

## Revised Shadow Habitats Regulations Assessment

Proposed non-material change of re-siting mitigation habitat approved to be located at Mitigation Area A to the Halton Marshes Wet Grassland Scheme

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## 1. Introduction

### 1.1 Overview

- 1.1.1 On 17 September 2018, Able Humber Ports Limited ('Able', or the 'Applicant') submitted an application (the Application) to make a non-material change (the 'NMC') to the Able Marine Energy Park Development Consent Order 2014 (S.I. 2014/2935, the 'AMEP DCO' or the 'Order'). On 28 October 2020, the Secretary of State ('SoS') responded to the application indicating that he was minded to refuse. The submission has now been amended to address the issues identified by the SoS. This document presents a revised shadow Habitats Regulations Assessment for the NMC.
- 1.1.2 In short, the Application seeks to amend the Order limits to remove development consent from the parcel of land allocated for Mitigation Area A ('Area A'). In all other respects, the authorised and associated development consented under the AMEP DCO would remain unaltered, consequently no development is authorised by the NMC. To avoid any new or significant effects arising an equivalent mitigation area has been consented, and already constructed, at Halton Marshes and a Terrestrial Environmental Management and Monitoring Plan ('TEMMP') for this alternative site has been agreed in principle between the Applicant and Natural England (Appendix F of the Application Statement).
- 1.1.3 Implementation of the proposed change requires the NMC to:
- amend the definition of the Order limits to remove Area A from the Order limits;
  - amend the definition of Associated Development in Schedule 1;
  - amend certified drawings set out at Requirement 6 of Schedule 11 (Requirements) of the DCO to remove reference to Area A and to introduce a new as-built drawing that identifies the alternative mitigation site that has been constructed at Halton Marshes.
- 1.1.4 Consent for the alternative mitigation site (the Halton Marshes Wet Grassland Scheme, 'HMWGS') including its construction, has already been granted following an appropriate assessment by North Lincolnshire Council. The HMWGS has been constructed, see Figure 1, and consequently it has begun its transition to functionality.
- 1.1.5 On 29 April 2019, the Department for Transport ('DfT') wrote to the Applicant in regard to the Application. In the letter, it is stated that the Secretary of State ('SoS') '*considers it necessary to undertake a Habitats Regulations Assessment ("HRA") to assess the materiality of the changes being sought in the Application*', noting that '*the need for an Appropriate Assessment as part of the HRA is not necessarily of itself determinative of whether a change should be considered material*.' Consequently, the SoS requested that the Applicant '*provides further information, which could be in the form of an updated shadow HRA/report, to assist the Secretary of State in undertaking the HRA. This HRA will then inform the Secretary of State's decision on the materiality of the change being applied for, which will include the possible effects on designated European Sites of moving Mitigation Area A to a new site outside the Order limits.*'

Figure 1 Aerial view of Halton Marshes Wet Grassland Scheme



- 1.1.6 On 17 May 2019, the Applicant submitted the requested shadow HRA ('the 2019 sHRA') to the SoS. On 28 October 2020, the DfT wrote to the Applicant providing comments on the submitted 2019 sHRA, offering the Applicant the opportunity to submit further information to demonstrate that the proposed change gives rise to no materially new or materially different likely significant effects, compared to those assessed as part of the AMEP DCO.
- 1.1.7 This report, the 'Revised sHRA 2020', has been prepared in response to the SoS's comments on the 2019 sHRA. It re-assesses whether the proposed NMC would adversely affect European Sites and their qualifying features in order to provide the SoS with sufficient information to enable them to make an appropriate assessment of the implications for such sites and features, if required, in accordance with their duties under The Conservation of Habitats and Species Regulations 2017.

## 1.2 Purpose of this report

- 1.2.1 In accordance with Regulation 63 of the Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations') a 'competent authority' is under a duty to undertake an 'appropriate assessment' ('AA') of the impacts of a proposed plan or project on a European site if the project is first found to have a likely significant effect on a European site, either alone or in combination with other plans or projects.
- 1.2.2 This report follows the same legal process that the SoS must perform, as the competent authority. It is consequently described as a shadow HRA ('sHRA') as it does not replace the SoS's duties to complete such an assessment.
- 1.2.3 In this case, the SoS is deciding whether to consent the removal of an area of ecological mitigation for which consent was granted under the AMEP DCO. An alternative site to mitigate for the effects of the development on habitats and species has been constructed under planning permission reference PA/2016/649, issued by North Lincolnshire Council. Therefore, the SoS is not consenting

to the development of Halton Marshes because the HMWGS has already been completed and no development can occur on the site of Mitigation Area A pursuant to the AMEP DCO because it is being proposed for removal from the Order limits.

- 1.2.4 Permission to develop wet grassland at Halton Marshes is long standing. Development of up to 32ha of wet grassland was originally approved in 2013 to mitigate for the effects of the development of Able logistic Park (itself EIA development), under planning permission PA/2009/0600. The permission was re-issued with revised conditions in 2016, planning reference PA/2015/1264 ('the ALP consent'). Both consents were also subject to HRA.
- 1.2.5 In 2018, planning permission PA/2016/1264 was granted for a detailed scheme of habitat creation on the same parcel of land at Halton Marshes as already consented under the ALP consent but for purposes not exclusively related to PA/2015/1264. These purposes included mitigation for AMEP.
- 1.2.6 This application was also subject to HRA which concluded, in short, that the HMWGS would not have an adverse effect on the integrity of the Humber Estuary SPA, SAC and Ramsar Sites if developed for its amended purpose.
- 1.2.7 A copy of the HRA for the HMWGS undertaken by the decision-maker before consenting planning permission PA/2016/649 was provided as part of the application for the NMC (Appendix C of the Application Statement). Natural England agreed with the findings of the HRA for the HMWGS in full (*ibid*).
- 1.2.8 The purpose of this report is therefore to consider whether the proposed NMC, alone or in combination with other plans and projects, would adversely affect European sites and their qualifying interests.

## 1.3 Structure of this report

- 1.3.1 This report is set out according to the following structure:
  - Section 2: Project Description, presenting a description of the proposed non-material change for which this report has been prepared;
  - Section 3: Habitats Regulations Assessment, presenting an overview of the process to be followed;
  - Section 4: Appropriate Assessments of Relevant Consents, providing a summary of previous relevant HRA;
  - Section 5: The sHRA: Screening, presenting the screening assessment undertaken for this project;
  - Section 6: The Appropriate Assessment, presenting an assessment of any likely significant effects.; and
  - Section 7: The sHRA 2020: Conclusions, presenting the further considerations undertaken and the overall conclusions of this Revised sHRA.

## 2. Project Description

### 2.1 Introduction

- 2.1.1 The '*plan or project*' that is the subject of this sHRA involves no new development.
- 2.1.2 Approval of the Application will have no effect on the construction, operation or maintenance of wet grassland at Halton Marshes as its construction is complete and the use of this land as mitigation for, *inter alia*, the loss of functionally linked land ('FLL') on the South Humber Bank has already been consented, with construction completed.
- 2.1.3 Environmental Management and Monitoring Plans for the HMWGS have also been approved pursuant to Condition 9 of PA/2016/649 and Condition 48 of PA/2015/1264, following advice from Natural England. These Plans, which replicate the requirements of the draft TEMMP included at Appendix F of the Application Statement, will continue to be implemented irrespective of the NMC decision. These approvals form part of the relevant baseline for this Revised sHRA.
- 2.1.4 Approval of the NMC will merely result in agricultural land on Killingholme Marshes that was to be developed as Area A not being developed and remaining as it currently is, in agricultural use. Therefore, the implications on the European site arising from approval of this NMC are very limited, and only the implication of not developing Area A falls to be assessed under the broad interpretation of the term '*plan or project*' as established by case law.
- 2.1.5 Area A was included as mitigation in the AMEP DCO, primarily to ensure that qualifying features of Humber Estuary Special Protection Area ('SPA') retained suitable and sufficient terrestrial habitat when AMEP was constructed. Full details of the purposes of Mitigation Area A are provided in section 2.2 below, but it is only the impact on the European sites that are relevant to this assessment..
- 2.1.6 A full project description is provided in the application documents submitted to the Secretary of State in September 2018 (see the revised Application Statement).
- 2.1.7 This section provides a summary of the proposed NMC for the purposes of providing context relevant for this report.

### 2.2 Background

#### **Mitigation Area A within the Able Marine Energy Park ('AMEP')**

- 2.2.1 The AMEP DCO came into force on 29 October 2014 and included approval of the siting of two ecological mitigation areas: Mitigation Area A; and Mitigation Area B. The consented mitigation areas are shown in Figure 2.
- 2.2.2 Area A comprises a core area of 16.7ha and habitat buffers incorporating sown neutral grassland of 1.7ha. The functional requirements of mitigation approved at this site is provided at Halton Marshes whilst Area A will remain in agricultural use.
- 2.2.3 Mitigation Area B is not affected by the Application.



- *Foraging habitat for bats, low shrub/scrub will be located around the margins;*
- *1.7ha (at least) of neutral grassland to mitigate for loss of Station Road Local Wildlife Site;*
- *Tussocky swards will be encouraged which provide habitat for nesting skylarks and Meadow Pipit, and*
- *Clearance of surrounding vegetation where it is resulting in over-shading, vegetation surrounding the water which provides cover from predators (eg rough grassland) and food for water voles to be encouraged!*

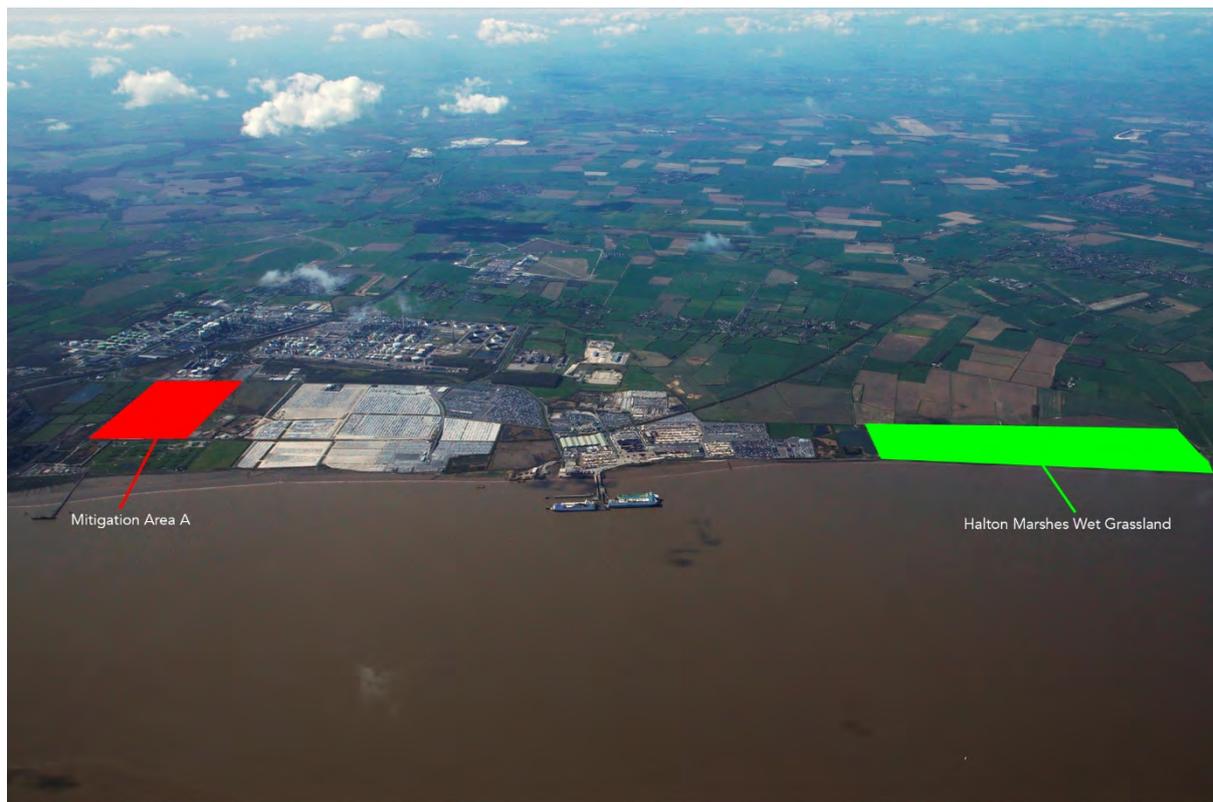
## 2.3 Description of the Halton Marshes mitigation site

### Site location

2.3.1 The constructed mitigation site lies outside the AMEP DCO limits, on Halton Marshes. The site is more specifically referred to as the Halton Marshes Wet Grassland Scheme ('HMWGS').

2.3.2 The location of the HMWGS in relation to AMEP is shown on Figure 3.

**Figure 3 Mitigation Area A within AMEP, and the constructed mitigation site at the Halton Marshes Wet Grassland Scheme**



### Halton Marshes Wet Grassland Scheme

2.3.3 The design principles for HMWGS are set out in a report by JBA Consultants which is included at Appendix A of the Application Statement. The HMWGS covers a total area of 90.2ha, providing:

- 12ha of core area for ALP<sup>1</sup> mitigation;
- 20ha of core area for AMEP further overcompensation;
- 20ha of core area for AMEP mitigation (comprising the 16.7ha of core area approved at Mitigation Area A and, importantly, 3.3ha of additional core area which can be considered as 'habitat banking');
- a total of 38.2ha of buffer, distributed on all sides of the core area at a width appropriate to distance the habitat from the different neighbouring land uses.

- 2.3.4 Figure 4 illustrates the habitats consented at HMWGS, the construction of which has been completed. A Waterbird Conservation Management Plan for the site has also been approved by North Lincolnshire Council pursuant to Condition 9 of the PA/2016/1264 and following the advice received from Natural England.
- 2.3.5 The HMWGS has been designed to provide all of the functional requirements of Area A, providing suitable habitat for both qualifying features of the European sites and other species that are not features of the Humber Estuary SPA/SAC/Ramsar site, including foraging habitats for bats and tussocky swards for nesting birds.
- 2.3.6 Referring to the functional requirements of Area A, the HMWGS specifically provides for the creation of suitable habitats for curlew, a qualifying feature of the SPA/SAC/Ramsar site. Curlew are the only part of the waterbird assemblage that are present in significant numbers on Killingholme Marshes and would be displaced by the development of AMEP.
- 2.3.7 The HMWGS design incorporates a series of long linear scrapes, at a suitable depth to persist throughout the target periods of the year for curlew. The design allows for topping up water levels as required, by pumping from an existing ditch that flows along the south western perimeter of the site.
- 2.3.8 To ensure the HMWGS does not experience excess flooding in winter, a series of bungs and weirs are incorporated into the design that can be adjusted manually to allow the site to drain effectively. Operation of the development will include site visits to manage water levels, to manage livestock grazing the site from late spring to autumn and for periodic hedge management.
- 2.3.9 Images of the HMWGS as constructed are reproduced in Figures 5a-5c.

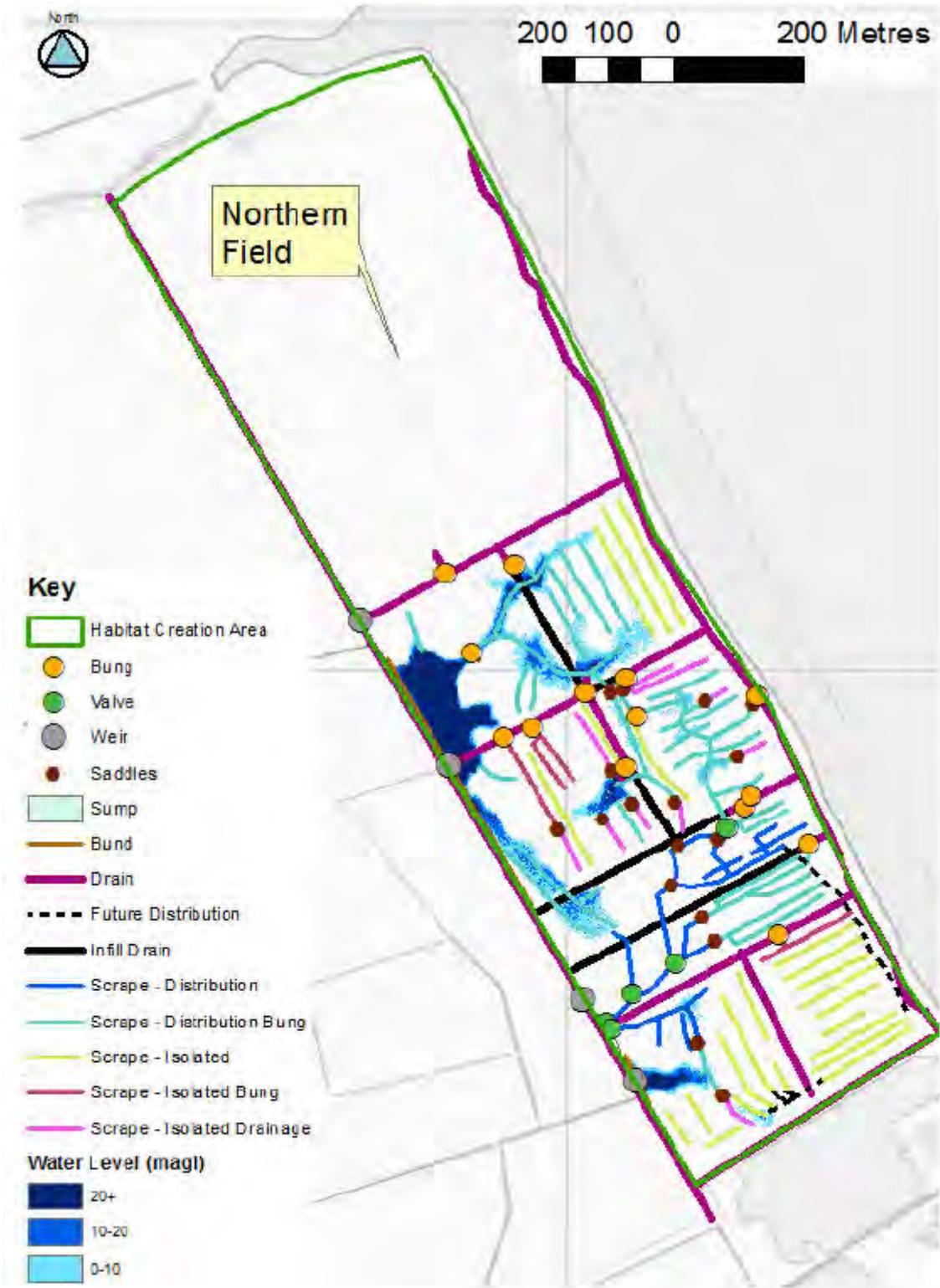
## 2.4 Definition of the '*Plan or Project*'

- 2.4.1 For the purposes of the sHRA, the simple definition of the 'plan or project' is the re-siting of Mitigation Area A.

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<sup>1</sup> Able Logistics Park, described at section 4.3

Figure 4 Design of the Halton Marshes Wet Grassland Scheme



## Figures 5a to 5c Photographs of the Halton Marshes Wet Grassland Scheme

Figures 5a and 5b dated February 2019, Figure 5c dated December 2018



Figure 5a – Wetted Area



Figure 5b – Scrape with hydraulic control



Figure 5c – Wind Pump abstracting water from Halton Drain

## 3. Habitats Regulations Assessment

### 3.1 An overview of the procedure to be followed

- 3.1.1 Regulation 63 of the Habitats Regulations and accompanying guidance from the European Commission and domestic authorities set out the HRA procedure, i.e. a process to be followed when a competent authority is considering a plan or project that is not directly connected with or necessary to the management of any European site but which may have an effect on any European site either alone or in combination with any other plans or projects.
- 3.1.2 As recognised in Advice Note 10 produced by the Planning Inspectorate, '*Habitats Regulations Assessment relevant to nationally significant infrastructure projects*' ('PINS AN10') the HRA process comprises four key stages:
1. Screening, to identify and determine if a project is likely to have significant impacts on a European site(s) (alone or in combination with other projects).
  2. Appropriate Assessment, an assessment of impacts on the integrity of the European site(s), taking cognisance of the site's structure, function and conservation objectives. In this respect an AA is much more narrowly focussed than an environmental impact assessment since it is exclusively concerned with the integrity of the European site. Mitigation options are assessed - where adverse effects cannot be mitigated, the assessment would proceed to stages 3 and 4.
  3. Assessment of alternative solutions, reviewing alternative ways of delivering or designing the project and if such solutions avoid or reduce the impact on the European site(s).
  4. IROPI (Imperative Reasons of Overriding Public Interest) where no alternative solution is identified and adverse impacts remain, determination if the project is needed due to IROPI and consideration to be given to possible compensatory measures to maintain the overall coherence of site or the integrity of the European site(s) network.

### 3.2 Screening

- 3.2.1 The first step under the HRA procedure is described at Regulation 63(1) and is commonly referred to as screening, or the Likely Significant Effect ('LSE') test.
- 3.2.2 Under this test the competent authority must consider whether a plan or project (in this case, not developing Area A and instead continuing to operate and maintain HMWGS) is likely to have any significant effect on any European site, either alone or in combination with other plans or projects.
- 3.2.3 Screening requires an assessment of the plan or project '*alone and in combination with other plans or projects.*'
- 3.2.4 Where the Secretary of State decides that the proposed development is not likely to have a significant effect on any European site, either alone or in combination with other plans or projects, the HRA procedure is complete.
- 3.2.5 A screening assessment has been undertaken for the proposed NMC and is presented at section 5 of this report.

## 3.3 Appropriate Assessment

- 3.3.1 Where the Secretary of State decides that the proposed development is likely to have a significant effect on any European site, either alone or in combination with other plans or projects, the HRA procedure must continue to an Appropriate Assessment ('AA').
- 3.3.2 The AA considers the implications of a project on the relevant European site(s) in view of that site's conservation objectives. The competent authority may then approve the project under consideration only if it has ascertained that it will not adversely affect the integrity of the European site(s).
- 3.3.3 If it cannot ascertain this, then the project may only proceed if further derogation tests are met.
- 3.3.4 The screening assessment set out at section 5 of this report concludes that the proposed NMC is not likely to have a significant effect on any European site alone, but in-combination effects with the Able Logistics Park (ALP) and the North Killingholme Power Project (NKPP) developments could not be ruled out given recent developments in case law that mitigation cannot be taken into account at the screening stage. As a result, an Appropriate Assessment is also required, and information to inform that assessment is provided. No adverse effects on integrity of the Humber Estuary SPA would occur.
- 3.3.5 The derogation tests summarised as stages 3 and 4 above are not considered further as they are consequently not relevant in this case.

## 4. Appropriate Assessments of Relevant Consents

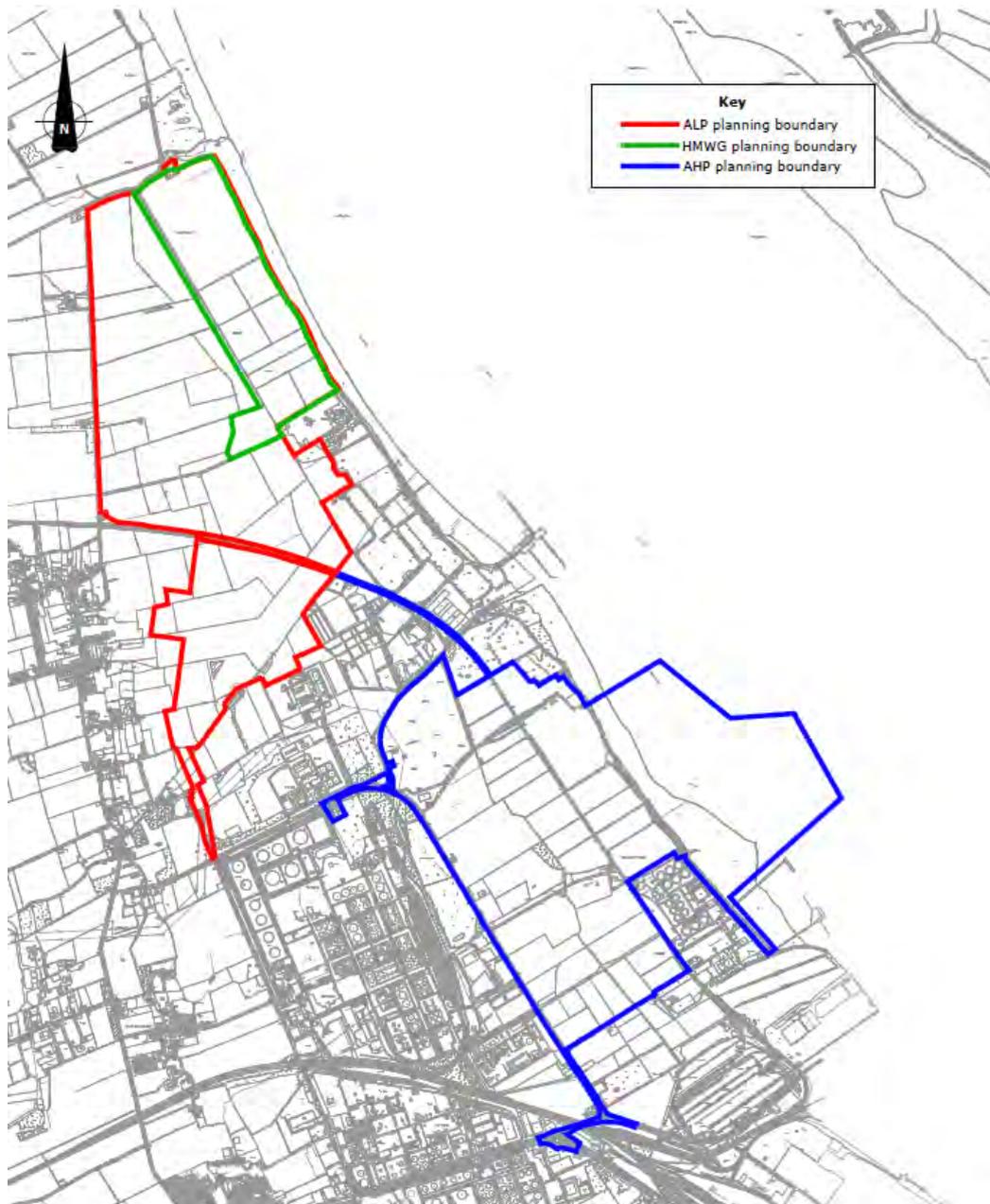
### 4.1 Overview

4.1.1 There are three consented projects that are directly relevant to the NMC; all have been subject to an appropriate assessment before being granted consent.

4.1.2 This Section briefly reviews those projects that are directly relevant to the NMC, in chronological order of the consenting date.

4.1.3 The site boundaries of the projects are shown in Figure 6.

**Figure 6 Site Boundaries of Relevant Consents**



## 4.2 Able Marine Energy Park ('AMEP')

- 4.2.1 Following a 'minded to approve' letter dated 28 August 2013, the SoS issued a decision letter dated 18 December 2013 (the 'AMEP decision letter') which presented his statement of reasons for consenting the AMEP DCO.
- 4.2.2 The AMEP decision letter records, *inter alia*, the HRA undertaken for the AMEP project. At paragraph 51, the Secretary of State confirms that the project (AMEP) '*satisfies all legal and regulatory requirements, including the international obligations of the United Kingdom Government and that the project can proceed without putting the UK Government in breach of the Habitats Directive.*'
- 4.2.3 This conclusion was reached following further consideration of the compensatory measures proposed within the AMEP DCO, which are not affected by this Project (to relocate Mitigation Area A). The AA undertaken by the SoS in determining the AMEP DCO (the 'AMEP AA') is set out at Annex 1 to the AMEP decision letter.
- 4.2.4 To address the recognised ecological impacts of the AMEP, a package of mitigation and compensation measures were approved through the DCO, including five new habitats:
- Mitigation Area A;
  - Mitigation Area B;
  - Cherry Cobb Sands, compensation and overcompensation; and
  - Further Overcompensation at Halton Marshes.
- 4.2.5 **Mitigation Area A**, adjacent to the southern edge of the AMEP site, was approved to provide wet grassland habitat for the use of feeding and roosting birds (primarily curlew) and to replace the loss of Station Road Local Wildlife Site. Mitigation Area A would comprise a core area of 16.7ha and habitat buffers with a sown neutral grassland of 1.7ha.
- 4.2.6 **Mitigation Area B** is a small plot adjacent to the Chase Hill Wood local wildlife site, which has already been developed for the use of great crested newts, including the provision of new ponds. This area complements Chase Hill Wood and will also provide nest opportunities for breeding birds.
- 4.2.7 Mitigation Area B has been constructed and is not affected by the proposed NMC.
- 4.2.8 The **Cherry Cobb Sands compensation package** comprises two new habitats located on the north bank of the Humber Estuary. The focus is a regulated tidal exchange scheme to provide replacement mudflat habitat that is sustainable in the long term and that provides a feeding area for wading birds. This (permanent) habitat is accompanied by an area of wet grassland provided as over-compensation for as long as it is required, but which may be returned to agriculture when the main scheme is fully functional.
- 4.2.9 The Cherry Cobb Sands compensation package is not affected by the proposed NMC.
- 4.2.10 **Further Overcompensation at Halton Marshes** was adopted as a precautionary measure, to provide additional feeding resource for the black-tailed godwit for as long as necessary.
- 4.2.11 The Cherry Cobb Sands compensation scheme was anticipated to take two to four years to become fully functional. The delivery programme for the AMEP was recognised to have the potential for habitat loss to occur before this compensation habitat is functional. European guidance indicates that overcompensation is an acceptable approach, and that has been adopted here.

- 4.2.12 The Further Overcompensation site is approved to be maintained and appropriately managed until the compensation scheme at Cherry Cobb Sands is deemed, with the agreement of Natural England (acting reasonably), to have met its objectives.
- 4.2.13 The Further Overcompensation scheme has been consolidated into the Halton Marshes Wet Grassland Scheme, as explained in section 4.4 below.

### 4.3 Able Logistics Park ('ALP')

- 4.3.1 The Able Logistics Park ('ALP') first gained planning consent on 10 July 2013 (reference PA/2009/0600). A new permission with varied conditions was subsequently granted on 1 February 2016 (PA/2015/1264, 'the ALP Consent') and has been implemented. A Conservation Management Plan for the wet grassland areas built on the HMWGS site has been approved, following advice from Natural England, pursuant to Condition 48 of the permission. The purpose of this Conservation Management Plan is to ensure protection of the features of the Humber Estuary SAC, SPA and Ramsar site from the ALP development.
- 4.3.2 The ALP Consent comprises: extensive warehousing, external storage and transportation depots; café/restaurant and hotel premises; and associated service facilities, amenity landscaping and habitat creation. The consented development included 32ha of core ecological habitat to mitigate for the loss of terrestrial fields that provided high tide feeding and roosting habitat for SPA qualifying species, specifically: lapwing; golden plover; ruff and curlew.
- 4.3.3 The ALP Consent also provides an option for up to 20ha of the 32ha of core area to be provided off site at a location to be agreed with the local planning authority. The balance of 12ha has now been provided within the HMWGS, as further described in Section 4.4 below. The remaining 20ha will be provided at a later date to ensure no likely significant effects from future stages of ALP development.
- 4.3.4 The original planning consent was subjected to an AA by the competent authority, North Lincolnshire Council, dated 24 June 2011. The AA, dated June 2011, concluded that:
- 'Overall, it is possible to ascertain that the proposal will not have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar Site alone or in combination with other plans or projects.'* (paragraph 17.2.9).
- 4.3.5 The ALP Consent was subjected to an AA dated 23 December 2015. Under the title '*Determination of Likely Significant Effect under The Conservation of Habitats and Species Regulations 2010*' the AA, dated 23 December 2015, concluded that:
1. *North Lincolnshire Council does not consider that the plan or project is directly connected with, or necessary to, the management of the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC) for nature conservation.*
  2. *North Lincolnshire Council is of the opinion that the plan or project is not likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC).*
- (eighth page, unnumbered)
- 4.3.6 Both AAs are included at Annex B of this report.

## 4.4 Halton Marshes Wet Grassland Scheme ('HMWGS')

4.4.1 An application for the Halton Marshes Wet Grassland Scheme ('HMWGS') was submitted to North Lincolnshire Council in May 2016 to provide a consolidated consent that brought three discrete parcels of ecological mitigation into a single block, namely:

- partial mitigation for development of the Able Logistics Park;
- further overcompensation for the AMEP; and
- mitigation for AMEP including the loss of functionally linked land at Killingholme Marshes.

4.4.2 The proposal was explained in a Planning Clarification Note that was issued in response to public consultation following the application. This Note is included at Annex C and demonstrates that the applicant fully understood that an amendment to the Order (as is now sought) would need to be gained to approve alternative mitigation proposals to those consented.

*'The HMWGS planning application simply seeks consent to create a habitat suitable to provide the functionality of Mitigation Area A, so that at a future date, and having gained the relevant, separate and discrete, planning permission it would be possible to relocate that element of mitigation for the AMEP.'*

*In that respect, the application might best be considered a stepping stone toward the relocation of Mitigation Area A, but not one that constitutes an application to do so. Consent for the HMWGS enables ABLE to be confident that, upon application to relocate Mitigation Area A, the HMWGS has been assessed as providing suitable habitat, (underline added).*

(paragraphs 1.2.4 and 1.2.5)

4.4.3 The HMWGS consolidated all the core areas set out in the relevant planning consents, surrounded by appropriate buffers.

4.4.4 As described at section 2.2, the HMWGS has also been designed to provide all the functional requirements of Area A, such that relevant other species are also not disadvantaged. Relevantly however, this Revised sHRA is narrowly focused on the implications for features of the European site.

4.4.5 The HMWGS was also subjected to an AA by the competent authority, North Lincolnshire Council, dated 3 April 2017 (the 'HMWGS AA') and is included at Appendix C of the Application Statement submitted to the SoS. The HMWGS AA concluded that:

*'Overall, it is possible to ascertain that the proposal will not have an adverse effect on the integrity of the Humber Estuary SPA and Ramsar Site alone or in combination with other plans or projects.'*  
(paragraph 9.2.2)

4.4.6 Consequently, planning permission was granted on 8 May 2017 (reference PA/2016/649) and construction commenced in May 2018.

## 4.5 Conclusions

4.5.1 These assessments provide relevant reference sources for this sHRA. They are used, alongside other referenced documents, to provide the objective evidence required for the sHRA undertaken in this report.

4.5.2 This approach delivers the iterative approach suggested in PINS AN10.

## 5. The sHRA: Screening

### 5.1 Introduction to screening and the approach used in this report

5.1.1 A screening assessment is normally a simple assessment to check whether a more detailed appropriate assessment is required. In December 2012, Defra published a consultation document titled 'The Habitats and Wild Birds Directives in England and its seas. Core guidance for developers, regulators & land/marine managers'.<sup>2</sup> Paragraph 34 of this guidance identifies the steps that should be undertaken in a screening assessment, which are:

- *Identify what (if any) European sites may be affected by the proposal*
- *Identify the conservation objectives of any site that may be affected, and the condition of the site*
- *Identify the potential effects of the plan or project on the site, alone or in combination with other plans or projects ("in combination" effects are explained in table 3 on page 11). This will need to include consideration of each of the features for which the site is designated*
- *Identify how those effects may impact on the site's conservation objectives*
- *Make a high level assessment of whether likely significant effects can be ruled out.'*

5.1.2 In short, this screening stage addresses the question:

*Is the project likely to have a significant effect on the interest features of the relevant sites alone or in combination with other plans or projects?*

5.1.3 Case law has assisted in interpreting the meaning of a LSE. *Waddenzee*<sup>3</sup> established that a plan or project is likely to have a significant effect on a European site (such that AA is required) where *'it cannot be excluded on the basis of objective information that the plan or project will have significant effects on the site concerned.'* (paragraph 44)

5.1.4 The judgement in the Scottish case of *Bagmoor Wind*<sup>4</sup> emphasised this point:

*'The requirement for objective information at the preliminary examination is not to be equated with a need for scientific knowledge.'* (paragraph 45)

5.1.5 It has also been established (eg *Boggis*<sup>5</sup>) that for a project to fail screening, there must be *'a real, rather than a hypothetical, risk'* of LSE based on objective evidence. (paragraph 37)

5.1.6 In April 2018, the European Court of Justice issued a decision in the case of *Sweetman*.<sup>6</sup> This decision overturned previous rulings to confirm that proposed mitigation measures cannot be taken into account for the purposes of screening under the Habitats Regulations.

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<sup>2</sup> The Habitats and Wild Birds Directives in England and its seas Core guidance for developers, regulators & land/marine managers December 2012 (draft for public consultation).  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/82706/habitats-simplify-guide-draft-20121211.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/82706/habitats-simplify-guide-draft-20121211.pdf) [14.05.2019@13:39]

<sup>3</sup> Court of Justice of the European Union, case C-127/02, 7 September 2004

<sup>4</sup> *Bagmoor Wind Limited v The Scottish Ministers* Court of Session [2012] CSIH 93

<sup>5</sup> *Peter Charles Boggis, Easton Bavents Conservation v Natural England v Waveney District Council* [2009] EWCA Civ 1061, 20 October 2009

<sup>6</sup> European Court of Justice, case C-323/17, 12 April 2018, *People Over Wind, Peter Sweetman v Coillte Teoranta*

- 5.1.7 The screening assessment in this report takes these judgements into account.
- 5.1.8 In summary, a LSE can be determined as any effect that may reasonably be predicted as a consequence of a project that may significantly affect the conservation or management objectives of the feature for which a site was designated.<sup>7</sup> The effect must be an effect on a European site and judgement as to significance must take into account relevant factors. These will include consideration of both: temporal effects (i.e. duration of effect); and physical effects (i.e. spatial extent of effect on the European site and the elements of the site including its conservation objectives).
- 5.1.9 In this case, the project is a NMC to a consented project: to re-site an area of ecological habitat, which has not yet been provided in the approved location; to an alternative location (the HMWGS), which has been consented and constructed. The location and design of the HMWGS is integral to the project, and having been constructed means that the Application (for the NMC) will not itself consent any new development.
- 5.1.10 To assess whether the proposed relocation of Mitigation Area A is likely to have any significant effect on the features of the European sites, the following matters have been considered:
- whether the project could affect the qualifying interests and whether they are sensitive/vulnerable to the effect;
  - the probability of the effect happening;
  - the likely consequence for the site's conservation objectives if the effect occurred; and
  - the magnitude, duration and reversibility of the effect.
- 5.1.11 The assessment is not presented in the screening matrix template set out at Appendix 1 of PINS AN10, but has been undertaken having had reference to it and seeking to address the matters raised therein.

## 5.2 Identification of the European sites

### The Humber Estuary European Sites

- 5.2.1 The AMEP Habitats Regulation Assessment Report<sup>8</sup> (the 'AMEP HRAr') submitted as part of the application for the AMEP DCO in 2011, identifies the Humber Estuary as '*one of the largest estuaries in the UK comprising extensive wetland and coastal habitats*' (paragraph 5.2.1). It is covered by all three relevant designations: Special Area of Conservation (SAC); Special Protection Area (SPA); and Ramsar site.
- 5.2.2 Paragraph 5.2.2 of the AMEP HRAr confirms that these are the only European sites that will be affected by the AMEP.
- 5.2.3 The information contained in all the AA set out at section 4 has been reviewed to consider whether:
- there are any other European sites that should be assessed;
  - there have been any changes to the extent or qualifying features of the relevant sites; and

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<sup>7</sup> Habitats Regulations Guidance Note 3. The Determination of Likely Significant Effect under The Conservation (Natural Habitats etc) Regulations 1994. English Nature, November 1999

<sup>8</sup> Able Marine Energy Park, Habitats Regulations Assessment Report, ERM, December 2011

- there are any planned future designated sites or changes to the current sites that should be noted and taken into account.

5.2.4 The relevant European sites to consider remain to be the:

- Humber Estuary SAC;
- Humber Estuary SPA; and
- Humber Estuary Ramsar site.

5.2.5 It is recognised that, in relation to the Humber Estuary SPA, the detailed species accounts contains some updates. However, the current Citations have been used in the preparation of this report and they match the information provided in the standard data form supplied to the EU.

5.2.6 Whilst the reporting documents have been updated, neither the qualifying features nor the conservation objectives for these European sites have changed from those set out in either of the AMEP HRAR or HMWGS AA.

5.2.7 The Applicant is not aware of any planned future designated sites or changes to the current sites that should be considered.

5.2.8 A plan of the Humber Estuary European sites, and others that have been considered, is provided at Annex D to this report.

## 5.3 Qualifying Features

### The Humber Estuary SAC

5.3.1 The qualifying interests of the Humber Estuary SAC are set out in the site Citation dated 10 December 2009 included at Annex E. For ease of reference they are reproduced below:

5.3.2 **Qualifying habitats:** The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I of that Directive:

- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Coastal lagoons
- Dunes with *Hippophae rhamnoides*
- Embryonic shifting dunes
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Fixed dunes with herbaceous vegetation ('grey dunes')
- *Salicornia* and other annuals colonising mud and sand
- Sandbanks which are slightly covered by sea water all the time
- Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')

5.3.3 **Qualifying species:** The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II of that Directive:

- Grey seal *Halichoerus grypus*
- River lamprey *Lampetra fluviatilis*

- Sea lamprey *Petromyzon marinus*

## The Humber Estuary SPA

5.3.4 The qualifying interests of the Humber Estuary SPA are set out in the site Citation dated 31 August 2007, included at Annex F. For ease of reference, relevant abstracts are reproduced in Figures 7a to 7c.

### Figures 7a to 7c Relevant extracts from Humber Estuary SPA Citation 2007

Figure 7a

#### Qualifying species:

The site qualifies under **article 4.1** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

Annex I species	Count and season	Period	% of GB population
Avocet <i>Recurvirostra avosetta</i>	59 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.7%
Bittern <i>Botaurus stellaris</i>	4 individuals – wintering	5 year peak mean 1998/99 – 2002/03	4.0%
Hen harrier <i>Circus cyaneus</i>	8 individuals – wintering	5 year peak mean 1997/98 – 2001/02	1.1%
Golden plover <i>Pluvialis apricaria</i>	30,709 individuals – wintering	5 year peak mean 1996/97 – 2000/01	12.3%
Bar-tailed godwit <i>Limosa lapponica</i>	2,752 individuals – wintering	5 year peak mean 1996/97 – 2000/01	4.4%
Ruff <i>Philomachus pugnax</i>	128 individuals – passage	5 year peak mean 1996-2000	1.4%
Bittern <i>Botaurus stellaris</i>	2 booming males – breeding	3 year mean 2000-2002	10.5%
Marsh harrier <i>Circus aeruginosus</i>	10 females – breeding	5 year mean 1998-2002	6.3%
Avocet <i>Recurvirostra avosetta</i>	64 pairs – breeding	5 year mean 1998 – 2002	8.6%
Little tern <i>Sterna albifrons</i>	51 pairs – breeding	5 year mean 1998-2002	2.1%

Figure 7b

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

Migratory species	Count and season	Period	% of subspecies/ population
Shelduck <i>Tadorna tadorna</i>	4,464 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.5% Northwestern Europe (breeding)
Knot <i>Calidris canutus</i>	28,165 individuals – wintering	5 year peak mean 1996/97 – 2000/01	6.3% <i>islandica</i>
Dunlin <i>Calidris alpina</i>	22,222 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.7% <i>alpina</i> , Western Europe (non-breeding)
Black-tailed godwit <i>Limosa limosa</i>	1,113 individuals – wintering	5 year peak mean 1996/97 – 2000/01	3.2% <i>islandica</i>
Redshank <i>Tringa totanus</i>	4,632 individuals – wintering	5 year peak mean 1996/97 – 2000/01	3.6% <i>britannica</i>
Knot <i>Calidris canutus</i>	18,500 individuals – passage	5 year peak mean 1996 – 2000	4.1% <i>islandica</i>
Dunlin <i>Calidris alpina</i>	20,269 individuals – passage	5 year peak mean 1996 – 2000	1.5% <i>alpina</i> , Western Europe (non-breeding)
Black-tailed godwit <i>Limosa limosa</i>	915 individuals – passage	5 year peak mean 1996 – 2000	2.6% <i>islandica</i>
Redshank <i>Tringa totanus</i>	7,462 individuals – passage	5 year peak mean 1996 – 2000	5.7% <i>britannica</i>

Figure 7c

**Assemblage qualification:**

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season:

In the non-breeding season, the area regularly supports 153,934 individual waterbirds (five year peak mean 1996/97 – 2000/01), including dark-bellied brent goose *Branta bernicla bernicla*, shelduck *Tadorna tadorna*, wigeon *Anas penelope*, teal *Anas crecca*, mallard *Anas platyrhynchos*, pochard *Aythya ferina*, scaup *Aythya marila*, goldeneye *Bucephala clangula*, bittern *Botaurus stellaris*, oystercatcher *Haematopus ostralegus*, avocet *Recurvirostra avosetta*, ringed plover *Charadrius hiaticula*, golden plover *Pluvialis apricaria*, grey plover *P. squatarola*, lapwing *Vanellus vanellus*, knot *Calidris canutus*, sanderling *C. alba*, dunlin *C. alpina*, ruff *Philomachus pugnax*, black-tailed godwit *Limosa limosa*, bar-tailed godwit *L. lapponica*, whimbrel *Numenius phaeopus*, curlew *N. arquata*, redshank *Tringa totanus*, greenshank *T. nebularia* and turnstone *Arenaria interpres*.

**The Humber Estuary Ramsar Site**

5.3.5 The criteria that are relevant to the designation of the Humber Estuary Ramsar Site are set out in the Site Information Sheet dated 31 August 2007. This is included at Annex G.

**5.4 The Conservation Objectives**

**Humber Estuary SAC**

5.4.1 The conservation objectives of the Humber Estuary SAC were published by Natural England on 27 November 2018 (refer to Annex E) and for ease of reference are set out below:

*'Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;*

- *The extent and distribution of qualifying natural habitats and habitats of qualifying species*
- *The structure and function (including typical species) of qualifying natural habitats*
- *The structure and function of the habitats of qualifying species*
- *The supporting processes on which qualifying natural habitats and habitats of qualifying species rely*
- *The populations of qualifying species, and,*
- *The distribution of qualifying species within the site.'*

**Humber Estuary SPA**

5.4.2 The conservation objectives of the Humber Estuary SPA apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).<sup>9</sup>

5.4.3 The conservation objectives are:

<sup>9</sup>

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9006111&SiteName=Humber&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=#hlco>

*'... to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:*

*the extent and distribution of the habitats of the qualifying features*

*the structure and function of the habitats of the qualifying features*

*the supporting processes on which the habitats of the qualifying features rely*

*the populations of each of the qualifying features*

*the distribution of qualifying features within the site'*

5.4.4 Natural England has also issued Supplementary Advice on the Conservation Objectives (SACO) for the Humber Estuary SPA.

5.4.5 The SACO for the waterbird assemblage and for marsh harrier are included at Annex H.

### **Humber Estuary Ramsar Site**

5.4.6 Natural England's guidance on the conservation objectives of the Humber Estuary Ramsar Site are detailed in Annex G, and are repeated below for ease of reference:

*'For Ramsar sites, a decision has been made by Defra and Natural England not to produce Conservation Advice packages, instead focussing on the production of High Level Conservation Objectives. As the provisions on the Habitats Regulations relating to Habitat Regulations Assessments (HRAs) extend to Ramsar sites, Natural England considers the Conservation Advice packages for the overlapping European Marine Site designations to be, in most cases, sufficient to support the management of the Ramsar interests. If there are Ramsar qualifying features not covered by overlapping European Marine Sites, we will consider the best approach on addressing these (e.g. to produce advice on a feature basis) if there is an operational risk. For information regarding timelines for publication of Conservation Advice packages please contact the relevant local area team.'*

## **5.5 Considering Likely Significant Effects**

### **Introduction**

5.5.1 The proposed NMC is the removal of Area A from the Order limits and the relocation of mitigation that was consented at Killingholme Marshes to Halton Marshes. Relevantly however, as explained above, an approval would not give rise to any new physical disturbance of the environment as the construction of the alternative habitat is complete and its ongoing management is already consented and approved by planning condition. The consequence of any approval of the NMC therefore is merely that land on Killingholme Marsh that was to be developed as wet grassland will remain undeveloped and in agricultural use (its current use).

5.5.2 Relevantly also, Natural England has already agreed the HRA for the development of HMWGS which included an assessment of its suitability as high tide feeding and roosting areas for waterbirds displaced by AMEP. Therefore, where the HMWGS HRA is referenced below it should be understood that Natural England has endorsed that assessment.

## Could this project affect any qualifying interests of the SAC?

- 5.5.3 Neither Area A, nor the HMWGS is within the SAC. Consequently, no qualifying feature, as listed at section 5.3, is directly affected by the proposed NMC.
- 5.5.4 Nor is there a reasonable possibility of an indirect effect on features of the SAC from not developing wet grassland on Area A because the current agricultural use of Area A will be unchanged by the proposals, and in any event is insignificant in relation to the water body of the Humber Estuary.
- 5.5.5 In any event, a Water Framework Directive Compliance Statement was prepared for the HMWGS (Annex J). At section 5.1, this Compliance Statement concluded that '*The proposed works to develop a wet grassland at Halton Marshes should not enter either of the waterbodies screened in and it is considered that the proposed works will be compliant with the WFD.*

## Could this project affect any qualifying interests of the SPA/Ramsar site?

- 5.5.6 Section 5.3.25 *et seq* of the AMEP HRAR set out the existing use of the terrestrial fields on Killingholme Marshes. The AMEP HRAR noted that of six species of wetland bird using the terrestrial fields, only one, curlew, did so regularly and in numbers that exceeded 1% of that species' estuary population.
- 5.5.7 Whilst three other species (common snipe, gadwall and whimbrel) were present in numbers >1% of the Humber Estuary population, their overall numbers were very low and they were only present sporadically, indicating no dependence on the habitat.
- 5.5.8 In this assessment, consideration has also been given to marsh harrier, as a species that was identified by the SoS in his letter of 28 October 2020 as requiring further information and assessment.
- 5.5.9 Accordingly, there are two species that could possibly be affected by the change from Mitigation Area A, curlew and marsh harrier. Mitigation Area A mitigated for the loss of terrestrial fields (or FLL) by providing enhanced habitat that provided the same benefit as the existing fields within a smaller core area that was buffered to safeguard it from disturbance.
- 5.5.10 Curlew is not a qualifying feature of the SPA *per se*, but it is part of the waterbird assemblage, which is a qualifying feature, as listed at section 5.3 above. Marsh harrier is a qualifying species for its breeding population (see Figure 7a above).
- 5.5.11 The HMWGS AA confirms that the mitigation requirements of Mitigation Area A provided at HMWGS would also provide FLL for the waterbird assemblage on Killingholme Marsh and so would not affect the qualifying interests of the Humber Estuary SPA or Ramsar site (at paragraph 9.2.2, see quote provided at paragraph 4.4.5 of this report).

## 5.6 Assessment of LSE on the Waterbird Assemblage

### Introduction

- 5.6.1 The mitigation habitat consented at Mitigation Area A has several functions. In relation to the European sites the priority was for the curlew, but also other species of the waterbird assemblage. Consequently, this section considers the LSE on the waterbird assemblage, with a focus on curlew.

- 5.6.2 Specific targets for the waterbird assemblage are listed in the SACO<sup>10</sup> issued by Natural England. These were most recently updated in March 2019, with supplementary advice stating that they should be used '*when developing, proposing or assessing an activity, plan or project that may affect the site.*'
- 5.6.3 Each of the relevant targets has been considered in assessing the LSE of relocating the mitigation habitat approved at Mitigation Area A to the HMWGS.

## **Baseline Conditions: use of Mitigation Area A and proposed alternative mitigation area at Halton Marshes**

- 5.6.4 Baseline surveys in 2011-12 showed that, though most curlew were found on the foreshore, smaller numbers were seen around the Rosper Road Pools, including the arable fields within Mitigation Area A. Curlew were also found in this area in the 2017-18 surveys (Annex I). There would, under this proposal, be no further development on Mitigation Area A to consider, so this baseline would remain unchanged by the proposal. If the mitigation on Area A had gone ahead then it would have provided 16.7ha of wet grassland, buffered from surrounding potential disturbance sources (as agreed with Natural England).
- 5.6.5 Under the current proposal, the Mitigation Area A requirements will instead be provided within the Halton Marshes Wet Grassland Scheme (HMWGS). This too has created wet grassland from an area that had previously been arable farmland, and again has been appropriately buffered from surrounding potential disturbance sources (as agreed with Natural England) to ensure that a core 16.7ha of undisturbed wet grassland habitat is available. The HMWGS area was included in the same 2017-18 surveys. Those surveys reported curlew use of the HMWGS site together with the foreshore and agricultural land in its vicinity, refer to Annex I.

## **Target: Restore the overall abundance of the assemblage to a level which is above 153,934 whilst avoiding deterioration from its current level as indicated by the mean count or equivalent.**

- 5.6.6 The relocation of Mitigation Area A is likely to have a neutral or potentially beneficial effect on the abundance of the assemblage. This is evidenced in Natural England's consultation response to the Application, dated 24 October 2018, which states that:
- 'the proposed change of location to Halton Marshes for the mitigation for the loss of functionally linked land at Killingholme Marshes, alongside mitigation measures for other permissions, will create a larger, contiguous area of wet grassland habitat overall that **will potentially have significant value for SPA birds**, (emphasis added, refer to Annex K).*
- 5.6.7 The HMWGS AA also considered the potential effect resulting from the relocation of Mitigation Area A to Halton Marshes. Paragraph 7.3.3 of the HMWGS AA references a letter from Natural England dated 28 October 2011 (Annex L of this report) in which it advises that the provision of mitigation habitat at Halton Marshes would enable the impacts of the loss of feeding and roosting habitat from the Killingholme Marshes to be mitigated. Paragraphs 7.3.4 and 7.3.5 of the HMWGS AA summarise relevant local development plan policy, which also recognises the potential for Halton Marshes to be a preferred area for waterbird mitigation.
- 5.6.8 By inspection, the fact that unimproved FLL will remain on Killingholme Marshes provides a benefit to the waterbird assemblage compared to the consented scheme.

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<sup>10</sup>

<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9006111&SiteName=Humber&SiteName%E2%80%A6> [14.05.2019@18:12]. Also provided at Annex H

5.6.9 In short, there is no likely adverse effect on the abundance of the waterbird assemblage arising from re-siting the mitigation currently consented to be located at Mitigation Area A, within AMEP, to the HMWGS.

**Target: Maintain the species diversity of the waterbird assemblage.**

5.6.10 As identified above (from paragraph 5.5.6) only one of the six species of wetland bird using the terrestrial fields at Killingholme Marshes (the curlew) did so regularly and in numbers that exceeded 1% of the species' estuary population. Whilst three other species (common snipe, gadwall and whimbrel) were present in numbers >1% of the Humber Estuary population, their overall numbers were very low and they were only present sporadically, indicating no dependence on the habitat. Accordingly, the only species of the waterbird assemblage that possibly relies on Mitigation Area A is the curlew.

5.6.11 Paragraph 7.3.7 of the HMWGS AA considers the commute distance available to wintering curlews. It states:

*'The area proposed for HMWGS lies about 4km from AMEP Area A and a similar distance from the intertidal habitat at Killingholme frontage that will remain following the AMEP development. A search of the readily available literature suggests that wintering curlews will readily commute such a distance between estuaries and inland fields or between foraging sites (A.S. Holmes in Cramp (ed.) 1983, Wilson 1973, Bainbridge and Minton 1978 and Tasker & Milsom 1979 in Townshend 1981). Inter-refuge distances of around 3-6 km have been proposed for other wader species, such as grey plover and dunlin (Rehfishch et al. 1993).'*

5.6.12 The species dependent on the approved site can readily commute to the proposed relocation site. In short, there is no likelihood that the relocation of Mitigation Area A will adversely affect the diversity of the waterbird population. The fact that unimproved FLL will also remain on Killingholme Marshes (at the location originally intended for Mitigation Area A) provides a benefit to the waterbird assemblage compared to the consented AMEP scheme.

**Target: Reduce the frequency, duration and/or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed**

5.6.13 Mitigation Area A comprises a core area surrounded by a buffer of sufficient width to ensure that the core area is undisturbed. The proposed relocation site (HMWGS) also comprises a core area surrounded by buffers agreed with Natural England. In paragraph 7.3.8 of the HMWGS AA it is stated that *'it is reasonable to conclude that the mitigation for loss of feeding, roosting and loafing habitat for curlew from Killingholme Marsh, that would have been provided by Area A, can effectively be delivered by the provision of 20 hectares of core habitat, along with the appropriate buffers at HMWGS'*. (underline added)

5.6.14 Again, there is no likelihood that the re-siting of Mitigation Area A will change the level of disturbance to the waterbird assemblage, as at the HMWGS the core area is appropriately buffered.

5.6.15 Further, and as recognised in Natural England's response to the Application (summarised at paragraph 5.6.4 above) the HMWGS can be considered a better scheme for the waterbird assemblage overall because habitat is being provided on a larger scale, rather than in a piecemeal fashion.

**Target: Maintain concentrations and deposition of air pollutants at below site relevant Critical Load or Level values for this feature of the site on the Air Pollution Information System**

5.6.16 Air quality is addressed at Chapter 17 of the AMEP Environmental Statement. The key operational issues were: road traffic; shipping; and emissions from paint spraying products (paragraph 17.1.2).

5.6.17 The proposed relocation of Mitigation Area A does not comprise activities that would affect the creation or deposition of air pollutants. Not developing Area A will have no effect on air quality.

5.6.18 The relocation of Mitigation Area A will have no effect on air pollution.

**Target: Maintain the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.**

5.6.19 HMWGS is already being managed by the Applicant in accordance with the draft TEMMP submitted at Appendix F of the Application Statement. Natural England confirmed by letter dated 13 December 2018, that it was content to '*approve the (revised) TEMMP in principle*' (refer to Annex M).

5.6.20 Schedule 11, Requirement 19(3) of the AMEP DCO requires a Terrestrial Environmental Management and Monitoring Plan (TEMMP) to be submitted and subsequently approved by Natural England. The SoS can reasonably rely on the advice of Natural England that the draft TEMMP is agreed in principle and that this ensures the ongoing maintenance of the mitigation land at Halton Marshes.

5.6.21 In its withdrawn response to the Application, North Lincolnshire Council expressed some concern that it was '*unclear how the new area could be secured*.' In fact, North Lincolnshire Council, as the local planning authority, is responsible for enforcing compliance with the Requirements of the AMEP DCO and this would include the TEMMP. In addition, planning permission for the HMWGS was granted by North Lincolnshire Council and so again it is the local planning authority with relevant associated powers.

5.6.22 Consequently, arrangements to maintain the proposed relocation site (HMWGS) will be as robust as those already agreed by Natural England for the current site of Mitigation Area A, so there is no likelihood of the proposed NMC undermining existing arrangements in the longer term.

**Target: Restore the extent, distribution and availability of suitable habitat (either within or outside the site boundary) which supports the features for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding) to an unknown extent based on restoring natural estuarine functioning.**

5.6.23 The Humber Estuary SPA's ability to support the waterbird assemblage is a function of the habitats that support the assemblage, including wet grassland, rough grassland and agricultural land outside the site boundary. Land outside the site boundary is sometimes referred to as functionally linked land or FLL.

5.6.24 The HMWGS site lies within a parcel of land known as the South Humber Gateway ('SHG'), located on the south bank of the Humber estuary. The SHG stretches from the outskirts of Grimsby to the East Halton Skitter, straddling the boundaries of North Lincolnshire Council and North East Lincolnshire Council. It covers almost 1,000 hectares, nearly four square miles, of development land. AMEP and the consented Able Logistics Park to the north lie within this area, see Figure 8.

**Figure 8 The South Humber Gateway (SHG), or South Humber Bank Zone (SHBZ)**



5.6.25 Because of its economic importance to the region and the confounding factor that it is functionally linked to the Humber Estuary SPA, it has long been recognised that a strategic approach is required for mitigating the adverse effects of developing the SHG on the waterbird assemblage that relies on terrestrial areas adjacent to the boundary of the European site. Indeed, the RSPB prepared a paper dated February 2008 that argued against a piecemeal approach by developers to the loss of FLL in the SHG area, and promoted a more strategic approach comprising large blocks of land. Specifically, the RSPB proposed at that time:

*'Given the size and length of the SHBZ, a single mitigation site would not be appropriate. .... As a starting point it is likely that, as a minimum, three areas broadly located in the north, centre and south of the Zone, and within close proximity to the estuary would be required to ensure provision of feeding/roosting habitat within relatively easy reach of all intertidal areas along the South Humber Bank', (original emphasis).*

5.6.26 A strategic approach to mitigation for FLL was later agreed by all the relevant regulatory bodies who, in 2010 (at various dates) signed a Memorandum of Understanding to develop such an approach.

5.6.27 In 2011, during pre-application consultations with Natural England regarding AMEP, Natural England explained the emerging principles of the mitigation for FLL within the SHG to the Applicant, and the requirement for 4 x 50ha blocks (20ha core area + buffer) of wet grassland mitigation to be delivered within the SHG. Natural England also, in a letter dated 20 September 2011 (refer to Annex N), noted that these mitigation areas were determined from the 'South Humber Gateway INCA bird survey data and based on expert opinion from national Natural England and RSPB staff based on their knowledge and experience across the country', but that AMEP need only contribute according to its impact which Natural England calculated to be 16.7ha of core area. This left a residual 3.3ha to be provided to fully mitigate for the loss of FLL on Killingholme Marshes.

5.6.28 In the same letter Natural England confirmed that an alternative mitigation strategy was possible:

*'Natural England also accepts that it is possible to mitigate for this (AMEP's) impact by utilising land on Able's previous development site, ALP (Able Logistics Park. Note: Original consent reference PA/2009/0600, consented with revised conditions as PA/2015/1264). The option that was discussed in Peterborough was for the provision of a 20ha core area to partially mitigate for ALP and a 16.7ha core area to mitigate for AMEP – ie a 36.7ha core area. This would be surrounded by a 150m buffer, except adjacent to the seawall where a buffer of 50m was agreed if public access was*

*screened. To complete the mitigation for ALP, this option also requires a 20ha core area surrounded by 150m buffers where the adjacent land is unsecured, outside of the South Humber Gateway. The location of this offsite mitigation would be agreed with Natural England and would need to follow the principles of the South Humber Gateway. All of the land should be optimally managed as wet grassland'. (Notes added).*

5.6.29 In time, a Strategic Plan for SHG was formulated and set out in 'The South Humber Gateway Mitigation Strategy' (SHGMS) and it is this strategy that informs Policy SHBE-1 of North Lincolnshire Council's 'Housing and Employment Land Allocations Development Plan Document', (March 2016). The SHGMS forms Appendix 2A of the HRA for North Lincolnshire Council's Development Plan Document. This particular policy covers the hinterland from Immingham to East Halton Skitter and the SHGMS records the following proposals for mitigation in this area:

*'In North Lincolnshire, the majority of the area of waterbird mitigation is expected to be delivered through implementation of two large developments. The Able Logistics Park development (ref PA/2009/0600) already has planning permission. Conditions attached to that permission require the developer to carry out one of two options to deliver all of the waterbird mitigation required as a result of the loss of feeding, roosting and loafing habitat on Halton Marsh. Waterbird mitigation for the Able Marine Energy Park will deliver 16.7 hectares of wet grassland core habitat plus a wet grassland habitat buffer, representing the majority of the 20 hectares core habitat plus buffer required to mitigate fully for the loss of terrestrial habitat on Killingholme Marsh'.*

and;

*'In North Lincolnshire, options remain open about the delivery of the further 3.3 hectares of core habitat plus wet grassland habitat buffer that will be required to allow the development of the remaining land on Killingholme Marsh, which also supports significant numbers of curlew. Developers at the southern end of Killingholme Marsh may opt to create mitigation habitat in one of the following ways:*

*1. By adding to waterbird mitigation on Halton Marsh, through agreement with the landowners'; (emphasis added).*

5.6.30 Policy SHBE-1 emphasises that the land allocated for the loss of FLL is linked to two projects, AMEP and ALP, and that both had undergone HRA before being approved. However, the policy also emphasises that a flexible approach will nevertheless be adopted:

*'Developers could bring forward other alternative mitigation proposals, of at least equivalent area to that agreed under the ALP and AMEP projects, provided that they have an evidence base sufficient to demonstrate the ability of such waterbird mitigation to contribute to the overall mitigation strategy and avoid Adverse Effects on the integrity of the SPA/Ramsar site. This approach will enable to keep Policy SHBE-1 flexible and give the policy longevity, without future cause to involve formal amendments to the DPD or possible DPD departure procedures. This will also enable precise areas for mitigation sites to be agreed by signatories to the Mitigation Strategy and will allow for any possible future changes (to the first Mitigation Strategy), which may occur as a result of managing, monitoring and future updated studies. In effect the Mitigation Strategy for North Lincolnshire will be a 'living document' that will provide continual updated robust evidence towards delivering and maintaining mitigation sites. There are options for waterbird mitigation/compensation to be provided beyond the boundaries of the SHB employment allocation as long as this does not affect the ability of the designated site to meet its conservation objectives. Other proposals which may come forward on the remainder of the SHB employment allocation*

*(other than the proposed AMEP and ALP projects) will have to pass the tests of the Habitats Regulations.'*

5.6.31 Therefore it is clear, and evidenced in various documents and correspondence, that the distribution and availability of FLL is addressed at a strategic level within this part of the estuary and that the proposal to use wet grassland at Halton Marshes to mitigate for the loss of FLL at Killingholme Marsh is consistent with the strategic approach.

5.6.32 Consequently, the extent, distribution and availability of suitable habitat will be maintained to the extent that is necessary to avoid an AEOI and managed as agreed with Natural England and there will be no impact on this target.

**Target: Maintain the structure, function and availability of the following habitats which support the assemblage feature for all stages (moulting, roosting, loafing, feeding) of the non-breeding period. The principal habitats known or likely to support the assemblage features at this SPA are .... inland areas of wet grassland, rough grassland and agricultural land...**

5.6.33 This is addressed above, from paragraphs 5.6.23.

5.6.34 There is no impact identified on the structure, function and availability of the relevant habitat.

**Target: Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels.**

5.6.35 The Humber Estuary is the largest macro-tidal coastal plain estuary on the North Sea coast and drains one fifth of England, a spatial area 24,240km<sup>2</sup>. Surface water run-off from the consented site and the proposed alternative site will discharge into the Humber Estuary. Leaving Area A in agricultural use means that it will remain essentially 'greenfield', so the quality of run-off will be the same.

5.6.36 The HMWGS AA found no LSE on the water quality of the Humber Estuary. This is reasonable as the works simply comprised landscaping. The construction works necessary for creating the consented habitat at the HMWGS have been completed. The proposed relocation of Area A to the HMWGS does not comprise activities that would affect the creation or deposition of aqueous contaminants.

5.6.37 As noted at paragraph 5.5. a Water Framework Direct Compliance Statement (Annex J) was prepared for the HMWGS and provides further evidence of no effect.

5.6.38 The re-siting of Mitigation Area A will have no impact on the levels of aqueous contaminants within the estuary.

**Target: Maintain the dissolved oxygen (DO) concentration at levels equating to Good Ecological Status (specifically  $\geq 5.7\text{mg/l}$  (at 35 salinity) for 95% of the year, avoiding deterioration from existing levels.**

5.6.39 Chapter 9 of the AMEP Environmental Statement addressed water quality. Dissolved oxygen is addressed at paragraphs 9.5.17 *et seq*. Impacts are addressed in Section 9.6, which identifies that impacts on dissolved oxygen could potentially arise from dredging activities. However, the proposed NMC does not change the consented dredging operations.

5.6.40 The HMWGS AA found no LSE on the water quality of the Humber Estuary, this is reasonable as the works simply comprised landscaping. The construction works necessary for creating the consented habitat at the HMWGS have been completed. The proposed relocation of Mitigation Area A to the HMWGS does not comprise activities that would impact on dissolved oxygen in the European site.

5.6.41 Leaving Area A undeveloped will make no change to the existing baseline.

5.6.42 The re-siting of Mitigation Area A will have no impact on the dissolved oxygen concentration levels in the estuary.

**Target: Maintain water quality and specifically mean winter dissolved inorganic nitrogen (DIN) at a concentration equating to High Ecological Status (specifically mean winter DIN is <12µM for coastal waters), avoid deteriorating from existing levels.**

5.6.43 Anthropogenic inputs of nitrogen to rivers arise primarily from fertilisers, atmospheric deposition in drainage basins and direct sewage discharge. The proposed relocation of Mitigation Area A to the HMWGS does not comprise activities that would affect the creation or deposition of inorganic nitrogen.

5.6.44 Leaving Area A undeveloped will make no change to the existing baseline.

5.6.45 The re-siting of Mitigation Area A will have no impact on DIN levels in the estuary.

**Target: Maintain natural levels of turbidity (e.g. concentrations of suspected sediment, plankton and other material) across the habitat.**

5.6.46 Suspended sediment concentrations within the Humber Estuary are addressed in Chapter 8 of Environmental Statement prepared for AMEP, paragraphs 8.5.10 *et seq.* Changes in suspended sediment concentrations are associated with dredging works which are not affected by the proposed relocation of Mitigation Area A to the HMWGS.

5.6.47 The re-siting of Mitigation Area A will have no impact on turbidity levels in the estuary.

## 5.7 Assessment of LSE on Marsh Harrier

### Introduction

5.7.1 The habitat consented at Mitigation Area A would also have provided alternative foraging habitat for marsh harriers, so this section specifically considers the effect of the proposed change in location of the mitigation area to Halton Marshes on this species.

5.7.2 Specific targets for the marsh harrier population are listed in the SACO<sup>11</sup> issued by Natural England. These were most recently updated in March 2019, with supplementary advice stating that they should be used '*when developing, proposing or assessing an activity, plan or project that may affect the site.*'

5.7.3 Each of the relevant targets has been considered in assessing the LSE of relocating the mitigation habitat approved at Mitigation Area A to the HMWGS.

### Baseline Conditions

5.7.4 Most marsh harrier activity recorded during the ES baseline surveys was centred around the North Killingholme Haven Pits, where they were breeding in 2011. Movements to/from that area were largely to the north or north-east (over the Humber to/from the north bank). Breeding bird surveys of this area in 2019 for the NKPP did not report the presence of any breeding harriers at these pits in that year, though there were flights observed over the area. A pair did, however, nest on

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<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9006111&SiteName=Humber&SiteName%E2%80%A6> [14.05.2019@18:12]. Also provided at Annex H

Winter's Pit on Halton Marshes, immediately adjacent to the HMWGS site, in 2019 (D. Clarke, Humber Nature Partnership, *pers. comm.*)

- 5.7.5 Whilst Mitigation Area A would have provided this species with some additional feeding opportunity, use of that area in baseline surveys has been low and the area is more distant from known breeding sites (and more isolated by existing development). In contrast, marsh harriers have nested recently immediately adjacent to HMWGS, and have frequently been observed foraging at the site (see Annex O). It is therefore considered that the HMWGS will provide this species with a greater benefit than Mitigation Area A.

**Target: Maintain the size of the non-breeding population at a level which is above 21 breeding females, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.**

- 5.7.6 The relocation of Mitigation Area A is likely to have a neutral or potentially beneficial effect on marsh harrier abundance. This is evidenced in Natural England's consultation response to the Application, dated 24 October 2018, which states that:

*'the proposed change of location to Halton Marshes for the mitigation for the loss of functionally linked land at Killingholme Marshes, alongside mitigation measures for other permissions, will create a larger, contiguous area of wet grassland habitat overall that **will potentially have significant value for SPA birds**, (emphasis added, refer to Annex K).*

- 5.7.7 The HMWGS AA also considered the potential effect resulting from the relocation of Mitigation Area A to Halton Marshes. Paragraph 7.3.3 of the HMWGS AA references a letter from Natural England dated 28 October 2011 (Annex L of this report) in which it advises that the provision of mitigation habitat at Halton Marshes would enable the impacts of the loss of feeding and roosting habitat from the Killingholme Marshes to be mitigated. Paragraphs 7.3.4 and 7.3.5 of the HMWGS AA summarise relevant local development plan policy, which also recognises the potential for Halton Marshes to be a preferred area for waterbird mitigation.
- 5.7.8 By inspection, the fact that unimproved FLL will remain on Killingholme Marshes at Mitigation Area A provides a benefit to marsh harriers compared to the consented scheme.
- 5.7.9 In short, there is no likely significant effect on the abundance of marsh harriers arising from moving the mitigation currently consented to be located at Mitigation Area A to the HMWGS.

**Target: Maintain safe passage of birds moving between nesting, roosting and feeding areas.**

- 5.7.10 The HMWGS site delivers a range of habitats for foraging marsh harrier and is not subject to any large scale site related disturbance other than occasional field management, similar to or at a lower level than on adjacent arable areas. The site does not provide a barrier to marsh harrier movement, and potentially delivers a greater foraging potential than when under arable cultivation e.g. to breeding areas in the vicinity of the site and across the estuary.

- 5.7.11 The re-siting of Mitigation Area A will have no impact on marsh harrier safe passage moving between nesting, roosting and feeding areas.

**Target: Reduce the frequency, duration and/or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed**

- 5.7.12 Mitigation Area A comprises a core area surrounded by a buffer of sufficient width to ensure that the core area is undisturbed. The proposed relocation site (HMWGS) also comprises a core area surrounded by buffers agreed with Natural England. In paragraph 7.3.8 of the HMWGS AA it is

stated that '*it is reasonable to conclude that the mitigation for loss of feeding, roosting and loafing habitat for curlew from Killingholme Marsh, that would have been provided by Area A, can effectively be delivered by the provision of 20 hectares of core habitat, along with the appropriate buffers at HMWGS.*' (underline added)

5.7.13 Again, there is no likelihood that the relocation of Mitigation Area A will change the level of disturbance to marsh harriers, as at the HMWGS the core area is appropriately buffered.

5.7.14 Further, and as recognised in Natural England's response to the Application (summarised at paragraph 5.6.6 above) the HMWGS can be considered a better scheme for marsh harriers overall because habitat is being provided on a larger scale, rather than in a piecemeal fashion.

**Target: Restrict predation and disturbance caused by native and non-native predators**

5.7.15 As part of the management plan for the HMWGS site, a process of scrub removal was undertaken in order to reduce the potential for predation of waterbirds using the area e.g. removal of cover and perches. This management action could also benefit breeding marsh harrier, given that they have recently bred adjacent to the HMWGS site.

5.7.16 The re-siting of Mitigation Area A will have no impact on marsh harrier predation/predator disturbance.

**Target: Maintain concentrations and deposition of air pollutants at below site relevant Critical Load or Level values for this feature of the site on the Air Pollution Information System**

5.7.17 Air quality is addressed at Chapter 17 of the AMEP Environmental Statement. The key operational issues were: road traffic; shipping; and emissions from paint spraying products (paragraph 17.1.2 of the Environmental Statement).

5.7.18 The proposed relocation of Mitigation Area A does not comprise activities that would affect the creation or deposition of air pollutants. Not developing Area A will have no effect on air quality.

5.7.19 The relocation of Mitigation Area A will have no effect on air pollution.

**Target: Maintain the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.**

5.7.20 HMWGS is already being managed by the Applicant in accordance with the draft TEMMP submitted at Appendix F of the Application Statement. Natural England confirmed by letter dated 13 December 2018, that it was content to '*approve the (revised) TEMMP in principle*' (refer to Annex M).

5.7.21 Schedule 11, Requirement 19(3) of the AMEP DCO requires a Terrestrial Environmental Management and Monitoring Plan (TEMMP) to be submitted and subsequently approved by Natural England. The SoS can reasonably rely on the advice of Natural England that the draft TEMMP is agreed in principle and that this ensures the ongoing maintenance of the mitigation land at Halton Marshes.

5.7.22 In its response to the Application, North Lincolnshire Council has expressed some concern that it was '*unclear how the new area could be secured.*' In fact, North Lincolnshire Council, as the local planning authority, is responsible for enforcing compliance with the Requirements of the AMEP DCO and this would include the TEMMP. In addition, planning permission for the HMWGS was granted by North Lincolnshire Council and so again it is the local planning authority with relevant associated powers.

5.7.23 Consequently, arrangements to maintain the proposed relocation site (HMWGS) will be as robust as those already agreed by Natural England for the current site of Mitigation Area A, so there is no likelihood of the proposed NMC undermining existing arrangements in the longer term.

**Target: Maintain the extent, distribution and availability of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding) at: current level. Exact ha not known at this time**

5.7.24 The Humber Estuary SPA's ability to support marsh harriers is a function of the habitats that support this species, including wet grassland, rough grassland and agricultural land outside the site boundary. As set out above in relation to the waterbird assemblage, land outside the site boundary is sometimes referred to as functionally linked land (FLL). Again, as set out above, a strategic approach to mitigation for FLL was later agreed by all the relevant regulatory bodies who, in 2010 (at various dates), signed a Memorandum of Understanding to develop such an approach.

5.7.25 Therefore it is clear, and evidenced in various documents and correspondence, that the distribution and availability of FLL is being addressed at a strategic level within this part of the estuary and that the proposal to use land at Halton Marshes to mitigate for the loss of FLL at Killingholme Marsh is consistent with the strategic approach.

5.7.26 Consequently, the extent, distribution and availability of suitable habitat will be maintained to the extent that is necessary to avoid an adverse effect on the integrity of the designated sites. Managed as agreed with Natural England, there will be no impact on this target.

**Target: Maintain the distribution, abundance and availability of key food and prey items (e.g. mammals, birds) at preferred sizes (e.g. voles, mice, rabbit; birds of pipit to duck size).**

5.7.27 The core management aims of the HMWGS are to deliver habitat suitable for waterbird foraging and roosting, as well as increasing the biodiversity of the site, with potential for breeding waterbirds and passerines as well as small mammals and amphibians. Given this, then it is considered that the HMWGS delivers a greater foraging potential for the species than before.

5.7.28 The re-siting of Mitigation Area A will have no impact on marsh harrier feeding opportunity (other than the larger contiguous area of improved habitat at HMWGS potentially increasing feeding resources).

**Target: Maintain continuous reed cover over large areas avoiding fragmentation of extensive reedbeds.**

5.7.29 Neither Mitigation Area A nor the HMWGS site have any featured reedbed, therefore this target is not applicable at this site.

**Target: Maintain a management regime that ensures the constant availability of areas of dense reed stands as nesting cover.**

5.7.30 Neither Mitigation Area A nor the HMWGS site have any featured reedbed, therefore this target is not applicable at this site.

**Target: Maintain the availability of water over the entire reedbed area, with a high proportion of the area with a water depth of 0.1 m to 0.3 m.**

5.7.31 Neither Mitigation Area A nor the HMWGS site have any featured reedbed, therefore this target is not applicable at this site.

**Target: Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels.**

5.7.32 The Humber Estuary is the largest macro-tidal coastal plain estuary on the North Sea coast and drains one fifth of England, a spatial area 24,240km<sup>2</sup>. Surface water run-off from the consented site and the proposed alternative site will discharge into the Humber Estuary. Leaving Mitigation Area A in agricultural use means that it will remain essentially 'greenfield', so the quality of run-off will be the same.

5.7.33 The HMWGS AA found no LSE on the water quality of the Humber Estuary. This is reasonable as the works simply comprised landscaping. The construction works necessary for creating the consented habitat at the HMWGS have been completed. The proposed relocation of Area A to the HMWGS does not comprise activities that would affect the creation or deposition of aqueous contaminants.

5.7.34 As noted above at paragraph 5.5.5, a Water Framework Direct Compliance Statement (Annex J) was prepared for the HMWGS and provides further evidence of no effect. The re-siting of Mitigation Area A will have no impact on the levels of aqueous contaminants within the estuary.

**Target: Maintain the dissolved oxygen (DO) concentration at levels equating to Good Ecological Status (specifically  $\geq 5.7\text{mg/l}$  (at 35 salinity) for 95% of the year, avoiding deterioration from existing levels.**

5.7.35 Chapter 9 of the AMEP Environmental Statement addressed water quality. Dissolved oxygen is addressed at paragraphs 9.5.17 *et seq.* Impacts are addressed in Section 9.6, which identifies that impacts on dissolved oxygen could potentially arise from dredging activities. However, the proposed NMC does not change the consented dredging operations.

5.7.36 The HMWGS AA found no LSE on the water quality of the Humber Estuary, which is reasonable as the works simply comprised landscaping. The construction works necessary for creating the consented habitat at the HMWGS have been completed. The proposed relocation of Mitigation Area A to the HMWGS does not comprise activities that would impact on dissolved oxygen in the European site.

5.7.37 Leaving Mitigation Area A undeveloped will make no change to the existing baseline. The re-siting of Mitigation Area A will have no impact on the dissolved oxygen concentration levels in the estuary.

**Target: Maintain water quality and specifically mean winter dissolved inorganic nitrogen (DIN) at a concentration equating to High Ecological Status (specifically mean winter DIN is  $<12\mu\text{M}$  for coastal waters), avoid deteriorating from existing levels.**

5.7.38 Anthropogenic inputs of nitrogen to rivers arise primarily from fertilisers, atmospheric deposition in drainage basins and direct sewage discharge. The proposed relocation of Mitigation Area A to the HMWGS does not comprise activities that would affect the creation or deposition of inorganic nitrogen.

5.7.39 Leaving Mitigation Area A undeveloped will make no change to the existing baseline. The re-siting of Mitigation Area A will have no impact on DIN levels in the estuary.

**Target: Maintain natural levels of turbidity (e.g. concentrations of suspected sediment, plankton and other material) across the habitat.**

5.7.40 Suspended sediment concentrations within the Humber Estuary are addressed in Chapter 8 of the Environmental Statement prepared for AMEP, paragraphs 8.5.10 *et seq.* Changes in suspended sediment concentrations are associated with dredging works which are not affected by the proposed relocation of Mitigation Area A to the HMWGS.

5.7.41 The re-siting of Mitigation Area A will have no impact on turbidity levels in the estuary.

### **Cumulative Effects**

5.7.42 Screening of the potential cumulative effects of the proposal in combination with other plans/projects identified two possible cumulative impacts for which, in the absence of mitigation, a likely significant effect could not be ruled out on the HMWGS. These comprised:

- Construction Disturbance from the Able Logistics Park
- Construction Disturbance from the North Killingholme Power Project

5.7.43 Cumulative disturbance effects of the proposal in combination with these two schemes have therefore been taken forward for Appropriate Assessment.

### **What is the likely consequence for the site's conservation objectives?**

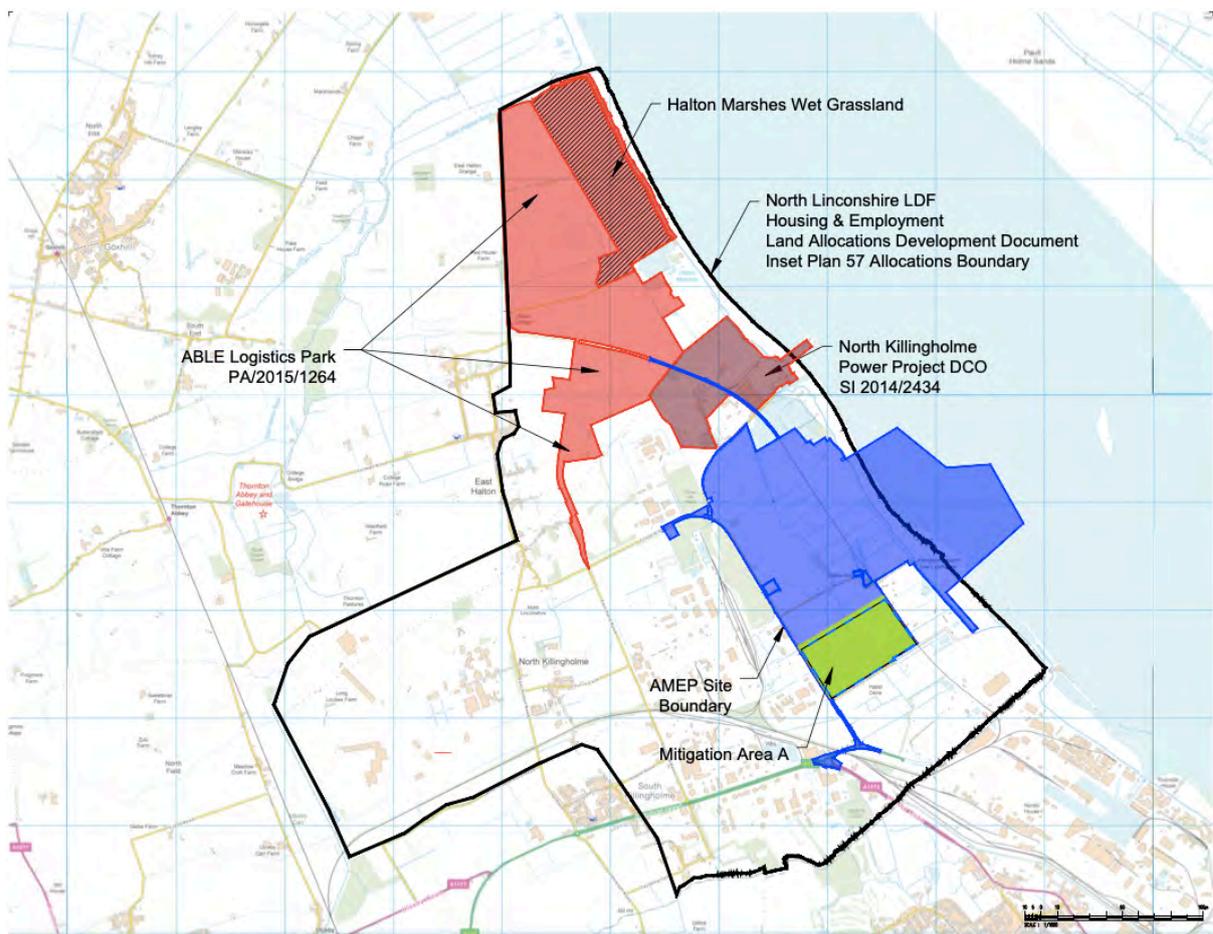
5.7.44 Overall, based on the above review of the targets relating to the site's conservation objectives, the re-siting of the mitigation approved at Mitigation Area A to the HMWGS alone will have no likely significant effect on the waterbird assemblage or marsh harrier.

5.7.45 Likely significant effects from cumulative disturbance in combination with the construction of the Able Logistics Park and the North Killingholme Power Project could not be ruled out, so have been taken forward for Appropriate Assessment.

## 6. Appropriate Assessment

- 6.1.1 A plan or project must be made subject to an AA if LSE on a European site cannot be ruled out at the screening stage.
- 6.1.2 Section 5 of this report has demonstrated, on the basis of objective information, that there is no material change from the previous consent and no significant effects are predicted to occur for the proposal alone.
- 6.1.3 However, in combination with two other consented developments (the Able Logistics Park and the North Killingholme Power Project), a likely significant effect cannot be ruled out, so this has been taken forward for Appropriate Assessment. The location of these developments in relation to the AMEP site and HMWGS is shown in Figure 9.

**Figure 9 Location of Able Logistics Park and North Killingholme Power Project**



6.1.4 There are two cumulative effects to consider:

- construction disturbance from the Able Logistics Park (PA/2015/1264)
- construction disturbance from the North Killingholme Power Project (SI2014/3331)

6.1.5 This AA examines each of those in turn to determine if there could be any adverse effect on integrity resulting from the cumulative impact of the proposal in combination with either or both of these other projects.

## ALP

- 6.1.6 There are approved mitigation plans in place through planning condition for the ALP project, with several planning conditions included in the amended ALP consent to ensure no likely significant effects on the features of the SAC, SPA and Ramsar site, including the development of a Waterbird Protection Plan. In a letter dated 25 January 2019, Natural England advised North Lincolnshire Council that these planning conditions had been discharged (refer to Annex P).
- 6.1.7 As a result, with this mitigation in place, it can be safely concluded that there will not be any adverse effect on integrity from the proposal in combination with the ALP project.

## NKPP

- 6.1.8 Again, there are approved mitigation plans prescribed through planning condition for the NKPP project. The Secretary of State for Climate Change undertook an HRA for the NKPP and its associated infrastructure (the 'NKPP HRA') (refer to Annex Q). Paragraph 9.11 of the NKPP HRA states that:

*'The Secretary of State concludes that the construction and operation of the 470 megawatt electrical generating station, referred to as the 'North Killingholme Power Project', as proposed, with all of the proposed avoidance and mitigation actions being implemented in full, will not adversely affect the integrity of the Humber Estuary SPA, Humber Estuary Ramsar site or Humber Estuary SAC either alone or in combination with other plans or projects.'*

- 6.1.9 As a result, with this mitigation in place, it can be safely concluded that there will not be any adverse effect on integrity from the proposal in combination with the NKPP project.
- 6.1.10 Overall, therefore, there would be no in-combination effects that could result in any adverse effect on the integrity of the Humber Estuary SPA.

## 7. The sHRA: Conclusions

### 7.1 Adverse Effect on Integrity

- 7.1.1 Sections 5 and 6 have demonstrated that the proposed NMC would not result in any LSE alone, but that unmitigated construction activities from nearby projects have the potential to disturb birds using HMWGS. The appropriate assessment concluded that in the light of the conditions set down in planning consents for ALP and NKPP, construction disturbance would be mitigated to avoid an adverse effect on integrity and therefore in-combination effects with the NMC are not likely.
- 7.1.2 Relevantly however, the proposed relocation of Mitigation Area A to the HMWGS, does not alter the findings of the original HRA for the consented scheme.
- 7.1.3 This conclusion is evident from: the reliance placed by the SoS on the TEMMP that had been approved by Natural England in 2013; the fact that Natural England has confirmed its agreement in principle to an alternative TEMMP based on FLL being provided at Halton Marshes; and by Natural England's agreement to the HRA for planning permission PA/2016/1264. This conclusion is also supported by reference to the Water Framework Directive Compliance Statement completed for the HMWGS and confirmed through this assessment of the current targets for the conservation objectives of the relevant European sites.
- 7.1.4 Further, the re-siting of Mitigation Area A to the HMWGS would be in accordance with the Lawson principles of creating bigger, better and more joined up habitats. It would also reflect Natural England's preferences for location and would mean the further overcompensation would be in place ahead of the consented project (AMEP DCO) being constructed, thereby meeting the need to reach ecological function within 2-4 years.

### 7.2 Evaluation of the potential for the scheme to require other consents requiring consideration of LSE by different competent authorities

- 7.2.1 At paragraph 4.9, PINS AN10 requests consideration of the potential for a project to require other consents requiring consideration of LSE by different competent authorities.
- 7.2.2 This consideration has been undertaken within this Revised sHRA and has demonstrated both that:
- the mitigation proposed to be provided at Mitigation Area A is appropriate and results in no adverse effect on the relevant European sites, and has received the necessary consent; and
  - the HMWGS, the proposed relocation site for the mitigation approved to be provided at Mitigation Area A, is appropriate and results in no adverse effect on the relevant European sites and has received the necessary consent.
- 7.2.3 This project only requires consent from the SoS for the principle of relocating the mitigation approved to be located at Mitigation Area A to the HMWGS. Consent for creating the required habitat at the HMWGS has already been gained and implemented.

### 7.3 Statement regarding any overlap into other administrations and any LSE

- 7.3.1 Paragraph 4.9, PINS AN10 also requests that the report includes:

- a) a statement which specifies where the DCO boundary of the project overlaps into devolved administrations or other European Economic Area (EEA) States and map(s), as appropriate; and
- b) a statement which identifies (with reasons) whether significant effects are considered to be likely in respect of European sites in devolved administrations or within other EEA States.

## Statement regarding the DCO boundary

- 7.3.2 The AMEP DCO boundary does not overlap into any devolved administrations or other EEA States.
- 7.3.3 The boundary of the HMWGS also does not overlap into any devolved administrations or other EEA States.

## Statement regarding LSE

- 7.3.4 LSE are not considered to be likely in respect of European sites in devolved administrations or within other EEA States.

## 8. Conclusions

- 8.1.1 Paragraph 5.1.2 asks the question:

*Is the project likely to have a significant effect on the interest features of the relevant sites alone or in combination with other plans or projects?*

- 8.1.2 This report has considered objective information and undertaken an sHRA to conclude that the proposal alone is not likely to have a significant effect on the interest features of the relevant sites.
- 8.1.3 AA was determined to be necessary for the assessment of cumulative effects. LSE could not be ruled out for cumulative disturbance effects from ALP and NKPP on the HMWGS site. It was, therefore, necessary to move to stage 2 and undertake an AA. The outcome of that AA was to conclude that the approved mitigation plans in place for both the ALP and NKPP developments would ensure that there would not be any adverse effect on integrity in combination with the NMC.
- 8.1.4 Whilst no adverse effect on integrity was identified, it may be considered that the proposed NMC would be of increased value (benefit) to the SPA birds through both: providing a larger area of mitigation overall; and already being in place, such that mitigation has been provided earlier than it would do if that mitigation was reliant upon the relevant habitat being provided at Mitigation Area A.
- 8.1.5 Responding to the Secretary of State's letter (of 28 October 2020), the proposed changes, of moving the mitigation proposed to be provided at Mitigation Area A to a new site outside the AMEP DCO limits, namely to the HMWGS, are demonstrated to be:
- not material; and
  - not likely to result in significant effects on the designated European Sites alone, and not result in any adverse effects on integrity in combination with other projects.

## **Annexes**

### **Annex A**

Drawing reference AME-02007-A

### **Annex B**

Appropriate Assessments undertaken for the ALP

### **Annex C**

HMWGS Planning Clarification Note

### **Annex D**

Plan of the Humber Estuary European sites

### **Annex E**

Humber Estuary SAC Citation, dated 10 December 2009

### **Annex F**

Humber Estuary SPA Citation, dated 31 August 2007

### **Annex G**

Humber Estuary Ramsar Site, Site Information Sheet, dated 31 August 2007

### **Annex H**

Natural England, Supplementary Advice on the Conservation Objectives (SACO) for the Humber Estuary SPA, dated 15 March 2019

### **Annex I**

'Wintering Birds: Halton and Killingholme Marshes. Final Report to Able UK' January 2019, JBA Consulting

### **Annex J**

Able Marine Energy park and Habitat Compensation Scheme, Water Framework Directive Compliance Statement, HR Wallingford, November 2012

### **Annex K**

Natural England's consultation response to the Application, dated 24 October 2018

### **Annex L**

Natural England letter dated 28 October 2011

### **Annex M**

Natural England letter dated 13 December 2018

### **Annex N**

Natural England letter dated 20 September 2011

## **Annex O**

'Halton Marshes Wet Grassland: Marsh Harrier Function & Status: Information to Assist the HRA & SoS Review Process', Cutts & Hemingway Estuarine Ecology and Management Ltd. (CHEEM), UK. Final Report to Able UK Ltd; Report No. CHEEM015-F-2020

## **Annex P**

Natural England letter dated 25 January 2019

## **Annex Q**

Habitats Regulations Assessment undertaken for the NKPP and associated infrastructure

## **Annex A**

Drawing reference AME-02007-A

- KEY**
- Semi Mature Avenue Tree Planting.
  - Standard Tree Planting mainly native tree species.
  - Native woodland and/or scrub planting.
  - Grass areas: maintenance regime dependent on location (a low frequency of cut adjacent water courses, higher frequency adjacent to paths, parking areas and at entrances).

- Mitigation Area B – Erect nest boxes for tree sparrows in adjacent trees.**
- Habitat Creation, restoration and enhancement measures.
  - Amphibian-proof fence
  - Log piles
  - Creation of six new ponds for GCN
  - Translocation
  - Turf covered GCN hibernaculum
  - Grassland bund
  - Infrequently cut grassland providing year round cover for GCN
  - Section of tarmac to be removed and grass seeded
  - Arable field converted to species rich grassland

Landscape Treatment along Rosper Road to consist of semi mature trees in avenue groups as shown with native woodland/scrub belt to rear. Trees are positioned at key locations to encourage bats to fly high and over towards adjacent existing woodland.

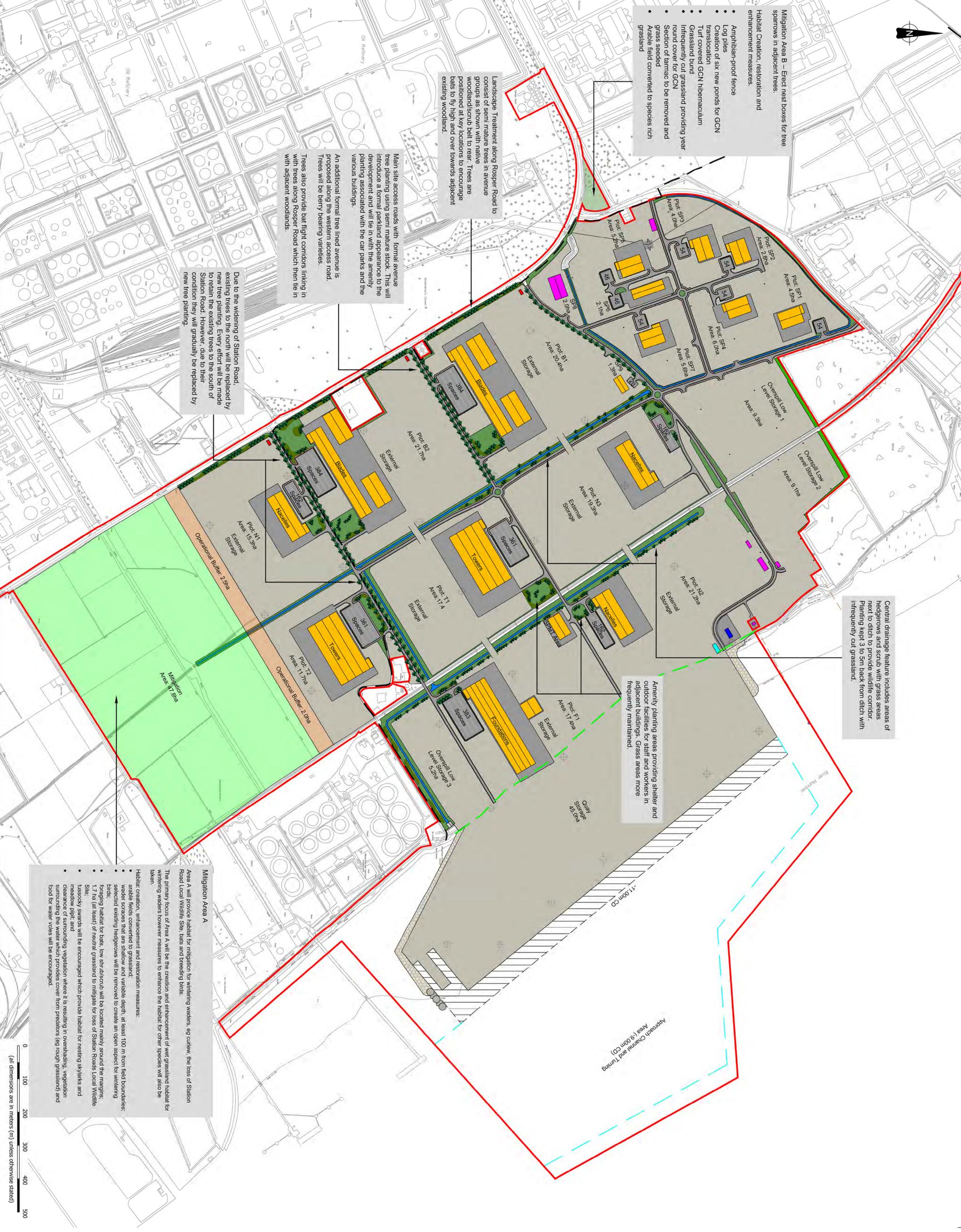
Main site access roads with formal avenue tree planting using semi mature stock. This will introduce a formal parkland appearance to the development and will be in with the amenity planting associated with the car parks and the various buildings.

An additional formal tree lined avenue is proposed along the western access road. Trees will be berry bearing varieties.

Due to the widening of Station Road, existing trees to the north will be replaced by new tree planting. Every effort will be made to retain the existing trees to the south of Station Road. However, due to their condition they will gradually be replaced by new tree planting.

Central drainage feature includes areas of hedgerows and scrub with grass areas next to ditch to provide wildlife corridor. Planting kept 3 to 5m back from ditch with infrequently cut grassland.

Amenity planting areas providing shelter and outdoor facilities for staff and workers in adjacent buildings. Grass areas more frequently maintained.



**Mitigation Area A**

Area A will provide habitat for mitigation for wintering waders, eg curlew, the loss of Station Road Local Wildlife Site, bats and breeding birds.

The primary focus of Area A will be the creation and enhancement of wet grassland habitat for wintering waders however measures to enhance the habitat for other species will also be taken.

Habitat creation, enhancement and restoration measures:

- arable fields converted to grassland.
- wider scrapes that are shallow and variable depth, at least 100 m from field boundaries.
- selected existing hedgerows will be removed to create an open aspect for wintering birds.
- foraging habitat for bats, low shrub/scrub will be located mainly around the margins.
- 1.7 ha (at least) of neutral grassland to mitigate for loss of Station Roads Local Wildlife Site.
- tussocky swards will be encouraged which provide habitat for nesting skylarks and meadow pipit, and
- clearance of surrounding vegetation where it is resulting in overshading, vegetation surrounding the water which provides cover from predators (eg rough grassland) and food for water voles will be encouraged.

**PRELIMINARY**

Scale: 1:5,000@A1  
 Date: 12/12/2011 | 12/12/2011 | 12/12/2011

Drawn: R Kell | R Cam | R Cam | R Cam  
 Checked: R Kell | R Cam | R Cam | R Cam  
 Approved: R Kell | R Cam | R Cam | R Cam

Drawing No: A1E-02007 | Revision: A

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Rev	Date	Comments	By	CHK	App
A	21/12/11	Preliminary Issue	RLC	RLC	RLC

Project: ABLE Marine Energy Park  
 Client: ABLE UK Ltd  
 Title: Indicative Landscape Masterplan

## **Annex B**

Appropriate Assessments undertaken for the ALP

**Title of Application:** PA/2015/1264

Application for variation of condition numbers 3, 4, 6, 7, 15,19, 26, 35, 38, 40, 48, 49, 50 and 51 and removal of condition number 5 of planning permission PA/2009/0600 to erect buildings and use land for purposes within Use Classes A3, C1, B1, B2 and B8 for port-related storage and associated service facilities together with amenity landscaping and habitat creation, including flood defences, new railway siding, estate roads, sewage and drainage facilities, floodlighting, waste processing facility, hydrogen pipeline spur and two 20 metre telecommunication masts (IN ACCORDANCE WITH THOSE ADDITIONAL DETAILS AND PLANS CONTAINED WITHIN THE ADDENDUM TO THE ENVIRONMENTAL IMPACT ASSESSMENT DATED APRIL 2011 RECEIVED BY THE LOCAL PLANNING AUTHORITY ON 20 APRIL)

**Location of Plan or Project /Application**

Land off Skitter Road, East Halton,  
E: 514829 N:421172

**International Nature Conservation Site**

Humber Estuary Special Protection Area (SPA) and Ramsar site  
Humber Estuary Special Conservation Area (SAC)

**Description of the Plan or Project- Original Permission PA/2009/0600  
(Extract from the Habitats Regulations Assessment with paragraphs re-numbered)**

1. Planning consent for development is sought for an area of 379.9ha. The sizes of areas for development are dependent upon which one of two mitigation options for SPA waterbirds is carried forward. Table 1 details the proposed site areas and land uses.
2. The industrial/commercial development will accommodate B1, B2 and B8 land uses for port related storage and associated service facilities. In addition to this, the application seeks consent to develop either 140.7ha or 159.6ha for on-site amenity landscaping and habitat creation. Improvements to the flood defence wall will entail covering 1.1 ha of rocky foreshore with a further rock toe.
3. In essence the proposed works include:
  - Works to repair the existing flood defence wall on its current alignment.
  - Recontouring the site landform in order to reduce the consequences of flooding of the land along its eastern margin.
  - The creation of a drainage balancing pond and the installation of a new drainage system with its outfall onto the foreshore via a new pumping station.
  - Construction of a 2,490m long service road with screening bunds running north to south through the southern part of the site, thus extending the existing consented glass wool

factory access road with its link to the junction of Eastfield Road and Chase Hill Road. (The road will be to adoptable standard).

- Creation of 2,490m of cycleway and increasing public footpaths on site.
  - Closure of 590m of highway to motor vehicles.
  - Construction of a bridge carrying the proposed new spine road, over the derelict railway line.
  - Construction of railway sidings and a loading area, linking into the end of the live railway north west of the Humber Sea Terminal.
  - Construction of a private road (to adoptable standard) linking the site with the Humber Sea Terminal.
  - Creation of a business park on the west side of the spine road.
  - Creation of transport depots, an HGV service facility, warehousing, offices, car parks and external storage areas with floodlighting and 2.5m high security fencing, east of the spine road and south of the former railway line and security cabins.
  - Development of a motel and a truck stop restaurant with HGV refuelling facilities.
  - Construction of external storage areas with floodlighting and 2.5m high security fencing.
  - Construction of sewage treatment facilities and links to Anglian Water foul water treatment facilities.
  - Construction of a 2410m spur from the consented hydrogen pipeline to run from the spine road bridge over the former railway, along the west side of the spine road to its junction with Chase Hill Road.
  - Erection of two telecommunication masts, 20m high, each with two associated cabins within a surrounding compound.
  - Erection of one bird hide.
- 4 Further details are given in the revised Chapter 4 of the submitted Environmental Statement dated April 2011. Details of the locations of the proposed hard surface developments are shown on submitted Drawings No. KI-02002 & ALP-02005, which should be read in conjunction with the submitted Development Statistics for Options 1 & 2. In addition, the development will provide amenity landscaping beside Skitter Road and on the north side of the former railway line. Areas which have been designated for habitat creation lie to the north and west of the Winters' Pond.
- 5 The applicant has proposed that works will be phased as shown in Tables 2 and 3 overleaf.
- 6 Measures taken to minimise effects on the International Nature Conservation Sites:
- 6.1 The applicant has proposed areas of wetland habitat creation to provide for feeding, roosting and loafing waterbirds. There are two options for the total area and configuration of these. The on-site only option entails the provision of around 74 hectares of wetland mitigation habitat, comprising 32 hectares of "core" mitigation habitat adjudged adequate to support the numbers of waterbirds currently observed on-site and 42 hectares of wetland buffer habitat, designed to protect birds in the core area from noise and visual disturbance. The on-site and off-site option entails the provision of 55 hectares of wetland mitigation habitat on-site, comprising 20 hectares of core habitat and 35 hectares of buffer. Additionally, the latter option will entail the

provision of 50 hectares of wetland mitigation habitat off-site, at a location to be agreed, comprising 20 hectares of core habitat and 30 hectares of buffer.

- 6.2 Works on the seaward side of the seawall will be conducted between April and September, to minimise temporary disturbance to bird populations during the overwintering period (October to March).
- 6.3 Attempts have been made to phase works so as to minimise construction disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. Seasonal work timings have also been planned on this basis, where appropriate. These are described in sections 10.5.50 to 10.5.59 of the submitted ES (as amended by addendum section 13.9).
- 6.4 Attempts have been made to minimise construction light disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. These are described in section 10.5.127 of the submitted ES.
- 6.5 The project proposals have been revised subsequent to the planning committee of 08 October 2010, in order to address the continuing concerns of Natural England and the RSPB.

**Table 2: Proposed Phasing of Works**

Phase	Timing	Plot no.	Plot area (ha)		Works Proposed
			Option 1	Option 2	
1	2011-2014	NE1	2.2	2.2	Transport depot office, workshop, parking & external storage.
		NE2	1.9	1.9	HGV services office, HGV workshop, parking & external storage.
		NE3	2.6	2.6	Waste management facility.
		NE4	2.3	2.3	Transport depot office, workshop, parking & external storage.
		NE5	2.0	2.0	Transport depot office, workshop, parking & external storage.
		NE6	4.9	4.9	Warehouse, security cabin, parking & external storage.
		NE7	12.9	12.9	Warehouse, security cabin, parking & external storage.
		NW1	0.2	0.2	Large office
			0.2	0.2	Large office
			0.4	0.4	6 No. small offices (746m2 each)
			0.2	0.2	Road
		Road	2.5	2	Spine road inc. cycleways
		Potential Dev. Area	18.8	18.8	Formerly proposed waterbird mitigation area.
		WaterbirdMitigation	20	20*	Core Area (to be finished prior to phases 3-6)
			35.1	35.1*	Buffer (including balancing pond) (to be finished prior to phases 3-6)
		Landscape	5.3	5.3	Permanent water
23.6	23.6		Landscaping (inc. 1.2 ha woodland)		
6	6		Pond		
<b>Total</b>	<b>120.6</b>	<b>119.9</b>			
2	2011-2015	WaterbirdMitigation	N/A	12	Extension to Core Area (to be finished prior to phases 3-6)
			N/A	6.8	Extension of Buffer (to be finished prior to phases 3-6)
		<b>Total</b>	<b>N/A</b>	<b>18.8</b>	
3	2013-2015	NW2	13.3	13.3	Warehouse, security cabin, parking & external storage.
		NW3	9.1	9.1	Warehouse, security cabin, parking & external storage.
		NW4	7.7	7.7	Truck stop motel, restaurant & parking.
		NW5	3.1	3.1	Warehouse & security Cabin
		NW6	44.7	44.7	Port related storage, office, vehicle PDI building, security cabin & stores building.
		Road	2.5	1	Inc. cycleways and footpaths
		Landscape	30	30	
<b>Total</b>	<b>110.4</b>	<b>108.9</b>			
4	2014-2016	NE8	8.7	8.7	Warehouse, security cabin, parking.
		NE9	3.8	3.8	Warehouse, security cabin, parking.
		NE10	12.0	12.0	Rail freight terminal, security cabin & office.
		Potential Dev. Area	5.5	5.5	Formerly proposed waterbird mitigation area.
		Landscape	10	10	
<b>Total</b>	<b>40</b>	<b>40</b>			
5	2015-2017	NW7	35		Port related storage, vehicle etching building, office, vehicle PDI building, security cabin, stores building, car parking & external storage.
		Landscape	15		Landscaping and habitat creation
		<b>Total</b>	<b>50</b>		
6	2016-2018	NE12	41.6	25	Transport depot office, workshop, parking and external storage
		Landscape	10	10	Landscape and habitat creation
		<b>Total</b>	<b>51.6</b>		
-----	2012-2014	<b>Floodbank</b>			

\*asterisked values replace figures considered to be included in error in the addendum to the Environmental Statement.

**Table 3. Potential overlap of phases**

Phase	2011	2012	2013	2014	2015	2016	2017	2018
1								
2								
3	To begin after completion of wetland mitigation							
4								
5								
6								
<b>Pipeline</b>								
<b>Flood wall</b>								

**Proposed Condition Variations PA/2015/1264**

The proposed condition variations are attached in full as Appendix 1.

The stages of development to which the proposed variations apply are attached as Appendix 2.

Conditions 3-48 and the proposed amendments to them, do not have any significant ecological implications in terms of the Habitats Regulations or the features of the Humber Estuary SAC, SPA or Ramsar site. They are not discussed further in this document.

Condition 49

Here, the proposed variation ensures that each stage of development will have a water pollution prevention plan. This is instead of a single plan for the whole development. Natural England has no objection to the variation of this condition.

Condition 50

Here, the proposed variation ensures that each stage of development will have a waterbird protection and construction method statement. This is instead of a single plan for the whole development.

North Lincolnshire Council has requested that this condition should have the words “relevant to that stage” inserted, so that it will apply in a similar manner to condition 49. Provided that this change is made, Natural England has no objection. Able UK has no objection to making the change (Jo Salisbury, pers. comm.).

This condition may usefully work in combination with the varied condition 51 (see overleaf). With the varied condition 51, the developer will not need to submit the conservation management plan for waterbird mitigation areas until during stages 1a and

1b of development. However, it will be necessary for these stages to have a waterbird protection and construction method statement. For works south of the railway, the method statement will need to demonstrate that alternative feeding, roosting and loafing areas will be available for the duration of these works. This will entail demonstrating that land north of the railway will be maintained in a condition suitable for feeding, roosting and loafing, curlew, ruff, lapwing and golden plover in particular and other SPA/Ramsar waterbirds in general.

#### Condition 51

The original condition ensured that no development could take place until a conservation management plan for waterbird mitigation areas had been submitted to and agreed in writing with the local planning authority. The proposed amendment is intended to allow the applicant to construct a roundabout and spine road south of the railway before needing to submit the management plan. For this reason, the proposed variation needs to be further amended to read as follows:

"No development **with the exception of stages 1a and 1b**, shall take place until a conservation management plan for waterbird mitigation areas has been submitted to and agreed in writing with the local planning authority. The plan shall include: .....  
*(as existing condition)."*

Able UK (Jo Salisbury, pers. comm.) and Natural England have both agreed to this amendment.

Able UK has confirmed that the roundabout to be constructed at stage 1a is at the junction of the existing Eastfield Road and Chase Hill Road, at the very southern end of the development area (Jo Salisbury, pers. comm.).

Natural England has highlighted that the road works in stages 1a and 1b could displace significant numbers of SPA/Ramsar waterbirds. This variation therefore requires more detailed assessment.

#### **Further Assessment of Condition 51**

In the appropriate assessment document for PA/2009/0600 the effects of construction disturbance south of the railway line were discussed as set out in Box 1 below. The paragraphs have been re-numbered:

##### **Box 1- Construction disturbance of birds using existing farmland and wetlands for feeding, roosting and loafing.**

- 1 Phasing of works will ensure that different areas of the site are available for feeding, roosting and loafing at different stages of the development. Construction of the proposed wetlands in the early phases of development should help to mitigate for construction disturbance of birds in the later phases.
- 2 Field usage maps produced by Mott Macdonald (2009), suggest that for golden plover, lapwing and ruff, the most heavily used fields on the application site are north of the disused railway line. Curlew use fields north and south of the railway line, but the Catley reports (2007a, 2008a) reveal that, much of the time, fields south of the railway line are subject to disturbance and the northern curlew flocks use the fields north of the railway line roughly twice as much as those south of the railway line (2007/08 figures), or fourteen times as much if 2007 figures are applied.
- 3 Save for works to create new wetlands, Phase 1 of development is proposed to be

entirely south of the railway line (Submitted drawing ALP – 02004 Rev B). While these works take place, waterbirds will be able to use the more “important” fields to the north. In Phase 1, the mitigation wetland will be created. If it is not possible to provide any wetland mitigation off-site, there will also be a Phase 2 of wetland mitigation on-site, to be completed prior to the commencement of construction phases 3, 4, 5 and 6.

- 4 However, Table 3 of Section 4 [of the original HRA] shows that whilst there is a notional phasing programme for this project, there is considerable overlap in the phases as proposed. Areas covered by proposed phases 3, 4, 5 and 6, north of the railway line, are all used by significant numbers of birds, according to Mott Macdonald (2009). In theory, three out of four of these areas could be affected by construction works at the same time. However, by this stage waterbird mitigation adequate to support birds from the whole application site will be in place, and is confidently expected to be able to support any displaced birds.
- 5 Some temporary disturbance and displacement of waterbirds from the phase 1 and 2 areas is inevitable with a construction project of the type proposed. Habitat Regulations Guidance Notes 1 and 3 guide competent authorities to consider the magnitude, duration and reversibility of such effects.
- 6 Clearly the construction disturbance is temporary (proposed over 4 years at most for phases 1 and 2) and reversible to the extent that, after the construction period, waterbirds will no longer be subjected to construction activities. In terms of magnitude, displacement of waterbirds is not likely to be absolute until areas become hard-surfaced and affected by built structures. Indeed, at Far Ings and Waters’ Edge, Barton upon Humber, waders including curlew, lapwing and redshank were found to continue using the construction sites while earth-moving and localised construction works were taking place (Catley 2000-2003). Waterfowl using nearby waterbodies were not significantly affected (ibid).
- 7 Nevertheless, there is a likelihood that waterbirds currently using farmland and wetland will be disturbed and displaced. In the case of ruff and curlew, analysis of the Humber INCA bird reports suggests that these birds are strongly linked to the application site, whereas golden plover, lapwing and the less numerous species appear to be more wide ranging and less dependent on the application site.
- 8 Conditions will be required to ensure that habitat continues to be available for ruff and curlew in particular during site works. This requirement will be most acute when works are taking place around East Halton Pits. These conditions need to ensure that land in phases 3, 4, 5 and 6 is available for waterbirds while Phases 1 and 2 are being developed (including creation of the mitigation wetlands). As well as ensuring continued provision for ruff and curlew, this approach is expected to benefit lapwing, golden plover and smaller numbers of other waders and wildfowl.

The approach set out in Box 1 was secured by conditions 51-55 of PA/2009/0600. The proposed variation will ensure that the same approach will still apply. While stages 1a and 1b are carried out south of the railway line, any birds temporarily displaced by the construction noise and visual disturbance will be able to use pasture and arable land north of the railway line for feeding, roosting and loafing.

Whilst stages 1a and 1b are carried out the following protective restrictions shall apply:

- Waterbird protection and construction method statement (condition 50)
- Bird monitoring and implementation of remedial measures (condition 53)
- Environmental Steering Group (condition 55)

This will help to ensure that the numbers of birds likely to be displaced are within the range anticipated and that the farmland north of the railway line is maintained in a condition suitable to support SPA/Ramsar waterbirds for the duration of stages 1a and 1b.

### **Determination of Likely Significant Effect under The Conservation of Habitats and Species Regulations 2010**

1. North Lincolnshire Council does not consider that the plan or project is directly connected with, or necessary to, the management of the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC) for nature conservation.
2. North Lincolnshire Council is of the opinion that the plan or project is not likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC).

### **Reasons for Likely Significant Effect (LSE) determination:**

With the minor amendments described, the variations to conditions 49 and 50 will provide the same safeguards as the originals. The original conditions arose from a signed and approved appropriate assessment of PA/2009/0600 and contributed to the conclusion that the development would have no adverse effect on the integrity of the Humber Estuary SAC, SPA or Ramsar site.

The more detailed assessment of condition 51 reveals that, with the amendments described the varied condition will provide the same safeguards as the original.

Potential hazards to the features of the International Nature Conservation Site that have been considered are as follows:-

- Construction disturbance of birds using existing farmland and wetlands for feeding, roosting and loafing.

### **In-combination Plans and Projects**

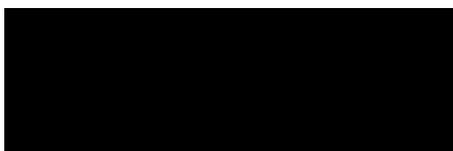
In-combination plans and projects were considered in detail in the Habitats Regulations Assessment for PA/2009/0600. As the varied conditions will provide the same safeguards as the originals, it is not necessary to consider the variations in combination with other plans or projects in detail.

It is worth noting that two or three Nationally Significant Infrastructure Projects could potentially be under construction between the railway line and Chase Hill Road at the same time as PA/2009/0600 stages 1a and 1b. These are:

- North Killingholme Power Project- CGen Killingholme Ltd.
- Hornsea Offshore Wind Farm (Zone 4) - Project One
- Hornsea Offshore Wind Farm (Zone 4) - Project Two

Taken together, the requirements for these projects and conditions 50-55 (with variations) of PA/2009/0600 will provide the necessary safeguards for SPA/Ramsar waterbirds as previously described in this document.

Signe



Andrew Taylor

..

Date

23 December 2015

Designation Project Officer (Ecologist)

### References

Catley G. 2000-2003 Waters Edge and Far Ings Bird Disturbance Reports (unpublished)

Catley, G. 2007a Winter bird survey of East Halton and Killingholme Marshes and inland fields encompassed by North Lincolnshire Council boundary; January to March 2007 (unpublished report)

Catley, G. 2008a Winter bird survey of East Halton and Killingholme Marshes and inland fields encompassed by North Lincolnshire Council boundary; July 1<sup>st</sup> to March 31<sup>st</sup> 2007 – 2008 (unpublished report)

Mott Macdonald 2009 South Humber Bank Zone Final Report: Field Usage by Bird Species from the Humber Estuary SPA

Smartwind 2015 Hornsea Offshore Wind Farm Project Two – Application for Development Consent. Draft Development Consent Order

2014 No. 2434 INFRASTRUCTURE PLANNING The North Killingholme (Generating Station) Order 2014

2014 No. 3331 INFRASTRUCTURE PLANNING The Hornsea One Offshore Wind Farm Order 2014

Appendix 1 Proposed Condition Variations.

	<b>ABLE LOGISTICS PARK</b> <b>PROPOSED REVISIONS TO PLANNING CONDITIONS (PA/2009/0600)</b>	<b>SEPTEMBER 2015</b>
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Cond'n No.	Original Condition	Proposed Condition
3	Works shall not commence on site until wheel-cleaning facilities, in accordance with details to be submitted to and approved in writing by the local planning authority, have been provided within the curtilage of the site, and this facility shall be retained for the duration of the works.	Works shall not commence on site <i>on each stage of the development</i> until wheel-cleaning facilities, in accordance with details to be submitted to and approved in writing by the local planning authority, have been provided within the curtilage of the site, and this facility shall be retained for the duration of the works.
4	No development shall take place until details of the drainage, construction, services and lighting of the proposed access road, including the junction with the adjacent highway, have been submitted to and approved in writing by the local planning authority.	No stage <i>of the</i> development shall take place until details of the drainage, construction, services and lighting of the proposed access road <i>relevant to the stage of the development being constructed</i> , including the junction with the adjacent highway, have been submitted to and approved in writing by the local planning authority.
5	No other works shall be commenced on the site until the access road junction with the adjacent highway, including the required visibility splays, has been set out and established.	<del>No other works shall be commenced on the site until the access road junction with the adjacent highway, including the required visibility splays, has been set out and established.</del> <b>DELETE CONDITION.</b>
6	Development shall not begin on site until details of:  (i) the number, location and layout of vehicular accesses to the site;  (ii) the number, location and layout of vehicle parking spaces, including access aisles, surface markings and turning facilities;  (iii) the location and layout of vehicle loading, off-loading and turning facilities for delivery vehicles; and  (iv) the pedestrian means of access to all buildings;  have been submitted to and approved in writing by the local planning authority.	Development <i>of each stage</i> shall not begin on site until details of:  (i) the number, location and layout of vehicular accesses to the site;  (ii) the number, location and layout of vehicle parking spaces, including access aisles, surface markings and turning facilities;  (iii) the location and layout of vehicle loading, off-loading and turning facilities for delivery vehicles; and  (iv) the pedestrian means of access to all buildings;  <i>for that stage of the development</i> have been submitted to and approved in writing by the local planning authority.

<p><b>7</b></p>	<p>The development shall not be brought into use until:</p> <p>(i) the access roads to the service and customer parking area;</p> <p>(ii) the loading, off-loading and turning areas for all vehicles; and</p> <p>(iii) the parking spaces and access aisles (including surface markings);</p> <p>have been provided and all these facilities shall thereafter be so retained.</p>	<p><del>The</del><i>Each stage of the</i> development shall not be brought into use until:</p> <p>(i) the access roads to the service and customer parking area;</p> <p>(ii) the loading, off-loading and turning areas for all vehicles; and</p> <p>(iii) the parking spaces and access aisles (including surface markings);</p> <p>have been provided <i>for that stage</i> and all these facilities shall thereafter be so retained.</p>
<p><b>15</b></p>	<p>No development shall take place until details of a construction phase traffic management plan have been submitted to and approved in writing by the local planning authority (in consultation with the Highways Agency). Once approved the plan shall be implemented and monitored throughout the construction period.</p>	<p>No development shall take place until details of a construction phase traffic management plan <i>for the stage to be constructed</i> have been submitted to and approved in writing by the local planning authority (in consultation with the Highways Agency). Once approved the plan shall be implemented and monitored throughout the construction period.</p>
<p><b>19</b></p>	<p>Notwithstanding the provisions of sections 94, 98 and 106 of the Water Industry Act 1991, no development shall commence until details of a scheme for the satisfactory provision of sufficient capacity within the public sewerage system and at the wastewater treatment works to meet the needs of the approved development has been submitted to and approved in writing by the local planning authority. No buildings shall be occupied until the works have been carried out in accordance with the scheme.</p>	<p>Notwithstanding the provisions of sections 94, 98 and 106 of the Water Industry Act 1991, <i>no building works which comprise the erection of a building required to be served by water services</i> <del>no development</del> shall commence until details of a scheme for the satisfactory provision of sufficient capacity within the public sewerage system and at the wastewater treatment works to meet the needs of the approved development has been submitted to and approved in writing by the local planning authority. No buildings shall be occupied until the works have been carried out in accordance with the scheme <i>so far as they relate to the building(s) occupied.</i></p>

<p><b>26</b></p>	<p>Prior to any site works for any of the buildings being commenced, a scheme for the reinforcement of agricultural hedgerows with native tree and shrub planting for the land edged blue on the submitted drawing numbered KI-02000 D shall be submitted to and agreed in writing by the local planning authority.</p> <p>Any such scheme should pay particular attention to any potentially adverse impact of new planting upon the setting of the heritage asset (Ancient Monument Moated Site) located at TA14032014. Once agreed all planting in this area shall be completed within the next available planting season (end October to end March) and shall thereafter be maintained in accordance with the tree and biodiversity management plan required by condition 56.</p>	<p>Prior to any site works for any of the buildings being commenced, a scheme for the reinforcement of agricultural hedgerows with native tree and shrub planting for the land edged blue <i>to the west of the development</i> on the submitted drawing numbered KI-02000 D shall be submitted to and agreed in writing by the local planning authority.</p> <p>Any such scheme should pay particular attention to any potentially adverse impact of new planting upon the setting of the heritage asset (Ancient Monument Moated Site) located at TA14032014. Once agreed all planting in this area shall be completed within the next available planting season (end October to end March) and shall thereafter be maintained in accordance with the tree and biodiversity management plan required by condition 56.</p>
<p><b>35</b></p>	<p>Before development commences on site, a scheme shall be submitted to and approved in writing by the local planning authority that provides for a minimum of 10% in Phases 1 and 2, 15% in Phases 3 and 4 and 20% in Phases 5, 6 and 7 of the approved buildings' total energy requirements to be provided by on-site renewable energy sources production equipment.</p> <p>Such sources/equipment shall be provided/installed and fully operational prior to the occupation of any of the buildings hereby approved. (A phased approach to this provision may be agreed in consultation with the local planning authority at an early stage.)</p>	<p>Before <del>development</del> <i>any stage that includes the erection of a building</i> commences on site, a scheme shall be submitted to and approved in writing by the local planning authority that provides for a minimum of 10% in Phases 1 and 2, 15% in Phases 3 and 4 and 20% in Phases 5, 6 and 7 of the approved buildings' total energy requirements to be provided by on-site renewable energy sources production equipment.</p> <p>Such sources/equipment shall be provided/installed and fully operational prior to the occupation of any of the buildings hereby approved. (A phased approach to this provision may be agreed in consultation with the local planning authority at an early stage.)</p>
<p><b>38</b></p>	<p>Before development is commenced, a scheme shall be submitted to and agreed in writing by the local planning authority of the method of insulating each building. Such a scheme shall provide that the sound reduction index (SRI value) of each building envelope shall be sufficient to ensure that activities within the buildings do not give rise to adverse noise impact at sensitive receptors' locations.</p>	<p><del>Before development is commenced,</del> <i>Before any stage that includes the erection of a building is commenced,</i> a scheme shall be submitted to and agreed in writing by the local planning authority of the method of insulating each building <i>within that stage</i>. Such a scheme shall provide that the sound reduction index (SRI value) of each building envelope shall be sufficient to ensure that activities within the buildings do not give rise to adverse noise impact at sensitive receptors' locations.</p>

40	Before development commences, details of the location, dimensions and construction materials of all acoustic barriers, including predicted noise levels at relevant receptors, shall be submitted to and approved in writing by the local planning authority.	<del>Before development commences,</del> <i>Before each stage commences,</i> details of the location, dimensions and construction materials of all acoustic barriers <i>in that stage,</i> including predicted noise levels at relevant receptors, shall be submitted to and approved in writing by the local planning authority.
48	No development shall commence until details of a scheme for the satisfactory provision of sufficient capacity within the public sewerage system and at the wastewater treatment works to meet the needs of the approved development has been submitted to and approved in writing by the local planning authority.  No buildings shall be occupied until the works have been carried out in accordance with the approved scheme.	<i>No building works which comprise the erection of a building required to be served by water services</i> <del>No development</del> shall commence until details of a scheme for the satisfactory provision of sufficient capacity within the public sewerage system and at the wastewater treatment works to meet the needs of the approved development has been submitted to and approved in writing by the local planning authority.  No buildings shall be occupied until the works have been carried out in accordance with the approved scheme.
49	No development shall take place until a water pollution prevention plan has been submitted to and approved in writing by the local planning authority. The plan shall include:  (i) details of measures to avoid water-borne pollution during construction in accordance with sections 10.5.16 to 10.5.22 of the submitted environmental statement;  (ii) details of measures to avoid water-borne pollution in accordance with sections 8.6.36 to 8.6.39 and 16.3.43 of the submitted environmental statement.	No <i>stage of the</i> development shall take place until a water pollution prevention plan <i>relevant to that stage</i> has been submitted to and approved in writing by the local planning authority. The plan shall include:  (i) details of measures to avoid water-borne pollution during construction in accordance with sections 10.5.16 to 10.5.22 of the submitted environmental statement;  (ii) details of measures to avoid water-borne pollution in accordance with sections 8.6.36 to 8.6.39 and 16.3.43 of the submitted environmental statement.

<p><b>50</b></p>	<p>No development shall take place until a waterbird protection and construction method statement has been submitted to and agreed in writing by the local planning authority. The plan shall include:</p> <ul style="list-style-type: none"> <li>i) a prohibition on floodbank works or other works within the Humber Estuary SPA between October and February within, and up to 500 metres to the south of East Halton Skitter;</li> <li>(ii) a prohibition on earthworks to raise or lower ground levels between October and February;</li> <li>(iii) details of measures that shall be put in place during construction to avoid impacts upon waterbirds;</li> <li>(iv) a programme of construction noise and visual disturbance monitoring and bird disturbance studies to be carried out with results to be submitted to the local planning authority quarterly during the construction period;</li> <li>(v) details of thresholds for disturbance and/or displacement of waterbirds that shall trigger amendment of working methods in response to monitoring results;</li> <li>(vi) details of the means by which amended sensitive working methods shall be agreed with the local planning authority;</li> <li>(vii) details of sensitive working methods for installation of the hydrogen pipeline and construction of the pumping station;</li> <li>(viii) details of measures to control construction-phase light pollution in accordance with section 10.5.127 of the submitted environmental statement.</li> </ul> <p>All site clearance and construction works shall be carried out strictly in accordance with the agreed waterbird and construction method statement unless otherwise agreed in writing by the local planning authority.</p>	<p>No <i>stage of the development</i> shall take place until a waterbird protection and construction method statement has been submitted to and agreed in writing by the local planning authority. The plan shall include:</p> <ul style="list-style-type: none"> <li>i) a prohibition on floodbank works or other works within the Humber Estuary SPA between October and February within, and up to 500 metres to the south of, East Halton Skitter;</li> <li>(ii) a prohibition on earthworks to raise or lower ground levels between October and February;</li> <li>(iii) details of measures that shall be put in place during construction to avoid impacts upon waterbirds;</li> <li>(iv) a programme of construction noise and visual disturbance monitoring and bird disturbance studies to be carried out with results to be submitted to the local planning authority quarterly during the construction period;</li> <li>(v) details of thresholds for disturbance and/or displacement of waterbirds that shall trigger amendment of working methods in response to monitoring results;</li> <li>(vi) details of the means by which amended sensitive working methods shall be agreed with the local planning authority;</li> <li>(vii) details of sensitive working methods for installation of the hydrogen pipeline and construction of the pumping station;</li> <li>(viii) details of measures to control construction-phase light pollution in accordance with section 10.5.127 of the submitted environmental statement.</li> </ul> <p>All site clearance and construction works shall be carried out strictly in accordance with the agreed waterbird and construction method statement unless otherwise agreed in writing by the local planning authority.</p>
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<p><b>51</b></p>	<p>No development shall take place until a conservation management plan for waterbird mitigation areas has been submitted to and agreed in writing with the local planning authority. The plan shall include:</p> <ul style="list-style-type: none"> <li>- the aims and objectives of the plan, including proposed indicators of success;</li> <li>- details of the ecological requirements of target species and the ecological trends affecting them;</li> <li>- plans and details of habitats to be created and managed to support the target species, including details of earthworks, ground levels, islands, scrapes, soil properties, water control structures, ditches, waterbodies, target grassland sward types and any screening banks, hedgerows or reedbeds;</li> <li>- ongoing management measures to be implemented to maintain habitats in favourable condition;</li> <li>- detailed grazing prescriptions for wetland mitigation areas, including the means by which cattle shall have access to the proposed grassland areas;</li> <li>- details of measures required to ensure the welfare of grazing animals;</li> <li>- confirmation that areas of grass, rush and sedge shall be managed by cattle grazing, rather than mowing, unless agreed in writing by the local planning authority;</li> <li>- detailed prescriptions for control of water levels, inputs and output, including water budgets for average, dry and wet years;</li> <li>- timing of proposed works;</li> <li>- details of remedial measures to be carried out in the event of water levels or other target measures rising or falling beyond agreed limits;</li> <li>- persons responsible for:             <ul style="list-style-type: none"> <li>• compliance with legal consents relating to nature conservation;</li> <li>• compliance with planning conditions relating to nature conservation;</li> <li>• installation of physical protection measures during construction;</li> </ul> </li> </ul>	<p>No development <i>with the exception of stages 1 and 2</i>, shall take place until a conservation management plan for waterbird mitigation areas has been submitted to and agreed in writing with the local planning authority. The plan shall include:</p> <ul style="list-style-type: none"> <li>- the aims and objectives of the plan, including proposed indicators of success;</li> <li>- details of the ecological requirements of target species and the ecological trends affecting them;</li> <li>- plans and details of habitats to be created and managed to support the target species, including details of earthworks, ground levels, islands, scrapes, soil properties, water control structures, ditches, waterbodies, target grassland sward types and any screening banks, hedgerows or reedbeds;</li> <li>- ongoing management measures to be implemented to maintain habitats in favourable condition;</li> <li>- detailed grazing prescriptions for wetland mitigation areas, including the means by which cattle shall have access to the proposed grassland areas;</li> <li>- details of measures required to ensure the welfare of grazing animals;</li> <li>- confirmation that areas of grass, rush and sedge shall be managed by cattle grazing, rather than mowing, unless agreed in writing by the local planning authority;</li> <li>- detailed prescriptions for control of water levels, inputs and output, including water budgets for average, dry and wet years;</li> <li>- timing of proposed works;</li> <li>- details of remedial measures to be carried out in the event of water levels or other target measures rising or falling beyond agreed limits;</li> <li>- persons responsible for:             <ul style="list-style-type: none"> <li>• compliance with legal consents relating to nature conservation;</li> <li>• compliance with planning conditions relating to nature conservation;</li> <li>• installation of physical protection measures during construction;</li> </ul> </li> </ul>
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<p><b>51 cont'd</b></p>	<ul style="list-style-type: none"> <li>• implementation of sensitive working practices during construction;</li> <li>• regular inspection and maintenance of physical protection measures and monitoring of working practices during construction;</li> <li>• implementation of the management plan.</li> </ul> <p>The conservation management plan shall be reviewed by the applicant or their successor in title every five years in order to achieve the stated aims and objectives. Following such five yearly reviews, any changes agreed between the applicant or their successor in title and the local planning authority shall be incorporated into a revised conservation management plan which shall thereafter be the conservation management plan for the purposes of all associated planning conditions.</p> <p>The agreed conservation management plan shall be implemented in its entirety, in accordance with agreed timings, unless otherwise agreed in writing by the local planning authority. The features provided through implementation of the plan shall be retained and managed as agreed thereafter.</p>	<ul style="list-style-type: none"> <li>• implementation of sensitive working practices during construction;</li> <li>• regular inspection and maintenance of physical protection measures and monitoring of working practices during construction;</li> <li>• implementation of the management plan.</li> </ul> <p>The conservation management plan shall be reviewed by the applicant or their successor in title every five years in order to achieve the stated aims and objectives. Following such five yearly reviews, any changes agreed between the applicant or their successor in title and the local planning authority shall be incorporated into a revised conservation management plan which shall thereafter be the conservation management plan for the purposes of all associated planning conditions.</p> <p>The agreed conservation management plan shall be implemented in its entirety, in accordance with agreed timings, unless otherwise agreed in writing by the local planning authority. The features provided through implementation of the plan shall be retained and managed as agreed thereafter.</p>
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## Appendix 2 Stages of Development

## **1 STAGES OF DEVELOPMENT**

- 1.1.1 The original planning consent PA/2009/0600 allowed for some conditions to be discharged in accordance with the original phasing proposed, but this was not written into all the conditions therefore requiring, for example, the car parking spaces to be detailed on the *whole* scheme even if only the first part of the access road was to be built.
- 1.1.2 It is therefore proposed to introduce stages of the development that will allow primarily the roads to proceed ahead of the discharge of all the pre commencement conditions.
- 1.1.3 Following consultation, clarification of the relationship between the phases and the stages has been addressed. The phases will remain with the stages being the subdivision of these phases, see below. Phases are taken from the Addendum to the Environmental Statement (April 2011).

<b>Phase</b>	<b>Proposed Stage</b>	<b>Plot No.</b>	<b>Facility</b>
1	1a	Roundabout	Section 278 highway works
1	1b	Road	Spine road south of railway inc cycleways
1	1c-k to be determined as tenants are signed up	NE1	Transport depot office, workshop, parking & external storage.
1		NE2	HGV services office, HGV workshop, parking & external storage.
1		NE3	Waste management facility.
1		NE4	Transport depot office, workshop, parking & external storage.
1		NE5	Transport depot office, workshop, parking & external storage.
1		NE6	Warehouse, security cabin, parking & external storage.
1		NE7	Warehouse, security cabin, parking & external storage.
1		NW1	Offices including road
1		Potential Development Area	Former mitigation area
1		1c	Conservation Mitigation Area
1	1a-k	Landscaping	Permanent water Landscaping (incl. 1.2 ha woodland) Pond
2	2a	Extension to core mitigation and buffer	Only required with Option 1. If Option 2 then this work goes to Phase 6.

Phase	Proposed Stage	Plot No.	Facility
3	3a	Road	North of railway, including cycle and footways
3	3b-f	NW2	Warehouse, security cabin, parking & external storage.
3		NW3	Warehouse, security cabin, parking & external storage.
3		NW4	Truck stop motel, restaurant & parking.
3		NW5	Warehouse & security Cabin
3		NW6	Port related storage, office, vehicle PDI building, security cabin & stores building.
3	3a-f	Landscaping	
3	3b	Drainage	Pumping station and outfall
4	4a-c	NE8	Warehouse, security cabin, parking.
4		NE9	Warehouse, security cabin, parking.
		Potential development area	Former mitigation area.
4	4d	NE10	Rail freight terminal, siding, security cabin & office.
4	4a-d	Landscape	
5	5a	Landscape	Bund from topsoil strip from plots
5	5b	NW7	Port related storage, vehicle etching building, office, vehicle PDI building, security cabin, stores building, car parking & external storage.
6	6a	NE12	Transport depot office, workshop, parking & external storage.
6	6a	Landscaping	
6	6a	Extension to core mitigation and buffer	Only required with Option 2. If Option 1 then this work goes to Phase 2.

1.1.4 Note that the mitigation required by the planning consent that is appropriate for the stage under construction will be constructed alongside or ahead of that stage as required.

Able UK, Land between East Halton Skitter and Chase Hill Road,  
North Killingholme

Planning permission to erect buildings and use land for purposes within Use Classes A3, C1, B1, B2 and B8 for port related storage and associated service facilities together with amenity landscaping and habitat creation, including flood defences, new railway siding, estate roads, sewage and drainage facilities, floodlighting, waste processing facility, hydrogen pipeline spur and two 20m telecom masts

Appropriate Assessment under the under The Conservation of Habitats and Species Regulations 2010

NOTE: This document supersedes the previously signed appropriate assessment dated 08 October 2010.

## **Contents**

1. Summary- Record of Appropriate Assessment in accordance with Habitats Regulations Guidance Note 1.
2. Introduction
3. The Appropriate Assessment Process
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6. Loss of intertidal habitat due to coastal squeeze following restoration and improvement of the floodbank.
7. Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area
8. Surface water drainage into intertidal habitat, causing pollution.
9. Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.
10. Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing.
11. Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland.
12. Increased light levels and the dominant visual appearance of lighting columns.
13. Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI and all three proposed wetland areas.
14. In-combination assessment of plans and projects not already considered
15. Register of conditions or restrictions required.  
Table 3: Comparison of the Do Nothing Scenario with Application PA/2009/0600
16. Overall determination of AEOI.
17. Opinion in relation to the Humber Estuary SSSI- Section 28 of the Wildlife and Countryside Act (as amended)

## **Appendices**

1. Location of Proposals in relation to the International Nature Conservation Site.
2. Appropriate Assessment Supporting Documents
3. Citations and Conservation Objectives.
4. Natural England Correspondence.
5. Applicant Correspondence.
6. Consultee Responses.
7. References.

1 Summary- Record of Appropriate Assessment in accordance with Habitats Regulations Guidance Note 1.

1.1 Title of Plan or Project/Application:

Planning permission to erect buildings and use land for purposes within Use Classes A3, C1, B1, B2 and B8 for port related storage and associated service facilities together with amenity landscaping and habitat creation, including flood defences, new railway siding, estate roads, sewage and drainage facilities, floodlighting, waste processing facility, hydrogen pipeline spur and two 20m telecom masts.

1.2 Location of Plan or Project /Application

Able UK, Land between East Halton Skitter and Chase Hill Road, North Killingholme.

See Location Plan- Appendix 1

International Nature Conservation Site

Humber Estuary Special Protection Area (SPA) and Ramsar site  
Humber Estuary Special Conservation Area (SAC)

1.3 Nature/Description of Plan or Project/Application

1.3.1 Planning consent for development is sought for an area of 379.9ha. The sizes of areas for development are dependant upon which mitigation option for SPA waterbirds is carried forward. Table 1 details the proposed site areas and land uses.

**Table 1. Development Statistics.**

Site Area	Option 1	Option 2
	Size (ha)*	
<b>Landscaping</b>	78.4	78.4
<b>Conservation:</b>		
Mitigation Area (core + buffer)	55.1	73.9
Local Wildlife Site (LWS)	7.25	7.25
<b>Potential Development Areas:</b>		
Previously designated conservation/mitigation areas	24.3	24.3
Roads (including cycleways)	5	3
Foreshore Works- extending the toe of the floodbank	1.1	1.1
Industrial/Commercial	208.8	191.9
<b>TOTAL</b>	379.9	379.9

\*Numbers taken from Development statistics presented in Appendix 4.2. of the Addendum to the Environmental Statement dated April 2011

1.3.2 The project proposals have been revised subsequent to the planning committee of 08 October 2010, in order to address the continuing concerns of Natural England and the RSPB.

1.3.3 Measures taken to minimise effects on the International Nature Conservation Sites:

1.3.3.1 The applicant has proposed areas of wetland habitat creation to provide for feeding, roosting and loafing waterbirds. There is also a proposal to create around 2450m<sup>2</sup> of intertidal habitat.

1.3.3.2 Attempts have been made to phase and time works so as to minimise construction disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. Seasonal work timings have also been planned on this basis, where appropriate. These are described in sections 10.5.50 to 10.5.59 of the submitted ES.

1.3.3.3 Attempts have been made to minimise construction light disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. These are described in section 10.5.127 of the submitted ES.

1.4 Date Appropriate Assessment Recorded

24 June 2011

1.5 This is a record of the appropriate assessment, required by Regulation 61 of the Habitats Regulations 2010, undertaken by North Lincolnshire Council in respect of the above plan/project, in accordance with the Habitats Directive (Council Directive 92/43/EEC). Having considered that the plan or project would be likely to have a significant effect on the Humber Estuary SAC, SPA and Ramsar Site and that the plan or project was not directly connected with or necessary to the management of the site, an appropriate assessment has been undertaken of the implications of the proposal in view of the sites conservation objectives.

1.6 Natural England was consulted under Regulation 61(3) on numerous occasions between June 2009 and June 2011 and the representations, to which this authority has had regard, are attached at Appendix 4. The project was significantly revised between October 2010 and June 2011 to take Natural England's concerns into account. The conclusions of this appropriate assessment are in accordance with the advice and recommendations of Natural England.

1.7 The applicant was required to submit further information reasonably necessary for this assessment on numerous occasions after validation of the application under Reg. 61(2) and replied with information between June 2009 and June 2011.

1.8 The opinion of the general public was taken under Reg.61(4) by way of further consultation etc and the views expressed (attached at Appendix 6) have been taken into account. The project was significantly revised between October 2010 and June 2011 to take the RSPB's concerns into account.

1.9 The site's conservation objectives have been taken into account, including consideration of the situation for the site and information supplied by Natural England (See Appendix 4). The likely effects of the proposal on the international nature conservation interests for which the site was designated may be summarised as:

1.9.1 Loss of intertidal habitat due to coastal squeeze following restoration and improvement of the floodbank.

1.9.2 Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area.

- 1.9.3 Surface water drainage into intertidal habitat, causing pollution.
  - 1.9.4 Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.
  - 1.9.5 Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing.
  - 1.9.6 Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland.
  - 1.9.7 Increased light levels and the dominant visual appearance of lighting columns
  - 1.9.8 Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI and all three proposed wetland areas.
- 1.10 The assessment has concluded that the plan or project as proposed would adversely affect the integrity of the site.
- 1.11 The imposition of conditions or restrictions on the way the proposal is to be carried out has been considered and it is ascertained that:
- ~~\*a) conditions or restrictions cannot overcome the adverse effects on the integrity of the site.~~
  - Or
  - b) the conditions listed in section 15 of this document would avoid adverse effects on the integrity of the site.

Signed



Date 24 June 2011

Andrew Taylor

Designation: Project Officer (Ecologist)

**NOTE: This document supersedes the previously signed appropriate assessment dated 08 October 2010.**

## 2 Introduction

- 2.1 Able UK has applied for planning permission for an area of 379.9 ha immediately west of the Humber Estuary and South of East Halton Skitter at Ordnance Survey grid reference TA147229-TA147184 in North Lincolnshire. The sizes of areas for development are dependant upon which one of two mitigation options for SPA waterbirds is carried forward. Table 1 details the proposed site areas and land uses. The planning application reference number is PA/2009/0600. The project proposals have been revised subsequent to the planning committee of 08 October 2010, in order to address the continuing concerns of Natural England and the RSPB.
- 2.2 North Lincolnshire Council has determined that:
- 2.2.1 The plan or project is not directly connected with, or necessary to, the management of the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC) for nature conservation.
  - 2.2.2 The plan or project is likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Protection Area (SPA) and Ramsar site.
  - 2.2.3 The plan or project is likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Conservation Area (SAC).
- 2.3 Therefore, as the Competent Authority for the plan or project, North Lincolnshire Council must carry out an appropriate assessment in accordance with Regulation 61 of The Conservation of Habitats and Species Regulations 2010
- 2.4 This document is the formal record of that process.

**NOTE: This document supersedes the previously signed appropriate assessment dated 08 October 2010.**

## 3 The Appropriate Assessment Process

- 3.1 The process is described in detail in Circular 06/2005. The Council has followed the Circular as closely as possible. The main stages in the process are as follows. Note that if there are no harmful effects on the features of the Humber Estuary, or if these effects can be prevented, not all of the stages will be required.
- 3.1.1 Determination of Likely Significant Effect (see Taylor 2009)
  - 3.1.2 Appropriate Assessment with regard to site Conservation Objectives.
    - 3.1.2.1 Determine whether there will be an Adverse Effect on the Integrity (AEOI) of the International Nature Conservation Sites with reference to all the relevant interest features.
    - 3.1.2.2 Consider possible restrictions and conditions.
    - 3.1.2.3 Consider alternative approaches.
    - 3.1.2.4 Consider any Imperative Reasons of Over-riding Public Interest (IROPI).

3.2 Put simply, the Local Planning Authority can only grant planning permission if, at a given stage in 3.1 above, it can be ascertained that the proposal would not adversely affect the integrity of the International Nature Conservation Sites. Even if, at a late stage in considerations, IROPI were found to apply, compensatory measures would need to be provided.

3.3 Circular 06/2005 describes the key decision to be made as follows:

3.3.1 “In the light of the conclusions of the assessment of the project’s effects on the site’s conservation objectives, the decision-taker must determine whether it can ascertain that the proposal will not adversely affect the integrity of the site(s). The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified. It is not for the decision-taker to show that the proposal would harm the site, in order to refuse the application or appeal. It is for the decision-taker to consider the likely and reasonably foreseeable effects and to ascertain that the proposal will not have an adverse effect on the integrity of the site before it may grant permission. If the proposal would adversely affect integrity, or the effects on integrity are uncertain but could be significant, the decision-taker should not grant permission, subject to the provisions of regulations 49 and 53 as described below.”

3.3.2 “..In the Waddenzee judgment, the European Court of Justice ruled that a plan or project may be authorised only if a competent authority has made **certain** that the plan or project will not adversely affect the integrity of the site. “*That is the case where no reasonable scientific doubt remains as to the absence of such effects*”. Competent national authorities must be “**convinced**” that there will not be an adverse effect and where doubt remains as to the absence of adverse effects, the plan or project must not be authorised, subject to the procedure outlined in Article 6(4) of the EC Habitats Directive regarding imperative reasons of overriding public interest.” – ODPM 2005.

3.4 On this “precautionary principle”, English Nature’s Interim Regulation 33 advice for the Humber gives the following guidance:

3.4.1 “All forms of environmental risk should be tested against the precautionary principle which means that where there are real risks to the site, lack of full scientific certainty should not be used as a reason for postponing measures that are likely to be cost effective in preventing such damage. It does not however imply that the suggested cause of such damage must be eradicated unless proved to be harmless and it cannot be used as a licence to invent hypothetical consequences. Moreover, it is important, when considering whether the information available is sufficient, to take account of the associated balance of likely costs, including environmental costs, and benefits (DETR & the Welsh Office, 1998).” – English Nature 2003.

#### 4 Description of Development

4.1 Planning consent for development is sought for an area of 379.9ha. The sizes of areas for development are dependant upon which one of two mitigation options for SPA waterbirds is carried forward. Table 1 details the

proposed site areas and land uses.

4.2 The industrial/commercial development will accommodate B1, B2 and B8 land uses for port related storage and associated service facilities. In addition to this, the application seeks consent to develop either 140.7ha or 159.6ha for on site amenity landscaping and habitat creation. Improvements to the flood defence wall will entail covering 1.1 ha of rocky foreshore with a further rock toe.

4.3 In essence the proposed works include:

- Works to repair the existing flood defence wall on its current alignment.
- Recontouring the site landform in order to reduce the consequences of flooding of the land along its eastern margin.
- The creation of a drainage balancing pond and the installation of a new drainage system with its outfall onto the foreshore via a new pumping station.
- Construction of a 2,490m long service road with screening bunds running north to south through the southern part of the site, thus extending the existing consented glass wool factory access road with its link to the junction of Eastfield Road and Chase Hill Road. (The road will be to adoptable standard).
- Creation of 2,490m of cycleway and increasing public footpaths on site.
- Closure of 590m of highway to motor vehicles.
- Construction of a bridge carrying the proposed new spine road, over the derelict railway line.
- Construction of railway sidings and a loading area, linking into the end of the live railway north west of the Humber Sea Terminal.
- Construction of a private road (to adoptable standard) linking the site with the Humber Sea Terminal.
- Creation of a business park on the west side of the spine road.
- Creation of transport depots, an HGV service facility, warehousing, offices, car parks and external storage areas with floodlighting and 2.5m high security fencing, east of the spine road and south of the former railway line and security cabins.
- Development of a motel and a truck stop restaurant with HGV refuelling facilities.
- Construction of external storage areas with floodlighting and 2.5m high security fencing.
- Construction of sewage treatment facilities and links to Anglian Water foul water treatment facilities.
- Construction of a 2410m spur from the consented hydrogen pipeline to run from the spine road bridge over the former railway, along the west side of the spine road to its junction with Chase Hill Road.
- Erection of two telecommunication masts, 20m high, each with two associated cabins within a surrounding compound.
- Erection of one bird hide.

4.4 Further details are given in the revised Chapter 4 of the submitted Environmental Statement dated April 2011. Details of the locations of the proposed hard surface developments are shown on submitted Drawings No. KI-02002 & ALP-02005, which should be read in conjunction with the submitted Development Statistics for Options 1 & 2. In addition, the development will provide amenity landscaping beside Skitter Road and on the north side of the former railway line. Areas which have been designated for habitat creation lie to the north and west of the Winters' Pond.

4.5 The applicant has proposed that works will be phased as shown in Tables 2 and 3 overleaf.

#### 4.6 Measures taken to minimise effects on the International Nature Conservation Sites:

- 4.6.1 The applicant has proposed areas of wetland habitat creation to provide for feeding, roosting and loafing waterbirds. There are two options for the total area and configuration of these. The on-site only option entails the provision of around 74 hectares of wetland mitigation habitat, comprising 32 hectares of "core" mitigation habitat adjudged adequate to support the numbers of waterbirds currently observed on-site and 42 hectares of wetland buffer habitat, designed to protect birds in the core area from noise and visual disturbance. The on-site and off-site option entails the provision of 55 hectares of wetland mitigation habitat on-site, comprising 20 hectares of core habitat and 35 hectares of buffer. Additionally, the latter option will entail the provision of 50 hectares of wetland mitigation habitat off-site, at a location to be agreed, comprising 20 hectares of core habitat and 30 hectares of buffer.
- 4.6.2 Works on the seaward side of the seawall will be conducted between April and September, to minimise temporary disturbance to bird populations during the overwintering period (October to March).
- 4.6.3 Attempts have been made to phase works so as to minimise construction disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. Seasonal work timings have also been planned on this basis, where appropriate. These are described in sections 10.5.50 to 10.5.59 of the submitted ES (as amended by addendum section 13.9) .
- 4.6.4 Attempts have been made to minimise construction light disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. These are described in section 10.5.127 of the submitted ES.
- 4.6.5 The project proposals have been revised subsequent to the planning committee of 08 October 2010, in order to address the continuing concerns of Natural England and the RSPB.

**Table 2: Proposed Phasing of Works**

Phase	Timing	Plot no.	Plot area (ha)		Works Proposed
			Option 1	Option 2	
1	2011-2014	NE1	2.2	2.2	Transport depot office, workshop, parking & external storage.
		NE2	1.9	1.9	HGV services office, HGV workshop, parking & external storage.
		NE3	2.6	2.6	Waste management facility.
		NE4	2.3	2.3	Transport depot office, workshop, parking & external storage.
		NE5	2.0	2.0	Transport depot office, workshop, parking & external storage.
		NE6	4.9	4.9	Warehouse, security cabin, parking & external storage.
		NE7	12.9	12.9	Warehouse, security cabin, parking & external storage.
		NW1	0.2	0.2	Large office
			0.2	0.2	Large office
			0.4	0.4	6 No. small offices (746m2 each)
			0.2	0.2	Road
		Road	2.5	2	Spine road inc. cycleways
		Potential Dev. Area	18.8	18.8	Formerly proposed waterbird mitigation area.
		WaterbirdMitigation	20	20*	Core Area (to be finished prior to phases 3-6)
			35.1	35.1*	Buffer (including balancing pond) (to be finished prior to phases 3-6)
		Landscape	5.3	5.3	Permanent water
			23.6	23.6	Landscaping (inc. 1.2 ha woodland)
6	6		Pond		
<b>Total</b>	<b>120.6</b>	<b>119.9</b>			
2	2011-2015	WaterbirdMitigation	N/A	12	Extension to Core Area (to be finished prior to phases 3-6)
			N/A	6.8	Extension of Buffer (to be finished prior to phases 3-6)
		<b>Total</b>	<b>N/A</b>	<b>18.8</b>	
3	2013-2015	NW2	13.3	13.3	Warehouse, security cabin, parking & external storage.
		NW3	9.1	9.1	Warehouse, security cabin, parking & external storage.
		NW4	7.7	7.7	Truck stop motel, restaurant & parking.
		NW5	3.1	3.1	Warehouse & security Cabin
		NW6	44.7	44.7	Port related storage, office, vehicle PDI building, security cabin & stores building.
		Road	2.5	1	Inc. cycleways and footpaths
		Landscape	30	30	
<b>Total</b>	<b>110.4</b>	<b>108.9</b>			
4	2014-2016	NE8	8.7	8.7	Warehouse, security cabin, parking.
		NE9	3.8	3.8	Warehouse, security cabin, parking.
		NE10	12.0	12.0	Rail freight terminal, security cabin & office.
		Potential Dev. Area	5.5	5.5	Formerly proposed waterbird mitigation area.
		Landscape	10	10	
<b>Total</b>	<b>40</b>	<b>40</b>			
5	2015-2017	NW7	35		Port related storage, vehicle etching building, office, vehicle PDI building, security cabin, stores building, car parking & external storage.
		Landscape	15		Landscaping and habitat creation
		<b>Total</b>	<b>50</b>		
6	2016-2018	NE12	41.6	25	Transport depot office, workshop, parking and external storage
		Landscape	10	10	Landscape and habitat creation
		<b>Total</b>	<b>51.6</b>		
-----	2012-2014	<b>Floodbank</b>			

\* asterisked values replace figures considered to be included in error in the addendum to the Environmental Statement.

**Table 3. Potential overlap of phases**

Phase	2011	2012	2013	2014	2015	2016	2017	2018
1	Shaded	Shaded	Shaded	Shaded				
2	Shaded	Shaded	Shaded	Shaded	Shaded			
3	To begin after completion of wetland mitigation		Shaded	Shaded	Shaded			
4				Shaded	Shaded	Shaded		
5						Shaded	Shaded	
6							Shaded	Shaded
<b>Pipeline</b>	Shaded	Shaded	Shaded	Shaded	Shaded	Shaded	Shaded	Shaded
<b>Flood wall</b>		Shaded	Shaded	Shaded				

5 Summary of Likely Significant Effects on the International Nature Conservation Sites.

5.1 Loss of intertidal habitat due to coastal squeeze following restoration and improvement of the floodbank.

5.2 Loss of intertidal habitat due to construction of floodbank toe beam, placement of rock beyond the toe beam and construction of a pumping station outfall within the current intertidal area.

5.3 Surface water drainage into intertidal habitat, causing pollution.

5.4 Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.

5.5 Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing.

5.6 Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland.

5.7 Increased light levels and the dominant visual appearance of lighting columns

5.8 Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI and all three proposed wetland areas.

6 Loss of intertidal habitat due to coastal squeeze following restoration and improvement of the floodbank.

6.1 Likely Significant Effect

6.1.1 The applicant proposes to restore and improve the existing length of

floodbank along the estuarine frontage of the application site. In the absence of development here, the Environment Agency's preferred option for this area would be to allow the existing floodbank to fall into disrepair, allowing landward migration of intertidal habitats, whilst protecting existing port facilities from flooding with cross-banks. This would create about 126 hectares of intertidal habitat (Halcrow Group Ltd 2009). With sea level rise in the future, holding the line of the floodbank as part of the development will mean that intertidal habitats are gradually eroded and lost, without being able to migrate inland. Therefore coastal squeeze following restoration and improvement of the floodbank has been recorded as a **LSE** (Taylor 2009).

## 6.2 Further assessment

- 6.2.1 The magnitude of this loss of habitat has not been determined conclusively. However, at a meeting held on 30<sup>th</sup> June 2008, coastal squeeze figures presented in relation to this application ranged from a loss of 4.8 hectares of intertidal habitat, calculated by Able UK, to a loss of 12.2 hectares calculated by Black and Veatch. At a teleconference held on 16<sup>th</sup> July 2008 the organisations represented tentatively agreed that the coastal squeeze loss related to the frontage for the Able UK application was around 7.5 hectares.
- 6.2.2 In the absence of development, coastal squeeze would continue to take place along the application site frontage, at least until some unknown date in the future when the existing floodbank begins to fail. There would then be a period of time when the collapse and spread of the existing floodbank material could affect the quality of the existing intertidal habitat. It is not known how long it would take for the projected 126 hectares of intertidal habitat to develop to a quality comparable with existing internationally protected habitat. Recent calculations carried out for an update of the CHaMP suggest that coastal squeeze may be taking place more quickly than previously thought (P. Winn & E. Hawthorne, pers. comm.). Thus much of the projected loss for the Able UK frontage may have taken place prior to any development proceeding. This reduces the amount of coastal squeeze loss that can be attributed to the proposed development.
- 6.2.3 Furthermore, loss of current inter-tidal habitat in this area will result primarily from sea level rise which causes the mean low water mark to rise, so that inter-tidal mud becomes sub-tidal mud, well away from the position of the flood bank. Sea level rise means that loss of current habitat is inevitable; coastal squeeze merely prevents natural processes taking place that would otherwise lead to the creation of new inter-tidal habitat landward of the current SAC, SPA and Ramsar boundaries. Natural England's approach to these matters is detailed in their letter of 23 June 2011, reproduced in Appendix 4b of this document.

## 6.3 In-combination effects.

- 6.3.1 The Humber Flood Risk Management Strategy states that, "As sea levels rise the presence of a system of defences around the estuary will result in the loss of about 600 ha of inter-tidal habitat due to coastal squeeze." The applicant's proposal therefore needs to be considered in combination with the Strategy. However, the Environment Agency's Coastal Habitat Management Plan (ChaMP) provides for the provision of about 700 hectares of new intertidal habitat over the next 50 years. At present, there is an estimated 17.2 ha deficit in provision of intertidal habitat for the Middle Estuary (E. Hawthorne pers. Comm.).

6.3.2 Natural England has identified just under 0.3 hectares of intertidal habitat losses attributable to other projects that need to be considered in combination with the current application (E. Hawthorne – Appendix 4)

#### 6.4 Replacement for loss of habitat.

6.4.1 Compensation for loss of intertidal habitat due to coastal squeeze along the estuary frontage of this application site will be included in the Environment Agency's package of compensatory habitat in the CHaMP. Habitat loss due to sea level rise and coastal squeeze is a contentious issue, both in terms of quantifying the losses and in attributing responsibility for them (see para 6.2.2 above, Tyldesley 2010 and the responses to the Draft Appropriate Assessment consultation question 2).

6.4.2 However, Table 3 (section 16 of this document) shows that, regardless of whether or not planning permission is granted for the Able UK project, the same coastal squeeze losses will occur along their frontage. Similarly, regardless of whether or not planning permission is granted for the Able UK project, the Environment Agency will be committed to providing replacement inter-tidal habitat to offset the area lost to coastal squeeze.

6.4.3 The Environment Agency proposals for habitat compensation for coastal squeeze in the Humber Estuary are fully described in a revised Humber Flood Risk Management Scheme Habitats Regulations Assessment (Halcrow Group Ltd 2011). Whilst this appropriate assessment has not yet been signed off at the time of writing (June 2011), it is being addressed by Defra, Natural England and the Environment Agency- all government bodies with statutory responsibilities to ensure that adequate compensation is properly secured in accordance with the Habitats Regulations. The applicant has no influence over this process.

#### 6.5 Determination of AEOI.

6.5.1 The Humber Estuary Final Draft Conservation Objectives for the SPA and Ramsar site require, "No decrease in extent of listed habitats from established baselines, subject to natural change". This requirement applies to intertidal mud and Atlantic salt meadows (saltmarsh).

6.5.2 Natural England's opinion is that restoration and improvement of the floodbank will lead to a loss of both intertidal mud and saltmarsh due to coastal squeeze along the frontage of the application site.

6.5.3 Natural England's opinion does not refer explicitly to the magnitude of the habitat loss due to coastal squeeze, but this is believed to be somewhat less than 12.2 hectares (6.2.1 and 6.2.2 above). Given that the area of intertidal habitat in the Humber Estuary (presumably the SAC) is around 10,000 ha (Environment Agency 2005), 12.2 hectares would be around 0.1% of the Estuary resource. In other cases, Secretaries of State have concluded that very small scale losses, substantially less than 1%, would be an adverse effect on integrity; or at least they could not ascertain there would be no adverse effect on integrity (Hoskin & Tyldesley 2006).

6.5.4 However, this habitat will be lost, and will be replaced by the Environment Agency, regardless of whether planning permission is granted for the Able UK project. The Environment Agency has prepared an appropriate assessment covering this habitat loss and compensation, which is in the process of being signed off at the time of writing. Given that this process

must be settled to the satisfaction of Natural England in accordance with the Habitats Regulations, North Lincolnshire Council, as Competent Authority for the Able UK application, has confidence that adequate compensation will be secured. Furthermore, the Planning Officer's recommendation for this planning application is that planning permission should only be granted (subject to conditions) when the applicant has signed a legal agreement with the Environment Agency in respect of the flood defence and also when the Environment Agency's appropriate assessment of the Humber Estuary Flood Risk Management Scheme has been signed off by Defra . This approach closely mirrors Natural England's "first" suggestion for dealing with coastal squeeze as outlined in their letter of 23 June 2011.

6.5.5 Therefore, **there will be no adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar site due to coastal squeeze of inter-tidal habitats attributable to the Able UK proposal .**

## 7 Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area

### 7.1 Likely Significant Effect –

7.1.1 Between East Halton Skitter and East Halton Pits, works will largely entail covering existing rock armour and patches of intertidal mud between rocks with additional rock armour. The applicant has estimated the area of mud and silt that will be covered by rock as around 757 m<sup>2</sup>. This figure was reached using a standardised technique for estimating percentage cover, broadly equivalent to standard quadrat techniques used in the National Vegetation Classification. Allowing for error of  $\pm 20\%$  cover, due the subjective technique (Sykes et al. 1983), the area of mud and silt covered at the time of assessment could be as low as 606 m<sup>2</sup> or as high as 908 m<sup>2</sup>. Given that the area of intertidal habitat in the Humber Estuary (presumably the SAC) is 9382 ha (E.Hawthorne, pers. comm.), this represents 0.0006% to 0.0009% of the Estuary resource.

7.1.2 The mud and silt described is in part a thin covering overlying rock, but in other places is a deeper deposit, showing signs of use by feeding waders (pers. obs). Its distribution is likely to change significantly over short timescales, due to localised patterns of erosion and deposition (Doubleday, G pers. comm). Given the upper-tidal position, instability and limited extent of the habitat, it would not be expected to support as great a diversity or biomass of invertebrates as mud in the mid-tidal area. Birds' usage of such areas will be limited by disturbance due to walkers on the floodbank (pers. obs).

7.1.3 Soon after the addition of the rock armour, a proportion of the area of mud is likely to be re-deposited, resulting in a net result of less than the 606-908 m<sup>2</sup> change. Given that the rock armour will extend further into the estuary at a higher elevation than at present, the area of mud deposited is not likely to match the area lost for some time.

7.1.4 Small numbers of waterbirds feed within intertidal area ISI (Taylor 2009). A smaller subset of these may regularly be found feeding within the 5.3 metre x 1.8 kilometre corridor that will be affected by rock armour. These are typically redshank, black-tailed godwit and turnstones numbering in single figures (pers. obs., Nick Cutts pers. comm). These birds are regularly disturbed by

walkers and other people using the floodbank. Such disturbance usually results in movements to feed further along the shore, or larger movements away from the immediate area. With new rock armour extending into the estuary, feeding areas at the toe of the floodbank will be made unavailable on more tides and for longer periods than at present.

- 7.1.5 Hoskin and Tyldesley (2006) gives a useful measure of the area of mudflat loss that has been considered to be an adverse effect on the integrity of Natura 2000 estuaries in the past.
- 7.1.6 Updated designs for the flood defence wall show the proposed wall continuing into East Halton Skitter, encroaching onto existing mudflat, *Spartina anglica* Common cord grass community (National Vegetation Classification (NVC) type SM6) and NVC SM12 saltmarsh communities. Able UK estimate that 392m<sup>2</sup> of the SM12 community will be lost, based on the results of a 2001 NVC survey commissioned by English Nature (Richard Cram 17 February 2010). Only 40.5 ha of SM12 communities were recorded in the entire Humber Estuary during this survey (Allen et al. 2003) making this a loss of about 0.1% of the Estuary resource and a much higher percentage of the total for the south bank of the Middle Estuary.
- 7.1.7 Given a degree of uncertainty over the magnitude of loss of mudflat and saltmarsh attributable to the development, the construction of the floodbank toe beam within the current intertidal area has been treated as a **LSE** for the purposes of this appropriate assessment.

## 7.2 In-combination effects.

- 7.2.1 Assuming that there is an LSE, the project needs to be considered in combination with just under 0.3 hectares of other known intertidal habitat losses attributable to other projects identified by Natural England (see Appendix 4). It also needs to be considered in the context of an estimated 17.2 ha deficit in provision of intertidal habitat for the Middle Estuary (see para 6.3.1).

## 7.3 Measures taken to avoid, minimise or mitigate effects.

- 7.3.1 No works will be undertaken from the intertidal side of the flood wall, as confirmed in writing by Able UK:
- 7.3.2 "Flood defence wall works: The works will be undertaken from atop the flood defence wall. The previously mentioned 1.1ha of rock armour foreshore will no longer be used." – e-mail from Richard Cram 12/02/10.
- 7.3.3 The applicant now proposes to create a small area of intertidal habitat within East Halton Skitter, through managed realignment of the existing floodbank near the existing sluice around Ordnance Survey grid reference TA14492287. It is predicted that this will create 1177m<sup>2</sup> of intertidal habitat within the existing Humber Estuary SPA boundary and 1273 m<sup>2</sup>, of intertidal habitat outside the existing Humber Estuary SPA boundary, given that the boundary is set at the landward toe of the current floodbank (Steve Boland 06 August 2010). The proposals are shown on submitted drawing numbers KI-06029 D and KI-06030 D.
- 7.3.4 Experience from other managed realignment schemes around the Humber Estuary suggests that the habitat creation area will initially function as a kind of impoverished mudflat, before rapidly developing into saltmarsh.

#### 7.4 Conditions or restrictions required.

- 7.4.1 It is necessary to impose a condition restricting the footprint of rock armour on intertidal mud to an agreed distance from a fixed datum (see section 15)
- 7.4.2 It will also be necessary to secure the intertidal habitat creation described above and the working methods that avoid work from the estuary side of the floodbank.

#### 7.5 Determination of AEOL.

- 7.5.1 The Humber Estuary Final Draft Conservation Objectives for the SAC, SPA and Ramsar site require, "No decrease in extent of listed habitats from established baselines, subject to natural change". This requirement applies to intertidal mud and Atlantic salt meadows (saltmarsh).
- 7.5.2 In terms of intertidal mud, paragraphs 7.1.1 to 7.1.5 above reveal that a negligible area of habitat will be lost and insignificant numbers of birds will be affected (<1% of the citation population of any species). These effects are considered to be *de minimis*.
- 7.5.3 In terms of saltmarsh (NVC community SM12) a higher percentage of the estuary resource will be lost initially. However, it is predicted that there will be a net increase in the area of saltmarsh around the application site from around 392m<sup>2</sup> to up to 1177m<sup>2</sup> within the SPA and up to 1273 m<sup>2</sup> outside the current SPA boundary, once the proposed management realignment takes place.
- 7.5.4 **Therefore, given the imposition of planning conditions as outlined above, there will be no adverse effect on the Integrity of the Humber Estuary SAC, SPA and Ramsar site arising from the loss of intertidal habitat due to construction of the floodbank toe beam and rock armour within the current intertidal area.**

### 8 Surface water drainage into intertidal habitat, causing pollution.

#### 8.1 Likely Significant Effects.

- 8.1.1 Pollution events could occur during the proposed flood defence improvements and the construction of the outfall, specifically resulting from outflows or spills of water containing suspended sediment, oils/fuels and concrete or cement products or from wind-blown contaminants. There is also a small possibility of pollution entering surface water run-off during the operational phase of development. Pollution could result in impacts on the Humber Estuary SAC, SPA, Ramsar site and SSSI and indirectly on Ramsar and SPA birds and the waterbird assemblage. Although the likelihood of such an event occurring will be low, the impacts could be severe. In the absence of mitigation measures, it is concluded that such pollution impacts could have a **LSE**.
- 8.1.2 In addition, the Environment Agency has concerns relating to the use of Package Treatment Plants for sewage treatment. They have stated that, "Preference is given to connection to the public sewer as Package Treatment Plants (PTP) cannot treat sewage effluent to the same standard as larger Sewage Treatment Works (STW). Additionally, there are a number of operational and maintenance issues with these systems which can lead to inadequate treatment of sewage and so, cause a polluting discharge into the receiving watercourse or ground. This is evidenced in compliance figures for

private PTP compared to plants operated by Sewage Undertakers. “ (Richardson 2010). As the likelihood and severity of such a polluting discharge is unknown, this could also be a **LSE**.

## 8.2 In-combination effects.

- 8.2.1 In theory, a pollution event could occur almost anywhere in the Humber Estuary at any time. However, most activities are strictly regulated to minimise the risk of pollution (Edwards 2004). Pollution from the application site could act in combination with other sources of pollution or other harmful effects, resulting in a greater impact on designated features than would result from the application site pollution event considered in isolation.
- 8.2.2 In reality, it is very unlikely that more than one significant pollution event would occur at any one time.
- 8.2.3 In practical terms, mitigation measures designed to minimise the risk of pollution affecting intertidal habitats can be expected to reduce the effect from the application site to a negligible level. Such negligible effects cannot then be considered to act in combination with any other plans or projects.
- 8.2.4 However, the Environment Agency has concerns about the diversion of surface water drainage away from East Halton Skitter. This will reduce the volume of water at East Halton Skitter, thus reducing the degree of dilution and flushing of pollutants from the East Halton Beck (D. Morris, pers. comm). Thus the current proposal needs to be considered in combination with discharge consents to East Halton Beck, including an application to discharge effluent from a pig farm (E. Hawthorne pers. comm.).

## 8.3 Measures taken to minimise pollution.

- 8.3.1 The applicant proposes the following mitigation measures for the construction phase of development:
  - 8.3.1.1 All chemicals and materials will be stored on the landward side of the development and all liquids will have drip trays and interceptors to catch any spillage.
  - 8.3.1.2 All surface drainage and run-off from the construction compounds will be routed to drains and be contained, before disposing of it safely off-site.
- 8.3.2 The applicant proposes the following mitigation measures for the operational phase of development:
  - 8.3.2.1 Light liquid separators (oil interceptors) will be incorporated for all areas of public parking and wash down facilities (which do not use detergents).
  - 8.3.2.2 The open storage areas will incorporate drainage channels and catch pits to help mitigate the discharge of sediment and detritus to the channels. Oil interception is not considered necessary as these areas will be used for either sealed container storage or the temporary storage of new vehicles carrying little fuel load; hence the risk of oil deposits or spillage is very low.
  - 8.3.2.3 Improved flows in the channel system will provide greater dilution of any residual waterborne contaminants.

## 8.4 Conditions or restrictions required.

- 8.4.1 Conditions are required to ensure that the mitigation measures described in section 8.3 above are carried out in full. Works should also be carried out in accordance with the Environmental Agency's published Pollution Prevention Guidelines, particularly PPG6, which covers construction activities.
- 8.4.2 Planning conditions must also secure appropriate water quality standards and management and maintenance of sewage treatment facilities as proposed by the applicant.

#### 8.5 Determination of AEOL.

- 8.5.1 The Humber Estuary Final Draft Conservation Objectives for the SAC, SPA and Ramsar site require, that saltmarsh communities, intertidal mudflat & sandflat communities and subtidal sediment communities should be maintained in favourable condition subject to natural change. Pollution of waters is not compatible with this objective.
- 8.5.2 Pollution could also adversely affect the SPA/Ramsar Final Draft Conservation Objective to "Maintain the ability of the estuary to support its bird populations."
- 8.5.3 The Environment Agency clarified their concerns with respect to Package Treatment Plants on 02 July 2010: "We do not anticipate that there will be an impact on the Humber Estuary due to the volumes and potential for dilution however we have concerns that smaller [tributaries] could be adversely [affected]." (James Brackenbury 2010).
- 8.5.4 Able UK has pointed out that East Halton Drain neither flushes nor dilutes pollutants from East Halton Beck (Richard Cram 17 February 2010). Any proposals for discharges to East Halton Beck upstream of the East Halton Drain outfall will presumably need to meet Environment Agency water quality standards such that further dilution downstream will not be required. Therefore the concerns outlined in paragraph 8.2.4 above are not founded.
- 8.5.5 It is therefore highly unlikely that surface water drainage from the application site into intertidal habitat would generate a significant degree of pollution of the habitat. However, if this did happen it would constitute an adverse effect on the integrity of the Humber Estuary with regard to a number of its interest features.
- 8.5.6 Use of conditions as described in section 8.4 above would ensure that there is **no AEOL due to surface water drainage into intertidal habitat, causing pollution.**

### 9 Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.

#### 9.1 Background

- 9.1.1 Construction works can clearly cause temporary disturbance and displacement of SPA birds. Various factors need to be considered to give greater clarity as to whether a given source or combination of sources of construction-related disturbance could have an adverse effect on the SPA. For example, Habitats Regulations Guidance Note 3 (HRGN3) requires a competent authority to consider the "magnitude, likely duration and reversibility or irreversibility" of each potential effect on a Conservation Objective before determining whether each effect is a LSE. HRGN1 requires us to consider the "nature, scale, geographic extent, timing, duration and magnitude of direct and indirect effects" as well as considering mitigation

measures. Disturbance and displacement due to construction works are clearly reversible. The other factors require more detailed consideration on a case-by-case basis. Any determination of AEOI here must relate to evidence that disturbance and displacement can have an impact the population level or at least scientific doubt that a population level effect can be ruled out.

## 9.2 Likely Significant Effects

### 9.2.1 Construction disturbance of birds using the intertidal area.

9.2.1.1 Large numbers of birds, particularly Lapwing, have been recorded using the intertidal WeBS sector ISI that is adjacent to the application site. However, the majority of these birds use the southern half of the sector, away from the application site, where there is a wider expanse of mudflat (Catley 2007a, 2008a). Waterbirds using the northern section of ISI, along the Able UK frontage tend to be concentrated largely within and up to 500 metres south of East Halton Skitter (ibid, pers obs.). Species recorded here include teal, black-tailed godwit (in small numbers), redshank and shelduck- largely between October and February. The harsh weather events recorded in surveys were in the coldest months of December and January. Recorded numbers of birds using intertidal area ISI are given in Taylor (2010b)

9.2.1.2 Those birds that do use the intertidal area next to the application site could be disturbed or displaced by any noisy earth movements and floodbank works that take place in the passage and wintering periods. Monitoring works carried out by the Environment Agency, however, have shown that redshank flocks will feed and roost normally within 100-125 metres of vibration piling works (Cutts, N 2009). Any effects of such displacement will generally be very local (within a few hundred metres) and temporary and would not lead to any effects at the population level. However, there remains a chance that disturbance around the more confined area of East Halton Skitter during periods of hard frost could restrict birds' ability to feed and lead to greater energy loss through flight movements.

### 9.2.2 Construction disturbance of birds using existing farmland and wetlands for feeding, roosting and loafing.

9.2.2.1 Construction works have the potential to disturb and/or displace waterbirds using East Halton Pits and the existing farmland in significant numbers.

### 9.2.3 Construction disturbance of birds using created wetland habitats.

9.2.3.1 Wetlands for SPA birds, to be created in Phase 1 of development could be subjected to construction disturbance during subsequent Phases (Submitted drawings ALP – 08024 & ALP - 08025). The intention is that the wetland areas should provide for waterbirds displaced from other parts of the site. Therefore, if these areas are themselves subject to disturbance, this could be a LSE.

### 9.2.4 Disturbance due to the hydrogen pipeline.

9.2.4.1 The level of disturbance likely to be caused by the construction of the hydrogen pipeline is difficult to predict, as the timing of construction in relation to other phases is not known. In practice, this is only likely to

be a problem if the pipeline is constructed during phases 1 or 2 meaning that construction works could affect much of the site at one time. During later phases, the southern end of the site will already be developed and the northern end will already be subject to construction works.

### 9.3 In-combination effects.

9.3.1 Birds disturbed and displaced from feeding, roosting and loafing areas on or around one part of the application site may normally move to other parts of the application site; other agricultural fields or areas of intertidal habitat; existing wetlands; mitigation wetlands (once created) or other parts of the South Humber Gateway. Other construction projects proposed in the south Humber Gateway at the same time could in theory reduce the area of habitat available that is free of disturbance, thus reducing one of these options. However, movements to the other areas described above will generally remain possible.

9.3.2 Projects likely to take place in the South Humber Bank Area over the next few years are described below:

#### 9.3.3 Environment Agency East Halton Flood Defence Works.

9.3.3.1 The Environment Agency is currently restoring and improving the flood defence stretching from East Halton Pits to Killingholme Haven. Natural England determined that this project would have no likely significant effect on the Humber Estuary SAC, SPA and Ramsar site alone or in combination with other plans or projects. Works have been carefully timed to avoid disturbance to waterbirds using intertidal areas and landward habitat. Vibrating, rather than percussive, piling techniques have been used. Therefore, the Environment Agency East Halton Flood Defence Works will not act in combination with the Able UK application in terms of construction disturbance to waterbirds

#### 9.3.4 Killingholme Marsh Drainage Scheme

9.3.4.1 Works are proposed on Killingholme Marshes, south of North Killingholme Haven Pits and north of Killingholme Lighthouse. The works will entail drainage channel construction, construction of access roads and the construction of a pumping station with an outfall in the intertidal area. The creation of access routes near fields known to be used by feeding and roosting curlew and works to the pumping station outfall are proposed for the summer months, outside the period when passage and wintering waterbirds are present.

9.3.4.2 Given the mitigation and avoidance measures proposed, the residual effect will be of negligible disturbance and displacement of passage and wintering waterbirds. Therefore, the drainage scheme will not act in combination with the Able UK application in terms of construction disturbance to waterbirds.

#### 9.3.5 Heron Biomass Plant

9.3.5.1 This is a Form B application to construct and operate a 290 megawatt (MW) biomass fuelled electricity generating station on land north of Humber Road, South Killingholme, near Rosper Road Pools nature reserve. During construction, there are proposals to use screening fencing to minimise disturbance to waterbirds on neighbouring land

and intertidal habitat. Sensitive works such as erecting the screening and piling in the intertidal area will be carried out between April and June, outside the period when passage and wintering waterbirds are present. Measures will also be put in place to minimise noise near Rosper Road Pools and to reduce disturbance during the operational phase of development.

9.3.5.2 Given the mitigation and avoidance measures proposed, the residual effect will be of negligible disturbance and displacement of passage and wintering waterbirds. Therefore, the Heron Biomass Plant project will not act in combination with the Able UK application in terms of construction disturbance to waterbirds.

#### 9.3.6 URSA Glass Wool Factory PA/2008/0988

9.3.6.1 This is a project to construct a large factory and storage area for glass wool insulating products. The site is immediately to the south of the Able UK application site and east of the spine road. The planning permission contains a detailed condition designed to prevent construction disturbance of waterbirds using identified fields at the times when they have been recorded as present in significant numbers.

9.3.6.2 Given the mitigation and avoidance measures proposed, the residual effect will be of negligible disturbance and displacement of passage and wintering waterbirds. Therefore, the URSA Glass Wool Factory project will not act in combination with the Able UK application in terms of construction disturbance to waterbirds.

#### 9.3.7 Bioethanol Plant PA/2010/0325

9.3.7.1 This is a project to erect a bioethanol plant with an associated combined heat and power plant to include administration buildings, a plant water lagoon and internal process conveyor and vehicular access off Chase Hill Road, just to the south of the Able UK application site. The project was determined to have No LSE on the Humber Estuary SAC, SPA and Ramsar site alone or in combination with other plans and projects. With regard to bird disturbance, the record of this determination states that, "The Bioethanol plant would not create any additional effect over and above the displacement caused by the Able UK application, for which full mitigation is proposed."

9.3.8 The above assessment shows that other projects currently planned for the South Humber Bank area all have full avoidance measures secured or proposed to prevent construction disturbance of wintering and passage waterbirds. The projects around Killingholme Marsh may result in a small loss of habitat currently used by curlew in particular. However, this will not prevent any birds temporarily displaced from construction zones within the application area from being able to find alternative habitat as described in 9.3.1 above.

### 9.4 Measures taken to minimise disturbance.

#### 9.4.1 Construction disturbance of birds using the intertidal area.

9.4.1.1 Works on the seaward side of the floodbank are planned between

April and September to minimise temporary disturbance of wintering and passage birds (Alab 2009a 10.5.52, Doubleday 2010). This timing will avoid the sensitive period between October and February when significant numbers of birds are present on inter-tidal area ISI and when there could also be periods of hard frost. In practice, the restriction is only really necessary between October and February within and up to 500 metres to the south of East Halton Skitter.

- 9.4.1.2 Cut and fill earthworks will be similarly timed (Alab 2009a 10.5.53). Except for works to the flood defence wall, no pile driving works will be undertaken within 400m of the foreshore during the construction of the proposed development, which will reduce the potential for noise impacts. Any noise reaching the adjacent intertidal areas will be below 55dB during Phases 1 and 2, but above this threshold during the other construction periods (ibid.). Monitoring works carried out by the Environment Agency near the application site, however, have shown that a piling run with maximum recorded sound levels of 66.6dB(A) did not affect seven Redshank feeding on the upper mud c. 100-125m from the source. The sound recordings were taken at c. 150m from source (Cutts, N 2009).
  - 9.4.1.3 The residual effect after these measures have been taken is that for the proposed 7-year construction period, construction works could take place on or near the floodbank between April and September in each year, occasionally exceeding 55dB within the SPA in terms of noise. When the pumping station outfall is being constructed, this could include works seaward of the flood wall. Such works could displace the generally small numbers of birds using the inter-tidal area for a distance of a few hundred metres. However, significant numbers of birds are concentrated within and up to 500 metres to the south of East Halton Skitter, between the months of October and February (Catley 2007a, 2008a).
  - 9.4.1.4 It is worth noting that the 55dB noise threshold is used as a precautionary restriction to avoid harm to birds in harsh winter weather. Birds are less likely to respond to such noise than to human presence. Any periods of severe and prolonged frost are only likely to occur between October and February, when works will be restricted.
  - 9.4.1.5 For construction disturbance of birds using the intertidal area to be an AEOI, the disturbance effects in July to September of the floodbank construction period would need to be significant and enduring, leading to sustained reduction in waterbird populations. The residual effect after mitigation is at a much lower magnitude than this. If birds do respond, it is unlikely that the disturbance would lead any effect at the population level as any response would be of relatively low magnitude, limited duration and would be temporary i.e. reversible (see HRGN1 and HRGN3).
  - 9.4.1.6 The conditions proposed to ensure that mitigation and avoidance measures are fully implemented are given in section 15.4.
- 9.4.2 Construction disturbance of birds using existing farmland and wetlands for feeding, roosting and loafing.
- 9.4.2.1 Cut and fill earthworks are planned between April and September to

minimise temporary disturbance of wintering and passage birds (Alab 2009a 10.5.53). This timing will avoid much of the sensitive period, although significant numbers of curlew and wimbrel are present in the fields in July-September and East Halton Pits are used by waterfowl all year round.

- 9.4.2.2 Phasing of works will ensure that different areas of the site are available for feeding, roosting and loafing at different stages of the development. Construction of the proposed wetlands in the early phases of development should help to mitigate for construction disturbance of birds in the later phases.
- 9.4.2.3 Field usage maps produced by Mott MacDonald (2009), suggest that for golden plover, lapwing and ruff, the most heavily used fields on the application site are north of the disused railway line. Curlew use fields north and south of the railway line, but the Catley reports 2007a, 2008a) reveal that, much of the time, fields south of the railway line are subject to disturbance and the northern curlew flocks use the fields north of the railway line roughly twice as much as those south of the railway line (2007/08 figures), or fourteen times as much if 2007 figures are applied.
- 9.4.2.4 Save for works to create new wetlands, Phase 1 of development is proposed to be entirely south of the railway line (Submitted drawing ALP – 02004 Rev B). While these works take place, waterbirds will be able to use the more “important” fields to the north. In Phase 1, the mitigation wetland will be created. If it is not possible to provide any wetland mitigation off-site, there will also be a Phase 2 of wetland mitigation on-site, to be completed prior to the commencement of construction phases 3, 4, 5 and 6.
- 9.4.2.5 However, Table 3 of Section 4 above shows that whilst there is a notional phasing programme for this project, there is considerable overlap in the phases as proposed. Areas covered by proposed phases 3, 4, 5 and 6, north of the railway line, are all used by significant numbers of birds, according to Mott MacDonald (2009). In theory, three out of four of these areas could be affected by construction works at the same time. However, by this stage waterbird mitigation adequate to support birds from the whole application site will be in place, and is confidently expected to be able to support any displaced birds.
- 9.4.2.6 Some temporary disturbance and displacement of waterbirds from the the phase 1 and 2 areas is inevitable with a construction project of the type proposed. Habitat Regulations Guidance Notes 1 and 3 guide competent authorities to consider the magnitude, duration and reversibility of such effects.
- 9.4.2.7 Clearly the construction disturbance is temporary (proposed over 4 years at most for phases 1 and 2) and reversible to the extent that, after the construction period, waterbirds will no longer be subjected to construction activities. In terms of magnitude, displacement of waterbirds is not likely to be absolute until areas become hard-surfaced and affected by built structures. Indeed, at Far Ings and Waters’ Edge, Barton upon Humber, waders including curlew, lapwing and redshank were found to continue using the construction sites

while earth-moving and localised construction works were taking place (Catley 2000-2003). Waterfowl using nearby waterbodies were not significantly affected (ibid).

9.4.2.8 Nevertheless, there is a likelihood that waterbirds currently using farmland and wetland will be disturbed and displaced. In the case of ruff and curlew, analysis of the Humber INCA bird reports suggests that these birds are strongly linked to the application site, whereas golden plover, lapwing and the less numerous species appear to be more wide ranging and less dependent on the application site.

9.4.2.9 Conditions will be required to ensure that habitat continues to be available for ruff and curlew in particular during site works. This requirement will be most acute when works are taking place around East Halton Pits. These conditions need to ensure that land in phases 3, 4, 5 and 6 is available for waterbirds while Phases 1 and 2 are being developed (including creation of the mitigation wetlands). As well as ensuring continued provision for ruff and curlew, this approach is expected to benefit lapwing, golden plover and smaller numbers of other waders and wildfowl.

#### 9.4.3 Construction disturbance of birds using created wetland habitats

9.4.3.1 Cut and fill earthworks are planned between April and September to minimise temporary disturbance of wintering and passage birds (Alab 2009a 10.5.53). This restriction shall be secured by a planning condition. The timing will avoid much of the sensitive period, although if the wetland areas are successful, significant waterbird assemblages could be present in July-September and April-June. If included in the new wetland proposals, the creation of screening embankments would help to reduce visual disturbance and may help to attenuate noise (Alab 2009b)

9.4.3.2 Furthermore, the core mitigation area for wetland birds will be surrounded by a 150 metre wide buffer (also of wetland habitat) on the landward side. This will help to minimise visual disturbance, light overspill and construction noise within the core area during construction. Applying BS5228, sound pressure is attenuated by around 52dB over 150 metres of hard ground. The attenuation over softer wet grassland can be expected to be greater.

9.4.3.3 There is some evidence that noise levels greater than 55dB(A) can lead to disturbance of waterbirds to such an extent in harsh winter conditions that birds fail to feed adequately and lose condition to a point where the population may decline through increased mortality and reduced breeding success (IECS 2004 in Dodd 2006). For this reason, Natural England recommends restriction of noise levels during the months when there may be severe frosts or snow. Submitted drawings ALP-2008A AND ALP-2009A show that noise levels of 85 dB(A) to 95dB(A) within much of the construction area could lead to sound levels exceeding 55dB(A) in the core mitigation area. However, such works will be of limited duration and will not be taking place when there is a risk of severe frost or snow. It should also be noted that the drawings were produced using a method for average sound levels or  $dBL_{Aeq}$ , which does not necessarily reflect the loudest machinery or sudden noises, either at the location of the contours or

at the boundary of the core area.

9.4.3.4 Applying the alternative method described in 9.4.3.2 above, machinery would have to be operating at over 107 dB(A) at the boundary of the wetland mitigation area, to be perceived as loud as 55dB(A) in the core mitigation area. This would be very loud noise-louder than most construction machinery. Therefore, it is unlikely that construction noise outside the mitigation area would result in a breach of Natural England's recommended noise levels within the core area.

9.4.3.5 The residual effect after these measures have been taken is that waterbirds using the new wetland areas could be subjected to very infrequent construction disturbance in July-September and April-June of 6 out of 8 construction years. If large populations have come to rely on these areas, this could result in a low degree displacement. However, this effect will be of low magnitude, will be temporary, and will not take place during harsh winter weather. If enhanced bird assemblages are attracted to the application site in the passage periods, having not used the area previously, then the sites they currently use will still be available to them in event of temporary disturbance of the wetland areas in the absence of any in-combination projects.

9.4.3.6 Given the control measures proposed, construction disturbance of birds using created wetland habitats will not result in a decline or displacement of waterbird populations.

#### 9.4.4 Disturbance due to the hydrogen pipeline.

9.4.4.1 Working methods for the hydrogen pipeline were agreed for PA/2006/1133. So long as the same conditions and restrictions are attached to the current application, there should be no AEOL due to pipeline installation.

#### 9.5 Conditions or restrictions required.

9.5.1 Conditions are required to secure the sensitive construction methods and timings described in section 9.4 above, including the working methods for the hydrogen pipeline.

#### 9.6 Determination of AEOL.

9.6.1 In relation to disturbance and displacement, The Humber Estuary Final Draft Conservation Objectives for the SPA and Ramsar Site require, "No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors... A 'significant' reduction will be determined on a case by case basis, however a decline of 1% or greater should be taken as a guide."

9.6.2 Construction works may lead to noise and visual displacement of birds using existing fields, wetland habitat or intertidal habitat. This was considered to be a likely significant effect for this project.

9.6.3 Various mitigation measures have been proposed to minimise construction disturbance (see Section 9.4). Most potential disturbance will be avoided by timing certain construction works between March and September and by providing buffer zones around wetland habitat areas. There is still a possibility that passage birds could be disturbed by construction works between July and September in each construction year. However, provided

that other sensitive construction methods are followed, this residual disturbance effect will be negligible and will be extremely unlikely to lead to lasting effects on waterbird populations.

- 9.6.4 Provided that the proposed mitigation measures are implemented in full, there will be **no Adverse Effect on the Integrity of the Humber Estuary SPA and Ramsar site due to noise and visual disturbance in the construction phase of development.**

10 Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing.

10.1 Humber Estuary Final Draft Conservation Objectives for the SPA and Ramsar site.

10.1.1 Conservation Objectives relevant to this effect are:

10.1.1.1 Maintain the ability of the estuary to support its bird populations: The ability of the estuary and its hinterland to support the highest mean peak of designated birds present in the 5 year period prior to designation, OR any other 5 year period since designation (whichever is the highest), should be maintained.

10.1.1.2 Maintain the population within acceptable limits:

- Based on the known natural fluctuations of the population, maintain the population at or above the minimum for the site (i.e. maintain the population above either the 5 yr mean peak count used at designation OR any other 5 year period since designation – whichever is the highest)

10.1.1.3 No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors... A 'significant' reduction will be determined on a case by case basis, however a decline of 1% or greater should be taken as a guide."

10.1.1.4 Maintain assemblage diversity as at designation (2004) OR as at any other 5 year period since designation – whichever is the most diverse:

- If the number of wintering species falls by 25% or more then the feature is in unfavourable condition (winter is November to February).
- If the number of passage species falls by 25% or more then the feature is in unfavourable condition (passage periods are Autumn - August to October and Spring – March to April).

10.2 Ruff

10.2.1 Likely Significant Effect

10.2.1.1 Passage ruff are an interest feature of the Humber Estuary SPA, with a population of 128 individuals at the time of citation representing more than 1% of the Great Britain population. Up to 14 ruff have been recorded using the application site and adjacent intertidal area between January and April 2007 and 2008 (Catley 2007a, 2008a). Applying BTO definitions, these data largely lie within the winter period. However, the UK spring passage for ruff is considered to begin

in February, peaking in March and April (Wymenga 1998). The site survey results broadly reflect this. In the peak months of March and April, the site holds >1% of the Humber citation population for this species.

- 10.2.1.2 The main fields used are those nearest the Estuary and East Halton Pits. Development of the site will permanently remove the current feeding, roosting and loafing habitat. It will also have a significant urbanising effect, generating more noise, movements of people and potentially, a sense of enclosure created by tall buildings and woodlands. However, the core wetland mitigation areas provided for waders as part of the proposal will be separated from these urbanising effects by a 150 metre buffer on the landward side.

#### 10.2.2 In-combination effects.

- 10.2.2.1 No other plans or projects have been identified that could result in a loss of habitat used by wintering or passage ruff. Bird surveys of the South Humber Bank development area carried out by Humber INCA recorded ruff only on the Able application site, North Killingholme Haven Pits SSSI, inter-tidal area ISI and inter-tidal area ISJ (the latter on one occasion only) (Catley 2007a, 2008a, Taylor 2010a).

#### 10.2.3 Mitigation for loss of habitat.

- 10.2.3.1 Graham Catley's survey data and reports for both January-March 2007 and 2007/08 describe a generally cohesive flock of 11-12 ruff moving between the intertidal area, Killingholme Haven Pits SSSI and fields adjacent to East Halton Pits. Within the site, these birds were recorded almost exclusively in fields 11, 12,, 17, 25 and 29- a total area of 32 hectares of cereals, stubbles, oilseed rape and permanent pasture, depending upon the year and season.
- 10.2.3.2 Whichever wetland bird mitigation option is implemented, there will be at least 32 hectares of optimally managed wet grassland habitat, surrounded by a larger area of wet grassland buffer habitat that can also be expected to be used by ruff. The currently used field 29 (part of East Halton Pits Local Wildlife Site) will also still be available and will be managed for waterbirds. Given that the area of mitigation will be larger than the area currently used by ruff and will be better quality habitat, managed to benefit waders, this should be adequate to support the numbers of ruff currently observed, and may even support enhanced numbers. The fact that this area is currently used should be an advantage. Birds will continue to be able to move between the intertidal area, Killingholme Haven Pits SSSI and the mitigation area. Any birds temporarily disturbed from one part of the mitigation area (perhaps by raptors), will be able to settle in field 29, Killingholme Haven Pits or the intertidal area.
- 10.2.3.3 Ruff may temporarily be displaced from their traditional haunts whilst the mitigation areas are being constructed. However, the remainder of the site north of the railway will be available for birds, including the currently-used fields 25 and 29. The latter is at least 200 metres from the wetland mitigation creation area.
- 10.2.3.4 The proposed wetland mitigation areas will take time to develop. However, monitoring of the Alkborough Flats managed realignment

site has revealed use by up to 135 ruff just over a year after the new habitat was created (Catley 2008d).

#### 10.2.4 Determination of AEOI.

10.2.4.1 See 10.1 for Conservation Objectives.

10.2.4.2 The proposal affects areas that support up to 14 ruff. If fully implemented, the submitted wetland mitigation proposals will provide habitat for at least this number of birds. **Assuming there is a condition to secure this work and ongoing wet grassland management, the planning application will not adversely affect the integrity of the Humber SPA/Ramsar site with respect to any permanent loss of habitat used by wintering and passage ruff for feeding, roosting and loafing.**

#### 10.3 Curlew

##### 10.3.1 Likely Significant Effect.

10.3.1.1 Curlew used the application site and nearby fields primarily for feeding throughout the passage and winter survey periods in January-March 2007 and 2007/08. Feeding effort appears to be concentrated in pasture fields, flooded pools in arable fields and in the "tram-lines" of arable fields (Alab 2009a, Catley, G. 2007a & 2008a + pers. obs.). In the autumn passage, arable fields are not used by curlew or other waders until crops are harvested- typically around mid-August (Catley 2008a). Even then, oil seed rape stubbles may be as high as 20cm, discouraging feeding until the stubble is ploughed-in (ibid). With autumn-sown cereals, fields tend to be used from the time of ploughing and drilling, through to crops reaching a height of 15cm or more, which may be between January and March, depending on the time of drilling (Catley 2007a, 2008a). With oil seed rape, the crop becomes too tall and dense for waders at about the same time (ibid.).

10.3.1.2 Curlews use a wider spread of fields in the application area than is the case for ruff. The site frequently holds >1% of the Humber Estuary citation population figure (3,253) for this species with numbers regularly around 85-100, peaking at 177 in January 2007. Reports of 445 birds in the Environmental Statement are erroneous, reflecting a high degree of double-counting. The true totals are given in Graham Catley's explanatory reports (Catley 2007a, 2008a).

10.3.1.3 There have also been counts of up to 76 birds at East Halton Pits, a similar number at Killingholme Haven Pits and 2 in the ISI intertidal area with greater numbers being found further south in sector ISJ. Curlew using the application site are not related to the adjacent intertidal area, but fly to the site from roosting areas on the north bank of the Humber (Catley 2007a, 2008a).

10.3.1.4 Catley (2007a) cites various references reporting that curlew flocks and individual colour-ringed birds show strong fidelity to particular intertidal roosting areas and small inland feeding areas. This suggests that development of traditionally-used sites could adversely affect the ability of birds in such flocks to feed.

10.3.1.5 However, studies also show that curlews may regularly fly 15-20 km between feeding and roosting sites. That fact that temporarily flooded

fields were used during the Halton Marsh surveys (Catley 2007a) suggests that curlews are adaptable enough to take advantage of new feeding habitats that appear within their foraging range.

10.3.1.6 Development of the site will permanently remove the current feeding habitat. It will also have a significant urbanising effect, generating more noise, movements of people and potentially, a sense of enclosure created by tall buildings and woodlands. However, the core wetland mitigation areas provided for waders as part of the proposal will be separated from these urbanising effects by a 150 metre buffer on the landward side.

10.3.1.7 Further Assessment

10.3.1.8 Milsom et al. (1998) found that curlew used fields >200 metres wide the most and fields <100 metres wide the least, suggesting that field widths within this range are useable by feeding curlew. This suggests that curlew will not be discouraged by the degree of enclosure envisaged overall on the proposed mitigation wetlands, despite the use of screening bunds. Furthermore, as discussed in section 11, the proposed wetland areas will not be significantly enclosed or subject to noise and visual disturbance, particularly as planning conditions will be used to control such matters.

10.3.2 In-combination effects.

10.3.2.1 Various other plans and projects around the Humber Estuary could lead to an increase or decrease in curlew roosting, feeding and loafing habitat:

10.3.2.2 PA/2001/1556 Land East of Falkland Way Barton upon Humber. Up to 84 curlew have been recorded on land that is proposed for industrial development. However, at present, the land is waist-high in grass and ruderal species and is unsuitable for wintering or passage curlew (pers. obs 2010). The birds that once used this site were likely to have been associated with different estuary roosts from those using the application site. Therefore, there will be no direct interaction between the two projects' effects on curlew, a species which has in any case already been lost from the Barton site due to habitat neglect.

10.3.2.3 PA/2008/0988 URSA glass wool factory. Greater than 1% of the citation population of curlew occasionally use fields near this site. When doing so, they could potentially be affected by construction and ongoing disturbance due to this proposal. However mitigation measures have been agreed to minimise this. The same bird records have been taken into account for the current proposal, so mitigation measures for both schemes will minimise effects on these birds.

10.3.2.4 Heron Renewable Energy Plant. Nearby fields hold up to 90 curlew. Birds could be displaced by construction and ongoing noise and visual disturbance. If this affects overall population levels, this would be a LSE. See also Section 14 on in combination projects here and elsewhere on Killingholme Marshes.

10.3.2.5 The South Humber Bank Draft Masterplan and North Lincolnshire draft Core Strategy both propose industrial development over a large area from East Halton to South Killingholme. This could lead to a loss

of inland feeding, roosting and loafing habitat for curlew. However both documents propose strategic mitigation to help avoid such effects. See also Section 14 on in combination projects.

#### 10.3.3 Mitigation for loss of habitat.

10.3.3.1 The applicant now proposes to create 32 hectares of “core” wet grassland habitat for wading birds, to be surrounded by a further buffer of wet grassland of 50-150 metres in width. This will either be in one block within the application site or one block on-site and one block off-site.

10.3.3.2 In order to assess the ability of the proposed wet grassland to support the requisite numbers of curlew, the proposals were compared with sites in the Lincolnshire Coastal Grazing Marsh (LCGM) (Wardle 2010). Bird data for these sites are analysed in Taylor 2010b. If curlew were able to use all of the 32 hectares of wet grassland proposed in mitigation areas A and B to the same level of intensity as the longest-established site studied in the LCGM, then these areas would be able to support the currently observed numbers of curlew, with a significant safety margin of 50% additional capacity.

#### 10.3.4 Determination of AEOL.

10.3.4.1 See 10.1 for Conservation Objectives.

10.3.4.2 The proposal affects areas that support up to 177 curlew. If fully implemented, the submitted wetland mitigation proposals will provide habitat for at least this number of birds. **Assuming there is a condition to secure this work and ongoing management of the wet grasslands, the planning application will not adversely affect the integrity of the Humber SPA/Ramsar site with respect to any permanent loss of habitat used by wintering and passage curlew for feeding, roosting and loafing. As the Plan would fully mitigate for the effects from this application, there will be no adverse effects that could act in combination with any other plan or project.**

### 10.4 Golden Plover

#### 10.4.1 Likely Significant Effect.

10.4.1.1 Up to 617 Golden Plover have been recorded using the application site in winter, with up to 443 during passage. The main fields used are fields 1 & 4 at the north end of the site. Graham Catley reports larger numbers in the past, prior to a recent re-distribution of birds to Alkborough Flats, Cherry Cobb, Paul and more locally, to land around Thornton Abbey (Catley 2007a). During periods of hard frost, golden plover appear to leave Halton Marshes for other feeding and roosting sites (ibid, pers. obs.). Birds recorded in the hundreds are invariably roosting flocks; much smaller flocks of ten or so are occasionally recorded feeding (Catley 2007a, 2008a). However, there have been no studies of nocturnal behaviour. In all, there were 4 occasions between January 2007 and March 2008 when the site held more than 1% of the Humber Estuary citation population.

10.4.1.2 No golden plover were recorded in the adjacent intertidal area, though they do regularly occur in the WeBS sector to the north (IECS in Mott

Macdonald 2009, pers.obs.). They are not recorded from East Halton or Killingholme Haven Pits in significant numbers. Graham Catley reports large numbers of golden plover completely bypassing the application site, moving in numbers of up to 8,500 birds from the north bank of the Humber, to fields between East Halton Skitter and Goxhill and then inland (Catley 2007a). Around 20,000 birds were observed on the North Bank of the Humber in January 2008, during site surveys (Catley 2008a). Similarly, analysis of low tide data shows that WeBS sectors on the north bank of the Humber are the nearest inter-tidal areas supporting large concentrations of golden plover (IECS in Mott Macdonald 2009). These areas are around 3-5 km from the application site.

10.4.1.3 Peak numbers of Golden Plover on the application site (around 300-600 birds) represent around 2-4% of the birds from these north bank WeBS sectors, which hold around 10,000 to 20,000 golden plover in autumn and winter (Mander and Cutts 2005, Catley 2007a, 2008a). However, numbers of 300-600 birds only occurred on four visits-representing about 8.5% of the autumn and winter counts carried out between January 2007 and March 2008. Taylor (2010b) shows that the cumulative golden plover count on the application site for August-March 2007/08 and January to March 2007 was 3,569 recorded birds. Assuming the total possible number of records was 705,000 (15,000 north bank birds on 47 counts) this roughly equates to 0.5% of the terrestrial feeding and roosting requirement of the birds from the north bank WeBS sectors.

10.4.1.4 Development of the site will permanently remove roosting and loafing habitat that is currently used frequently by small numbers of golden plover and infrequently by significant numbers. It will remove feeding habitat that appears to be used by small numbers of birds (Taylor 2010b). It will also have a significant urbanising effect, generating more noise, movements of people and potentially, a sense of enclosure created by tall buildings and woodlands. However, the core wetland mitigation areas provided for waders as part of the proposal will be separated from these urbanising effects by a 150 metre buffer on the landward side.

#### 10.4.2 In-combination effects.

10.4.2.1 Few other plans or projects have been identified that could result in a loss of habitat used by wintering or passage golden plover. The North East Lincolnshire Local Plan and draft Core Strategy could result in such a loss, however, and are considered in section 14. Given the application of policies intended to implement the protective measures required in the Habitats Regulations, neither of the plans will act in combination with the Able UK proposal in terms of effects on golden plover.

#### 10.4.3 Mitigation for loss of habitat.

10.4.3.1 The applicant now proposes to create 32 hectares of "core" wet grassland habitat for wading birds, to be surrounded by a further buffer of wet grassland of 50-150 metres in width. This will either be in one block within the application site or one block on-site and one block off-site.

- 10.4.3.2 With the previous proposal for wetland mitigation (Alab 2009b), Natural England expressed concerns that, aside from any provision of roosting habitat, the proposed wetland mitigation areas might not be adequate to support feeding waders, as food sources could become depleted through the passage and winter periods (E. Hawthorne Feb 2010). However, further analysis of the bird survey data for the application site reveals that only a small proportion of records for golden plover relates to feeding. Nocturnal feeding has not been assessed, so there is no evidence to suggest that the application site is more or less important than other pasture and arable habitat in this respect. Catley (2007a, 2008a) tentatively suggests that golden plover tend to feed on fields further inland than the application site overnight.
- 10.4.3.3 Assessment of golden plover numbers through the autumn and winter period on two Lincolnshire Coastal Grazing Marsh sites and eight RSPB reserves suggests that 32 hectares of well-managed wet grassland could support more than the currently observed number of “golden plover days” at the application site (Taylor 2010b).
- 10.4.3.4 If lower numbers of golden plover use the mitigation area than expected, the residual effect after mitigation will be that the application site as a whole will not support the peak counts currently recorded. However, it is important to note that peak counts of 300-600 golden plover on the application site only happen infrequently at present. Nearby fields around Goxhill marsh and Thornton Abbey were used around three to four times as heavily as the application site in 2007-2008 (Catley 2007a, 2008a, Taylor 2010b) and will continue to be available to golden plover in the future. These fields are about 5-8 km from the golden plover roosts recorded on the north bank of the Humber. As well as these fields, golden plover roosting on the north bank at low tide will be able to feed and roost in very many arable and pasture fields within 8km of the intertidal areas if development goes ahead. Indeed, this must already be happening, given that the application site delivers such a low proportion of the feeding and roosting requirement for these birds at present.

#### 10.4.4 Determination of AEOI.

- 10.4.4.1 See 10.1 for Conservation Objectives.
- 10.4.4.2 The proposal affects areas that occasionally support significant numbers of golden plover. Survey evidence strongly suggests that the observed birds are related to around five WeBS sectors on the north bank of the Humber where 10,000 to 20,000 golden plover are regularly observed between August and March. Use of the application site currently provides only about 0.5% of the August-March terrestrial feeding and roosting requirement of these birds. **Therefore, the loss of the occasional roost and feeding area will not lead to “a significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors”.** It is therefore possible to ascertain that this will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site.
- 10.4.4.3 The applicant proposes to create 32 hectares of “core” wet grassland habitat for wading birds, to be surrounded by a further buffer of wet

grassland of 50-150 metres in width. These mitigation areas will provide adequate feeding and roosting habitat for golden plover numbers currently observed on the application site. **Once these areas are established, there will be no effect on the Humber Estuary SPA and Ramsar site in relation to feeding and roosting golden plover.**

## 10.5 Lapwing

### 10.5.1 Likely Significant Effect.

10.5.1.1 The Humber Estuary SPA/Ramsar citation population for wintering lapwing was 22,765, representing more than 1% of the Great Britain population. There were lower numbers of autumn and spring passage birds (7,188 and 196 respectively) (Allen et al. 2003). In winter, the application site frequently holds >1% of the Humber Estuary citation population figure for this species with numbers frequently over 400, peaking at 3892 in February 2008, with 266 on the adjacent intertidal at the same time (Catley 2007a, 2008a). The main fields used are those nearest the estuary and around East Halton Pits. At certain times, these birds feed in the fields at night and roost in the fields and intertidal areas during the day (Catley 2007a, 2008a). However, recent surveys show a high proportion of records relate to both feeding and roosting on fields in the day (ibid, Taylor 2010b). There are regularly 1,000-2,500 lapwing in intertidal areas ISI and ISJ (ibid.).

10.5.1.2 As with golden plover, areas off-site also hold a lot of birds, with fields around Thornton Abbey frequently holding 700-1600 lapwing. Up to 14,000 lapwing were recorded around Alkborough Flats at the time of the 2007-08 surveys. Movements away from the application site are often linked to hard frosts or disturbance events such as dog walking or anglers walking along the floodbank (Catley 2007a, 2008a).

10.5.1.3 Catley (2007a) states that, "Fields used for feeding can be considerable distances inland but may also be close to the estuary. Clearly some fields are traditional and seem to hold feeding birds whatever the cropping regime, unless the crop is too tall, but other fields may be exploited when feeding conditions are advantageous, if the field is being worked or there is recent flooding etc." Development of traditionally-used sites could adversely affect the ability of birds in such flocks to feed. However, it appears that lapwings are adaptable enough to use alternative sites over considerable distances.

10.5.1.4 Development of the site will permanently remove roosting, feeding and loafing habitat that is currently used frequently by significant numbers of lapwing. It will also have a significant urbanising effect, generating more noise, movements of people and potentially, a sense of enclosure created by tall buildings and woodlands. However, the core wetland mitigation areas provided for waders as part of the proposal will be separated from these urbanising effects by a 150 metre buffer on the landward side.

### 10.5.2 In-combination effects.

10.5.2.1 PA/2001/1556 Land East of Falkland Way Barton upon Humber. Up to 638 lapwing have been recorded on land that is proposed for industrial development. However, at present, the land is waist-high in

grass and ruderal species and is unsuitable for wintering or passage lapwing (pers. obs 2010).

- 10.5.2.2 Few other plans or projects have been identified that could result in a loss of habitat used by wintering or passage lapwing. The North East Lincolnshire Local Plan and draft Core Strategy could result in such a loss, however, and are considered in section 14. Given the application of policies intended to implement the protective measures required in the Habitats Regulations, neither of the plans will act in combination with the Able UK proposal in terms of effects on lapwing.

### 10.5.3 Mitigation for loss of habitat.

- 10.5.3.1 The applicant now proposes to create 32 hectares of “core” wet grassland habitat for wading birds, to be surrounded by a further buffer of wet grassland of 50-150 metres in width. This will either be in one block within the application site or one block on-site and one block off-site.
- 10.5.3.2 Cramp & Simmonds 1983 states that lapwing “Invariably chooses unenclosed terrain affording unbroken all-round views; avoids fields enclosed by hedgerows or walls smaller than c. 5 ha...” The proposed mitigation areas would have a core area of either 20 or 32 hectares of open wet grassland, surrounded by a further 50-150 metres of open habitat.
- 10.5.3.3 With the previous proposal for wetland mitigation (Alab 2009b), Natural England expressed concerns that, aside from any provision of roosting habitat, the proposed wetland mitigation areas might not be adequate to support feeding waders, as food sources could become depleted through the passage and winter periods (E. Hawthorne Feb 2010). The fields on the application site are frequently used for both feeding and roosting (Taylor 2010b). Nocturnal feeding has not been assessed, so there is no evidence to suggest that the application site is more or less important than other pasture and arable habitat in this respect. Catley (2007a, 2008a) states that, “Feeding occurs on fields inland from the estuary with flocks of birds often departing from the day roosts, on the inter-tidal, after sunset.”
- 10.5.3.4 Cramp & Simmonds 1983 lists a number of references suggesting that wintering lapwing feed at night, particularly around the full moon. They frequently assess alternative foraging grounds, so that rapid switches can be made if needed.
- 10.5.3.5 Assessment of lapwing numbers through the autumn and winter period on two Lincolnshire Coastal Grazing Marsh sites and eight RSPB reserves suggests that 32 hectares of well-managed wet grassland could just support the currently observed number of “lapwing days” at the application site, once the grassland has developed for five years or so (Taylor 2010b). The buffer areas will provide up to 35-42 hectares of additional wet grassland habitat- or slightly less, allowing for the proposed water-balancing lake. These areas can also be expected to be used by lapwing, providing a safety margin of over-provision. This will additionally help to allow for the fact that habitat will take time to develop and would allow the mitigation areas to accommodate rare peak numbers of roosting lapwing as

currently observed on the application site (Taylor 2010b).

#### 10.5.4 Determination of AEOI.

10.5.4.1 See 10.1 for Conservation Objectives.

10.5.4.2 The application site regularly supports >1% of the Humber Estuary SPA citation population of lapwing. There are regularly 1,000-2,500 lapwing in intertidal areas ISI and ISJ. However, such numbers are only rarely reached on the application site, suggesting that population levels in the adjacent SSSI units are not dependent upon the use of the application site for feeding, roosting and loafing.

10.5.4.3 Proposed wetland mitigation areas are likely to support typical roosting lapwing numbers and their size has been designed to support the peak roosting numbers recently observed. Such totals are rarely achieved, suggesting that lapwings from areas ISI and ISJ are also using other inland areas. Nevertheless, by securing such a large area of grazed wet grassland even peak roosting lapwing numbers will be capable of being supported.

10.5.4.4 Given that lapwing using WeBS sector ISI will be able to use the combined mitigation areas for feeding and roosting to the same extent as the application site is used at present, there will not be a "significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors" (Para 10.1.1.3). **It is therefore possible to ascertain that the loss of habitat for feeding and roosting lapwing will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site**

#### 10.6 Black-tailed godwit and other waterbirds

10.6.1 Numbers of Black tailed godwit feeding on the arable land of the application site are trivial compared to the numbers feeding on intertidal mud and roosting at North Killingholme Haven Pits (Taylor 2010b). Catley (2007a) describes the observation of this species feeding within fields as a new and unusual phenomenon, perhaps attributable to young birds being displaced from higher quality feeding habitat by more dominant older birds.

10.6.2 Humber INCA bird survey results suggest that use of the application site for feeding and roosting by other species of waterbird is not significant. For these species, loss of feeding and roosting habitat on the application site would not lead to any impacts at the population level within the designated sites (Catley 2007a, 2008a). However, creation of the proposed wetland mitigation areas can be expected to increase usage of the application site by species such as black-tailed godwit, redshank, dunlin, wigeon, teal, mallard, gadwall, shelduck and shoveler.

10.6.3 **It is therefore possible to ascertain that the loss of habitat for feeding and roosting black-tailed godwit, and other waterbird species not already discussed in detail, will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site.**

#### 10.7 Permanent loss of habitat : Overall conditions or restrictions required.

10.7.1 Detailed conditions will be required to ensure that the proposed wetland mitigation areas are created in advance of the loss of existing habitat. These

areas require ongoing management by cattle grazing to maintain a suitable sward height for wading birds. Water levels in the mitigation areas also need to be strictly regulated. Overall, conditions should require compliance with a Conservation management plan to be submitted to and agreed in writing with the Local Planning Authority, in discussion with statutory consultees.

10.7.2 There needs to be provision for monitoring of bird usage of wetland mitigation habitat as well as habitat quality, along with mechanisms for review of the plan and implementation of remedial measures if required. A further condition is proposed, to secure an agreed programme of bird monitoring on the application site, the created wetlands, the adjacent intertidal and five intertidal areas on the North Bank of the Humber (WeBS sectors NG2-NG6). The Local Planning Authority, Natural England and the applicant shall agree in advance what the measures and thresholds for success will be. A lack of adverse effect would be represented by adequate levels of waterbird usage of the created wetlands or a lack of decline in bird numbers using intertidal habitat.

10.8 Overall Determination of AEOI for loss of bird habitat.

10.8.1 There is no adverse effect on the integrity (AEOI) of the Humber Estuary SPA or Ramsar site due to loss of habitat for ruff, curlew, lapwing or golden plover as individual species populations. Furthermore, these species will continue to co-exist as a mixed-species assemblage, making use of intertidal habitat, the proposed wetland areas and other inland sites that are currently used. Given the implementation of an appropriate Conservation Management Plan (to be agreed) the species richness of the waterbird assemblages on site will be expected to increase when compared with recent surveys (see Conservation Objective at 10.1.1.4).

10.8.2 Provided that the proposed mitigation measures are implemented in full **it is possible to ascertain that the loss of habitat for feeding and roosting lapwing, golden plover, curlew, ruff and black tailed godwit will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site**

11 Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland.

11.2 Likely Significant Effects

11.2.1 Disturbance of birds using the intertidal area.

11.2.1.1 In the operational phase of development, the largest sources of noise are expected to be the rail terminal and traffic on the spine road (Alab 2009a chapter 13). The rail terminal is considered in Section 13 below and section 10.5.136 of the Environmental Statement. This states that calculated noise levels from the rail terminal will be so low as to have no effect on birds when measured in the intertidal area. The spine road is similarly distant from the intertidal area, so traffic noise is not likely to have a significant effect.

11.2.1.2 Those parts of WeBS sectors ISI and ISJ that are near developed areas such as Humber Sea Terminal, Able UK's existing facility and the port of Immingham support larger numbers of waterbirds than the

central section of sector ISI (Catley, G. 2008). Birds using these intertidal areas appear to be unaffected by operational noise, though occasional industrial banging noises can cause large flocks to be temporarily displaced e.g. Catley, G 2007-08, week 6. The same may be expected in sector ISI following the proposed development.

11.2.1.3 Much of the current disturbance of Sector ISI is caused by walkers, dog walkers and sea anglers, particularly in dry weather (Catley, G. 2008). It is not clear whether development of the proposed area will lead to an increase or decrease in use of the floodbank footpath alongside ISI. Industrial development may make the area less attractive to current regular anglers and dogwalkers- though these people could be displaced to other parts of the estuary, such as north of East Halton Skitter, increasing disturbance there. The development will also increase the population of people working in the area- some of whom may choose to walk the floodbank path in their leisure time.

11.2.1.4 Overall there is potential for the development to change the level of use of floodbank paths along ISI and other sectors, causing a change in levels of disturbance. However, these concerns need to be set against a general drive to promote coastal access, following the Marine and Coastal Access Act 2009, which could result in these effects in any case.

#### 11.2.2 Disturbance of birds using created wetland habitats

11.2.2.1 Calculated noise levels from the rail terminal will be so low as to have no effect on birds when measured at the created wetlands (see Section 13 below). Traffic noise from the spine road will be sufficiently distant from the wetland areas to have no disturbance effect (Addendum to the ES 13.9.4).

11.2.2.2 Nearby wetlands at Killingholme Haven Pits SSSI and Rosper Road Pools already receive significant traffic noise from immediately adjacent roads. These wetlands support significant numbers of waterbirds that do not show any behavioural response to the traffic noise (pers. obs.). Therefore, birds using the proposed wetland areas can confidently be expected to show a similar lack of response.

#### 11.2.3 New paths and hides- walkers and dogs.

11.2.3.1 The proposed new wetland areas may have footpaths and/or publicly accessible bird hides near them in places. However, the provision of a 150 metre wide buffer on the landward side of the mitigation "core" area, and a 50 metre buffer on the estuary-bank-side, will minimise disturbance of birds from these sources.

### 11.3 Further assessment

11.3.1 Potential enclosing effect of tall structures, discouraging waterbirds from using created wetlands.

11.3.2 There are proposals for various 20-metre tall buildings near the proposed wetland mitigation areas. Containers could also be stacked to a considerable height within open storage areas. However, the provision of a 150 metre wet grassland buffer around the core of the mitigation area will mean that such buildings and stacks appear less than 8° above the horizon and have little enclosing effect on the birds using the core.

- 11.3.3 With earlier proposals (Alab 2009b), consultees expressed concerns that screening embankments may also discourage birds. At present it is not clear whether screening bunds will be included in the new wetland mitigation proposals as the Conservation Management Plan has not yet been agreed. However, survey data (Catley 2007a, 2008a) show that significant flocks of waterbirds use fields nearest the floodbank- which is essentially a large bund. They also use areas of intertidal habitat alongside the floodbank, though they clearly move further out at low tide. Therefore, waterbirds using the created wetland mitigation areas can confidently be expected to tolerate screening bunds with 100 metres or so of where they feed and roost.
- 11.4 In-combination effects.
- 11.4.1 Disturbance to the on-site wetland mitigation area and the intertidal areas needs to be considered in combination with proposals to promote coastal access, potentially increasing the frequency of walkers and dog walkers using the floodbank paths.
- 11.4.2 On-site disturbance effects will be fully mitigated by sensitive construction measures, phasing proposals and the creation of wetland mitigation areas large enough to support the requisite numbers of waterbirds with a significant safety margin. Therefore it will not be necessary to consider construction disturbance and ongoing disturbance to waterbirds in-combination with other plans and projects in the South Humber Gateway.
- 11.5 Measures taken to minimise disturbance.
- 11.5.1 Disturbance of birds using the intertidal area.
- 11.5.1.1 No mitigation is required for industrial noise. Given that public rights of way can be used at all times, it will not be possible to control or mitigate any change in usage of floodbank paths by walkers, sea anglers and dog walkers. However, the level of disturbance here is already high (Catley 2007a, 2008a) and the numbers of birds using the adjacent intertidal are very low- except around East Halton skitter where numbers of some species are occasionally significant (ibid.)
- 11.5.2 Disturbance of birds using created wetland habitats.
- 11.5.2.1 Various screening bunds could be incorporated in the conservation management plan for waterbird mitigation areas to minimise noise and visual disturbance of the created wetland habitats, subject to agreement with Natural England. The implementation of the conservation management plan shall be secured by a planning condition.
- 11.5.2.2 Public Rights of Way (PROW) staff propose a byelaw requiring dogs to be kept on a lead on PROW.
- 11.5.3 New paths and hides- walkers and dogs.
- 11.5.3.1 The wetland mitigation areas should be able to support the requisite numbers of waterbirds with a significant safety margin of over-provision. However, East Halton Pits Local Wildlife Site (LWS) also supports SPA waterbirds, so it may be desirable to screen this area from a new Public Right of Way to be created alongside the LWS.
- 11.6 Conditions or restrictions required.
- 11.6.1 A condition will be required to secure the submission, written agreement and

implementation of a Conservation Management Plan for the wetland mitigation areas, in part to avoid the effects of ongoing disturbance on SPA waterbirds.

## 11.7 Determination of AEOL.

11.7.1 In relation to disturbance and displacement, The Humber Estuary Final Draft Conservation Objectives for the SPA and Ramsar Site require, "No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors... A 'significant' reduction will be determined on a case by case basis, however a decline of 1% or greater should be taken as a guide."

11.7.2 Ongoing noise and visual disturbance of the intertidal habitat and created wetland areas is not judged to be a significant problem. The wetlands have been designed to ensure that the core wet grasslands and scrapes will be well separated from sources of noise and visual disturbance.

11.7.3 Occasional disturbance events could occur. Any birds displaced from one part of the site will be able to settle elsewhere on-site.

11.7.4 Provided that measures outlined in section 11.5 are put into place, **it is possible to ascertain that ongoing noise and visual disturbance of waterbirds will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site.**

## 12 Increased light levels and the dominant visual appearance of lighting columns.

### 12.1 Likely Significant Effects

#### 12.1.1 Effects of lighting in the construction phase.

12.1.1.1 During construction, artificial lighting could illuminate intertidal habitat, created wetland areas and fields currently used for feeding, roosting and loafing. The higher level of illumination, along with the intrusive appearance of the lights themselves could disrupt the behaviour of waterbirds, enhance their feeding behaviour or cause them to abandon otherwise suitable sites. However, various mitigation measures are proposed for the construction phase- see 12.3.1 below.

#### 12.1.2 Effects of lighting on the intertidal areas.

12.1.2.1 The proposed locations of 30 metre high lighting columns are shown on submitted drawing KI- 02014F, which replaces the withdrawn KI-02014C. Modelled light levels for the withdrawn drawing showed that the maximum illumination around the high tide mark would have been around 3 Lux, decreasing to 1 Lux around the low tide mark (Alab 2009a 13.20.8). Given that 10 Lux is roughly equivalent to a moonlit night, this level of illumination will be barely detectable in most circumstances. Given that the new lighting layout uses the same design principles as the withdrawn layout, it is anticipated that the degree of overspill will be similarly small. Planning conditions can be used to ensure that this is the case.

12.1.2.2 However, even where tall lighting columns are designed to minimise light overspill, there might be a risk that high luminaries themselves could be visually intrusive, deterring waterbirds

### 12.1.3 Effects of lighting on birds using created wetland habitats.

- 12.1.3.1 The previously submitted Conservation Management Plan for the now superseded wetland Areas A, B and C included a recognition that industrial development in general, and floodlighting in particular, could reduce the number of waterbirds able to use the proposed mitigation wetland areas. This effect was thought to apply to lapwing and golden plover in particular (Alab 2009b paras 4.3.19 & 5.2.6)
- 12.1.3.2 The proposed locations of 30 metre high lighting columns are shown on submitted drawing KI- 02014F, which replaces the withdrawn KI-02014C. The light spillage assessment for the withdrawn scheme revealed that the areas retained and created for birds would have received levels of light no greater than 3 lux. (Alab 2009a 10.5.131). This level of illumination would be barely detectable. However, the lighting columns and bright lights themselves could be visually intrusive as described in 12.1.2.2 above. Given that the new lighting layout uses the same design principles as the withdrawn layout, it is anticipated that the degree of overspill will be similarly small. Planning conditions can be used to ensure that this is the case.

### 12.1.4 Further Assessment

- 12.1.4.1 As most bird surveys in the South Humber Gateway are carried out during daylight, there are few records of direct observations of any effects of lighting on waterbird behaviour. However, bird monitoring at Humber Sea Terminal and Immingham Outer Harbour has revealed an increase in use by waterbirds since further port development in the former case and no significant change in the latter case (Centre for Marine and Coastal Studies 2003, 2004, 2006, ABPMER 2005). This is despite both sites being both noisy and well lit. The bird counts at both sites are made during daylight. However, this demonstrates at least that any effects of lighting at night do not influence bird numbers during the day.
- 12.1.4.2 One period of observation at North Killingholme Haven Pits in January 2010 revealed that the waterbirds did not react to lights being switched on as dusk fell. In fact, redshank, curlew and dunlin continued to arrive at the Pits to roost and feed after dark once all the floodlights were on (pers. obs.). Graham Catley has reported this site as being frequently used as a curlew roost throughout the night, with between ten and seventy curlew roosting there (Catley 2007a, 2008a). This suggests that the birds were not deterred either by light overspill or the visual appearance of lighting columns.
- 12.1.4.3 The fact that lapwing and golden plover feed at night, particularly around the new moon (Cramp and Simmonds 1983), suggests that they may even benefit from additional lighting. Such enhanced feeding effects have been reported by Hill (1992 in Markham 1996) and Santos et al. (2010) and apply in particular to waders such as plovers that feed using visual cues. It has been suggested that such night-time feeding under lights may not be an entirely positive effect as it could make birds more vulnerable to predators and could accelerate the depletion of prey items from the habitat. (ibid.).
- 12.1.4.4 However, given the low levels of light overspill produced by the

proposed lighting columns, it is not plausible that enhanced feeding rates could be so significant a phenomenon as to lead to depletion of food sources in a way that would affect the distribution or population levels of the waders concerned. In any case, Cramp & Simmonds (1983) report that lapwings frequently assess alternative foraging grounds, so that rapid switches can be made if needed. It is also worth noting that, whilst there are empirical data demonstrating enhanced feeding by waders around artificial lights, there have been no studies to my knowledge that have provided any evidence that this might be a problem. Finally, the provision of 50-150 metre wide buffers around "core" wetland mitigation habitat will ensure that, whilst there may be a low degree of light overspill into buffer areas, the core areas will remain unaffected by light overspill, to any measurable degree.

## 12.2 In-combination effects.

12.2.1 Lighting and the visual impression of bright lights associated with the proposed development may act in combination with other plans and projects from the following list:

- Humber Sea Terminal new jetties
- Humber Sea Terminal Car Storage
- Existing Able UK Port Facilities
- Glass wool factory
- Oil refineries
- Proposed Biomass Power Station.

12.2.2 Taken together, these proposals could result in much of the South Humber Bank Industrial Area being brightly lit at night. This could have no effect, make the area more attractive for feeding birds or discourage feeding, roosting and loafing birds- little is known about the direction or magnitude of these effects.

## 12.3 Mitigation measures.

### 12.3.1 Construction Phase

- Work onsite will be in accordance with any seasonal construction timings agreed with Natural England, Environment Agency and North Lincolnshire Council;
- The use of artificial lighting on site will be in accordance with the 'Guidelines for the Reduction of Light Pollution' (The Institution of Lighting Engineers 2005);
- All column mounted lighting will be required to have luminaries that provide an asymmetric beam which results in the ability to mount luminaries horizontally, thereby limiting any light spill;
- Only areas that are being worked on or are required for safe access will require the higher level of illumination (25 lux average). Other times illumination will be reduced to 5 lux;
- All column mounted lighting will be shielded with hooding to prevent direct glare from the light source and to provide light in a downward direction that only illuminates the area of interest;
- It is accepted that internal reflections could cause a small amount of light spill,

therefore it will be a requirement for the contractor to ensure that at the boundary with any area with a wildlife protection designation, the light level from the development site will be no more than a maximum of 3 lux

- Any work carried out on the maintenance of the flood defence wall will only be undertaken during daylight hours; and
- Construction work on site is expected to operate restricted hours as shown in ES table 13.2

- Source ES 10.5.127

#### 12.3.2 Operational Phase

12.3.2.1 The lighting scheme has been designed to minimise light overspill into intertidal habitat or created wetland areas. The maximum predicted overspill for these areas is expected to be around 3 Lux, as was the case for the previous scheme, which was designed according to the same principles as the new scheme. Furthermore, lighting levels will be reduced to 5 Lux in developed areas when no work activities are taking place.

12.3.2.2 No specific mitigation is proposed to soften the visual appearance of the high lighting columns, though screening bunds may block some views.

12.3.2.3 The provision of 50-150 metre wide buffers around "core" wetland mitigation habitat will ensure that, whilst there may be a low degree of light overspill into buffer areas, the core areas will remain unaffected by light overspill, to any measurable degree.

#### 12.4 Conditions or restrictions required.

12.4.1 Conditions will be required to ensure the following:

- That the construction lighting mitigation measures are fully implemented.
- That the ongoing lighting is installed and operated strictly in accordance with the submitted documents and drawings.
- That lighting systems can be amended if monitoring of bird behaviour in wetland mitigation areas or intertidal habitat reveals lower than expected bird usage attributable to lighting disturbance.
- A condition will be required to secure the submission, written agreement and implementation of a Conservation Management Plan for the wetland mitigation areas, in part to avoid the effects of ongoing disturbance on SPA waterbirds.

#### 12.5 Determination of AEOI.

12.5.1 In relation to disturbance and displacement, The Humber Estuary Final Draft Conservation Objectives for the SPA and Ramsar Site require, "No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors... A 'significant' reduction will be determined on a case by case basis, however a decline of 1% or greater should be taken as a guide."

12.5.2 Whilst the effects of light overspill and obtrusive lighting columns have not

been studied in detail, there does not appear to be an effect on waterbirds using Killingholme Haven Pits SSSI or the intertidal areas near Humber Sea Terminal and Immingham Outer Harbour. Peak numbers of birds such as black-tailed godwits have been recorded since the installation of 30 metre lighting columns nearby. Birds there do not react to the lights coming on at dusk.

12.5.3 The provision of large buffer areas around waterbird mitigation habitat will ensure that the core waterbird areas are unaffected by light overspill in any positive or negative way.

12.5.4 Given that the lighting design for the current application is similar to that for existing areas of car storage near Killingholme Haven Pits, **it is possible to ascertain that increased light levels and the dominant visual appearance of lighting columns will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site, provided that the conditions described in section 12.4 are attached.**

13 Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI (NKHP) and proposed wetland areas.

#### 13.1 Likely Significant Effects

13.1.1 Killingholme Haven Pits SSSI supports significant numbers of avocet, black-tailed godwit, redshank, dunlin, curlew, lapwing and waterbirds generally. Numbers are given in the determination of LSE. The birds could be disturbed by trains passing through the site at irregular intervals. Similar disturbance could be caused around the proposed wetland areas. If such disturbance restricts the birds' ability to use these sites and ultimately reduces population levels, this will be a LSE.

#### 13.2 Further Assessment

13.2.1 Analysis of railway routes and WeBS data for six estuaries in southern England suggested that numbers of waders such as dunlin and black-tailed godwit are reduced within 200 metres of railways (Burton et al. 2002). However, the authors of this paper recognise that consideration of the potential effects of railways on waterbirds should take into account the expected level of use. In this case, it is anticipated that two trains per day will use the rail sidings (R.Cram pers. comm.). For clarity, that means four movements through North Killingholme Haven Pits SSSI - "there and back" twice.

13.2.2 At Killingholme Haven Pits, dunlin, black-tailed godwit and other species appear to have habituated to noises such as heavy goods vehicles, ship unloading, and vehicle movements in storage areas (Andrew Ward Associates 2005, Pers. Obs.). Graham Catley (2007a, 2008a) notes occasional disturbance of birds at NKHP due to industrial noises such as crashes, bangs, shouting and car horns, as well as more frequent disturbance due to sparrowhawks and peregrines. However, such disturbance has not led to any significant displacement of birds from NKHP, as this site continues to be used by large numbers of several species of waterbird (Catley 2007a, 2008a).

13.2.3 Freight trains used the track through Killingholme Haven Pits until 2003 and for six months in 2005. Large numbers of birds used the Pits at that time (R. Cram, pers. comm.). With the current project, trains would only be expected

twice a day, resulting in a negligible impact.

13.2.4 Section 10.5.136 of the Environmental Statement states that, "The noisiest operation associated with rail freight in a terminal is shunting, measured as sound power level 107.3 dB(A) at source. Shunting will take place within the loading area, which is, at its closest, approximately 1,200m from the SSSI. Container handling will also take place in this area, which is expected to use three reach stackers and two straddle carriers, operating simultaneously, with a combined sound power level of 90.0 dB(A). These operations are both above the threshold noise level 55dB(A), at which negligible disturbance effects are observed (Hirvonen 2001; English Nature 1996 [Markham 1996]), however, noise modelling has revealed that these operations are too far from the SSSI to cause any adverse impacts."

13.2.5 Whilst the proposed rail terminal would be distant from the SSSI, it would lie within 200 metres of the proposed on-site wetland mitigation areas. Noise attenuation over 200-300 metres of hard ground is 53-58 dB (BS5228), so operation of the rail terminus is predicted to result in noise of 32-54 dB(A) in these areas. This is below the level generally accepted by Natural England and within the normal range for Killingholme Haven Pits SSSI, which supports large populations of waterbirds (pers. obs).

### 13.3 In-combination effects.

13.3.1 As a source of disturbance, trains may act cumulatively with various other sources of disturbance. For the created wetland areas, many of these will be as described under section 11 above. For Killingholme Haven Pits SSSI, other sources of disturbance include sparrowhawks, peregrines, road traffic, the operation of Humber Sea Terminal, walkers (including dog walkers), and the operation of Able UK's existing facilities.

13.3.2 The train tracks through Killingholme Haven Pits already exist. However, there do not appear to be any existing loading facilities north of the Pits. Therefore, new train movements will not act in combination with any existing train movements. If the applicant is not permitted to operate a rail siding for any reason, it seems logical that other landowners north of the Pits would be similarly constrained.

13.3.3 Circular 06/2005 states that, "In considering the combined effects with other proposals it will normally be appropriate to take account of outstanding consents that are not fully implemented, ongoing activities or operations that are subject to continuing regulation (such as discharge consents or abstraction licences) and other proposals that are subject to a current application for any kind of authorisation, permission, licence or other consent. Thus, the assessment is not confined to proposals that require planning permission, but includes all relevant plans and projects."

13.3.4 The additional sources of disturbance at Killingholme Haven Pits are all either completed developments or activities that are not subject to regulation. Therefore, it is not appropriate to consider these in combination with train movements. For Killingholme Haven Pits, the train movements shall be considered alone. However, background conditions do need to be taken into account when considering any additional effects caused by train movements.

### 13.4 Mitigation measures.

13.4.1 No mitigation measures are proposed for effects on Killingholme Haven Pits.

In any case, once a railway is in place, a Local Planning Authority cannot restrict its use .

- 13.4.2 Consultees have requested screening measures along the rail corridor in NKHP. However, mitigation measures such as screening and noise attenuation do not appear to be feasible in the space available within the Pits. In any case, construction of such mitigation could have a greater disturbance effect than the trains themselves. Screening, whether hard landscaping or screening vegetation could harbour sparrowhawks which are currently thought to be a greater source of disturbance than industrial noise (Catley 2007a, 2008a, Burton et al. 2002)
- 13.4.3 The proposed wetland mitigation areas will have screening bunds between them and the rail sidings. This should reduce the visual impact of trains and the equipment around the rail terminus. The noise attenuation effect is harder to quantify.
- 13.5 Conditions or restrictions required.
  - 13.5.1 As part of other planning conditions, it will be necessary to secure the screening around the proposed wetland mitigation areas, in the event of permission being granted.
- 13.6 Determination of AEOI.
  - 13.6.1 In relation to disturbance and displacement, The Humber Estuary Final Draft Conservation Objectives for the SPA and Ramsar Site require, "No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors... A 'significant' reduction will be determined on a case by case basis, however a decline of 1% or greater should be taken as a guide."
  - 13.6.2 Train operations are not expected to affect birds using the proposed wetland areas. Proposed screening bunds will minimise visual disturbance and there will be noise attenuation due to distance and screening.
  - 13.6.3 Birds currently using Killingholme Haven Pits may be expected to become habituated to infrequent, but regular train movements. Experience has shown that birds that take flight from the Pits due to disturbance settle again quickly. Examination of survey data from before and after major developments in the area, such as Able UK development and Humber Sea Terminal expansion, reveals that birds are subject to disturbance at NKHP, but suggests that they are habituated (Darren Clarke, pers. comm.).
  - 13.6.4 Therefore, such a low level of disturbance will not lead to a "significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors".
  - 13.6.5 **Therefore, it is possible to ascertain that disturbance due to increased train traffic through North Killingholme Haven Pits SSSI will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site.**

## 14. In-combination assessment of plans and projects not already considered

### 14.1. Background

14.1.1. Throughout this appropriate assessment, most potential in-combination plans and projects have been considered under the headings of the most relevant likely significant effects on the Humber Estuary. However, some plans and projects with unknown, uncertain, multiple or complex likely significant effects do not readily fit in with such a treatment and are thus treated separately below. Some of the plans and projects have been identified by North Lincolnshire Council, as competent authority; others have been highlighted by consultees.

14.1.2. The Humber Estuary is a large and complex site with many plans and projects going on or being proposed around it all the time. Some of these plans and projects do not require any form of formal consent. Those that do require consent may be dealt with by a wide range of relevant and competent authorities, both in terms of geographical spread and field of responsibility. Thus it is always difficult to compile a thorough and comprehensive body of information on in-combination plans and projects for appropriate assessments relating to the Humber Estuary.

14.1.3. With the draft appropriate assessment for this application, consultees were asked, "Are there any other plans, projects or effects that should be considered in combination with the current proposal when carrying out the appropriate assessment?". The quality of responses was somewhat limited, with some consultees merely suggesting that there were likely to be plans and projects that had not been considered, and others giving names or locations of projects, but no detail in terms of description, likely significant effects, interest features affected, proposed mitigation etc. The Council, as competent authority has made every reasonable effort to make use of the information presented, and to find out further details of named projects where possible. In the Council's opinion, the most important plans and projects have now been addressed in this appropriate assessment. However, the possibility remains that some of the smaller and/or less significant projects have not been addressed. This should have little bearing on the overall conclusions of the appropriate assessment.

### 14.2. List of in-combination plans and projects considered here

14.2.1. North Lincolnshire Local Plan

14.2.2. North East Lincolnshire Local Plan

14.2.3. North Lincolnshire Council Local Development Framework (LDF) in draft

14.2.4. North East Lincolnshire Council Local Development Framework (LDF) in draft

14.2.5. Humber Flood Risk Management Scheme and associated projects

14.2.6. Planning Application PA/2009/1269 Form B application to construct and operate a 290 megawatt (MW) biomass fuelled electricity generating station on land north of Humber Road, South Killingholme. Drax Biomass Immingham Ltd. Section 36 Electricity Act 1989. Section 90(2) Town and Country Planning Act

14.2.7. Killingholme Marshes Drainage Scheme

14.2.8. Humber Sea Terminal PA/2004/1162

14.2.9. PA/2008/0988 URSA glass wool factory.

14.3. Each plan or project is considered in detail below:

14.4. North Lincolnshire Local Plan

14.4.1. The Local Plan contains policies promoting development in the South Humber Bank area on and around East Halton Marshes, with certain caveats. It also contains policy provisions designed to ensure the conservation of the Humber Estuary SAC, SPA and Ramsar site. The most relevant policies to the in-combination assessment are policies IN4 and LC1 given in Boxes 1 and 2 below:

**Box 1 North Lincolnshire Local Plan Policy IN4**

IN4 - Estuary Related Development - South Humber Bank, Land Between South Killingholme Haven and East Halton Skitter

The South Humber Bank Industrial area between South Killingholme Haven and East Halton Skitter is proposed for estuary related B1, B2 and B8 industrial development and ancillary activities with close operational links. Proposals for estuary related development will be permitted provided that:

- i) land immediately fronting the deep water channel will be reserved for the development of jetties and the means of access to them; and
- ii) a regular or essential requirement to import or export large amounts of material either by means of a private jetty or pipeline, or via the port of Immingham is demonstrated; and/or
- iii) a requirement to take large amounts of water from the estuary is demonstrated; and/or
- iv) a requirement for close operational links with firms which comply with the above and need direct pipeline or conveyor belt connection is demonstrated; and
- v) proposals will have to achieve a high standard of landscaping, particularly providing for belts of appropriate planting within large sites incorporating and enhancing existing landscape features;
- vi) the proposal does not compromise the integrity of the existing South Humber Bank tidal defence system;
- vii) the development proposed does not adversely affect high tide roosts and feeding areas either separately or in combination with other plans or projects.

## **Box 2 North Lincolnshire Local Plan Policy LC1**

### **LC1 - Special Protection Areas, Special Areas of Conservation and Ramsar Sites**

Proposals for development which may affect an SPA, a proposed SPA, a SAC or candidate SAC will be assessed according to their implications for the site's conservation objectives. Proposals not directly connected with, or necessary for, the site, and which are likely to have an significant effect on the site (either individually or in combination with other proposals), will not be permitted unless it can be conclusively demonstrated that:

1. there is no alternative solution; and
2. there are imperative reasons of overriding public interest for the development.

Where the site hosts a priority natural habitat type or a priority species, proposals will not be permitted unless it can be conclusively demonstrated that it is necessary for reasons of human health or public safety, or for consequences of primary importance for nature conservation.

Where such a development does proceed, the use of conditions or planning obligations to secure all compensatory measures necessary to comply with Article 3 of the EEC Habitats and Species Directive will be considered.

14.4.2. Policy IN4 does permit development in the South Humber Bank Industrial area, so it may seem that development in accordance with IN4 could have a likely significant effect on the Humber Estuary SAC, SPA and Ramsar site alone and/or in combination with other plans or projects, including the current proposal. However, section 7 of IN4 makes it clear that such development must not affect high tide roosts and feeding areas.

14.4.3. Clearly, developments may have significant effects other than effects on high tide roosts and feeding areas. However, Policy LC1 also applies to such developments. This policy is clearly intended to implement the provisions of the Habitats Regulations and provides protection to ensure that development does not adversely affect the Humber Estuary SAC, SPA and Ramsar site. Interpreted strictly, the policy would ensure that proposals having a likely significant effect were not permitted. However, it is clear that the intention behind the policy is for Habitats Regulations Assessments to be carried out so that development only proceeds where it can be ascertained that there would be no adverse effect on the integrity of an International Nature Conservation Site.

14.4.4. Therefore development in accordance with the North Lincolnshire Local Plan will not have a likely significant effect on the International Nature Conservation Sites alone or in combination with the Able UK application.

### **14.5. North East Lincolnshire Local Plan**

14.5.1. This Local Plan contains policies promoting development in the South Humber Bank area from Immingham southwards, with certain caveats. It also contains policy provisions designed to ensure the conservation of the Humber Estuary SAC, SPA and Ramsar site. The most relevant policies to the in-combination assessment are policies E2, E3 and NH1 given in Box 3 below:

### **Box 3 North East Lincolnshire Local Plan Policies**

#### **Policy E2: Estuary Related Land.**

Within the area of Estuary Related Land as defined in the Proposals Maps, development will be restricted to those uses which take advantage of the site's special estuarial potential or to ancillary activities with close operational links to existing estuarial related uses, (estuary related B1, B2, B8).

Proposals should ensure that there are no adverse effects on the Humber Flats and Marshes; Pyewipe and Cleethorpes Coast SSSI, SPA and Ramsar site.

#### **Policy E3: Operational Port Area.**

Within the Operational Port Areas, as defined on the Proposals Maps, development proposals for port related uses will be permitted, (port related B1, B2, B8). Subject to:-

- (i) no adverse effect on the Humber Flats and Marshes: Pyewipe and Cleethorpes Coast SSSI/SPA/Ramsar Site;
- (ii) no unacceptable transport problems.

#### **Policy NH1: Sites of International and National Nature Conservation Importance.**

Development Proposals likely to adversely affect, either directly or indirectly, the conservation value of a designated or potential Site of Special Scientific Interest, a Ramsar site, a Special Protection Area or a Special Area of Conservation will only be permitted in exceptional circumstances and where the need for development outweighs the special interest of the site. In particular:

Development will only be permitted within the intertidal area of the Humber Estuary if it is required for reasons of human health and public safety.

Development will only be permitted within the Old Sand Dunes if it is required for reasons of human health and public safety or is of an over-riding national interest.

If the Council is minded to permit development it will consider the use of Planning Conditions or obligations to ensure the protection of the site's Nature Conservation interests.

14.5.2. Policies E2 and E3 do permit development in the South Humber Bank Industrial area but have very clear provisions to ensure that there is no adverse effect on the Humber Flats and Marshes: Pyewipe and Cleethorpes Coast SSSI/SPA/Ramsar Site. The fact that the names of the designated sites have changed since the Local Plan was adopted does not limit the protective measures, given any reasonable interpretation of the policies.

14.5.3. Policies E2 and E3 neglect to mention the SAC. However, the SAC features are also features of the SSSI. Furthermore, Policy NH1 which also applies to such developments corrects this omission. This policy is clearly intended to implement the provisions of the Habitats Regulations and provides protection to ensure that development does not adversely affect the Humber Estuary SAC, SPA and Ramsar site.

14.5.4. Therefore development in accordance with the North East Lincolnshire Local Plan will not have a likely significant effect on the International Nature Conservation Sites alone or in combination with the Able UK application.

14.6. North Lincolnshire Council Local Development Framework (LDF) in draft

14.6.1. Assessment of Local Development Frameworks is more complicated than assessment of Local Plans, largely because the LDFs themselves are more complex, encompassing a wide range of Local Development Documents. In North Lincolnshire the Core Strategy is at publication draft stage at the time of writing and the Housing and Employment Allocations (including industrial allocation for the South Humber Bank) are at an early stage of development.

14.6.2. The draft Core Strategy contains spatial objectives and policies promoting development in the South Humber Bank area on and around East Halton Marshes, with certain caveats. It also contains spatial objectives and policy provisions designed to ensure the conservation of the Humber Estuary SAC, SPA and Ramsar site. It has been subject to appropriate assessment and draft records of the assessment to date have been produced. Whilst some elements of the detailed wording of the Core Strategy and appropriate assessment documents are still to be ironed out, both draft documents signal a clear intent to protect and enhance the Humber Estuary. The most relevant objectives and policies to the in-combination assessment are Spatial Objectives 2, 4 and 6 and Policies CS12 and CS17 reproduced in abbreviated form in Boxes 4 and 5 below:

#### **Box 4 North Lincolnshire Publication Draft Core Strategy- Spatial Objectives**

Para 3.2.1..."Any development that cannot demonstrate that it would not have a significant adverse effect upon the integrity of a site of European or international importance to nature conservation will be refused."

#### **Spatial Objective 2: Delivering the Global Gateway**

To secure North Lincolnshire's major growth potential in the Yorkshire and Humber region based on the benefits of the unique opportunities provided by the South Humber Bank ports.. and the area's transport network. The South Humber Bank ports ...are recognised in the Northern Way Growth Strategy and the Regional Spatial Strategy as key economic drivers... Their growth and development will be supported to provide an ideal location for industrial growth...

#### **Spatial Objective 4: Creating Greater Economic Success**

**..This will be delivered through the identification of key strategic locations for economic development and a robust framework that supports growth. Among the key locations that will be identified are the South Humber Bank, Humberside Airport, the Scunthorpe Urban Area (including the town centre) and Sandtoft Industrial Estate. These locations will be developed in partnership with the private sector and developers, port and airport operators, Yorkshire Forward, the Highways Agency and others to ensure that these locations can be accessed and the development potential achieved.**

### **Box 5 North Lincolnshire Publication Draft Core Strategy- Spatial Objectives and Policies**

#### **Spatial Objective 6: Protecting and Enhancing The World Class Environment**

To conserve and enhance our world class environments of the Humber Estuary and Crowle Moors and improve our other natural, historic and built landscapes as well as guiding changes in a way which reduces and takes proper account of environmental impact, climate change and sea level rise.

... The Local Development Framework will create a policy framework that safeguards, enhances, and promotes North Lincolnshire's internationally and nationally recognised areas for nature conservation importance and biodiversity, including the Humber Estuary and Crowle Moors....

#### **CS12: SOUTH HUMBER BANK STRATEGIC EMPLOYMENT SITE**

Around 900 hectares of land at the South Humber Bank Strategic Employment Site (SHBSES) will be reserved for B1, B2 and B8 port related activities to take special advantage of its location, flat topography and adjacent a deep water channel of the River Humber as an extension to Immingham Port and the Humber Sea Terminal...

..The Plans, Strategies and Investment Decisions and Programmes for the SHBSES should:

#### **.. D. Environment**

Protect and enhance the biodiversity and landscape character of the Humber Estuary by harmonising the ecology, nature conservation and landscape with port related development activities. This can be largely achieved by the Delivery Plan for Ecology and Industrial Development with its aim of unlocking the economic development opportunity of the South Humber Bank Employment Site whilst ensuring the protection of the Humber Estuary Special Protection Area, SAC and Ramsar site and developing new green infrastructure.

#### **CS17: BIODIVERSITY**

The council will promote effective stewardship of North Lincolnshire's wildlife through:

- 1.Safeguarding national and international protected sites for nature conservation from inappropriate development.
2. Appropriate consideration being given to European and nationally important habitats and species.
3. Maintaining and promoting a North Lincolnshire network of local wildlife sites and corridors, links and stepping stones between areas of natural green space.
4. Ensuring development retains, protects and enhances features of biological and geological interest and provides for the appropriate management of these features.
5. Ensuring development seeks to produce a net gain in biodiversity by designing in wildlife, and ensuring any unavoidable impacts are appropriately mitigated for.
6. Supporting wildlife enhancements that contribute to the habitat restoration targets set out in the North Lincolnshire's Nature Map and in national, regional and local biodiversity action plans...

14.6.3. Policy CS12 does permit development in the South Humber Bank Strategic Employment Site, but also includes strong protection for the Humber

Estuary SAC, SPA and Ramsar site. Policy CS17 reiterates this protection.

14.6.4. Therefore development in accordance with the North Lincolnshire draft Core Strategy will not have a likely significant effect on the International Nature Conservation Sites alone or in combination with the Able UK application.

14.7. North East Lincolnshire Council Local Development Framework (LDF) in draft

14.7.1. In North East Lincolnshire the Core Strategy is at preferred options stage at the time of writing and the Housing and Employment Allocations (including industrial allocation for the South Humber Bank) are at an early stage of development.

14.7.2. The draft Core Strategy contains an Area Vision, spatial strategy and policies promoting development in the South Humber Bank provided that the Humber Estuary designated sites are also protected and enhanced. It also contains spatial objectives and policy provisions designed to ensure the conservation of designated sites. It has been subject to appropriate assessment and draft records of the assessment to date have been produced. Whilst some elements of the detailed wording of the Core Strategy and appropriate assessment documents are still to be ironed out, both draft documents signal a clear intent to protect and enhance the Humber Estuary. The most relevant extracts to the in-combination assessment are reproduced in abbreviated form in Boxes 6 and 7 below:

**Box 6 North East Lincolnshire Draft Core Strategy**

**Area Visions: Estuary Zone (Land adjacent to the Estuary including the port town of Immingham)**

The land adjacent to the estuary around the ports and adjacent to the deep water channel has been recognised as a valuable economic resource. By 2026 opportunities will have been taken to strengthen the local economy, capturing local economic benefits and realising the potential of the Humber Ports as a global gateway. Development will have been secured recognising the environmental and biodiversity qualities of the Humber Estuary, maintaining the integrity of designated sites, addressing aspects of flood risk, and providing access improvements to the ports and adjacent land in line with regional priorities.

**SP1b: Spatial Strategy for the Estuary Zone**

**3.25** Maximising opportunities around the ports and close to the estuary's deep water channel including land south east of Immingham for estuary related uses is an identified target of the RSS....

**3.26** The estuary zone is also internationally recognised for its environmental and biodiversity qualities and is also recognised as being at risk from flooding. Steps are being taken to develop an integrated approach to habitat management, creation and enhancement across the Humber Estuary. Such an approach seeks to secure positive economic benefits, allow for effective flood management and secure sound environmental practices that will safeguard the integrity of the Humber estuary biodiversity sites.

**Box 7 North East Lincolnshire Draft Core Strategy (continued)**

**Policy DM1: Supporting the Growth of the Local Economy**

Up to 580ha of employment land will be identified for economic development in the period to 2026 including in the following strategic locations:

The Humber Employment Zone, 552 ha stretching between and inclusive of the commercial port areas of Grimsby and Immingham Ports, including nationally significant estuary land. Land closest to the estuary (explicitly land east of the rail freight line ) will be safeguarded for uses that genuinely need to be located close to the estuary. (\*Future allocations will need to preserve the integrity of the Humber Estuary Natura 2000 sites. This will necessitate the establishment and management of appropriate habitat areas within this zone).

**Policy DM9: Safeguarding and Enhancing the Natural and Built Environment**

Development proposals will be expected to safeguard and enhance the natural and built environment, adopting approaches that;

...Protect and enhance the Borough's biodiversity and geological assets in line with PPS9. Priority will be given to protecting the integrity of designated sites... Action will be taken to identify an appropriate mechanism for the establishment of safeguarded bird roosting areas within the estuary employment zone;

Seek opportunities for creating biodiversity and provide mitigation where necessary or compensatory measures if appropriate, to address any potential harmful impacts..

14.7.3. The Area Vision, Spatial Strategy and Policy DM1 do permit development in the South Humber Bank area, but also include strong protection for the Humber Estuary SAC, SPA and Ramsar site. Policy DM17 reiterates and reinforces this protection.

14.7.4. Therefore development in accordance with the North East Lincolnshire draft Core Strategy will not have a likely significant effect on the International Nature Conservation Sites alone or in combination with the Able UK application.

**14.8. Humber Flood Risk Management Scheme (FRMS) and associated projects**

14.8.1. The draft appropriate assessment for the FRMS states that, "...the impact of permanently losing approximately 44.8 ha by encroachment of defences (and 27 ha temporarily) and approximately 787 ha by coastal squeeze and cross-estuary impacts through the Strategy over the 50 years is likely to have an adverse effect on the integrity of the European sites... However, the Strategy puts in place a series of habitat replacement schemes with suitable programme and replacement ratios designed to compensate for impacts before adverse effects on integrity are experienced."

14.8.2. Compensatory measures for the FRMS are described in Stage 4 of the draft appropriate assessment. The main commitments are as follows:

- to replace any direct loss of intertidal habitat from the works, based on a 3:1 ratio;
- to replace any intertidal habitat temporarily disturbed from the works, based on a 1:1 ratio;
- to replace any intertidal habitat lost to coastal squeeze, based on a 1:1 ratio;
- the compensatory habitat will be created in the same part of the

Estuary (inner, middle or outer) in which it had been lost;

14.8.3. The compensatory measures can be expected to address any adverse effects on the Humber Estuary SAC, SPA and Ramsar site due to habitat loss. In addition, further appropriate assessments will be carried out for individual flood defence schemes and working methods will be agreed with Natural England in order to minimise the potential for construction disturbance of birds and habitats. The Environment Agency has already completed much of the flood defence works at East Halton Marsh, so any construction disturbance due to their works cannot act in combination with the Able UK proposal to any significant degree.

14.8.4. Therefore flood defence works in accordance with the Humber Flood Risk Management Scheme will not have a likely significant effect on the International Nature Conservation Sites alone or in combination with the Able UK application.

14.9. Planning Application PA/2009/1269 Form B application to construct and operate a 290 megawatt (MW) biomass fuelled electricity generating station on land north of Humber Road, South Killingholme. Drax Biomass Immingham Ltd. Section 36 Electricity Act 1989. Section 90(2) Town and Country Planning Act

14.9.1. For this project, potential hazards to the features of the International Nature Conservation Site that have been considered are as follows (Taylor 2009):-

- Construction and decommissioning noise and visual disturbance of SPA/Ramsar assemblage species.
- Ongoing visual disturbance/displacement of wintering and passage waterbirds.
- Deposition of airborne pollutants
- Impingement of Sea and River Lampreys
- Thermal and chemical pollution of estuarine waters.
- De minimis direct loss of mudflat.

14.9.2. Ultimately this project, in-combination with other projects proposed for Killingholme Marshes could lead to the complete and permanent displacement of the "southern" curlew flock described in Humber INCA bird survey reports (Catley 2007 & 2008). There is little evidence of a connection between this flock and the Able UK application site. Therefore the Killingholme Marsh projects will not act directly in combination with the Able UK proposal. However, both sets of development do have likely significant effects on the estuary curlew population in terms of loss of feeding and roosting habitat, construction disturbance and on-going disturbance. **To avoid in-combination effects on curlew, the Able UK proposal therefore needs to avoid or mitigate for its own effects as fully as possible, leaving little or no residual effect.**

14.10. Killingholme Marshes Drainage Scheme

14.10.1. This project is expected to lead to a de minimis loss of mudflat and could have likely significant effects on the estuary curlew population in terms of loss of feeding and roosting habitat, construction disturbance and on-going disturbance alone and in combination with other Killingholme Marsh projects

(see 14.9.2 above). There could also be construction disturbance of birds such as curlew and black-tailed godwit using intertidal area ISJ. However, construction works on the Able UK application site are only likely to cause displacement of birds for a few hundred metres along the intertidal area, judging from observations of the Environment Agency flood defence works. Therefore, this project will not act in combination with the Able UK project in terms of disturbance of birds from intertidal habitat.

#### 14.11. Humber Sea Terminal PA/2004/1162

14.11.1. According to Appendix 15 of Able UK's Environmental Statement for PA/2009/0600, this project is still under construction. The project involves the construction and operation of a large area of car storage with tall lighting columns adjacent to East Halton Pits Local Wildlife Site (LWS). Construction noise, operational noise and light pollution from this site could reduce the number of waterbirds using the LWS. However, the wetland mitigation area is confidently expected to provide all the required waterbird habitat, so that displacement of birds from the LWS will not have an adverse effect on the SPA. Nevertheless, it is also worth noting that curlew used field 29 adjacent to this site in significant numbers in 2007 and 2008 when the lighting columns and car storage were already in operation. Lapwing also used field 29 in spring 2007. (Catley 2007, 2008)

#### 14.12. PA/2008/0988 URSA glass wool factory.

14.12.1. In-combination effects for this proposal have already been addressed under section 10 of this appropriate assessment, particularly in relation to curlew. Section 15 of the submitted Environmental Statement for Able UK PA/2009/0600 states that the effects of the URSA project are fully mitigated and thus it cannot act in combination with the Able UK project. The Council has no reason to dispute this opinion.

#### 15. Register of conditions or restrictions required.

15.1. No condition will be required to secure compensation for coastal squeeze as this is already addressed by the Environment Agency.

15.2. Conditions re habitat loss due to restoration and improvement of the floodbank.

15.2.1. "The floodbank hereby permitted shall be constructed strictly in accordance with submitted drawings KI-06011 Rev G, KI-06012 Rev G, KI-06013 Rev G, KI-06014 Rev G, KI-06015 Rev G, KI-06016 Rev G, KI-06017 Rev G, KI-06018 Rev G, KI-06019 Rev G, KI-06020 Rev G, KI-06021 Rev G, KI-06024 Rev F, KI-06025 Rev E, KI-06026 Rev B, KI-06027 Rev B, KI-06029 Rev D, KI-06030 Rev D and KI-06032 Rev E. No floodbank construction works shall be permitted further than 5.5 metres from the existing floodbank toe beam. No rock armour shall be placed more than 5.5 metres from the existing floodbank toe beam.

Reason: To protect features of the Humber Estuary SAC, SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan."

15.2.2. "The managed retreat works shown on submitted drawings KI-06029 D and KI-06030 D shall be carried out in their entirety before the commencement of any other floodbank works.

Reason: To provide new intertidal habitat in advance of any loss of intertidal habitat,

thus protecting features of the Humber Estuary SAC, SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.”

15.3. Surface water drainage into intertidal habitat, causing pollution

15.3.1. “No development shall commence until details of a scheme for the satisfactory provision of sufficient capacity within the public sewerage system and at the Wastewater Treatment Works to meet the needs of the approved development has been submitted to and approved in writing by the Local Planning Authority. No buildings shall be occupied until the works have been carried out in accordance with the approved scheme.”

Reason: To protect features of the Humber Estuary SAC, SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.”

15.3.2. “No development shall take place until a water pollution prevention plan has been submitted to and approved in writing by the Local Planning Authority. The plan shall include:

- Details of measures to avoid water-borne pollution during construction in accordance with sections 10.5.16 to 10.5.22 of the submitted Environmental Statement.
- Details of measures to avoid water-borne pollution in accordance with sections 8.6.36 to 8.6.39 and 16.3.43 of the submitted Environmental Statement.

Reason: To protect features of the Humber Estuary SAC, SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.”

15.4. Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.

15.4.1. “No development shall take place until a Waterbird and Construction method statement has been submitted to and agreed in writing by the Local Planning Authority. The plan shall include:

- A prohibition on floodbank works or other works within the Humber Estuary SPA between October and February within, and up to 500 metres to the south of, East Halton Skitter.
- A prohibition on earthworks to raise or lower ground levels between October and February.
- Details of measures that shall be put in place during construction to avoid impacts upon waterbirds.
  - A programme of construction noise and visual disturbance monitoring and bird disturbance studies to be carried out with results to be submitted to the Local Planning Authority quarterly during the construction period.
  - Details of thresholds for disturbance and/or displacement of waterbirds that shall trigger amendment of working methods in response to monitoring results.
  - Details of the means by which amended sensitive working methods shall be agreed with the Local Planning Authority.

- Details of sensitive working methods for installation of the hydrogen pipeline and construction of the pumping station.
- Details of measures to control construction-phase light pollution in accordance with Section 10.5.127 of the submitted Environmental Statement.

All site clearance and construction works shall be carried out strictly in accordance with the agreed Waterbird and Construction Method Statement unless otherwise agreed in writing by the Local Planning Authority.

Reason: To protect features of the Humber Estuary SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.

## 15.5 Conservation Management Plan for mitigation wetlands for SPA waterbirds.

15.5.1 No development shall take place until a Conservation Management Plan for waterbird mitigation areas has been submitted to and agreed in writing with the Local Planning Authority. The plan shall include:

- Aims and objectives of the plan, including proposed indicators of success.
- Details of the ecological requirements of target species and the ecological trends affecting them.
- Plans and details of habitats to be created and managed to support the target species, including details of earthworks, ground levels, islands, scrapes, soil properties, water control structures, ditches, waterbodies, target grassland sward types and any screening banks, hedgerows or reedbeds.
- Ongoing management measures to be implemented to maintain habitats in favourable condition.
- Detailed grazing prescriptions for wetland mitigation areas including the means by which cattle shall have access to the proposed grassland areas.
- Details of measures required to ensure the welfare of grazing animals.
- Confirmation that areas of grass, rush and sedge shall be managed by cattle grazing, rather than mowing, unless agreed in writing by the Local Planning Authority.
- Detailed prescriptions for control of water levels, inputs and output, including water budgets for average, dry and wet years.
- Timing of proposed works.
- Details of remedial measures to be carried out in the event of water levels or other target measures rising or falling beyond agreed limits.
- Persons responsible for:
  - Compliance with legal consents relating to nature conservation.
  - Compliance with planning conditions relating to nature conservation.
  - Installation of physical protection measures during construction.
  - Implementation of sensitive working practices during construction.
  - Regular inspection and maintenance of physical protection measures and monitoring of working practices during construction.
  - Implementation of the Management Plan.

The Conservation Management Plan shall be reviewed by the applicant or its successor in title every five years in order to achieve the stated aims and objectives. Following such five yearly reviews, any changes agreed between the applicant or its successor in title and the local planning authority shall be incorporated into a revised Conservation Management Plan which shall thereafter be the Conservation Management Plan for the purposes of all associated planning conditions.

The agreed Conservation Management Plan shall be implemented in its entirety, in accordance with agreed timings, unless otherwise agreed in writing by the Local Planning Authority. The features provided through implementation of the plan shall be retained and managed as agreed thereafter.

Reason: To protect features of the Humber Estuary SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.

#### 15.6 Securing mitigation wetland areas in advance of the later phases of development

15.6.1 "Development shall be phased in accordance with submitted drawing number KI-02004 B, dated 15 February 2011, as follows:

- a) No development shall take place within the areas identified as Phases 3, 4, 5 or 6 until commitments have been agreed in writing with the Local Planning Authority to carry out wetland mitigation works in accordance with submitted drawing ALP- 08025 revision A dated 15<sup>th</sup> February 2011 OR to carry out wetland mitigation works in accordance with submitted drawing ALP- 08024 revision A dated 15<sup>th</sup> February 2011 AND carry out wetland mitigation works of not less than 50 hectares at a further location to be agreed in writing with the Local Planning Authority.
- b) No development shall take place within the areas identified as Phases 3, 4, 5 or 6 until the Local Planning Authority has agreed in writing that SPA waterbird mitigation area works have been satisfactorily completed in accordance with the agreed conservation management plan AND the agreed commitments described in section a) above.
- c) Notwithstanding the above restrictions, the hydrogen pipeline and sea wall works shall not be restricted to any given phase.

Reason: To protect features of the Humber Estuary SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.

#### 15.5. Programme of bird monitoring

15.5.1. "No development shall take place until a bird monitoring programme has been submitted to and agreed in writing by the Local Planning Authority. The programme shall include:

- Bird monitoring methods and prescriptions for created wetland mitigation areas, WeBS sectors ISI, NG2, NG3, NG4, NG5 and NG6, the proposed landscape buffer and the application site prior to and during development.
- Timing of bird monitoring including seasonal timing, frequency of counts, tidal state during counts, starting points and end points.
- Reporting standards, including format of annual reports, interim reports and measures to be derived from the raw data.
- Measures of favourable condition with reference to bird populations and assemblages using the created wetland mitigation areas, WeBS sectors ISI, NG2, NG3, NG4, NG5 and NG6 and the proposed landscape buffer.

- Bird population and assemblage thresholds that indicate the success of mitigation and an absence of adverse effect on the integrity of the Humber Estuary SPA and Ramsar sites.
- Mechanisms for implementing any necessary remedial measures.

The agreed bird monitoring programme shall be implemented in its entirety, in accordance with agreed timings and methods, unless otherwise agreed in writing by the Local Planning Authority.

Reason: To protect features of the Humber Estuary SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.

#### 15.6. Ongoing Light pollution and Disturbance.

15.6.1. "No development shall take place until a Waterbird Protection Plan has been submitted to and agreed in writing by the Local Planning Authority. The plan shall include:

- Details of measures to minimise light overspill into wetland mitigation areas, East Halton Pits and The Humber Estuary SPA and Ramsar Site.
- Details of measures to minimise the visual appearance of high lighting towers for birds.
- Details of noise monitoring locations to record noise levels at the boundary of the waterbird mitigation areas..
- A programme of noise monitoring and bird disturbance studies to be carried out with results to be submitted to the Local Planning Authority at agreed intervals.
- Details of thresholds for disturbance and/or displacement of waterbirds that shall trigger remedial measures in response to monitoring results.
- Details of the means by which remedial measures shall be agreed with the Local Planning Authority.

The agreed Waterbird Protection Plan shall be implemented in its entirety, in accordance with agreed timings, unless otherwise agreed in writing by the Local Planning Authority. Any agreed remedial measures shall be retained thereafter.

Reason: To protect features of the Humber Estuary SPA and Ramsar Site in accordance with Policies LC1 and LC2 of the North Lincolnshire Local Plan.

#### 15.7. Formation and operation of an Environmental Steering Group.

15.7.1. "Prior to the commencement of development, the applicant or its successors in title shall agree in writing with the Local Planning Authority the terms of reference for an Environmental Steering Group to oversee implementation of mitigation measures and sensitive working practices. The Steering Group shall comprise suitably experienced representatives of the applicant or its successor, the local planning authority and other appropriate organisations by agreement. The steering group shall meet at least annually from the commencement of development to at least five years after the completion of all wetland mitigation areas for an annual monitoring review, unless otherwise agreed in writing with the local planning authority. Prior to the meeting, an environmental report, completed to an agreed standard, shall be provided by the applicant or their successor in title to all steering group members.

Environmental actions agreed by the Environmental Steering Group shall be implemented in full in accordance with agreed timescales.

- 15.7.2. Each year within the above period, the applicant or its successor in title shall provide the local planning authority with 21 days notice of an intended Annual Monitoring Review and use reasonable endeavours to agree a mutually acceptable date for the Annual Monitoring Review with the local planning authority.”

Reason: To provide environmental controls in accordance with policies DS1, DS12, LC1, LC2, LC4, LC5, LC6 and LC12 of the North Lincolnshire Local Plan.

**16 . Table 3 Comparison of the Do Nothing Scenario with Application PA/2009/0600**

This table compares the expected results of implementing the planning application proposals, assuming that planning conditions are followed, with the do nothing scenario that will apply if the application is rejected.

<b>Effect</b>	<b>Do Nothing</b>	<b>PA/2009/0600</b>
Loss of intertidal habitat due to coastal squeeze	Coastal Squeeze losses of between 4.8 and 12.2 hectares of intertidal habitat. The Environment Agency's Coastal Habitat Management Plan (ChaMP) provides for the provision of about 700 hectares of new intertidal habitat over the next 50 years.  Overall effect: Neutral	Coastal Squeeze losses of between 4.8 and 12.2 hectares of intertidal habitat. The Environment Agency's Coastal Habitat Management Plan (ChaMP) provides for the provision of about 700 hectares of new intertidal habitat over the next 50 years.  Overall effect: Neutral
Loss of intertidal habitat due to construction of floodbank toe beam	No direct loss of mudflat or saltmarsh, though coastal squeeze losses will be ongoing (see above). No mechanism to increase the area of habitat.  Overall effect: Neutral	De minimis loss of intertidal mud. A net increase in the area of saltmarsh around the application site from around 392m <sup>2</sup> to up to 1177m <sup>2</sup> within the SPA and up to 1273 m <sup>2</sup> outside the current SPA boundary  Overall effect: Positive
Surface water drainage into intertidal habitat, causing pollution.	Existing levels of agricultural inputs into the Estuary are likely to continue.  Overall effect: Neutral	Existing levels of agricultural inputs into the Estuary are likely to continue. Use of conditions would ensure that there is no AEOI due to surface water drainage into intertidal habitat  Overall effect: Neutral
Disturbance of wintering and passage waterbirds during the construction phase of the proposal	Existing levels of disturbance due to walkers, dog walkers and anglers likely to continue.  Overall effect: Neutral	Existing levels of disturbance due to walkers, dog walkers and anglers likely to continue. Use of conditions would ensure that there is no AEOI due to construction disturbance.  Overall effect: Neutral
Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing	No direct loss of feeding or roosting habitat. No mechanism to secure positive habitat management. Changes in cropping within	Direct loss of some feeding and roosting habitat currently used. Ongoing management of 74-100 hectares of wetland including open water, reedbed

	<p>ordinary agricultural practices could lead to an increase or decrease in feeding and roosting habitat.</p> <p>Overall effect: Neutral</p>	<p>and grazed wet grassland specifically for waterbirds.</p> <p>Overall effect: Positive</p>
<p>Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland</p>	<p>Existing levels of disturbance due to walkers, dog walkers and anglers likely to continue.</p> <p>Overall effect: Neutral</p>	<p>Existing levels of disturbance due to walkers, dog walkers and anglers likely to continue. Use of conditions would ensure that there is no AEOI due to noise and visual disturbance.</p> <p>Overall effect: Neutral</p>
<p>Increased light levels and the dominant visual appearance of lighting columns</p>	<p>Existing light overspill from Humber Sea Terminal will continue. Otherwise, little light pollution.</p> <p>Overall effect: Neutral</p>	<p>Existing light overspill from Humber Sea Terminal will continue. Use of conditions would ensure that there is no AEOI due to light pollution.</p> <p>Overall effect: Neutral</p>
<p>Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI and all three proposed wetland areas</p>	<p>Train movements unlikely to increase from very low levels. Disturbance to birds in North Killingholme Haven Pits will be primarily from predators such as Sparrow hawks.</p> <p>Overall effect: Neutral</p>	<p>Train movements will increase slightly from very low levels. Disturbance to birds in North Killingholme Haven Pits will continue to be primarily from predators such as Sparrow hawks.</p> <p>Overall effect: Neutral</p>

17 Overall determination of AEOI.

17.1 Project without restrictions or conditions.

17.1.1 The proposed project is not necessary for the management of the Humber Estuary SAC, SPA or Ramsar site (Taylor 2009).

17.1.2 The proposed project would have a likely significant effect on the Humber Estuary SAC, SPA and Ramsar site (Taylor 2009).

17.1.3 **Without conditions or restrictions, North Lincolnshire Council cannot ascertain that the proposed project would not have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar site.** The sources of the adverse effect on integrity are listed below, along with the International Nature Conservation Site interest features affected:

17.1.3.1 Loss of intertidal habitat due to coastal squeeze following restoration and improvement of the floodbank. This could lead to a loss of mudflats and sandflats not covered by seawater at high tide and Atlantic salt meadows. This could have a knock- on effect on the populations of waterbirds that could be supported by the reduced area of intertidal habitat.

17.1.3.2 Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area. In terms of intertidal mud, negligible area of habitat will be lost and insignificant numbers of birds will be affected (<1% of the citation population of any species). These effects are considered to be *de minimis*. In terms of saltmarsh (NVC community SM12) a higher percentage of the estuary resource will be lost initially.

17.1.3.3 Surface water pollution from the application site could cause long-term harm to mudflats and sandflats not covered by seawater at high tide and Atlantic salt meadows. Pollution could also lead to increased mortality of waterbirds in the SPA/ Ramsar assemblage and reduce the area of wetland and intertidal habitat available for them.

17.1.3.4 Serious construction disturbance, particularly during periods of prolonged harsh weather, could reduce the area of habitat available for waterbirds to feed, roost and loaf. Repeated disturbance in such conditions could lead to a loss of condition of individual birds, and ultimately to effects at the population level and/or their distribution around the estuary. Birds occurring in significant numbers around the application site, that could be affected, include ruff, curlew, golden plover and lapwing. In short, in the absence of mitigation, construction disturbance of birds is very likely to occur. Whether this would lead to a decrease in bird populations is less clear.

17.1.3.5 The permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing could lead to a reduction in, or displacement of, the populations of certain bird species, if alternative sites were unavailable, or the birds were unable to adapt to the change. Birds occurring in significant numbers around the application site, that could be affected, include ruff, curlew and lapwing. Golden Plover that currently feed and roost on the application site are related to inter-tidal habitat on the north bank of the Humber and are not dependent upon the application site to any significant degree.

- 17.1.3.6 Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland could lead to a reduction in the populations of certain bird species, if alternative sites were unavailable, or the birds were unable to adapt to the change. Birds occurring in significant numbers around the application site, that could be affected, include ruff, curlew and lapwing. Potential sources of disturbance include industrial noise, the movement of people and increases in the use of footpaths near wetland and intertidal habitats.
  - 17.1.3.7 Light pollution could lead to a reduction in the populations of certain bird species, if alternative sites were unavailable, or the birds were unable to adapt to the change. Birds occurring in significant numbers around the application site, that could be affected, include ruff, curlew and lapwing. Although the proposals for lighting will not have an adverse effect, conditions are required to ensure that lighting is installed and controlled as proposed.
- 17.2 Project with conditions and other positive measures
- 17.2.1 The planning conditions required to remove or minimise adverse effects on International Nature Conservation Site interest features are listed in section 15 above. These conditions would have the following effects.
  - 17.2.2 Loss of intertidal habitat due to coastal squeeze following restoration and improvement of the floodbank.
    - 17.2.2.1 This effect would be fully compensated for by Environment Agency habitat creation. With compensation guaranteed, there will be no adverse effect on the integrity of the Humber Estuary SAC, SPA or Ramsar site. As the Environment Agency have a duty to compensate in any case, there will not be a need for a planning obligation in relation to coastal squeeze for the Able UK project.
  - 17.2.3 Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area.
    - 17.2.3.1 Conditions are proposed to minimise the loss of intertidal mud Atlantic salt meadows (saltmarsh). Furthermore, it is predicted that there will be a net increase in the area of saltmarsh around the application site from around 392m<sup>2</sup> to up to 1177m<sup>2</sup> within the SPA and up to 1273 m<sup>2</sup> outside the current SPA boundary, once the proposed management realignment takes place. This will also be secured by a planning condition. Therefore, given the imposition of planning conditions as outlined above, there will be no adverse effect on the Integrity of the Humber Estuary SAC, SPA and Ramsar site arising from the loss of intertidal habitat due to construction of the floodbank toe beam and rock armour within the current intertidal area.
  - 17.2.4 Surface water pollution.
    - 17.2.4.1 Surface water pollution of a scale that would affect the integrity of the European Site is extremely unlikely to occur. Use of conditions as described in section 15.3 above would ensure that there is no AEOI due to surface water drainage into intertidal habitat, causing pollution
  - 17.2.5 Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.

- 17.2.5.1 Conditions are proposed to restrict the timing of works to avoid effects on populations of passage and wintering waterbirds where necessary. Conditions will also secure sensitive working practices, the monitoring of disturbance and the introduction of remedial measures if necessary. These conditions will not remove any possibility of birds being temporarily put to flight; nor are they intended to. They will however, ensure that construction disturbance will not affect the population levels or distribution of birds using the Humber Estuary. With these conditions in place, there will be no adverse effect on the integrity of the Humber Estuary SAC, SPA or Ramsar site.
- 17.2.6 Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing.
- 17.2.6.1 Development of the whole of the application site would certainly remove habitat used by species such as ruff, curlew, golden plover and lapwing for feeding roosting and loafing. Golden Plover that currently feed and roost on the application site are related to inter-tidal habitat on the north bank of the Humber and are not dependent upon the application site to any significant degree. However, other species, such as ruff, curlew and lapwing appear to be more dependent upon the application site.
- 17.2.6.2 Provision of adequate suitable wetland on- and/or off-site for the latter species would remove any possibility of an adverse effect on their estuary populations. The proposed phasing, monitoring and conservation management plan conditions will secure the provision and management of this habitat. Provided that the proposed mitigation measures are implemented in full it is possible to ascertain that the loss of habitat for feeding and roosting lapwing, golden plover, curlew, ruff and black tailed godwit will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site.
- 17.2.7 Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland.
- 17.2.7.1 Conditions listed in section 15 require a waterbird protection plan covering noise and disturbance monitoring and remedial measures to be put in place if there is excessive disturbance. With these conditions in place, there will be no adverse effect on the integrity of the Humber Estuary SAC, SPA or Ramsar site.
- 17.2.8 Increased light levels and the dominant visual appearance of lighting columns.
- 17.2.8.1 Conditions are proposed to ensure that levels of light overspill into the conservation management plan areas and intertidal areas is around 3 Lux or less- a level that is very unlikely to affect bird behaviour.
- 17.2.8.2 Given that the lighting design for the current application is similar to that for existing areas of car storage near Killingholme Haven Pits, there shall be no adverse effect on the integrity of the Humber Estuary SPA/Ramsar site due to increased light levels and the dominant visual appearance of lighting columns, provided that the conditions described in section 12.4 are attached.

**17.2.9 Overall, it is possible to ascertain that the proposal will not have an adverse effect on the Humber Estuary SAC, SPA and Ramsar Site alone or in combination with other plans or projects.**

18 Opinion in relation to the Humber Estuary SSSI- Section 28 of the Wildlife and Countryside Act (as amended).

18.1 In the East Halton area, the features of the Humber Estuary SSSI that are present are broadly similar to the features of the Humber Estuary SAC, SPA and Ramsar Site. Thus planning conditions that remove adverse effects on the integrity of the International Nature Conservation Sites will generally also protect the features of the Humber Estuary SSSI. The planning conditions proposed to conserve the Humber Estuary as a whole will, in this case, also ensure that there is no adverse effect on the adjacent SSSI units and those used by golden plover and curlew on the north bank of the Humber.

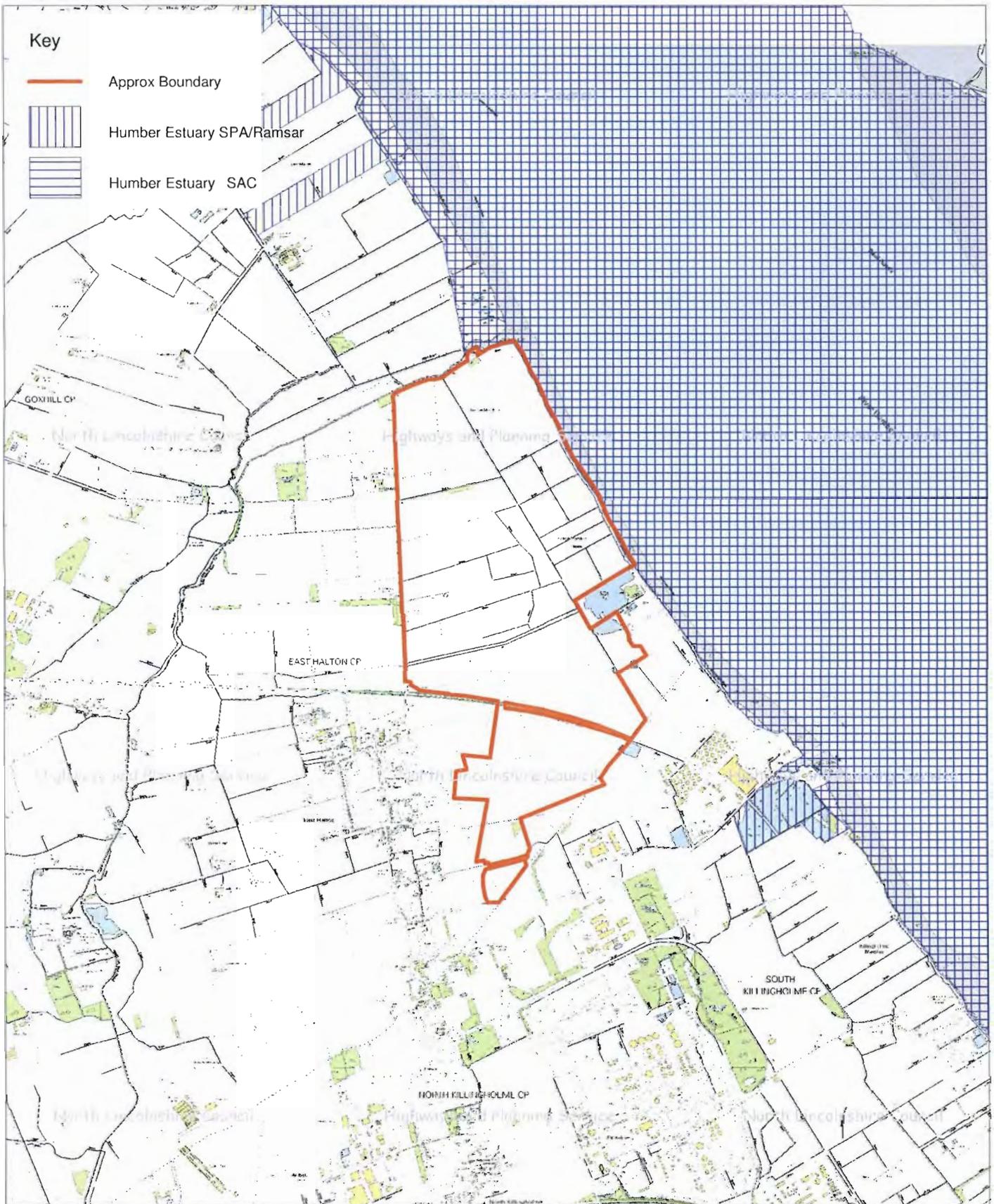
18.2 Therefore, taking the proposed conditions into account, there will be no adverse effect on the Humber Estuary SSSI or Killingholme Haven Pits SSSI.

**NOTE: This document supersedes the previously signed appropriate assessment dated 08 October 2010.**

## **Appendices**

### **Appendix 1.**

**Location of Proposals in relation to the International Nature Conservation Site.**



Drawing Title: 2009.0600 Location

OS Grid Ref: TA14662116

Drawn by: AT

Scale: NOT TO SCALE

Date: 25/01/2010



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NORTH LINCOLNSHIRE COUNCIL 0100023560 2010



Highways and Planning Service

Service Director,  
G Pople

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**Appendix 2 Appropriate Assessment Supporting Documents.**

- Determination of likely significant effect (Taylor 2009)
- Appropriate Assessment Consultation Response Summary and Proposed Actions.
- PA/2009/0600 Able UK, Land between East Halton Skitter and Chase Hill Road, North Killingholme: A quantitative assessment of the use of the application site as feeding habitat by five species of passage and wintering waterbirds and associated estimate of the carrying capacity of the proposed wetland mitigation sites for these species. [Revised June 2011]
- Golden Plover Usage of North Bank WeBS sectors. 2003/04 Low Tide Count data from Mander & Cutts 2005

<b>North Bank WeBS Sector</b>						
<b>Month</b>	<b>NG2</b>	<b>NG3</b>	<b>NG4</b>	<b>NG5</b>	<b>NG6</b>	<b>Total</b>
<b>Aug</b>	90	1750	0	11080	6803	19723
<b>Sep</b>	0	5	600	1016	520	2141
<b>Oct</b>	0	0	0	2422	1504	3926
<b>Nov</b>	980	6000	900	6300	3200	17380
<b>Dec</b>	1180	2200	0	8100	590	12070
<b>Jan</b>	2000	160	14000	2000	10500	28660
<b>Feb</b>	370	0	0	390	150	910
<b>Mar</b>	112	0	300	360	0	772
					<b>Grand total</b>	85582
					<b>Mean</b>	10698

- Natural England method for calculating mitigation habitat area

Core area (ha)	Total Square Shaped Mitigation Area (ha) with each buffer size (m)							
	0m buffer	50m buffer	80m buffer	100m buffer	120m buffer	150m buffer	200m buffer	500m buffer
16	16	25	31	36	41	49	64	196
17	17	26	33	37	43	51	66	199
18	18	27	34	39	44	52	68	203
19	19	29	36	40	46	54	70	206
20	20	30	37	42	47	56	72	209
21	21	31	38	43	49	57	74	213
22	22	32	40	45	50	59	76	216
23	23	34	41	46	52	61	77	219
24	24	35	42	48	53	62	79	222
25	25	36	44	49	55	64	81	225
26	26	37	45	50	56	66	83	228
27	27	38	46	52	58	67	85	231
28	28	40	47	53	59	69	86	234
29	29	41	49	55	61	70	88	237
30	30	42	50	56	62	72	90	240
31	31	43	51	57	63	73	92	242
32	32	44	53	59	65	75	93	245
33	33	45	54	60	66	76	95	248
34	34	47	55	61	68	78	97	251
35	35	48	56	63	69	79	98	253
36	36	49	58	64	71	81	100	256
37	37	50	59	65	72	82	102	259
38	38	51	60	67	73	84	103	261
39	39	52	62	68	75	85	105	264
40	40	54	63	69	76	87	107	266
41	41	55	64	71	77	88	108	269
42	42	56	65	72	79	90	110	272
43	43	57	67	73	80	91	111	274
44	44	58	68	75	82	93	113	277
45	45	59	69	76	83	94	115	279
46	46	61	70	77	84	96	116	282
47	47	62	71	78	86	97	118	284
48	48	63	73	80	87	99	119	287
49	49	64	74	81	88	100	121	289
50	50	65	75	82	90	101	123	291



**Title of Application:** PA/2009/0600

Planning permission to erect buildings and use land for purposes within Use Classes A3, C1, B1, B2 and B8 for port related storage and associated service facilities together with amenity landscaping and habitat creation, including flood defences, new railway siding, estate roads, sewage and drainage facilities, floodlighting, waste processing facility, hydrogen pipeline spur and two 20m telecom masts

**Location of Plan or Project /Application**

Able UK, Land between East Halton Skitter and Chase Hill Road, North Killingholme  
Grid Ref: TA147229-TA147184

**International Nature Conservation Site**

Humber Estuary Special Protection Area (SPA) and Ramsar site  
Humber Estuary Special Conservation Area (SAC)

**Description of Application**

Planning consent for development is sought for an area of 379.9ha. Of this, 235.5 ha would accommodate B1, B2 and B8 land uses for port related storage and associated service facilities. In addition to this, the application seeks consent to develop 138.1ha on the site for amenity landscaping and habitat creation.

In essence the proposed works include:-

- Works to repair and improve the existing flood defence wall on its current alignment.
- Recontouring the site landform in order to reduce the consequences of flooding of the land along its eastern margin.
- The creation of two new lakes with associated wetland, and the installation of a new drainage system with its outfall onto the foreshore via a new pumping station.

- Construction of a 2,490m long service road with screening bunds running north to south through the southern part of the site, thus extending the existing consented glass wool factory access road with its link to the junction of Eastfield Road and Chase Hill Road. (The road will be to adoptable standard).
- Creation of 2,490m of cycleway and increasing public footpaths on site.
- Closure of 590m of highway to motor vehicles.
- Construction of a bridge carrying the proposed new spine road, over the derelict railway line.
- Construction of railway sidings and a loading area, linking into the end of the live railway north west of the Humber Sea Terminal.
- Construction of a private road (to adoptable standard) linking the site with the Humber Sea Terminal.
- Creation of a business park on the west side of the spine road.
- Creation of transport depots, an HGV service facility, warehousing, offices, car parks and external storage areas with floodlighting and 2.5m high security fencing, east of the spine road and south of the former railway line and security cabins.
- Development of a motel and a truck stop restaurant with HGV refuelling facilities.
- Construction of external storage areas with floodlighting and 2.5m high security fencing.
- Construction of sewage treatment facilities and links to Anglian Water foul water treatment facilities.
- Construction of a pumping station with associated outfall to intertidal mud.
- Construction of a 2410m spur from the consented hydrogen pipeline to run from the spine road bridge over the former railway, along the west side of the spine road to its junction with Chase Hill Road.
- Erection of two telecommunication masts, 20m high, each with two associated cabins within a surrounding compound.
- Erection of two bird hides.

In addition, the development will provide amenity landscaping beside Skitter Road and on the north side of the former railway line. Areas are designated for habitat creation to the north, west and south of the Winters Pond, and to the south of the former railway line.

The applicant has proposed that works will be phased as shown in Table 1 overleaf:

**Table 1. Proposed Phasing of Works**

Phase	Timing	Plot no.	Plot area (ha)	Works Proposed
1	2010-2012	NE1	2.2	Transport depot office, workshop, parking & external storage.
		NE2	1.9	HGV services office, HGV workshop, parking & external storage.
		NE3	2.6	Waste management facility.
		NE4	2.3	Transport depot office, workshop, parking & external storage.
		NE5	2.0	Transport depot office, workshop, parking & external storage.
		NE6	4.9	Warehouse, security cabin, parking & external storage.
		NE7	12.9	Warehouse, security cabin, parking & external storage.
		Road	2.5	Spine road inc. cycleways
		Landscape	13.1	Soft landscaping
		Mitigation	19.6	Area C wetland mitigation land
		<b>Total</b>	<b>64ha</b>	
2	2010-2014	NW1	0.2	Large office
			0.2	Large office
			0.4	6 No. small offices (746m <sup>2</sup> each)
			0.2	Road
		Landscape	0.1	Pond
			5.9	Landscaping (incl. 1.2 ha woodland)
		<b>Total</b>	<b>7.0</b>	
3	2011-2013	NW2	13.3	Warehouse, security cabin, parking & external storage.
		NW3	9.1	Warehouse, security cabin, parking & external storage.
		NW4	7.7	Truck stop motel, restaurant & parking.
		NW5	3.1	Warehouse & security Cabin
		NW6	44.7	Port related storage, office, vehicle PDI building, security cabin & stores building.
		Road	2.7	Inc. cycleways and footpaths
		Landscape	29.1	Soft landscaping & bunds
		Mitigation	20.1	Wetland mitigation Area A

		<b>Total</b>	<b>129.8</b>	
4	2012-2014	NE8	8.7	Warehouse, security cabin, parking.
		NE9	3.8	Warehouse, security cabin, parking.
		NE10	12.0	Rail freight terminal, security cabin & office.
		Landscape	11.9	Landscaping and habitat creation
		Mitigation	20.6	Wetland mitigation Area B
		<b>Total</b>	<b>57.0</b>	
5	2012-2015	NW7	35	Port related storage, vehicle etching building, office, vehicle PDI building, security cabin, stores building, car parking & external storage.
		Landscape	9.2	Landscaping and habitat creation
		<b>Total</b>	<b>44.2</b>	
6	2012-2015	NE12	41.6	Port related storage, vehicle etching building, office, vehicle PDI building, security cabin, stores building, car parking & external storage.
		Landscape	6.5	Landscape and habitat creation
		<b>Total</b>	<b>48.1</b>	
7	2016	NE11	26.7	Port related storage, external storage, office, vehicle PDI building, car parking, security cabin & stores building.
		Landscape	3.0	Landscaping
		<b>Total</b>	<b>29.7</b>	
Other	??			Hydrogen pipeline- construction dates not known
	2010-2011			Flood defence wall

**Table 2. Potential overlap of phases**

Phase	2010	2011	2012	2013	2014	2015	2016
1							
2							
3							
4							
5							
6							
7							
Pipeline							
Flood wall							

**Measures taken to minimise effects on the International Nature Conservation Sites:**

- The applicant has proposed 3 areas of wetland habitat creation to provide for feeding, roosting and loafing waterbirds. The combined area of these is 59 ha, of which 8 ha is permanent, deep water unsuitable for the wading birds most affected by the proposal. Detailed management proposals for these areas have not yet been submitted.
- Works on the seaward side of the seawall will be conducted between April and September, to minimise temporary disturbance to bird populations during the overwintering period (October to March).
- Attempts have been made to phase works so as to minimise construction disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. Seasonal work timings have also been planned on this basis, where appropriate. These are described in sections 10.5.50 to 10.5.59 of the submitted ES.
- Attempts have been made to minimise construction light disturbance to waterbirds using intertidal areas, existing farmland or created habitat areas. These are described in section 10.5.127 of the submitted ES.

**Determination of Likely Significant Effect under The Conservation of Habitats and Species Regulations 2010**

1. North Lincolnshire Council does not consider that the plan or project is directly connected with, or necessary to, the management of the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC) for nature conservation.
2. North Lincolnshire Council is of the opinion that the plan or project is likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Protection Area (SPA) and Ramsar site.

North Lincolnshire Council is of the opinion that the plan or project is likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Conservation Area (SAC).

**Reasons for Likely Significant Effect (LSE) determination:**

Potential hazards to the features of the International Nature Conservation Site that have been considered are as follows:-

- Loss of intertidal habitat due to coastal squeeze following restoration and improvement of the floodbank.

The applicant proposes to repair and improve the existing length of floodbank along the estuarine frontage of the application site. In the absence of development here, the Environment Agency's preferred option for this area would be for managed realignment of the floodbank, allowing landward migration of intertidal habitats. With sea level rise in the future, holding the line of the floodbank will mean that intertidal habitats are gradually eroded and lost, without being able to migrate inland. Therefore coastal squeeze following restoration and improvement of the floodbank is a **LSE**, albeit an effect that may be addressed by the Environment Agency's programme for habitat compensation. The magnitude of this loss of habitat has not been determined conclusively.

- Loss of intertidal habitat due to construction of floodbank toe beam, placement of rock beyond the toe beam and construction of a pumping station outfall within the current intertidal area.

Originally recorded as no LSE. However, in January 2010, doubts arose as to the details of the floodbank scheme. North Lincolnshire Council wrote to Able UK on 27 January 2010 to seek clarification of various details that may have consequences for the area of mudflat and saltmarsh affected<sup>7</sup> (Taylor 2010). Until such time as the details are clarified, the loss of intertidal habitat due to construction of the floodbank toe beam within the current intertidal area will be recorded as a **LSE**.

- Surface water drainage into intertidal habitat, causing scour

**No LSE.** The proposal include a new surface water outfall into the Humber. By creating a stream in the mudflats, the outfall will change the nature of the mudflat. The outfall will cause a functional change to between 1,362m<sup>2</sup> and 2,026m<sup>2</sup> of intertidal habitat, including an area of intertidal mudflat. Existing data reveals that these mudflats are of a relatively limited value to birds. Discussions with Natural England have confirmed that this change is not considered to be an adverse impact on the mudflats and although the habitat will change and is likely to be used differently, no adverse impacts on the integrity of the SAC, SPA, Ramsar site, SSSI or UKBAP habitat are expected.

- Surface water drainage into intertidal habitat, causing pollution.

Pollution events could occur during the proposed flood defence improvements and the construction of the outfall, specifically resulting from outflows or spills of water containing suspended sediment, oils/fuels and concrete or cement products or from wind-blown contaminants. Pollution could result in impacts on the Humber Estuary SAC, SPA, Ramsar site and SSSI and indirectly on Ramsar and SPA birds and the waterbird assemblage. Although the likelihood of such an event occurring will be low, the impacts could be severe. In the absence of mitigation measures, it is concluded that such pollution impacts could have a **LSE**. Mitigation measures are proposed by the applicant. These will need to be considered in the appropriate assessment.

- Impacts of site drainage on the flows of East Halton Skitter.

**LSE.** Natural England and the Environment Agency have raised concerns about the diversion of flows from the application site away from East Halton Skitter. It is postulated that this could reduce the dilution and flushing of pollutants from East Halton Skitter, leading to increased concentrations of pollutants as these waters enter the Humber Estuary.

- Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.

**LSE** Construction works will be phased over a number of years, bringing the potential for significant disturbance of considerable duration. Various species of waterbird use the adjacent intertidal area and could be affected by noise and visual disturbance due to floodbank repairs and improvements and other construction works within around 200 metres of the floodbank.

Significant numbers of ruff, curlew, lapwing and golden plover and assemblages of other species such as black-tailed godwit and wildfowl use the application area for feeding, roosting and loafing. These birds could be affected by noise and visual disturbance as construction works move around the site. Landscaping works and earthworks associated with wetland habitat creation could disturb birds for a significant, albeit temporary, period. Birds using wetland habitat areas created in the early phases of development could be subjected to disturbance from nearby construction works in the later phases.

- Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing.

**LSE** Significant numbers of ruff, curlew, lapwing and golden plover and assemblages of other species such as black-tailed godwit and wildfowl use the application area for feeding, roosting and loafing. Much of the application area will be converted to roads, hardstanding, woodland, buildings and areas of open storage, representing a permanent loss of areas currently used by the waterbirds.

- Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland.

**LSE-** The application site is currently a relatively undisturbed area, with little traffic, quiet footpaths and infrequent agricultural operations. Development of the area will have a significant urbanising effect, generating more noise, movements of people and

potentially, a sense of enclosure created by tall buildings and woodlands. These effects may all reduce the suitability of the remaining intertidal habitat and wetland areas for waterbirds that might otherwise be expected to use these areas.

- Increased light levels and the dominant visual appearance of lighting columns

**LSE-** Light pollution may affect the behaviour of birds, though it is not known whether this is a positive or negative effect. The lighting columns will be dominant in the landscape at night and during long hours of darkness in the winter. It is not known whether this will make the area less attractive for waterbirds.

- Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI and all three proposed wetland areas.

**LSE.** Killingholme Haven Pits SSSI supports significant numbers of avocet, black-tailed godwit, redshank, dunlin, curlew, lapwing and waterbirds generally. These could be disturbed by trains passing through the site at irregular intervals. Similar disturbance could be caused around the proposed wetland areas. If such disturbance restricts the birds' ability to use these sites, this will be a LSE.

- 2410m spur will run from the consented hydrogen pipeline. This could lead to construction disturbance to waterbirds.

No LSE. . The "spur" is away from the Estuary and runs largely along proposed roads, so will not lead to appreciable additional noise or visual disturbance compared with other elements of construction.

North Lincolnshire Council is of the opinion that an appropriate assessment is required to determine the implications of the plan or project in view of the site's conservation objectives for the European interest. The Council will require further information from the applicant in relation to:

- The predicted magnitude of the loss of intertidal habitat due to coastal squeeze caused by maintaining the line of the floodbank.
- Proposals for mitigation or compensation for loss of intertidal habitat due to coastal squeeze (and the installation of rock armour)
- Pollution control measures for drainage into intertidal area- see ES
- Measures to reduce noise and visual construction disturbance on:
  - Birds using intertidal areas
  - Birds using existing farmland for feeding, roosting and loafing
  - Birds using created wetland habitats
- Conservation management plan for waterbird mitigation habitat areas to be provided.

- Lighting overspill and the visibility of lighting columns to birds using the adjacent intertidal area, created habitats and other high tide roost sites.
- Measures to minimise the enclosure of created waterbird habitat areas.
- Measures to minimise ongoing noise and visual disturbance of birds from commercial operations, site personnel, walkers and users of the proposed bird hides.
- Measures to minimise disturbance caused by train movements.
- Pollution control measures and amended sewage treatment proposals.

Signed ... Date 07 OCTOBER 2010.  
Andrew Taylor

Designation Project Officer (Ecologist)

## Summary of Determination of Likely Significant Effect (LSE) on International Nature Conservation Site Interest Features

### Humber Estuary Special Area of Conservation (SAC) Interest Features:

Interest Feature	Likely Significant Effect	Reason
1. Coastal lagoons	No LSE	Feature not found on or near the application site
2. Fixed dunes with herbaceous vegetation ("grey dunes")	No LSE	Feature not found on or near the application site
<b>3. Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)</b>	<b>LSE</b>	Works to the floodbank toe-beam will affect rock armour, not salt meadows. Pollution control measures will be in place. <b>However, repairing and improving the floodbank will lead to loss of saltmeadows due to coastal squeeze and possibly direct loss.</b>
4. Dunes with <i>Hippophae rhamnoides</i> Dunes with sea-buckthorn.	No LSE	Feature not found on or near the application site
5. Embryonic shifting dunes	No LSE	Feature not found on or near the application site
<b>6. Estuaries</b>	<b>LSE</b>	<b>Pollution control measures will be in place. However, Natural England and the Environment Agency have raised concerns about the diversion of flows from the application site away from East Halton Skitter. It is postulated that this could reduce the dilution and flushing of pollutants from East Halton Skitter, leading to increased concentrations of pollutants as these waters enter the Humber Estuary.</b>
7. <i>Halichoerus grypus</i> Grey seal	No LSE	Feature not found on or near the application site

8. <i>Lampetra fluviatilis</i> River lamprey.	No LSE	Feature not found on or near the application site
9. <b>Mudflats and sandflats not covered by seawater at low tide</b>	<b>LSE</b>	Works to the floodbank toe-beam will affect rock armour, not mudflat. Loss of mudflat due to run-off scour will be negligible. Pollution control measures will be in place- <b>However, repairing and improving the floodbank will lead to loss of mudflats due to coastal squeeze and possibly direct loss.</b>
10. <i>Petromyzon marinus</i> Sea lamprey	No LSE	Feature not found on or near the application site
11. <i>Salicornia</i> and other annuals colonising mud and sand	No LSE	Feature not found on or near the application site
1. Sandbanks which are slightly covered by sea water all the time	No LSE	Feature not found on or near the application site
2. Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")	No LSE	Feature not found on or near the application site

## Humber Estuary Special Protection Area (SPA) Interest Features:

### Qualifying species:

The site qualifies under **article 4.1** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

Annex 1 species	Count and season	Likely Significant Effect	Reason
Avocet <i>Recurvirostra avosetta</i>	59 individuals – wintering	LSE	Species not found on or near the application site <sup>1</sup>
Bittern <i>Botaurus stellaris</i>	4 individuals – wintering	No LSE	Species not found on or near the application site <sup>1</sup>
Hen harrier <i>Circus cyaneus</i>	8 individuals – wintering	No LSE	Species not found on or near the application site <sup>1</sup>
Golden plover <i>Pluvialis apricaria</i>	30,709 individuals – wintering	LSE	<b>Up to 617 Golden Plover have been recorded using the application site in winter<sup>2</sup>. The main fields used are fields 1 &amp; 4 at the north end of the site. Wintering Golden Plover feed and roost in arable fields throughout much of eastern England. However, in the South Humber Bank area, they do seem to be faithful to certain fields nearest the Humber Estuary, provided that crops are short<sup>2</sup>. Construction disturbance may affect the use of these fields for some time. Development of the site will permanently remove feeding, roosting and loafing habitat.</b>
Bar-tailed godwit <i>Limosa lapponica</i>	2,752 individuals – wintering	No LSE	Species not found on or near the application site <sup>1</sup>

<b>Ruff <i>Philomachus pugnax</i></b>	<b>128 individuals – passage</b>	<b>LSE</b>	<b>Up to 14 Ruff have been recorded using the application site and adjacent intertidal area between January and April 2007 and 2008<sup>1,2,3a</sup>. The main fields used are those nearest the Estuary and East Halton Pits. Construction disturbance, including the creation of wetland areas may affect the use of these fields for some time. Development of the site may permanently remove feeding, roosting and loafing habitat. It will also have a significant urbanising effect, generating more noise, movements of people and potentially, a sense of enclosure created by tall buildings and woodlands. These effects may all reduce the suitability of the remaining intertidal habitat and wetland areas for waterbirds that might otherwise be expected to use these areas. Birds could also be disturbed by trains passing through Killingholme Haven Pits SSSI (peak of 12 birds)<sup>3a</sup>.</b>
Bittern <i>Botaurus stellaris</i>	2 booming males – breeding	No LSE	Species not found on or near the application site <sup>1,2</sup>
Marsh harrier <i>Circus aeruginosus</i>	10 females – breeding	No LSE	Species not found on or near the application site <sup>1,2</sup>
<b>Avocet <i>Recurvirostra avosetta</i></b>	<b>64 pairs – breeding</b>	<b>LSE</b>	<b>Up to 70 birds present at Killingholme Haven Pits, March 2009 (pers. obs.). Birds could be affected by sporadic disturbance from trains.</b>
Little tern <i>Sterna albifrons</i>	51 pairs – breeding	No LSE	Species not found on or near the application site <sup>1,2</sup>

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

<b>Migratory species</b>	<b>Count and season</b>	<b>Likely Significant Effect</b>	<b>Reason</b>
Shelduck <i>Tadorna tadorna</i>	4,464 individuals – wintering	No LSE	Peak count of 3 on adjacent intertidal area <sup>2</sup> and 5 in fields <sup>1</sup> . Not a significant proportion of the Humber total.
Knot <i>Calidris canutus</i>	28,165 individuals – wintering	No LSE	Species not found in significant numbers on or near the application site <sup>1,2</sup>

<b>Dunlin <i>Calidris alpina</i></b>	<b>22,222 individuals – wintering</b>	<b>LSE</b>	Peak count of 53 on site <sup>1</sup> and around 100 on the adjacent intertidal area <sup>2</sup> . Not a significant proportion of the Humber total. <b>However, up to 1250 Dunlin use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>
<b>Black-tailed godwit <i>Limosa limosa</i></b>	<b>1,113 individuals – wintering</b>	<b>LSE</b>	Peak count of 432 on adjacent intertidal area on one occasion only <sup>2</sup> . Otherwise, fewer than 40 <sup>2</sup> . Peak count of 29 birds on-site <sup>1</sup> . <b>Site held &gt;1% of the citation total on 9% of 2008/7/08 counts. Up to 3,560 birds use Killingholme Haven Pits SSSI. These birds could be affected by sporadic disturbance from trains.</b>
<b>Redshank <i>Tringa totanus</i></b>	<b>4,632 individuals – wintering</b>	<b>LSE</b>	Peak counts of around 40 birds on adjacent intertidal area <sup>2</sup> . Peak of 36 in the fields <sup>1</sup> . Not a significant proportion of the Humber total. <b>However, up to 535 birds use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>
<b>Knot <i>Calidris canutus</i></b>	<b>18,500 individuals – passage</b>	<b>No LSE</b>	Species not found in significant numbers on or near the application site <sup>1,2</sup>
<b>Dunlin <i>Calidris alpina</i></b>	<b>20,269 individuals – passage</b>	<b>LSE</b>	Not recorded as a passage bird on-site <sup>1</sup> . Around 100 on the adjacent intertidal area <sup>2</sup> . Not a significant proportion of the Humber total. <b>However, up to 1250 Dunlin use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>
<b>Black-tailed godwit <i>Limosa limosa</i></b>	<b>915 individuals – passage</b>	<b>LSE</b>	Peak count of 432 on adjacent intertidal area on one occasion only <sup>2</sup> . Otherwise, fewer than 40 <sup>2</sup> . Not recorded as a passage bird on-site <sup>1</sup> . <b>Site held &gt;1% of the citation total on 9% of 2008/7/08 counts. Up to 3,560 birds use Killingholme Haven Pits SSSI. These birds could be affected by sporadic disturbance from trains.</b>
<b>Redshank <i>Tringa totanus</i></b>	<b>7,462 individuals – passage</b>	<b>LSE</b>	Peak counts of around 40 birds on adjacent intertidal area <sup>2</sup> . Single figures in the fields during passage <sup>1</sup> . Not a significant proportion of the Humber total. <b>However, up to 535 birds use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>

**Assemblage qualification:**

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season:

<b>Interest Feature</b>	<b>Likely Significant Effect</b>	<b>Reason</b>
<b>Over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season: In the non-breeding season, the area regularly supports 153,934 individual waterbirds</b>	<b>LSE</b>	<b>Significant numbers of waterbirds use the application site and adjacent intertidal area. Species in high numbers include ruff, golden plover, lapwing, curlew. The bird assemblage may be affected by noise and visual disturbance in the construction and operational phases of development. Development of the site will permanently remove roosting, feeding and loafing habitat</b>

**Humber Estuary Ramsar Site and proposed Ramsar Site Interest Features:**

Interest Feature	Likely Significant Effect	Reason
<b>Criterion 1: near-natural estuary with the following component habitats:</b>		
dune systems and humid dune slacks	No LSE	Feature not found on or near the application site
<b>estuarine waters</b>	<b>LSE</b>	<b>Pollution control measures will be in place. However, Natural England and the Environment Agency have raised concerns about the diversion of flows from the application site away from East Halton Skitter. It is postulated that this could reduce the dilution and flushing of pollutants from East Halton Skitter, leading to increased concentrations of pollutants as these waters enter the Humber Estuary.</b>
<b>intertidal mud and sand flats</b>	<b>LSE</b>	Works to the floodbank toe-beam will affect rock armour, not mudflat. Loss of mudflat due to run-off scour will be negligible. Pollution control measures will be in place. <b>However, repairing and improving the floodbank will lead to loss of mudflats due to coastal squeeze and possibly direct loss.</b>
<b>saltmarshes</b>	<b>LSE</b>	Works to the floodbank toe-beam will affect rock armour, not salt meadows. Pollution control measures will be in place. <b>However, repairing and improving the floodbank will lead to loss of saltmeadows due to coastal squeeze and possibly direct loss.</b>

coastal brackish/saline lagoons		No LSE	Feature not found on or near the application site
<b>Criterion 3: animal species important for maintaining the biological diversity of the biogeographic region:</b>			
grey seals <i>Halichoerus grypus</i> at Donna Nook		No LSE	Feature not found on or near the application site
natterjack toad <i>Bufo calamita</i> at Saltfleetby-Theddlethorpe		No LSE	Feature not found on or near the application site
<b>Criterion 5: regularly supports 20,000 or more waterbirds</b>		LSE	<b>Significant numbers of waterbirds use the application site and adjacent intertidal area. Species in high numbers include ruff, golden plover, lapwing, curlew. The bird assemblage may be affected by noise and visual disturbance in the construction and operational phases of development. Development of the site will permanently remove roosting, feeding and loafing habitat</b>
<b>Criterion 6: regularly supports 1% of the individuals in the populations of the following species or subspecies of waterbird in any season</b>		<b>Likely Significant Effect</b>	<b>Reason</b>
<b>Species</b>	<b>Count and season</b>		
Shelduck <i>Tadorna tadorna</i>	4,464 individuals – wintering	No LSE	Peak count of 3 on adjacent intertidal area <sup>2</sup> and 5 in fields <sup>1</sup> . Not a significant proportion of the Humber total.
<b>Golden plover</b> <i>Pluvialis apricaria</i>	<b>30,709 individuals – wintering</b>	LSE	<b>Up to 617 Golden Plover have been recorded using the application site in winter<sup>2</sup>. The main fields used are fields 1 &amp; 4 at the north end of the site. Wintering Golden Plover feed and roost in arable fields throughout much of eastern England. However, in the South Humber Bank area, they do seem to be faithful to certain fields nearest the Humber Estuary, provided that crops are short<sup>2</sup>. Construction disturbance may affect the use of these fields for some time. Development of the site will permanently remove feeding, roosting and loafing habitat.</b>
Knot <i>Calidris canutus</i>	28,165 individuals – wintering	No LSE	Species not found in significant numbers on or near the application site <sup>1</sup>

Dunlin <i>Calidris alpina</i>	22,222 individuals – wintering	LSE	Not recorded as a passage bird on-site <sup>1</sup> . Around 100 on the adjacent intertidal area <sup>2</sup> . Not a significant proportion of the Humber total. <b>However, up to 1250 Dunlin use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>
Black-tailed godwit <i>Limosa limosa</i>	1,113 individuals – wintering	LSE	Peak count of 432 on adjacent intertidal area on one occasion only <sup>2</sup> . Otherwise, fewer than 40 <sup>2</sup> . Peak count of 29 birds on-site <sup>1</sup> . <b>Site held &gt;1% of the citation total on 9% of 2008/7/08 counts. Up to 3,560 birds use Killingholme Haven Pits SSSI. These birds could be affected by sporadic disturbance from trains.</b>
Bar-tailed godwit <i>Limosa lapponica</i>	2,752 individuals – wintering	No LSE	Species not found on or near the application site <sup>1,2</sup>
Redshank <i>Tringa totanus</i>	4,632 individuals – wintering	LSE	Peak counts of around 40 birds on adjacent intertidal area <sup>2</sup> . Peak of 36 in the fields <sup>1</sup> . Not a significant proportion of the Humber total. <b>However, up to 535 birds use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>
Golden plover <i>Pluvialis apricaria</i>	17,996 individuals – passage	LSE	Up to 443 Golden Plover have been recorded using the application site during passage <sup>2</sup> . The main fields used are fields 1 & 4 at the north end of the site. Wintering Golden Plover feed and roost in arable fields throughout much of eastern England. However, in the South Humber Bank area, they do seem to be faithful to certain fields nearest the Humber Estuary, provided that crops are short (Catley, G. 2007-2009). Construction disturbance may affect the use of these fields for some time. <b>Development of the site will permanently remove feeding, roosting and loafing habitat.</b>
Knot <i>Calidris canutus</i>	18,500 individuals – passage	No LSE	Species not found in significant numbers on or near the application site <sup>1,2</sup>
Dunlin <i>Calidris alpina</i>	20,269 individuals – passage	LSE	Peak count of 53 on site and around 100 on the adjacent intertidal area <sup>2</sup> . Not a significant proportion of the Humber total. <b>However, up to 1250 Dunlin use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>

<b>Black-tailed godwit</b> <i>Limosa limosa</i>	<b>915 individuals – passage</b>	<b>LSE</b>	Peak count of 432 on adjacent intertidal area on one occasion only <sup>2</sup> . Otherwise, fewer than 40 <sup>2</sup> . Not recorded as a passage bird on-site <sup>1</sup> . <b>Site held &gt;1% of the citation total on 9% of 2008/7/08 counts. Up to 3,560 birds use Killingholme Haven Pits SSSI. These birds could be affected by sporadic disturbance from trains.</b>
<b>Redshank</b> <i>Tringa totanus</i>	<b>7,462 individuals – passage</b>	<b>LSE</b>	Peak counts of around 40 birds on adjacent intertidal area <sup>2</sup> . Single figures in the fields during passage <sup>1</sup> . Not a significant proportion of the Humber total. <b>However, up to 535 birds use Killingholme Haven Pits SSSI. Birds could be affected by sporadic disturbance from trains.</b>
<b>Criterion 8:</b> migration path on which fish stocks, either within the wetland or elsewhere, depend:			
River lamprey <i>Lampetra fluviatilis</i>		No LSE	Species not found on or near the application site
Sea lamprey <i>Petromyzon marinus</i>		No LSE	Species not found on or near the application site

## References

1. Able UK 19/08/09 SPA Bird Roosting Field Data Sheet
2. Catley, G. 2007-2009 South Humber Bank Bird Surveys
3. Catley, G. 2007 Winter bird survey of East Halton and Killingholme Marshes and inland fields encompassed by North Lincolnshire Council boundary: January to March 2007:
  - a) Ruff pp35-37
4. Sykes, J.M., Horrill, A.D. & Mountford, M.D. 1983 Use of visual cover assessments as quantitative estimators of some British woodland taxa. *Journal of Ecology* 71:437-450.
5. Environment Agency 2005 The Humber Flood Risk Management Strategy. Consultation Document August 2005. Planning for the Rising Tides.
6. Hoskin, R. & Tyldesley, D. 2006 How the scale of effects on internationally designated nature conservation sites in Britain has been considered in decision making: A review of authoritative decisions. English Nature Research Reports Number 704
7. Taylor 2010 Letter to Gary Doubleday re Humber Estuary Floodbank dated 27 January 2010.

PA/2009/0600 Able UK Land between East Halton Skitter and Chase Hill Road, North Killingholme

Summary of Detailed Consultation Responses to draft Appropriate Assessment

Consultation Question	Responses	Natural England	RSPB	TrustLincs Wildlife	Agency/Env.	Able UK
Q1 Do you agree with the list of Likely Significant Effects? If not, which effects would you add or remove?	1a Need to add consideration of the pumping station & outfall.	✓				
	1b Add impacts of site drainage on the flows of East Halton Skitter.	✓				
	1c Query over a 2410m spur which will run from the consented hydrogen pipeline	✓				
	1d Add temporary loss of functioning SPA and Ramsar habitat during construction based on the current phased approach.		✓			
	1e Add disturbance from recreational access- esp additional paths		✓			
	1f Agree with the list of Likely Significant Effects			✓		
	1g Agree, although 5.5 might more accurately refer to habitat loss also being from placement of rockarmour beyond the toe beam.				✓	
	1h Sea level rise is treated as natural change in the Reg 33 advice, so is not a LSE					✓
Q2 Do you agree that the Environment Agency's existing commitment to habitat creation will remove any Adverse Effect on Integrity due to coastal squeeze in the East Halton Area?	2a Deficit of 17.2ha of intertidal habitat in the middle estuary over the period 2007-2011 within the Humber FRMS. Need updated calculations on coastal squeeze losses & gains	✓	✓	✓		
	2b Compensation should be delivered & functioning before loss takes place. If EA can't deliver, then responsibility falls to applicant.	✓	✓			
	2c Development of the site would result in the need to identify an alternative site in the Middle Estuary for managed realignment.			✓		
	2d AEOI	✓	✓	✓		
	2e EA have not declared managed realignment as preferred option for Halton Marshes.					✓
	2f The predicted 17.2 ha deficit of intertidal habitat in the middle estuary is an agreed element of the CHAMP. It has been accepted that this deficit will increase, with replacement being made in the outer estuary.					✓
	2g Coastal squeeze will be fully compensated for within the EA's FRMS					✓
Q3 re Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area	3a Need clarity over final flood defence proposals before no AEOI can be justified	✓	✓	✓	✓	
	3b Need to confirm works will not be carried out from the intertidal side.	✓				
	3c Not best practice to refer to de minimis loss- death by a thousand cuts.	✓				
	3d Should be assessed in combination with all schemes and processes leading to habitat loss. The schemes at East Halton and Stallingborough are the most obvious nearby ones, but there are many more within the Humber Flood Risk Strategy.				✓	

	3e Should not be considered in combination with EA schemes as these are already covered by habitat compensation.						✓
	3f Loss of 704m2 of mud is not significant & will have negligible effect on birds						✓
	3g Guidance shows that loss of a small area of habitat from a large site may not be AEOI (EC document + ENRR 704)						✓
	3h Loss of 525m2 of saltmarsh is between 0.0036% and 0.005% of Estuary total						✓
	3i Spread of Spartina anglica SM6 community could lead to loss of bird habitat (JNCC/Reg 33 advice)						✓
	3j Loss of saltmarsh is not significant, but Able propose to create new saltmarsh						✓
Q4 re Surface water drainage into intertidal habitat, causing pollution.	4a Agree with the conclusion that as proposed the pollution from surface water drainage could result in an AEOI.	✓	✓	✓			
	4b Drains may not be able to store water in adverse weather conditions.	✓					
	4c East Halton Drain neither flushes nor dilutes pollutants from East Halton Beck.						✓
	4d Court of Appeal case showed that the LPA can rely on the EA to separately assess the effects of drainage discharges to a European Site						✓
	4e Separation of the site form E Halton Beck is already agreed with the EA						✓
	4f Water quality of discharge from the Package Treatment Plants (via reedbeds) can be secured by a planning condition						✓
	4g Effluent will be significantly diluted in the on-site wetland and further diluted upon entry into the Humber						✓
Q5 re Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.	5a Construction noise can adversely affect SPA birds.	✓					
	5b Relate timing restrictions to ornithological data- birds present between April and Sept.	✓		✓			
	5c Request map and number of birds using north and south halves of sector ISI.	✓					
	5d Concern over changes in bird populations and patterns of use, not mortality Para 9.6.1.4	✓	✓				
	5e In combination effects are possible unless other projects' effects are fully mitigated.	✓		✓			
	5f Query deviation from approaches used in other cases i.e. lengthy timing restrictions	✓					
	5g Query over 9.6.3.2- use of realignment sites	✓	✓				
	5h Additional evidence and more robust conditions required to show no AEOI.	✓					
	5i Proposed mitigation areas are insufficient in size, scale, location and design to support the numbers and species of SPA and Ramsar birds which will be displaced.		✓				
	5j It is unlikely there will be any functioning high tide feeding and roosting habitat within the site during the first four years at least of the construction works		✓				
	5k The mitigation areas will be subject to high levels of noise and visual disturbance during construction.		✓				
	5l The phased approach proposed will not be sufficient to mitigate for impacts during construction .Mitigation should be in place and functioning (i.e. optimum habitat established and free from disturbance) before loss.		✓				
	5m RSPB unaware of hydrogen pipeline construction methods.		✓				
	5n Particular concern about black-tailed godwit which have been recorded in significant numbers on the adjacent intertidal habitat in the July to September period			✓			

	5o Agree no AEOI- seems similar to the methods the EA would propose				✓		
	5p Planning consent for the hydrogen pipeline (PA/2006/1133) lapsed on 6 <sup>th</sup> November 2009. It is not necessary to consider it in combination with Able's planning application.					✓	
Q6 Do you agree with the conclusions relating to ruff, curlew, golden plover and lapwing? Are there any other species of concern?	6a (5j,5l) Mitigation must be created in advance of loss to enable the newly created habitat time to develop and ensure that it is able to support the displaced birds.	✓					
	6b (5i) The proposed mitigation areas are inadequate. Significant numbers of SPA birds are known to use much of the development site, which covers 380ha. A total area of 59ha, split up into 3 discrete blocks, is insufficient to mitigate for the loss of a much larger site. .. particularly as food stocks are depleted throughout the year.	✓	✓				
	6c (5k) Wetland mitigation areas will be subject to disturbance and edge effects	✓	✓	✓			
	6d Request consideration of black tailed godwit.	✓	✓				
	6e Reference to exceptional lapwing flocks.	✓		✓			
	6f Speculation as to greater golden plover use if more surveys were carried out.	✓					
	6g States that in-combination projects are missing	✓	✓				
	6h Query over cattle grazing.	✓					
	6i AEOI until full mitigation demonstrated- certainty required	✓	✓	✓			
	6j Usage by other non-breeding SPA and Ramsar birds most notably snipe, dunlin, redshank and whimbrel, and occasional use by other geese and wildfowl		✓				
	6k South Humber Bank Draft Masterplan mitigation not delivered or agreed		✓				
	6l Support the need for conditions relating to the grazing and hydrological management of any proposed mitigation areas		✓				
	6m Support the need for monitoring and mechanisms for review and adaptation to allow any necessary remedial measures or additional mitigation measures to be implemented.		✓				
	6n The proposed mitigation is not adequate to support the needs of golden plover and lapwing in the numbers and for the range of functions necessary.		✓	✓			
	6o Area C too isolated from estuary and subject to disturbance		✓				
	6p Area B already supports SPA/Ramsar birds, so does not provide additional mitigation		✓				
	6q Final Draft Conservation Objectives require "No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors".			✓			
	6r Application should not be determined until the locations of all strategic mitigation areas have been agreed for the SHB.			✓			
	6s Prediction of bird numbers on designed wetlands is an inexact science, but Able UK have used a designer of considerable experience						✓
6t Mean peak populations of Golden Plover, Lapwing, Curlew and Ruff have increased, not declined, in recent years, suggesting that high tide foraging and roosting habitat is not limiting.						✓	
Q7 re Ongoing noise and visual disturbance of waterbirds using the	7a Misunderstanding re noise levels, footpath proposals & Para 11.2.3.	✓					
	7b Clarify whether tall structures will have an enclosing effect.	✓					

adjacent intertidal area and areas of created wetland.	7c Screening condition required.	✓	✓			
	7d AEOI until full mitigation demonstrated	✓	✓			
	7e Proposed rail terminal will cause noise disturbance to the wetland mitigation areas.		✓			
	7f Bird using wetland areas may not respond to disturbance in the same way as birds using Killingholme Haven Pits		✓			
	7g Request precautionary approach to access near wetlands based on scientific evidence of disturbance		✓			
	7h Request measures to exclude the general public and dogs from accessing any proposed mitigation areas- barriers to be <1metre high		✓			
	7i Concern about paths proposed by PROW staff	✓	✓	✓		
	7j In combination effects are possible unless other projects' effects are fully mitigated.			✓		
	7k Displacing birds from the application site would not be AEOI. Similar displacements have occurred in the past, yet estuary-wide populations have increased.					✓
Q8 re Increased light levels and the dominant visual appearance of lighting columns.	8a NE require firm conclusion re lighting columns- para 12.1.2.2.	✓				
	8b AEOI unless more robust & enforceable conditions remove lighting disturbance.	✓	✓	✓		
	8c Require certainty re effects of light levels			✓		
Q9 re Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI and all three proposed wetland areas.	9a Activities not subject to regulation need to be considered in combination.	✓				
	9b Request for sound levels at NKHP + HE SSSIs.	✓				
	9c AEOI unless conditions require screening and improvement of NKHP- activities which NLC stated would cause rather than reduce disturbance.	✓	✓			
	9d Seek clarification of number of train movements per day		✓			
	9e Disagree that current usage of NKH Pits reveals lack of response to disturbance		✓			
	9f Require detailed disturbance monitoring with implementation of remedial measures if necessary.		✓	✓		
	9g AEOI without mitigation			✓		
	9h Andrew Ward Associates (2005) noted that birds using Killingholme Haven Pits are habituated to noise.					✓
	9i Freight trains used the track through Killingholme Haven Pits until 2003 and for six months in 2005. Large numbers of birds used the Pits at that time.					✓
Q10 Would you recommend any amendments to the proposed conditions? Will the conditions remove any adverse effect on the integrity of the International Nature Conservation Sites?	10a Conditions should be more explicit about mitigation during construction. Reporting should be more than once a year.	✓				
	10b Concern over parameters in conditions and make-up of steering group.	✓				
	10c Proposed mitigation is inadequate, so related conditions are inadequate		✓			
	10 d Conditions not enforceable		✓			
	10e Conditions should require monitoring with implementation of remedial measures if necessary.		✓			
Q11 Do you agree with the overall	11a AEOI at present.	✓	✓	✓	✓	
	11b The currently proposed mitigation is inadequate to address impacts on SPA		✓			

determination of adverse effect on the integrity of the International Nature Conservation Sites?	and Ramsar birds. However it is possible to mitigate this proposal adequately with provision of suitable habitat of sufficient scale, size, location and management.					
	11c In addition to the loss of intertidal habitat and potential pollution AEOI will be due to noise and visual disturbance to birds in the construction phase of development, to permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing and also possibly due to disturbance to birds from increased train movements, pedestrians and lighting			✓		
Q12 Do you agree with the advice relating to the SSSI?	12a Requires updating to reflect changes in AA	✓	✓			
	12b Agree				✓	
Q13 Are there any other references or pieces of evidence that should be taken into account in carrying out the appropriate assessment?	13a The RSPB's paper "The South Humber Bank: principles to underpin a strategic approach"	✓	✓			
	13b SHBZ Functional Capacity Study (2009) Mott MacDonald		✓			
	13c Always more docs and sources of info that could be used, (e.g. inspectors findings from other cases, EA Review of Consents documents, Humber Strategy documents), but I believe that you have referenced enough for the assessment to be "appropriate" at this time.				✓	
	13d Add EA's AA of floodbank land drainage application				✓	
Q14 Are there any other plans, projects or effects that should be considered in combination with the current proposal when carrying out the appropriate assessment?	14a The in-combination assessment requires further information to ensure a thorough assessment has been undertaken.	✓				
	14b NE disagrees with the current approach that states that since other developments will have their own mitigation, there can be no significant in-combination effects to consider.	✓				
	14c Planning Application PA/2009/1269 Form B application to construct and operate a 290 megawatt (MW) biomass fuelled electricity generating station on land north of Humber Road, South Killingholme. Drax Biomass Immingham Ltd. Section 36 Electricity Act 1989. Section 90(2) Town and Country Planning Act		✓			
	14d North Lincolnshire Local Plan		✓			
	14e North East Lincolnshire Local Plan		✓			
	14f North Lincolnshire Council Local Development Framework (LDF) in draft		✓			
	14g North East Lincolnshire Council LDF in draft		✓			
	14h South Humber Bank Draft Masterplan (2004)		✓			
	14i Contact EA Asset Systems Management team to determine what plans they have along the coastline.				✓	
Q15 Do you have any other comments not already covered?	15a A greater level of certainty is required before no AEOI can be determined. This should be reflected in the terminology used.	✓				
	15b Development must not compromise the strategic South Humber Gateway work.	✓		✓		
	15c Follow RSPB advice on mitigation.	✓				
	15d The Humber Estuary is no longer a candidate SAC, it is now a SAC.	✓	✓			
	15e References to English Nature should be amended to Natural England	✓	✓			
	15f Numbering errors from section 5 – always starts with .4 eg 5.4, 6.4, section 9.7 and	✓				

	9.8 refers to „section 9.3 above“ and „see 9.2“ which are missing					
	15g The works to the flood defence are described as restoration or repair, however it is our understanding that the flood defences will be improved.	✓				
	15h Request table to show when important fields will be lost and when mitigation will be provided.	✓				
	15i (3b) Need to confirm there will be no temporary loss of foreshore		✓			
	15j The AA must be undertaken in the light of the conservation objectives <b>but</b> is not restricted to these		✓			
	15k We are committed to working constructively with the Council, the developer Able UK and other stakeholders to address the nature conservation impacts of the proposal. We would be happy to resume a constructive dialogue to identify a potential resolution to the outstanding concerns regarding the inadequacy of the proposed wetland mitigation areas		✓			
	15l Water vole displacement technique may be reckless				✓	
	15m Clarification of reasonable scientific doubt & precautionary principle re AEOI in Circular 06/2005					✓
Q16 re additional footpaths	16a Without prejudice to any further advice we may give when formally consulted on this assessment, we advise that the new proposals may lead to an adverse effect.	✓				
	16b The additional proposed areas would further impact on the proposed mitigation dramatically, increasing uncertainty that the mitigation will provide any function for SPA and Ramsar birds and therefore be unsuitable mitigation for displace SPA and Ramsar birds.		✓			
	16c The provision of additional public footpaths adjacent to the wetland mitigation areas could potentially lead to an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site through disturbance to waterbirds from pedestrians and dogs.			✓		

## Consultation responses, discussion and recommended actions.

There are many responses here, many of which only require minor amendments to the draft appropriate assessment. More significant issues, requiring greater input are asterisked- \*. These are :

- Q2 (2a-2g) Coastal squeeze;
- 3c Can a very small loss of habitat be termed *de minimis*?
- Q3 Loss of intertidal habitat due to flood bank construction.
- 4f & 4g Water quality standards and discharge consents.
- 6b Adequacy of wetland mitigation areas. Estimating the magnitude 9 waterbird roosting and feeding requirements.
- 6c Dealing with uncertainty about adequacy of wetland mitigation areas. Conditions. Monitoring, remedial measures and provision of additional habitat if necessary.
- 9c Works to North Killingholme Haven Pits and bird disturbance.
- 15m Scientific doubt and the precautionary principle.
- Q16 Additional footpaths proposed by NLC Public Rights of Way staff.

### Q1 Do you agree with the list of Likely Significant Effects? If not, which effects would you add or remove?

1a Need to add consideration of the pumping station & outfall (NE)

Action: Make reference to pumping station & outfall in det. of LSE. Outfall covered by Pethick report. Pumping station- de minimis loss of mudflat + potential construction disturbance, similar to flood bank construction- same conditions.

1b Add impacts of site drainage on the flows of East Halton Skitter (NE)

Action: Add to det. of LSE. However, no AEOI as the existing drain does not flush or dilute pollutants (see 4c, 4d, 4e).

1c Query over a 2410m spur which will run from the consented hydrogen pipeline (NE)

Action: Add to det. of LSE. No AEOI as long as conditions are attached as per PA/2006/1133. The "spur" is away from the Estuary and runs largely along proposed roads.

1d Add temporary loss of functioning SPA and Ramsar habitat during construction based on the current phased approach. (RSPB)

Discussion: RSPB concern that only 4.8 ha of wetland will be created in Phases 1-3 is misplaced, presumably arising from a misinterpretation of Table 1 in the AA. The phasing plan shows that Wetland Area C will be created in Phase 1 and Wetland Area A will be created in Phase 3.

Action: No change to det. of LSE. Ensure that currently proposed phasing conditions are optimised to provide new wetland in advance of loss.

1e Add disturbance from recreational access- esp additional paths (RSPB)

Discussion: Ongoing noise and visual disturbance (including from recreational access) is already a listed LSE. The additional paths are not part of the Able UK Project- they are a separate proposal from the Highway Authority (NLC PROW staff), so should be considered separately as per the consultation.

Action: No change to det. of LSE.

1f Agree with the list of Likely Significant Effects (LWT)

Action: No change to det. of LSE.

1g Agree, although 5.5 might more accurately refer to habitat loss also being from placement of rock armour beyond the toe beam. (EA)

Action: Amend wording to det. of LSE + para 5.5 of AA re placement of rock armour beyond the toe beam.

1h Sea level rise is treated as natural change in the Reg 33 advice, so is not a LSE (Able UK)

Action: Confirm agreed response to coastal squeeze with NE and EA – see 2a-2g

**Q2\* Do you agree that the Environment Agency's existing commitment to habitat creation will remove any Adverse Effect on Integrity due to coastal squeeze in the East Halton Area?**

2a 900 ha intertidal habitat required throughout Estuary- Flood Risk Management Strategy.

Whilst we agree that the EA's commitment to compensating for coastal squeeze means that this impact is being dealt with through an alternative route, it is understood that there is currently a deficit in the middle estuary. Therefore any flood defence proposals in this part of the estuary are not currently compensated for under the EA's flood risk management strategy. We suggest that this is clarified with the EA. (NE)

2a Deficit of 17.2ha of intertidal habitat in the middle estuary over the period 2007-2011 within the Humber FRMS. AEOI due to coastal squeeze in combination with direct loss of mudflat.. Need updated calculations on coastal squeeze losses & gains (RSPB)

2b Compensation should be delivered & functioning before loss takes place. If EA can't deliver, then responsibility falls to applicant. (RSPB)

Discussion: Welwick and Chowder Ness constructed at the same time that the loss was taking place [Immingham Outer Harbour & Quay 2005]...not in advance (Darren Clarke pers comm.). Recent studies suggest that coastal squeeze is already happening in the Middle Estuary (Phil Winn, pers. comm.) Therefore, compensation can only be delivered as the loss continues.

2c Development of the site would result in the need to identify an alternative site in the Middle Estuary for managed realignment. (LWT)

2d AEOI (NE, RSPB, LWT)

2e EA have not declared managed realignment as preferred option for Halton Marshes. (Able UK)

2f The predicted 17.2 ha deficit of intertidal habitat in the middle estuary is an agreed element of the CHAMP. It has been accepted that this deficit will increase, with replacement being made in the outer estuary. (Able UK)

Discussion: Natural England do not accept that replacement of middle estuary losses in the outer estuary is an agreed element of the CHAMP. In the current review of the CHAMP, attention will focus on replacing middle estuary losses in the middle estuary (Emma Hawthorne, pers. comm.)

2g Coastal squeeze will be fully compensated for within the EA's FRMS (Able UK)

**ACTION\*- RESPONSE TO ISSUES OF COASTAL SQUEEZE TO BE AGREED WITH NE AND EA**

**Q3\* re Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area**

3a Need clarity over final flood defence proposals before no AEOI can be justified (NE, RSPB, LWT)

Action- Managed realignment proposal submitted, considered and secured with planning condition. Final drawings considered as part of appropriate assessment.

### 3b Need to confirm works will not be carried out from the intertidal side. (NE)

Confirmed: "Flood defence wall works: The works will be undertaken from atop the flood defence wall. The previously mentioned 1.1ha of rock armour foreshore will no longer be used." – e-mail from Richard Cram 12/02/10.  
Action: Secure agreed method by planning condition.

### 3c\* Not best practice to refer to *de minimis* loss- death by a thousand cuts. (NE)

Discussion:

#### *De minimis* effects

Whilst I appreciate Natural England's desire to minimise or even eliminate loss of internationally important habitat, it is important to recognise that the available guidance acknowledges that very small losses may be *de minimis* and therefore not an adverse effect on the integrity of an International Nature Conservation Site.

Habitats Regulations Guidance Note 3 (On the determination of likely significant effect) states that "Proposals having no, or *de minimis*, effects can be progressed without further consideration under the Habitats Regulations although reasons for reaching this decision must be justified and recorded..." It goes on to say that, "Permanent reductions in habitat area or species populations are likely to be significant unless they are very small scale. In the case of certain sites a loss of, say, a few square metres of the site area may **not** be considered significant (for example, there may be circumstances when this might apply in the case of estuarine SPAs which are selected for their bird interest)..."

English Nature Research Report 704 (ENRR 704) states that, "Whilst it is concluded that very small scale losses can be decisive in important decisions about project proposals, there must be a point at which an effect may be considered *de minimis*. The term *de minimis* is widely used in a legal sense and is defined by the LAW.COM Dictionary as "*Latin for 'of minimum importance' or 'trifling.' Essentially it refers to something or a difference that is so little, small, minuscule or tiny that the law does not refer to it and will not consider it.*" The report gives examples of legal judgements and inspectors' decisions where effects have been deemed to be *de minimis*, along with examples of small effects that were considered to be more significant.

EC guidance states that, "For example, a loss of a hundred square metres of habitat may be significant in relation to a small rare orchid site, while a similar loss in a large steppic site may be insignificant." "Managing Natura 2000 Sites; The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC', (MN2000). This implies that the loss of small amounts of habitat from very large designated sites may not be significant.

#### Death by a thousand cuts

Whilst this phrase is a metaphor, its use here illustrates an important point about the scale of the Able UK floodbank works. The works will result in an estimated loss of 0.0006% to 0.0009% of the area of intertidal mud in the Humber Estuary designated site. If there were a thousand projects of this scale acting in combination, this would represent a loss of 0.6% to 0.9% of the intertidal mud, which would be an AEOI applying the rules of thumb available from ENRR 704. However, for this to be a likely significant effect, there needs to be a probability, or at least a plausible scenario, for a significant number of other projects to be put forward that would not be AEOI on their own, but could lead to significant losses of intertidal habitat in combination. Around the Humber Estuary, the vast majority of flood defence works will be undertaken by the Environment Agency, who have undertaken to compensate for coastal squeeze losses at a 1:1 area ratio and direct losses at a 3:1 ratio. Their works should not be considered in combination with this project. Major losses of intertidal habitat due to jetties or other large projects would be AEOI on their own and would only progress if compensatory habitat could be provided (assuming other tests were also met). The only other projects that could act in combination would entail small losses of mudflat due to pipe or pumping station outfalls or other private flood bank schemes. I am not aware of a scale of demand for such projects that could lead to an AEOI in combination with the Able UK

proposal. Small private jetties for watersports are unlikely to be consented due to the disturbance that would be caused by additional watercraft (cf Tideways jetty decision in ENRR704).

Conclusions:

- It is legitimate to consider that very small losses of habitat can be *de minimis*. That may be the case with this application- that will depend on the final proposals for the floodbank.
- For an LSE and AEOI due to loss of intertidal habitat in combination with other potential projects (death by a thousand cuts), there has to be a likelihood that other small losses could occur. That is very unlikely to reach a significant level around the Humber Estuary.

Action: Retain the reference to de minimis loss and record conclusion of no AEOI due to loss of mudflat unless the floodbank proposals change very significantly.

3d Should be assessed in combination with all schemes and processes leading to habitat loss. The schemes at East Halton and Stallingborough are the most obvious nearby ones, but there are many more within the Humber Flood Risk Strategy. (EA)

Discussion, Conclusions, Action: See 3c

3e Should not be considered in combination with EA schemes as these are already covered by habitat compensation. (Able UK)

Discussion, Conclusions, Action: See 3c (Agree with 3e)

3f Loss of 704m<sup>2</sup> of mud is not significant & will have negligible effect on birds (Able UK)

#### Mudflat

Discussion, Conclusions, Action: See 3c (Agree with 3f)

#### Effect on birds

Various species of waterbird use WeBS sector ISI. However very small numbers use the intertidal area immediately adjacent to the application site (Catley, G 2007-2008). A loss of a very small area of mud from this section is very unlikely to have an effect on bird populations.

Action: Record no AEOI due to the effect of loss of mud on bird populations.

3g Guidance shows that loss of a small area of habitat from a large site may not be AEOI (EC document + ENRR 704) (Able UK)

Discussion, Conclusions, Action: See 3c (Agree with 3g)

3h Loss of 525m<sup>2</sup> of saltmarsh is between 0.0036% and 0.005% of Estuary total (Able UK)

Discussion: Natural England has provided a figure of 784 ha of saltmarsh for the estuary (E. Hawthorne 27/01/10). 525m<sup>2</sup> would be 0.0067% of this total, and a higher percentage of the middle estuary total. As the character of saltmarsh communities changes markedly from the upper to the outer estuary, it is pertinent to consider the middle estuary figures separately.

Action: Calculate percentage loss of saltmarsh for the middle estuary attributable to this application. Seek middle estuary figures from EA.

3i Spread of *Spartina anglica* SM6 community could lead to loss of bird habitat (JNCC/Reg 33 advice) (Able UK)

Action: Consider loss of SM12 Sea aster community only.

3j Loss of saltmarsh is not significant, but Able propose to create new saltmarsh (Able UK)

Action- Managed realignment proposal submitted, considered and secured with planning condition. Final drawings considered as part of appropriate assessment.

3a – 3j Action- Floodbank issues to be discussed with EA, NE and Able UK, late May 2010. Agreed actions from that meeting may enable the AA approach to be taken forward.

**Q4 re Surface water drainage into intertidal habitat, causing pollution.**

4a Agree with the conclusion that as proposed, the pollution from surface water drainage could result in an AEOI. (NE, RSPB, LWT)

Action: Consider further information to determine whether AEOI can be removed (see below)

4b Drains may not be able to store water in adverse weather conditions. (NE)

Action: Asked Richard Cram 25/03/10, request clarified 19/05/10

4c East Halton Drain neither flushes nor dilutes pollutants from East Halton Beck. (Able UK)

Action: Agreed. Remove reference to flushing or dilution by the drain.

4d Court of Appeal case showed that the LPA can rely on the EA to separately assess the effects of drainage discharges to a European Site (Able UK)

Action: Noted. However, AA could usefully refer to surface water discharges if adverse effects have been precluded.

4e Separation of the site from E Halton Beck is already agreed with the EA (Able UK)

Discussion: This issue is not whether the separation has been agreed, but whether it leads to an adverse effect.

Action: No action on this point.

4f\* Water quality of discharge from the Package Treatment Plants (via reedbeds) can be secured by a planning condition (Able UK)

Discussion: E-mailed EA for response 25/03/10. Laura Richardson responded 16/04/10. EA require Able UK to connect to a mains sewer, if at all possible, in order to gain Discharge Consent. This approach is underpinned by a Halcrow study (2008) which stated that, "*Three of the four largest discharges from wastewater treatment works discharge into the Humber Estuary. These wastewater treatment works serve the major growth area in the South Humber and are the most likely to be affected by development...the impact upon changes in water quality would need to be assessed against the ecological designations of the Humber Estuary to ensure no deterioration*".

Action: Subject to legal advice on 4d above, ensure that Able UK have dealt with surface water discharge and foul drainage issues to a point where EA can determine no AEOI.

4g\* Effluent will be significantly diluted in the on-site wetland and further diluted upon entry into the Humber (Able UK)

Action: Agreed no AEOI alone. However, water quality standards need to be met to ensure no AEOI in combination with other plans and projects. Determine no AEOI due to waterborne pollution if acceptable water quality can be secured.

**Q5 re Disturbance of wintering and passage waterbirds during the construction phase of the proposal, including landscaping operations and the creation of waterbird habitat.**

**5a Construction noise can adversely affect SPA birds. (NE)**

Discussion: Construction noise can clearly cause temporary disturbance and displacement of SPA birds. Various factors need to be considered to give greater clarity as to whether a given source of construction noise could have an adverse effect on the SPA. For example, Habitats Regulations Guidance Note 3 (HRGN3) requires a Competent Authority to consider the “magnitude, likely duration and reversibility or irreversibility” of each potential effect on a Conservation Objective before determining whether each effect is an LSE. HRGN1 requires us to consider the “nature, scale, geographic extent, timing, duration and magnitude of direct and indirect effects” as well as considering mitigation measures. Disturbance and displacement due to construction noise are clearly reversible. The other factors require more detailed consideration on case-by-case basis. Determination of AEOI here would require evidence that disturbance and displacement can have an impact the population level or at least scientific doubt that a population level effect can be ruled out.

**5b Relate timing restrictions to ornithological data- birds present between April and Sept. (NE, LWT)**

Discussion: Any timing restrictions imposed do need to relate to periods when significant numbers of wintering and passage birds are present. However, it is also necessary to consider the other factors listed under 5a above. The nature and magnitude of construction effects on birds are thought to depend partly on environmental factors such as periods of harsh weather that are most likely to occur between November and February.

Action: Ensure that any timing restrictions imposed are reasonable, relevant and precautionary where necessary. They should take into account the numbers and distribution of birds, likely weather conditions and the factors described in HRGN1 and HRGN3. Restrictions should also be based on the best available studies of bird responses to construction works.

**5c Request map and number of birds using north and south halves of sector ISI. (NE)**

Action: E-mailed Gary Doubleday 15 April 2010

**5d Concern over changes in bird populations and patterns of use, not mortality. Para 9.6.1.4 (NE, RSPB)**

Discussion: Para 9.6.1.4 is not intended to be read in isolation. Together with 9.6.1.5, it attempts to make an assessment of whether temporary disturbance is an AEOI. However, this section could perhaps be rephrased to give NE and RSPB greater clarity about factors such as reversibility, magnitude and duration of effects

Action: Rephrase section 9.6.1 to give NE and RSPB greater clarity about factors such as reversibility, magnitude and duration of effects

**5e In combination effects are possible unless other projects' effects are fully mitigated. (NE, LWT)**

Action: For each potential in-combination project, state what mitigation measures are likely to be required i.e. lengthy timing restrictions and what the residual effects will be.

**5f Query deviation from approaches used in other cases i.e. lengthy timing restrictions (NE)**

Discussion: Planning conditions and obligations need to be reasonable and relevant to the application (Circular 11/95). Construction timing restrictions have routinely been used near the Humber Estuary. They have tended to be very expensive for developers to implement and when challenged, have often been shown to produce little or no benefit for the interest features of the Estuary. For example, works on Whitton pumping station, Station Road Whitton, South Ferriby pumping station, Reeds Hotel Barton upon Humber, Waters' Edge Visitor Centre and East Halton Flood Defence works have all been allowed to proceed during the notional sensitive period, once it had been demonstrated that the works would not have a significant effect on SPA birds. Any timing restrictions should therefore only be required following detailed considerations as described in 5a and 5b above.

Action: Ensure that any timing restrictions imposed are reasonable, relevant and precautionary where necessary. They should take into account the numbers and distribution of birds, likely weather conditions and the factors described in HRGN1 and HRGN3. Restrictions should also be based on the best available studies of bird responses to construction works. (Same as 5b)

#### 5g Query over 9.6.3.2- use of realignment sites (NE, RSPB)

Discussion: Some of the key species related to this application are known to have large concentrations elsewhere on the estuary and to make large movements between roosting and feeding sites. Existing patterns of behaviour are likely to help the birds to adapt to any temporary displacement from the application area.

Golden Plover: "Very large flocks at the head of the estuary around Alkborough and on the north bank around Cherry Cobb and Paul." (Catley 2007)  
Very large flocks observed moving between North Bank and fields further inland than the application site (Catley 2007) Golden Plover concentrated around Thornton Abbey (ibid)

Lapwing- Movements observed across the estuary, towards Barton upon Humber and towards Thornton Abbey (Catley 2007)

Ruff- tend to be faithful to the application area, with occasional movements to Killingholme Haven Pits (Catley 2007) Therefore, perhaps more vulnerable to displacement than other species.

Curlew- tend to be faithful to the application area (Catley 2007). Therefore, perhaps more vulnerable to displacement than other species.

All species may disappear from the application area altogether during periods of harsh weather (Catley 2007, pers. obs. 2010), which may suggest that they have a high level of adaptability to temporary displacement.

Action: Add a section to the AA to describe the known ecology, distribution and current movements of curlew, ruff, golden plover and lapwing around the estuary. Include Graham Catley's 2007/08 observation as well as those above and other sources such as IECS reports. This will help to inform predictions about likely responses to development.

#### 5h Additional evidence and more robust conditions required to show no AEOI. (NE)

Action: Add more detail (see 5g) and amend conditions.

5i Proposed mitigation areas are insufficient in size, scale, location and design to support the numbers and species of SPA and Ramsar birds which will be displaced. In Phases 1-3 around 200 ha of works will be commenced, of which only 4.8ha includes wetland mitigation habitat, so as well as disturbance during the construction phase there will also be a temporary loss of high tide feeding and roosting habitats given the main areas of habitat creation do not take place until phase 4, with further incremental areas in phases 5 and 6. (RSPB)

Discussion: Much of the concerns about phasing and timing are based on a misinterpretation of Table 1 of the appropriate assessment, which is in turn based on the submitted Environmental Statement (ES). As the ES was written before the wetland Conservation Management Plan, some of the works in table 1 such as Phase 1 "Permanent Water" have now been replaced by works to create mitigation wetlands. The Phasing Plan KI- 02004 C shows that wetland Area C will be created in Phase 1, Area A in Phase 3 and Area B in Phase 4.

Action: Amend Table 1 to reflect creation of Areas A, B and C. Refer to the updated phasing plan that shows the detail of wetland design. Ensure that phasing condition adequately controls phasing (Draft AA section 14.5)

5j It is unlikely there will be any functioning high tide feeding and roosting habitat within the site during the first four years at least of the construction works (RSPB)

Discussion: Wetland creation will begin in Phase 1 (see above). Whilst the wet grasslands will take time to mature and develop, newly created muddy scrapes and wetlands can be very attractive to a variety of wading birds, as has been demonstrated at Alkborough Flats, Waters' Edge, Worlaby Carrs, Bonby Carrs etc.

Action: None.

5k The mitigation areas will be subject to high levels of noise and visual disturbance during construction and therefore are unlikely to function as required for SPA and Ramsar birds during the estimated 7 year period. (RSPB)

Discussion: Area C is only likely to be affected by Phase 1 and 4 works. The existing railway line corridor will provide screening from Phase 4 works. Area A is only likely to be affected by floodbank works and Phases 3, 4 and 7. Screening around the wetlands will help to reduce construction disturbance. Area B is only likely to be affected by Phase 4 works. Screening around the wetlands will help to reduce construction disturbance. Conditions are proposed to minimise construction disturbance of mitigation wetlands.

Action: Ensure that condition adequately controls construction disturbance of created wetlands (Draft AA section 14.3)

5l The phased approach proposed will not be sufficient to mitigate for impacts during construction. Mitigation should be in place and functioning (i.e. optimum habitat established and free from disturbance) before loss. (RSPB)

Action: Ensure that phasing condition adequately controls phasing (Draft AA section 14.5). See also 2b, 5j.

5m RSPB unaware of hydrogen pipeline construction methods. (RSPB)

Action: Working methods for the hydrogen pipeline were agreed for PA/2006/1133. So long as the same conditions and restrictions are attached to the current application, there should be no AEOI due to pipeline installation.

5n Particular concern about black-tailed godwit which have been recorded in significant numbers on the adjacent intertidal habitat in the July to September period (LWT)

Discussion: The peak of 481 Black-tailed godwits in January 2007 was in sector ISJ, not ISI. However, there were counts of 35, 234 and 432 in ISI south of East Halton Pits in July-September 2007. Otherwise 0-10 birds. This species uses sector ISJ more frequently and in larger numbers. While works are taking place on the floodbank, this species will continue to be able to use the ISJ intertidal area as well as ISI south of East Halton Skitter. This is in any case, the part of ISI most favoured by waders (Catley 2007).

Action: Check whether EA works in July to September 2009 affected black tailed godwit. Otherwise, no change to recommendations. Amend paragraph 9.6.1.1 and Determination of LSE, Taylor 2009 re counts.

5o Agree no AEOI- seems similar to the methods the EA would propose (EA)

No action required

5p Planning consent for the hydrogen pipeline (PA/2006/1133) lapsed on 6<sup>th</sup> November 2009. It is not necessary to consider it in combination with Able's planning application. (Able UK)

Action: Retain references to the pipeline, as parts of it form part of the current application

**Q6 Do you agree with the conclusions relating to ruff, curlew, golden plover and lapwing? Are there any other species of concern?**

6a (5j,5l) Mitigation must be created in advance of loss to enable the newly created habitat time to develop and ensure that it is able to support the displaced birds. (NE)

Action: Ensure that phasing condition adequately controls phasing (Draft AA section 14.5)- see also 2b, 5j, 5l

6b\* (5i) The proposed mitigation areas are inadequate. Significant numbers of SPA birds are known to use much of the development site, which covers 380ha. A total area of 59ha, split up into 3 discrete blocks, is insufficient to mitigate for the loss of a much larger site. ... particularly as food stocks are depleted throughout the year. Also disturbance of wetland areas. (NE)

6b\* (5i) We do not agree that the wetland areas as proposed are sufficient to mitigate the permanent displacement of SPA and Ramsar waterbirds from the area affected by the proposal either alone or in-combination with other plans and projects. Please refer to the detailed points raised in our original objection letter (dated 30 June 2009, pages 12-16 inclusive). (RSPB)

Discussion: Observations of Killingholme Haven Pits North East Pit (Catley 2003-2008) suggest that the proposed mitigation areas will be adequate to cater for roosting curlew, ruff, lapwing and golden plover in the numbers currently observed on the application site, with some feeding provision and further provision for additional waders and wildfowl. It is less clear how much the development will be responsible for a loss of feeding habitat and how much feeding resource the mitigation areas will provide. Objectors identify a notional shortfall that is not quantified, whereas the developer can only use the wetland site designer's best estimates of the area of habitat required.

Proposed further work: From Graham Catley's weekly South Humber Bank surveys, it will be possible to estimate the number of wader-days per year currently spent on the application site by curlew, ruff, golden plover, lapwing and perhaps black-tailed godwit. On a precautionary basis, it should be assumed that all these birds need to feed unless otherwise indicated in the reports. Estimates of the area and character of habitat required to support the required species for the required amount of time can be derived from handbooks, academic papers and other managed and monitored sites. If the estimated level of feeding habitat supply is greater than the estimated demand, then the loss of habitat will be fully mitigated on-site and there will be no AEOI, subject to consideration of sampling error and the level of certainty attributable to this approach. If there is a predicted shortfall in on-site mitigation, then further consideration of the ability of other land to absorb a residual number of displaced birds will be required before a decision on AEOI can be made.

A similar approach has been used in estimating mitigation habitat requirements for windfarm developments (R. Warren, pers.com.)

Action: Seek agreement from NE on proposed approach- Now agreed verbally with Alan Drewitt 17/05/10. Seek agreement from other consultees if possible.

6c\* (5k) Wetland mitigation areas will be subject to disturbance and edge effects + earth bunds (NE, RSPB)

Action: Ensure that condition adequately controls construction disturbance of created wetlands (Draft AA section 14.3) see also 5a.

6c\* Uncertainty that the mitigation areas will be utilised by the four bird species in the densities predicted in the Conservation Management Plan due to "the enclosed nature of the sites, visual and noise disturbance, light overspill and potential sub-optimal land management" (LWT)

Action: Ensure that condition adequately controls construction disturbance of created wetlands (Draft AA section 14.3)

Ensure management plan, environmental steering group and optimal site management provide the best possible habitat – further amend conditions.

Seek bird use data from comparable sites designed by Roger Wardle, the Wetland designer.

Require monitoring of bird use of the wetlands and bird population change on the Estuary and remedial measures and/or provision of additional habitat if both figures are lower than acceptable. At the South Humber Gateway Mitigation summit (17 May 2010) it was suggested that Phase 7 land

(26.7 ha) should be retained in cereal production with winter stubbles whilst the wetland mitigation areas were monitored during Phases 1-6. If there was evidence of lower-than expected waterbird use of the mitigation areas and bird population decline or displacement within the SPA, then this area would continue to provide mitigation. Otherwise, it could be developed as planned. In the unlikely event that an additional need for arable land was revealed by waterbird population decline or displacement within the SPA, this would be addressed by the applicant entering agreements with farmers and/or through the wider South Humber Bank Mitigation strategy. Such requirements to be agreed by the Environmental Steering Group, whose decision would be binding.

6d Request consideration of black tailed godwit. (NE, RSPB))

Action- see 6b.

6e Reference to exceptional lapwing flocks. (NE, LWT)

Discussion: Lapwing numbers greater than 2500 birds were only recorded twice on-site in two survey seasons. This strongly suggests that the Estuary population is not dependent upon the ability of this particular site to support that number of birds. Certainly, it would be unduly onerous to require the developer to support >2500 lapwing for the whole winter and passage period, as nothing like that level of use exists at present. However, the approach outlined in 6b is precautionary, as it would include the occasional peak numbers within estimates of annual bird usage.

Action- see 6b.

6f Greater golden plover use of the application land might have been recorded if more surveys were carried out. (NE)

Discussion: This remains speculation. A large bird survey dataset has been provided with this application- providing more information than is available for many planning applications around the estuary. Furthermore, the surveyor's report states that previously-used fields on the application site are now unsuitable for large flocks of golden plover and that this species appears to be forming very large flocks elsewhere around the estuary in preference to some historical haunts (Catley 2007)

Action: No further data reasonably required.

6g States that in-combination projects are missing, but does not name them. (NE)

6g Lists additional in-combination projects, but not the interest features, likely significant effects or mitigation (RSPB)

Discussion: In-combination effects have been included where the species affected and timing of works are relevant. Mitigation measures and residual effects are described where possible. The Council has not used lists of sites or projects with unspecified effects on unspecified interest features.

Action- Re-iterate request for details of additional in-combination projects that are likely to be relevant.

6h Query over cattle grazing. (NE)

Discussion: The proposed condition in Draft AA section 14.4 makes it clear that grazing is a requirement, not an option. The developer will need to deliver the requisite grazing themselves, if other graziers are not available.

Action: Maintain requirement for cattle grazing.

6i AEIOI until full mitigation demonstrated- certainty required (NE, RSPB, LWT)

Action: Review AEIOI following further consideration of mitigation and any residual effects- see 6b & 6c.

6j Usage by other non-breeding SPA and Ramsar birds most notably snipe, dunlin, redshank and whimbrel, and occasional use by other geese and wildfowl. The main fields covered by the proposal closest to the estuary are the most important for golden plover, lapwing and curlew with secondary importance for a number of

other waders in particular black-tailed godwit, dunlin, snipe and redshank. See Catley, G. (undated) Wader and wildfowl roosts on the South side of the Humber estuary between East Halton Skitter and Immingham Docks. (RSPB)

Discussion: The wetland areas proposed can be expected to provide for bird numbers equal to or higher than the current situation for all waterbird species not individually listed in the draft AA.

Action: No further action required.

6k South Humber Bank Draft Masterplan mitigation not delivered or agreed (RSPB)

Discussion: It is correct to point out that the unadopted Masterplan cannot be relied upon either as a Development Plan Document or as a lever for mitigation.

Action: Remove all references to the Masterplan, which in any case has lesser status than the Local Plan and the emerging LDF.

6l Support the need for conditions relating to the grazing and hydrological management of any proposed mitigation areas (RSPB)

Action: Confirm and strengthen Draft AA Section 14.4 if necessary.

6m Support the need for monitoring and mechanisms for review and adaptation to allow any necessary remedial measures or additional mitigation measures to be implemented (RSPB)

Action: Confirm and strengthen Draft AA Sections 14.4 and 14.7 if necessary. See also 6c.

6n The proposed mitigation is not adequate to support the needs of golden plover and lapwing in the numbers and for the range of functions necessary (RSPB, LWT)

Action- See 6b & 6c.

6o Area C too isolated from estuary and subject to disturbance (RSPB)

Action- See 6b, 6c + disturbance control measures.

6p Area B already supports SPA/Ramsar birds, so does not provide additional mitigation (RSPB)

Discussion: The Draft AA considers the numbers of birds using the whole application site at present (including proposed mitigation areas). It also considers the total numbers of birds likely to be supported by the proposed wetland areas. The work proposed under 6b will add extra detail to this. Whether some of the mitigation areas are currently used by some birds is immaterial, save for consideration of temporary displacement effects prior to the completion of the wetlands.

Action: No action required.

6q Final Draft Conservation Objectives require "No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors". (LWT)

Discussion: Of the SPA waterbirds recorded in significant numbers on the application site, ruff, curlew, black-tailed godwit and lapwing are related to a significant degree to the nearby SPA areas ISI, ISJ and North Killingholme Haven Pits, though lapwing and the godwits make regular movements further afield (Catley, 2007). The Golden plover recorded largely use intertidal habitat on the North Bank of the Estuary (ibid.). The Council therefore needs to assess whether changes to the application site would lead to birds being displaced from these parts of the SPA or entirely lost from the SPA. The issue is not whether they are lost from the application site per se.

Even demonstrable movement of birds from one part of this site to another needs to be considered in terms of magnitude, reversibility and degree of harm. Creation of new intertidal habitats at managed realignment sites such as Alkborough is an example of a positive conservation measure that affects the distribution of birds without causing harm. It may be that other small degrees of displacement can take place without harm occurring.

Action: Ensure that this consideration is recorded in the revised AA.

6r Application should not be determined until the locations of all strategic mitigation areas have been agreed for the SHB (LWT)

Discussion: This application covers a significant proportion of the South Humber Bank developable area for North Lincolnshire from East Halton Skitter south to existing industrial land. If the proposed wetland areas are adequate to mitigate for this application alone, they will by definition be providing a strategic mitigation area and one of the stepping stones of wetland habitat required throughout the south humber bank. In such a case this development will not be prejudicing the overall strategy as no other wetland areas will be required in the area described. However, if there is a residual effect such that the wetland areas do not fully mitigate for on-site losses, then the strategic picture may require further consideration.

Action- Consider Strategic mitigation proposals only if the proposed wetland areas do not fully mitigate for on-site losses – see also 6c.

6s Prediction of bird numbers on designed wetlands is an inexact science, but Able UK have used a designer of considerable experience (Able UK)

Action- noted- but see 6b

6t Mean peak populations of Golden Plover, Lapwing, Curlew and Ruff have increased, not declined, in recent years, suggesting that high tide foraging and roosting habitat is not limiting (Able UK).

Action- If the proposed mitigation areas do not fully compensate for the habitat loss for these species, then this argument will need to be taken into account when assessing any residual effects.

#### **Q7 re Ongoing noise and visual disturbance of waterbirds using the adjacent intertidal area and areas of created wetland.**

7a Misunderstanding re noise levels, footpath proposals & Para 11.2.3. (NE)

Discussion: The word “expected” is used in relation to noise levels as the numbers are modelled/calculated rather than measured. Clearly, no developer can be certain about predicted noise levels to an accuracy of 1 decimal place. However, the predictions made are reasonable and are based on the relevant British Standard. New footpath proposals are not considered in the body of the AA as they are suggestions from Council Public Rights of Way staff, not proposals from the developer. Displacement effects (para 11.2.3) are considered relevant to this section.

Action: Replace the word “expected” with “calculated”. No other actions proposed.

7b Clarify whether tall structures will have an enclosing effect. (NE)

Response: Scaling from Drawing no. KI02017 B and submitted elevations, there is a 20 metre tall building 125 metres from wetland area C. As proposed, containers could be stacked nearer than this. There are 20 metre tall buildings proposed within 250 metres of Area B and about 120 metres from Area A (all distances to the nearest point). Again, containers could be stacked nearer than this. These buildings would appear between 5° and 9° above the horizontal at that distance. Put another way, this would be broadly equivalent to the height of a mature ash woodland edge at 120 to 200 metres from the edge of each wetland area. This would have little enclosing effect on the birds at the edge of the wetlands and less effect in the core habitat. In places, bunds would screen views of buildings from the wetlands.

Action: Update AA to reflect the above response, with reference to available literature on enclosure and openness.

7b Screening embankments may discourage birds. (RSPB)

Discussion: Consultees have highlighted that significant flocks of waterbirds use fields nearest the floodbank- which is essentially a large bund. They also use areas of intertidal habitat alongside the floodbank, though they clearly move further out at low tide.

Action: Record that as proposed, floodbanks and tall buildings shall not discourage waterbirds from using intertidal habitat or the proposed wetland areas.

7c Condition required to secure screening between proposed wetlands and footpaths (NE)

7c Sufficient and appropriate screening required for any potential wetland mitigation areas for SPA and Ramsar birds. (RSPB)

Action: Add planning condition to secure screening around proposed wetland areas.

7d AEOI until full mitigation demonstrated (NE, RSPB)

Action: Review AEOI following further consideration of mitigation and any residual effects

7e Proposed rail terminal will cause noise disturbance to the wetland mitigation areas. (RSPB)

Discussion: The RSPB has highlighted that the rail terminal cuts through area B, which is only 100 metres wide for a third of its length. In fact that proposed railway line only clips the extreme southern tip of wetland area B. The width of area B, measured between bunds, is about 75 metres for a distance of 175 metres (Drawing No KI08038 A in wetland Conservation Management Plan).

Action: Add noise calculations for rail terminal effects on wetlands into AA.

7g Request precautionary approach to access near wetlands based on scientific evidence of disturbance (RSPB)

Action: Restrict access in accordance with evidence from Birds and Construction Study, Stour and Orwell and Solent reports. Use planning condition(s).

7h Request measures to exclude the general public and dogs from accessing any proposed mitigation areas- barriers to be <1metre high (RSPB)

Action: Planning condition to exclude the general public and dogs from accessing any proposed mitigation areas- barriers to be <1metre high exclude the general public and dogs from accessing any proposed mitigation areas- barriers to be <1metre high

Public Rights of Way (PROW) staff propose a byelaw requiring dogs to be kept on a lead on PROW.

7i Concern about paths proposed by PROW staff (NE, RSPB, LWT)

Discussion: Public Rights of Way staff have now formalised their request for an additional footpath, around the southern edge of wetland areas B and C. They have also requested adequate screening to remove any AEOI due to disturbance of the wetlands and have proposed a byelaw to require that dogs be kept on leads.

Action: Retain the additional footpath as a distinct, separate proposal within the AA and seek agreement with NE on adequate conditions to remove any AEOI.

7j In combination effects are possible unless other projects' effects are fully mitigated. (LWT)

Discussion: Birds temporarily disturbed from the intertidal habitat may either settle again quickly or would ordinarily be displaced to the other wetland areas or other areas of intertidal habitat. On occasion, birds may also move across the estuary, inland towards Thornton Abbey or south to North Killingholme Haven Pits or Killingholme Marsh. Any or these responses would be amongst the normal pattern of behaviour currently observed on-site (Catley 2007-2008). It is extremely unlikely that all of these options could be precluded by construction or other disturbance at the other sites. Furthermore, other construction projects will need to carry out measures to reduce their disturbance effects. Even if this does not entirely mitigate for possible effects, the chances of remote

construction disturbance affecting birds displaced from the Able UK site will be very small. Overall, the chances of in-combination disturbance affecting population levels or the SPA/Ramsar conservation objectives are extremely remote.

Action: No change to conclusions. Check clarity of wording.

#### 7k Displacing birds from the application site would not be AEOI (Able UK)

Discussion: Able UK present evidence suggesting that golden plover and lapwing could be displaced from the application site without affecting estuary-wide populations. Indeed, the estuary wintering population of golden plover increased in recent history while the population on the application site declined (Alab 2009b, R. Cram 17/02/10). However it is less clear to what extent such displacement would affect the geographical spread of birds using the estuary and thus one of the draft SPA conservation objectives. Compared to lapwing and golden plover, recent observations of ruff and curlew suggest that these species are relatively faithful to the application area. Thus wetland mitigation on-site needs to be adequate to provide for these species and to ensure that lapwing and golden plover are not displaced from one part of the SPA to another.

Action: Review AEOI following further consideration of mitigation and any residual effects

#### **Q8 re Increased light levels and the dominant visual appearance of lighting columns.**

##### 8a NE require firm conclusion re lighting columns- para 12.1.2.2. (NE)

Action: Amend 12.1.2.2. to reflect 12.1.3.2.

##### 8b AEOI unless more robust & enforceable conditions remove lighting disturbance. (NE, RSPB, LWT)

##### 8c Require certainty re effects of light levels (LWT)

Action 8b & 8c: Amend 14.6 to ensure that more robust & enforceable conditions remove lighting disturbance.

#### **Q9 re Increase in train traffic, leading to sporadic disturbance of waterbirds using Killingholme Haven Pits SSSI and all three proposed wetland areas.**

##### 9a Activities not subject to regulation need to be considered in combination. (NE)

Action: Clarify the distinction between in combination effects and the cumulative effect (Habitats Regulations Guidance Note 4). Consider whether train traffic will add in any way to the cumulative effect.

##### 9b Request for sound levels at NKHP + HE SSSIs. (NE)

Action: Predicted levels requested from Gary Doubleday 12 April 2010 and subsequently received [date].

##### 9c\* AEOI unless conditions require screening and improvement of NKHP (NE, RSPB)

Discussion- I have already stated that creating screening within NKHP could cause rather than reduce disturbance. Works to create roosting refuges away from the train lines would be difficult to programme without causing construction disturbance. Graham Catley has suggested reducing screening scrub and hedgerows at NKHP, to reduce the cover for sparrowhawks- including cover along the railway line (Catley 2008, survey periods 17, 22, 23).

"What speed will trains be moving at? Can this be limited? A train arriving and leaving slowly is likely to pose less of a disturbance than one moving quickly. I would imagine that there's a fairly low speed limit on that line anyway." (Darren Clarke pers. comm.).

There is also a need to compare the speed and type of trains at NKHP with those references that record disturbance of black-tailed godwits next to railroads.

Action: There is a clear need to resolve the balance between screening and habitat management work in NKHP and avoidance of creating further disturbance by carrying out such works. Seek agreement with NE.

9d Seek clarification of number of train movements per day (RSPB)

Response: "Railway: It is anticipated that two trains per day will use the rail sidings." – E-mail R.Cram 12/02/10  
For clarity, that means four movements through NKHP- "there and back" twice.

9e Disagree that current usage of NKH Pits reveals lack of response to disturbance as response vary between sites (RSPB)

Discussion: Examination of godwit data from before and after major developments in the area e.g. Able's site, HST expansion reveals that birds are subject to disturbance at NKHP, but suggests that they are habituated (Darren Clarke, pers. comm.)

Reference to a single observation of waterbirds' limited response to noise at NKHP in the draft AA was perhaps unhelpful and under-represented the level of information available. In addition to this comment, it would be useful to refer to the consistent pattern of disturbance and continued waterbird usage over a number of years as described by Darren Clarke above.

Action: Revise this section to better reflect the body of evidence showing that birds habituate to noise and visual disturbance of roost sites in the South Humber Bank Gateway area.

9f Require detailed disturbance monitoring with implementation of remedial measures if necessary (RSPB, LWT)

Action: Add Killingholme Haven Pits SSSI into planning condition para 14.6

9g AEOI without mitigation (LWT)

Action: Review AEOI following further consideration of mitigation and any residual effects

9h Andrew Ward Associates (2005) noted that birds using Killingholme Haven Pits are habituated to noise. (Able UK)

Action: Add reference to AA.

9i Freight trains used the track through Killingholme Haven Pits until 2003 and for six months in 2005. Large numbers of birds used the Pits at that time. (Able UK)

Action: Add additional information to para 13.1- include numbers of key species if available.

**Q10 Would you recommend any amendments to the proposed conditions? Will the conditions remove any adverse effect on the integrity of the International Nature Conservation Sites?**

10a Conditions should be more explicit about mitigation during construction. Reporting should be more than once a year. (NE)

Action: Amend conditions and re-consult NE. Require more regular reporting- timing to depend on parameter being measured.  
Immingham Outer Harbour Env. Steering Group Meetings are twice per year, for comparison. (Darren Clarke, pers. comm.)

10b Concern over parameters in conditions and make-up of steering group. (NE)

Discussion- The Local Planning Authority cannot impose planning conditions that rely on the actions of third parties. Therefore we cannot require the applicant to invite Natural England or NGOs to any Environmental Steering Group required as part of a planning condition. In practice, all parties recognise that the Steering Group approach will only work if the right organisations are represented- as has been the case with the Immingham Outer Harbour ES Group. The condition proposed is based on Counsel's advice on a similar case.

Conditions will no doubt require fine-tuning to make sure they are reasonable, enforceable and produce the desired outcomes.

Action- Revise conditions as necessary in agreement with planning colleagues and legal advisors.

10c Proposed mitigation is inadequate, so related conditions are inadequate (RSPB)

Action: Revise conditions once improved mitigation has been agreed with NE.

10 d Conditions not enforceable (RSPB)

Action: Revise conditions once improved mitigation has been agreed with NE. Seek legal advice and advice from Enforcement staff on wording of conditions.

10e Conditions should require monitoring with implementation of remedial measures if necessary. (RSPB)

Action: Monitoring and remedial measures are already a part of the conditions e.g. Para 14.6 Seek legal advice and advice from Enforcement staff on wording of conditions and amend if necessary- see also 6c.

**Q11 Do you agree with the overall determination of adverse effect on the integrity of the International Nature Conservation Sites?**

11a AEOI at present. (NE, RSPB, LWT, EA)

Action: Review AEOI following further consideration of mitigation and any residual effects

11b The currently proposed mitigation is inadequate to address impacts on SPA and Ramsar birds. However it is possible to mitigate this proposal adequately with provision of suitable habitat of sufficient scale, size, location and management (RSPB)

Action: Review AEOI following further consideration of mitigation and any residual effects

11c In addition to the loss of intertidal habitat and potential pollution AEOI will be due to noise and visual disturbance to birds in the construction phase of development, to permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing and also possibly due to disturbance to birds from increased train movements, pedestrians and lighting (LWT)

Action: Review AEOI following further consideration of mitigation and any residual effects

**Q12 Do you agree with the advice relating to the SSSI?**

12a Requires updating. (NE, RSPB)

Action: Update this section once sections relating to the SAC, SPA and Ramsar have been updated.

12b Agree (EA)

No Action

**Q13 Are there any other references or pieces of evidence that should be taken into account in carrying out the appropriate assessment?**

13a The RSPB's paper "The South Humber Bank: principles to underpin a strategic approach" (NE, RSPB)

Action: Add reference. The approach taken in the AA is broadly compatible with the elements of this paper that relate to strategic mitigation and mitigation for individual developments. However, other evidence is also used where available, including site-specific information.

13b SHBZ Functional Capacity Study (2009) Mott MacDonald (RSPB)

Action: Add reference and amend evidence and conclusions if necessary. This document is based largely on Graham Catley's survey work for the South Humber Bank. Raw data from the latter document has been used extensively in the production of the draft AA. Therefore, the Mott MacDonald report should not add any information widely different from that already put forward.

13c Always more docs and sources of info that could be used, (e.g. inspectors findings from other cases, EA Review of Consents documents, Humber Strategy documents), but I believe that you have referenced enough for the assessment to be "appropriate" at this time. (EA)

No Action

13d Add EA's AA of floodbank land drainage application

Action: Add reference and amend evidence and conclusions if necessary.

**Q14 Are there any other plans, projects or effects that should be considered in combination with the current proposal when carrying out the appropriate assessment?**

14a The in-combination assessment requires further information to ensure a thorough assessment has been undertaken. (NE)

Action: Clarify what NE thinks is missing. For any additional in-combination projects, clarify what the potential effects are (location, magnitude, timing, reversibility, duration etc.), what interest features/conservation objectives could be affected, what mitigation is proposed and whether there are any residual effects

14b NE disagrees with the current approach that states that since other developments will have their own mitigation, there can be no significant in-combination effects to consider. (NE)

Action: Consider any residual effects after mitigation. Where plans and projects are fully mitigated-for, they cannot act in combination.

14c Planning Application PA/2009/1269 Form B application to construct and operate a 290 megawatt (MW) biomass fuelled electricity generating station on land north of Humber Road, South Killingholme. Drax Biomass Immingham Ltd. Section 36 Electricity Act 1989. Section 90(2) Town and Country Planning Act (RSPB)

Action: Project already considered in draft AA. Could perhaps be more explicit about effects and mitigation (see 14a)

14d North Lincolnshire Local Plan (RSPB)

Action- see 14a

14e North East Lincolnshire Local Plan (RSPB)

Action- see 14a

14f North Lincolnshire Council Local Development Framework (LDF) in draft (RSPB)

Action- see 14a

14g North East Lincolnshire Council LDF in draft (RSPB)

Action- see 14a

14h South Humber Bank Draft Masterplan (2004) (RSPB)

Discussion: The unadopted Masterplan cannot be relied upon either as a Development Plan Document or as a lever for mitigation.

Action: Remove all references to the Masterplan, which in any case has lesser status than the Local Plan and the emerging LDF- see 6k.

14i Contact EA Asset Systems Management team to determine what plans they have along the coastline. (EA)

Action : Contact EA as suggested. Assess each plan or project as per 14a.

**Q15 Do you have any other comments not already covered?**

15a A greater level of certainty is required before no AEOI can be determined. This should be reflected in the terminology used. (NE)

Action: Review AEOI following further consideration of mitigation and any residual effects. Where there is a high level of certainty about conclusions, ensure appropriate wording is used.

15b Development must not compromise the strategic South Humber Gateway work. (NE, LWT)

Discussion: The strategic South Humber Gateway work relates to the strategic provision of adequate wetland habitat stepping stones to provide feeding, loafing and roosting habitat for waterbirds currently using the South Humber Gateway (North and North East Lincolnshire). This application covers a significant proportion of the South Humber Bank developable area for North Lincolnshire from East Halton Skitter south to existing industrial land. If the proposed wetland areas are adequate to mitigate for this application alone, they will by definition be providing a strategic mitigation area and one of the stepping stones of wetland habitat required throughout the south humber bank. In such a case this development will not be prejudicing the overall strategy as no other wetland areas will be required in the area described. However, if there is a residual effect such that the wetland areas do not fully mitigate for on-site losses, then the strategic picture may require further consideration.

Action- Consider Strategic mitigation proposals only if the proposed wetland areas do not fully mitigate for on-site losses. (see 6r)

15c Follow RSPB advice on mitigation. (NE)

Action: see 13a

15d The Humber Estuary is no longer a candidate SAC, it is now a SAC. (NE, RSPB)

Action: Amend references to SAC. Also amend references to regulation numbers (Reg 48 etc) to reflect 2010 Habitats Regulations.

15e References to English Nature should be amended to Natural England (NE, RSPB)

Action: Where work has been carried out or published by English Nature, retain the reference to English Nature (add "now Natural England " for clarity). Refer to Natural England for more recent events/publications.

15f Numbering errors from section 5 – always starts with .4 eg 5.4, 6.4, section 9.7 and 9.8 refers to „section 9.3 above[] and „see 9.2[] which are missing (NE)

Action: Amend numbering and double-check final version.

15g The works to the flood defence are described as restoration or repair, however it is our understanding that the flood defences will be improved. (NE)

Action: amend wording to include improvements to flood defences.

15h Request table to show when important fields will be lost and when mitigation will be provided. (NE)

Action: E-mailed Gary Doubleday 15 April 2010.

15i (3b) Need to confirm there will be no temporary loss of foreshore (RSPB)

Confirmed: "Flood defence wall works: The works will be undertaken from atop the flood defence wall. The previously mentioned 1.1ha of rock armour foreshore will no longer be used." – e-mail from Richard Cram 12/02/10. (3b)

15j The AA must be undertaken in the light of the conservation objectives **but** is not restricted to these (RSPB)

Action: If any factors outside the coverage of the draft Conservation Objectives could lead to AEOI, these will be taken into consideration.

15k We are committed to working constructively with the Council, the developer Able UK and other stakeholders to address the nature conservation impacts of the proposal. We would be happy to resume a constructive dialogue to identify a potential resolution to the outstanding concerns regarding the inadequacy of the proposed wetland mitigation areas (RSPB)

Action: Review AEOI following further consideration of mitigation and any residual effects. If there are residual effects relating to the proposed wetland mitigation areas, consider whether RSPB may be able to offer further advice.

15l For information, we have drawn the applicants attention to our concerns regarding the strategy they propose for the displacement of water voles. The applicant is proposing extensive use of the strimming method to dissuade them from remaining in stretches that are due to be reprofiled. We informed them via email on 11th January 2010 that the method lacks scientific support and may, contrary to earlier ideas of best practice, be harmful to water voles and warned them that it may even be regarded as reckless. We recommended that they consider alternative techniques. (EA)

Action: Outside the AA process, ensure that any mitigation proposed for water voles follows good practice. E-mailed Gary Doubleday with concerns 15 April 2010.

15m\* Clarification of reasonable scientific doubt & precautionary principle re AEOI in Circular 06/2005 (Able UK)

Action: Ensure that any decision on AEOI or no AEOI reflects the best available guidance and case law.

#### **Q16\* re additional footpaths**

16a Natural England believes that the additional public footpaths as proposed should be assessed in the updated appropriate assessment. Without prejudice to any further advice we may give when formally consulted on this assessment, we advise that the new proposals may lead to an adverse effect. The success of the mitigation areas is key to avoiding adverse effects on the Humber Estuary SPA and Ramsar site. As we have highlighted, we believe that the size of the areas is insufficient. The presence of pedestrians is known to be one of the most severe forms of disturbance to birds and locating public footpaths around all three mitigation areas is likely to reduce their efficacy considerably. (NE)

16b The additional proposed areas would further impact on the proposed mitigation dramatically, increasing uncertainty that the mitigation will provide any function for SPA and Ramsar birds and therefore be unsuitable mitigation for displace SPA and Ramsar birds. (RSPB)

16c The provision of additional public footpaths adjacent to the wetland mitigation areas could potentially lead to an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site through disturbance to waterbirds from pedestrians and dogs. The additional public footpaths as proposed should therefore be assessed in the updated appropriate assessment (LWT)

Discussion: Public Rights of Way staff have now formalised their request for an additional footpath, around the southern edge of wetland areas B and C. They have also requested adequate screening to remove any AEOI due to disturbance of the wetlands and have proposed a byelaw to require that dogs be kept on leads.

Action: Retain the additional footpath as a distinct, separate proposal within the AA and seek agreement with NE on adequate conditions to remove any AEOI.

PA/2009/0600 Able UK, Land between East Halton Skitter and Chase Hill Road, North Killingholme

A quantitative assessment of the use of the application site as feeding habitat by five species of passage and wintering waterbirds and associated estimate of the carrying capacity of the proposed wetland mitigation sites for these species.

## Summary

Weekly winter and passage bird survey data for the Able UK PA/2009/0600 application site were compiled and analysed to estimate the number of feeding “wader days” currently supported by the application site in a typical year. The calculations were carried out for lapwing, golden plover, curlew, ruff and black-tailed godwit, using Humber INCA data from 2007 and 2008.

This provided a measure of the importance of the site for feeding waterbirds and hence the “demand” for feeding wader habitat. Known wader numbers and densities from managed wet grasslands on RSPB reserves and Lincolnshire Coastal Grazing Marsh were used to estimate the numbers of birds that could be supported on wet grassland areas of a size proposed by Able UK. This provided a measure of the likely “supply” of wader feeding resource to meet the current demand.

Simple extrapolation of numbers from the existing wet grasslands indicated that the 32 hectares of wet grassland proposed for Able UK’s areas would be adequate to provide for the numbers of lapwing, curlew and golden plover currently supported by the application site. Current numbers of ruff and black tailed godwit could also be expected to be supported, given the low numbers involved.

However a number of factors introduce an element of uncertainty about target bird numbers being achieved. These are:

1. All wetland mitigation areas will take time to develop to reach their full potential, by which time, existing habitat may already be developed.
2. The mitigation areas will be affected to a certain degree by human and industrial disturbance and light pollution from the application site and rights of way.
3. The proposed wetlands may be more susceptible to edge effects than some of the comparison sites, given their industrial setting, thus reducing the effective area of habitat available for wading birds. This effect is expected to be overcome by the proposed wetland buffers.

Given the approach recommended above, the proposed mitigation areas could then confidently be expected to support the numbers of golden plover, lapwing and curlew currently observed on the application site. The wetlands would also support the smaller numbers of ruff and black tailed godwit required, as well as a suite of other species such as redshank, dunlin, teal and wigeon.

## Background

Able UK have applied for planning permission for an area of 379.9ha between East Halton Skitter and Chase Hill Road, North Killingholme in the South Humber Bank area of North Lincolnshire. Planning consent for development is sought for an area of 379.9ha. The sizes of areas for development are dependant upon which one of two mitigation options for SPA waterbirds is carried forward. The industrial/commercial development will accommodate B1, B2 and B8 land uses for port related storage and associated service facilities. In addition to this, the application seeks consent to develop either 140.7ha or 159.6ha for on site amenity landscaping and habitat creation.

At the scoping stage of the application, North Lincolnshire Council and Natural England highlighted the fact that the application site is used by significant numbers of passage and wintering waterbirds associated with the Humber Estuary SPA and Ramsar site- most notably curlew, ruff, golden plover and lapwing. Subsequently, the Council as Competent Authority under the Habitats Regulations determined that the project is likely to have a number of significant effects on the Humber Estuary SPA and Ramsar site, including,

“Permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing.”

As part of the Environmental Impact Assessment (EIA) process, the applicant initially developed a proposal to create three contiguous areas of wetland habitat totalling around 59 hectares to mitigate for this effect and to provide biodiversity enhancement. In response to concerns expressed by Natural England and the RSPB, this package was superseded with two options:

The on-site only option entails the provision of around 74 hectares of wetland mitigation habitat, comprising 32 hectares of “core” mitigation habitat adjudged adequate to support the numbers of waterbirds currently observed on-site and 42 hectares of wetland buffer habitat, designed to protect birds in the core area from noise and visual disturbance. The on-site and off-site option entails the provision of 55 hectares of wetland mitigation habitat on-site, comprising 20 hectares of core habitat and 35 hectares of buffer. Additionally, the latter option will entail the provision of 50 hectares of wetland mitigation habitat off-site, at a location to be agreed, comprising 20 hectares of core habitat and 30 hectares of buffer.

The Council’s draft appropriate assessment (AA) of the initial application recorded that the proposed wetland areas would be adequate to support currently observed numbers of roosting ruff, curlew and lapwing (Taylor 2010). It was less clear whether these sites would support golden plover. However, no assessment was made of the current use of the site by feeding waders or of the ability of the proposed wetland mitigation areas to support the observed numbers of feeding waders. This important omission was highlighted by Natural England in their consultation response to the draft AA. This paper reports on attempts by the Council to quantify these elements of demand and estimated supply of wader feeding habitat and has been updated to reflect the revised mitigation proposals.

## **Methods**

### **Method 1- Quantifying the current use of the application site by feeding waders.**

Bird survey data were obtained from the Humber Industry and Nature Conservation Association’s (HINCA) South Humber Bank survey reports (Catley 2007, 2008). The survey methods for recording habitats, weather conditions, weekly bird counts and any disturbance events are described in detail in these reports. For the 2007/2008 period, the key bird survey methods were as follows:

“All of the area covered by the study was surveyed on a single date during each of the 39 weeks spanning the period July 1st 2007 to March 29th 2008. Surveys covered each seven day period starting with July 1st to the 7th and continuing to the last week March 23rd – 29th. “

“Surveys were mainly carried out around the high tide period in order to locate all of the inland roosting and feeding areas of waterfowl and waders that had moved from the inter-tidal mudflats of the Humber estuary... All qualifying SPA species present within the various fields and wetland sites were identified and the number of birds counted and recorded in relation to specific field numbers or wetlands. Any movements of birds between different fields were recorded. Longer movements between fields and the inter-tidal areas of the estuary were also recorded and mapped. An initial attempt was always made to ascertain the total number of birds of each species within a series of fields between which there were frequent movements. Where a series of fields were used by the same individual flock of birds on a set survey date then details are discussed in the weekly report texts... When practicable the inter-tidal areas adjacent to the study area were also observed to ascertain which species were present and to gauge an estimate of the

numbers of relevant species which may have been moving between the estuarine area and the adjacent or more distant fields...”

“..Any non qualifying species which were present in significant numbers or of which the distribution or abundance were considered to be of interest were also recorded and details are given in the species texts. “

Comparable survey methods were employed from January 1<sup>st</sup> to March 31<sup>st</sup> 2007 (the end of the previous survey season).

To quantify the current use of the application site by feeding waders, bird numbers for the application site for each survey week were largely derived from the weekly report texts as described above. Fortunately, use of the application site and affected area closely equates to the “northern area” and “northern flocks” described by Graham Catley. Use of this information helped to ensure that the correct total numbers of birds were used, avoiding the double-counting that can result when field-by-field data are used. However, spreadsheets of field-by-field and week-by-week data were also used to identify any bird records that were not included in the weekly reports.

The reports were also analysed, to note whether the recorded birds were roosting (R), Feeding (F), Loafing (L) or whether their activity was not clearly recorded (N). Given that the assessment relates to the loss of a feeding resource, and that the precautionary principle needs to be applied, the subsequent assessments assume that all recorded birds are feeding, unless clearly recorded otherwise. Thus notional feeding bird totals include all categories except roosting birds i.e. F+L+N.

To make an annual or seasonal assessment of site usage by feeding birds, the relevant weekly counts were totalled for the whole 39 weeks (2007/08) or 13 weeks (2007). Given that the data derive from weekly counts, the totals were multiplied by seven, to give an estimate of the number of “wader days” supported by the application site for each species. Similar studies (e.g. Percival 2010) have estimated numbers of “goose days” by multiplying the mean daily count by the number of days in the relevant season. Arithmetically, these are simply two ways of arriving at the same figure- see Box 1

<b>Box 1 Calculation of wader days</b>	
Mean no. waders = total no. of waders recorded/number of survey visits (weeks)	
Or $\mu = \Sigma x/n$ , where x is a weekly wader count.	
<b>A. From totals</b>	<b>B. From Means</b>
No Wader days = $7(\Sigma x)$	$\mu = \Sigma x/n$ No Wader days = $7n(\mu)$ $= 7n(\Sigma x/n)$ $= 7(\Sigma x)$

Initial attempts were made to calculate 95% confidence intervals for the means (and hence the total number of wader days). However, confidence intervals are derived from the standard deviation from the mean. Most of the variation in the dataset is attributable to seasonal increases and decreases in wader numbers, rather than sampling error, leading to exaggeratedly large confidence intervals that do not give an accurate measure of the adequacy of the sampling effort.

For Methods 3b and 3c below, the above calculations were re-worked for shorter periods (December-March and October to March respectively) to allow valid comparisons to be made with datasets submitted by Able UK and the RSPB.

### **Method 2- Comparison of the application site with other local recorded sites.**

The datasets and approaches used in Method 1 were also used to estimate the total number of “wader days” for the following broad areas mentioned in the INCA reports:

- Goxhill Marsh.
- Fields near Thornton Abbey.
- WeBS sector ISI (Intertidal Habitat, Humber Estuary)
- WeBS sector ISJ (Intertidal Habitat, Humber Estuary)
- North Killingholme Haven Pits SSSI (NKHP)
- All other sites, including Killingholme Marsh (for curlew), the North Bank of the Humber, Alkborough Flats and other sites.

Whilst the WeBS sectors and NKHP were surveyed weekly and systematically, the other sites were only checked on an ad hoc basis by the surveyor. Thus any figures given are underestimates. Some records were clearly for Goxhill Marsh or fields near Thornton Abbey- others relate to land in between or near these areas. Each bird record was attributed to the most appropriate site using personal judgement. However, each record was only included in one category, so the figures are mutually exclusive and can be added if necessary (subject to the above caveats for interpretation). For the purposes of this report, the precise location of off-site birds records matters little, so long as broad concentrations of birds can be compared with the application site. Thus “wader day” estimates were derived for the above broad areas, to put the application site figures into context.

### **Method 3- Estimating the capacity of proposed wetlands for feeding waders.**

Following agreement with Natural England (A. Drewitt, pers. comm.) attempts were made to quantify the carrying capacity of well-managed wet grassland areas for feeding waders of the species affected by the planning application. The original intention was to derive estimates of the area and character of habitat required to support the required species for the required amount of time from handbooks, academic papers and other managed and monitored sites. In practice, it was not possible to track down much useable data from these sources. The literature available on carrying capacity and site management for waders focus heavily towards breeding birds. However, some data were obtained from Able UK and the RSPB (see Methods 3b and 3c below).

#### **Method 3a**

Empirical data from the most heavily-used fields around East Halton Pits were used to show the carrying capacity of the most important parts of the site at present. This had the advantage of being very relevant data, relating to the site in question and the areas of the site that are proposed for wetland management. This approach is arguably precautionary, as estimates of carrying capacity are derived from arable land rather than wet grasslands specifically managed for wintering and passage waders.

Data were collected from the INCA reports in the same way as method 1, except that field by field records were used, rather than the weekly reports, given the focus on individual fields. Field numbers 11, 12, 17, 25 and 29 were used, giving a total area of 32 hectares which is equivalent to the core area of wet grassland proposed by Able UK for mitigation north of East Halton Pits. These fields were largely under oilseed rape in July 2007, which

was harvested in August. The fields were sown with cereals around the end of September. The exception is field 29, which is permanent pasture.

### **Method 3b**

Bird count data for two existing created wet grassland sites in the Lincolnshire Coastal Grazing Marsh (LCGM) were obtained via the applicant from Roger Wardle, the designer of these sites and the originally-proposed Able UK mitigation sites (Wardle 2010). The dataset was not as comprehensive as the Humber INCA dataset for the South Humber Bank, in terms of both frequency of survey and length of winter/passage survey season. Also, parts of the report that were initially unclear had to be clarified with the report's author over the telephone. However, it was possible to compare LCGM counts for December, January, February and March 2008/09 with application site counts for equivalent weeks in 2007 and 2007/08. Both datasets were assessed according to Method 1, with the estimated number of "wader days" for Mid-December to March being calculated from mean values as per Box 1B. In this way it was possible to compare the known capacity of two managed wet grassland areas with the current "demand" on the application site for the period in question.

### **Method 3c**

RSPB provided mean golden plover and lapwing densities for eight lowland wet grassland areas on nature reserves in the eastern half of England for the period from October 2007 to March 2008. No supporting information was provided on the survey and sampling methods used to obtain the data or on how the densities were calculated (whether edges were excluded from area measurements etc). However, the data were taken at face value and the means of the mean densities were used to predict golden plover and lapwing numbers and hence "wader days" that could be expected to be supported by the proposed wet grassland areas.

The list of RSPB sites from which the wader densities were derived is given in Table 3c of Appendix 1. It is worth noting that most of the sites have coastal or estuarine locations and most lie near Special Protection Areas designated at least in part for assemblages of wintering and passage waders, including golden plover and/or lapwing. Saltholme is notable for being a reserve set amongst heavy industry on an estuary in the north-east of England – a very similar situation to the South Humber Bank.

The submitted mitigation proposal will deliver 32 hectares of core wet grassland, surrounded by buffer habitat as agreed with Natural England. Thus the RSPB mean wader densities were multiplied by 32 to gain a rough estimate of average number of birds that the core area could support. These figures were in turn used to calculate the expected numbers of wader days that could be supported for October to March as per Method 1. Method 1 was re-calculated using October to March figures only, to compare current usage of the application site with the likely capacity of the wetland areas.

## Results

### Results 1- Quantifying the current use of the application site by feeding waders

Results are given in full in Tables 1a-d in Appendix 1. Using Method 1 as described above it was possible to estimate the number of feeding wader-days supported by the application site. Tables 1a and 1c include roosting birds. In tables 1b and 1d, roosting birds are excluded, giving a better measure of numbers of feeding birds. Table 1a uses 2007/08 data. Table 1d uses the January-March data from winter 2006/07. However, July-December data were not available for this period, so the July-December 2007 were used again to ensure that this estimate reflected the whole July-March period.

The key figures are as follows:

Measure	Golden Plover	Lapwing	Curlew	Ruff	Black-tailed Godwit
Estimate 1 (2007-2008 data)					
Estimated no. feeding wader-days Jul-March	6629	46501	13930	301	14
Estimate 2 (2007 Jan-Mar & 2007 Jul-Dec data)					
Estimated no. feeding wader-days Jul-March	7770	49581	15267	679	364

### Results 2- Comparison of the application site with other local recorded sites.

Results are given in full in Tables 2a-j in Appendix 1.

### Results 3a- Assessment of the capacity of fields near East Halton Pits.

#### Fields 11, 12, 17, 25 and 29 only- total 32 hectares

Measure	Golden Plover	Lapwing	Curlew	Ruff	Black-tailed Godwit
Estimate 1 (2007-2008 data)					
A Estimated no. wader-days Jul-March	399	15946	4844	189	0
B Wader days per hectare	12.47	498.31	151.38	5.91	0
Estimate 2 (2007 Jan-Mar & 2007 Jul-Dec data)					
Estimated no. wader-days Jul-March	1883	34818	10269	518	616
B Wader days per hectare	58.84	1088.06	320.91	16.19	19.25

**Results 3b- Comparison of the application site with Lincolnshire Coastal Grazing Marsh (LCGM) Managed Wet Grasslands- estimated numbers of “wader days” supported.**

Results are given in full in Tables 3 a-c in Appendix 1. “Wader day” estimates below are based on 6 counts (samples) per dataset and are for the period from Mid December to the end of March only.

Species	Dataset			
	LGCM Site 1- 45 hectares, 5 years old	LGCM Site 2- 73 hectares, 2 years old	Application site 2007	Application Site 2007/08
Lapwing	151904	13440	13680	21040
Golden Plover	14400	0	384	688
Curlew	17760	1296	7424	8320

**Results 3c- Lapwing and Golden Plover densities from RSPB Lowland Wet Grassland Reserves**

Table 3c of Appendix1 gives typical lapwing and golden plover densities from RSPB lowland wet grassland reserves for the period from October to March 2007/08. Applying the mean densities for these birds to the wetland mitigation areas proposed for the application site gives the following results:

Species	Dataset		
	Predicted wader days:	Wader days calculated from surveys	
	RSPB density x 32 ha	Application site Jan- Mar 2007+ Oct-Dec 2007	Application site Oct-Dec 2007+ Jan- Mar 2008
Lapwing	54880	49455	46375
Golden Plover	26880	7770	6629

**Discussion and Conclusions**

Results of method 1 show that the 2 datasets used produce very similar results for the estimated number of feeding “wader days” per year on the application site for the five species assessed. This is partly because the same July-December figures were used in each case. Nevertheless, examination of the detailed tables in Appendix1 reveals that a high proportion of the feeding “wader days” each year occur in the January- March period, so the similarity between the two sets of data is striking. Whilst it was not possible to calculate confidence intervals for the survey data, the similarity of the two years’ data perhaps gives a degree of confidence that the figures provide a reasonable estimate of the actual usage of the application site by feeding waders. Certainly, the use of weekly survey data represents a higher degree of survey effort than is common for studies of estuarine waterbirds.

Comparison of results tables with and without the figures for roosting birds reveals that the vast majority of ruff, curlew and black-tailed godwit recorded from fields on the application site were feeding at least in part. Removal of roosting records revealed that a lower proportion of lapwing records related to recorded or assumed feeding, whilst a relatively low proportion of recorded golden plovers were feeding.

- No nocturnal survey information exists. Therefore, it is not possible to say anything about the importance or otherwise of the application site for lapwing and golden plover feeding at night. However, the literature suggests that night-time feeding flocks are more widely dispersed than the compact roosting flocks (Cramp and Simmonds 1983). The INCA reports give a number of observations of golden plover appearing to move away from the application site to feed at night (Catley 2007a, 2008a).

Turning to method 2, Comparison of “wader day “ estimates for the application site with other local sites reveals a number of points about each of the species studied:

- Golden plovers recorded on site are clearly not related to the adjacent intertidal areas ISI and ISJ. Indeed Catley (2008) records golden plovers flying from the north bank of the Humber to the site and flying in greater numbers beyond the site and further inland. Even though the land around Thornton Abbey was only surveyed on ad hoc basis, it generated a larger cumulative total of golden plovers than the application site, and hence a larger estimate of wader days per year.
- Lapwings do roost on the southern half of the adjacent intertidal area ISI in significant numbers. There was also evidence of them using land around Thornton Abbey and Goxhill Marsh in numbers at least equivalent to, if not greater than, the application site.
- Numbers of Black tailed godwit feeding on the arable land are trivial compared to the numbers feeding on intertidal mud and roosting at North Killingholme Haven Pits. Catley (2007) describes the observation of this species feeding within fields as a new and unusual phenomenon, perhaps attributable to young birds being displaced from higher quality feeding habitat by more dominant older birds.
- Ruff appear to be faithful to the application site, at least in a Killingholme/East Halton context. Most of the birds found roosting at North Killingholme Haven Pits feed on the application site near to East Halton Pits.
- A “northern flock” of around 10-150 curlew is relatively faithful to the application site, but is not related to the adjacent intertidal area ISI. A generally smaller southern flock found on Killingholme Marsh does appear to be functionally linked to the intertidal area ISJ from Killingholme Haven southwards. The “northern” birds have been observed commuting from the north bank of the Humber (Catley 2008).

Turning to method 3a, the assessment of 32 ha of mostly arable land around Killingholme Haven Pits reveals that in it's current form, it would not be able to support the requisite number of feeding “wader days” for any of the species studied. This is perhaps not surprising given that the land is currently under sub-optimal management for waders as drained arable land with uncontrolled vegetation height and applications of agrochemicals. Such a relatively small area of arable land would not be expected to support as many birds as the whole application site- though there is perhaps a concentration in the area around East Halton Pits, which is encouraging, given the plans for wet grassland in that location. Managing the land as wet grassland, broadly as described in the previously submitted Conservation Management Plan, would be expected to increase the carrying capacity of the mitigation area for all species concerned.

Turning to existing managed wet grasslands (Method 3b), the LCGM Site 1 is only 45 hectares, but appears to support a greater number of feeding curlew, lapwing and golden plover than the application site does at present- at least during the Mid-December to End-March period. Scaling the results down to 32 hectares- equal to the core area of wet grassland proposed , such an area might be expected to support around 108,000 wader days year for lapwing, 10,200 for golden plover and 12,600 for curlew. These numbers would still be in excess of numbers supported by the application site at present. However, it is worth noting that these findings are based on relatively small numbers of counts in

only part of the winter and passage period, and various assumptions had to be made in interpreting the data.

Despite being larger, at around 73 hectares, LCGM Site 2 supports lower numbers of target species than LCGM Site 1. This may be partly because of certain intrinsic constraints such as its location near a working farmyard, rubbish tip, power lines and a caravan and camping site. In addition, it is a relatively young site that has not developed its interest to the same extent as Site 1.

Finally, method 3c reveals predicted wader numbers for October to March, assuming that the 32 hectares of core wet grassland proposed could support lapwing and golden plover in densities equivalent to the average of the RSPB reserves for which data were available. For lapwing, the mitigation areas would support feeding "wader days" at least equivalent to the application site at present, with a safety margin of about 10%. Golden plover numbers could potentially be far in excess of those currently observed on the application site. The RSPB reserves considered are comparable to the application area in that they are located largely in coastal and estuarine settings near to SPAs designated in part for assemblages of waterbirds including golden plover and/or lapwing. Saltholme reserve, on the Tees Estuary supports high densities of both species, despite being a relatively new reserve in an industrial setting. However, Saltholme's 45 hectares of lowland wet grassland are set within a 380 hectare nature reserve, whereas the mitigation areas proposed by Able UK would be much nearer to industrial activity.

Methods 3b and 3c taken together give useful wader densities on wet grassland from ten sites for golden plover and lapwing and two sites for curlew. The results suggest that well designed and managed wet grasslands of the size proposed by Able UK could support feeding wader numbers at least equivalent to the application site at present for these species, given time to develop. Target numbers for ruff and black-tailed godwit should be readily achievable, given the small numbers involved. The wetlands would also support a suite of other species such as redshank, dunlin, teal and wigeon.

## **References**

Alab Environmental Services Ltd 2009b Able Humber Port Facility Northern Area: Conservation Management Plan for Areas A, B & C

Percival, S. 2010 Note On The Calculation Of The Area Of The Goose Refuge Required For The Proposed Saxby Wolds Wind Farm

Taylor, A 2010 Able UK, Land between East Halton Skitter and Chase Hill Road, North Killingholme- Appropriate Assessment under the under The Conservation (Natural Habitats &c) Regulations 1994

**Appendix 1- Tables of results**

**Table 1a- Quantifying the current use of the application site by feeding waders (2007-2008)- All records.**

Week beginning.	Golden Plover		Lapwing		Curlew		Ruff		Black-tailed Godwit	
	Number	Activity	Number	Activity	Number	Activity	Number	Activity	Number	Activity
Jul 1	0		2	N	0		0		0	
Jul 8	0		0		41	F	0		0	
Jul 15	0		12	F	31	F	0		0	
Jul 22	0		2		150	F	0		0	
Jul 29	0		0		0		0		0	
Aug 5	0		0		35	F	0		0	
Aug 12	0		2	N	40	N	0		0	
Aug 19	0		0		32	N	0		0	
Aug 26	0		0		14	N	0		0	
Sept 2	197	R	0		16	N	0		0	
Sept 9	41	R	0		4	N	0		0	
Sept 16	214	R	0		96	F	0		0	
Sept 23	443	R	0		24	F	0		0	
Sept 30	0		0		53	F	0		0	
Oct 7	22	N	81	N	4	N	0		0	
Oct 14	0		0		44	N	0		0	
Oct 21	145	R	57		38	N	0		0	
Oct 28	82	R	0	N	61	N	0		0	
Nov 4	2	R	0		40	N	0		0	
Nov 11	13	N	139	N	12	N	0		0	
Nov 18	44	F	458	F	29	N	0		0	
Nov 25	8	R	586	R	18	N	0		0	

Week beginning.	Golden Plover		Lapwing		Curlew		Ruff		Black-tailed Godwit	
	Number	Activity	Number	Activity	Number	Activity	Number	Activity	Number	Activity
Dec 2	0		0		30	F	0		0	
Dec 9	158	R & F	39	R	110	F & R	0		0	
Dec 16	24	R & F	148	N	53	F	0		0	
Dec 23	212	N	681	N	114	F	0		0	
Dec 30	0		419	R	4	N	0		0	
Jan 6	8	N	414	R	52	F	0		0	
Jan 13	6	N	896	F	110	F	3	F	0	
Jan 20	361	R	0		29	N	0		0	
Jan 27	0		2	N	99	F	0		0	
Feb 3	447	N	3892	F	139	F	10	N	0	
Feb 10	0		0		68	N	6	N	0	
Feb 17	0		0		2	N	0		0	
Feb 24	13	N	195	F	27	N	0		0	
Mar 2	91	R	0		43	N	0		0	
Mar 9	131	R	19	N	58	N	0		0	
Mar 16	0		24	N	100	F	11	F	2	F
Mar 23	0		33	N	170	N	13	F	0	
Total	2662		8101		1990		43		2	
Mean	68.26		207.72		51.03		1.10		0.05	
Wader days	18634		56707		13930		301		14	

F = Feeding  
 R = Roosting  
 L = Loafing  
 N = Not recorded

Table 1b- Quantifying the current use of the application site by feeding waders (2007-2008)- Roosting birds excluded.

Week beginning.	Golden Plover		Lapwing		Curlew		Ruff		Black-tailed Godwit	
	Number	Activity	Number	Activity	Number	Activity	Number	Activity	Number	Activity
Jul 1	0		2	N	0		0		0	
Jul 8	0		0		41	F	0		0	
Jul 15	0		12	F	31	F	0		0	
Jul 22	0		2		150	F	0		0	
Jul 29	0		0		0		0		0	
Aug 5	0		0		35	F	0		0	
Aug 12	0		2	N	40	N	0		0	
Aug 19	0		0		32	N	0		0	
Aug 26	0		0		14	N	0		0	
Sept 2	0	R	0		16	N	0		0	
Sept 9	0	R	0		4	N	0		0	
Sept 16	0	R	0		96	F	0		0	
Sept 23	0	R	0		24	F	0		0	
Sept 30	0		0		53	F	0		0	
Oct 7	22	N	81	N	4	N	0		0	
Oct 14	0		0		44	N	0		0	
Oct 21	0	R	57		38	N	0		0	
Oct 28	0	R	0	N	61	N	0		0	
Nov 4	0	R	0		40	N	0		0	
Nov 11	13	N	139	N	12	N	0		0	
Nov 18	44	F	458	F	29	N	0		0	
Nov 25	0	R	0	R	18	N	0		0	
Dec 2	0		0		30	F	0		0	

Week beginning.	Golden Plover		Lapwing		Curlew		Ruff		Black-tailed Godwit	
	Number	Activity	Number	Activity	Number	Activity	Number	Activity	Number	Activity
Dec 9	158	R & F	0	R	110	F & R	0		0	
Dec 16	24	R & F	148	N	53	F	0		0	
Dec 23	212	N	681	N	114	F	0		0	
Dec 30	0		0	R	4	N	0		0	
Jan 6	8	N	0	R	52	F	0		0	
Jan 13	6	N	896	F	110	F	3	F	0	
Jan 20	0	R	0		29	N	0		0	
Jan 27	0		2	N	99	F	0		0	
Feb 3	447	N	3892	F	139	F	10	N	0	
Feb 10	0		0		68	N	6	N	0	
Feb 17	0		0		2	N	0		0	
Feb 24	13	N	195	F	27	N	0		0	
Mar 2	0	R	0		43	N	0		0	
Mar 9	0	R	19	N	58	N	0		0	
Mar 16	0		24	N	100	F	11	F	2	F
Mar 23	0		33	N	170	N	13	F	0	
Total	947		6643		1990		43		2	
Mean	24.28		170.33		51.03		1.10		0.05	
Wader days	6629		46501		13930		301		14	

F = Feeding  
 R = Roosting  
 L = Loafing  
 N = Not recorded

Table 1c- Quantifying the current use of the application site by feeding waders (Jan-Mar 2007)- All records.

Week beginning.	Golden Plover		Lapwing		Curlew		Ruff		Black-tailed Godwit	
	Number	Activity	Number	Activity	Number	Activity	Number	Activity	Number	Activity
Jan 1	0		320	R	117	F	0		1	F
Jan 8	270	R	2370	R	106	N	14	F	8	F
Jan 15	0		209	L	102	F	5	F	3	F
Jan 22	0		1700	F	177	F	10	F	7	F
Jan 29	617	F	2234	F	81	F	6	F	5	
Feb 5	20	N	556	N	40	N	4	F	0	
Feb 12	0		648	N	77	F	12	F	5	F
Feb 19	0		24	N	14	F	0	F	0	
Feb 26	0		95	F	85	F	6	F	3	N
Mar 5	0		32	F	107	N	9	F	9	N
Mar 12	0		3	N	76	F	9	F	11	F
Mar 19	0		5	R	79	F	11	F	0	
Mar 26	0		0		31	F	11	F	0	
Total	907		8196		1092		97		52	
Mean	69.77		630.46		84.00		7.46		4.00	
Wader days*	17584		72821		15267		679		364	

F = Feeding  
R = Roosting  
L = Loafing  
N = Not recorded

\* No data are available for autumn passage or winter 2006. To avoid a bias towards January-March figures, the estimated number of wader days has been calculated using data from July-December 2007 (Table 1a) and January-March 2007 (above).

**Table 1d- Quantifying the current use of the application site by feeding waders (Jan-Mar 2007)- Roosting birds excluded.**

Week beginning.	Golden Plover		Lapwing		Curlew		Ruff		Black-tailed Godwit	
	Number	Activity	Number	Activity	Number	Activity	Number	Activity	Number	Activity
Jan 1	0		0	R	117	F	0		1	F
Jan 8	0	R	0	R	106	N	14	F	8	F
Jan 15	0		209	L	102	F	5	F	3	F
Jan 22	0		1700	F	177	F	10	F	7	F
Jan 29	617	F	2234	F	81	F	6	F	5	
Feb 5	20	N	556	N	40	N	4	F	0	
Feb 12	0		648	N	77	F	12	F	5	F
Feb 19	0		24	N	14	F	0	F	0	
Feb 26	0		95	F	85	F	6	F	3	N
Mar 5	0		32	F	107	N	9	F	9	N
Mar 12	0		3	N	76	F	9	F	11	F
Mar 19	0		0	R	79	F	11	F	0	
Mar 26	0		0		31	F	11	F	0	
Total	637		5501		1092		97		52	
Mean	49.00		38507		84.00		7.46		4.00	
Wader days*	7770		49581		15267		679		364	

F = Feeding  
R = Roosting  
L = Loafing  
N = Not recorded

\* No data are available for autumn passage or winter 2006. To avoid a bias towards January-March figures, the estimated number of wader days has been calculated using data from July-December 2007 (Table 1a) and January-March 2007 (above).

**Results 2- Comparison of the application site with other local recorded sites.**

**Table 2a- Lapwing 2007/08**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jul 1	2						
Jul 8	0	9		0		3	
Jul 15	12					3	500
Jul 22	2					28	
Jul 29	0					24	
Aug 5	0					40	
Aug 12	2					38	80
Aug 19	0			3		45	
Aug 26	0					20	
Sept 2	0					12	
Sept 9	0					12	
Sept 16	0						
Sept 23	0					4	
Sept 30	0				4	122	
Oct 7	81		200			84	
Oct 14	0	70				182	
Oct 21	57			70	49	56	
Oct 28	0		120			98	
Nov 4	0		250	191	48	110	
Nov 11	139		160			2	
Nov 18	458		290	67	342	665	
Nov 25	586		70		569	54	
Dec 2	0		1650	1350	128	325	650
Dec 9	39		1100	1470		182	
Dec 16	148		1500		177		227
Dec 23	681		1600	197			
Dec 30	419		720	860	522	92	
Jan 6	414		500	2180	212		
Jan 13	896			1400		1	
Jan 20	0			108			
Jan 27	2			800		3	13500
Feb 3	3892		220	266	192	4	

Feb 10	0			1300		22	
Feb 17	0		1500		321		
Feb 24	195		800	106			
Mar 2	0				4		
Mar 9	19						
Mar 16	24					4	
Mar 23	33						
Total	8101	79	10680	10368	2568	2235	14957
Wader days	56707	553	74760	72576	17976	15645	104699

NKHP = North Killingholme Haven Pits SSSI

ISI = Intertidal WeBS sector from East Halton Skitter to Killingholme Haven

ISJ = Intertidal WeBS sector from Killingholme Haven to LPG Jetty (South Killingholme)

**Table 2b- Lapwing January to March 2007**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI + ISJ	NKHP	Other	ISJ
Jan 1	320	1600		1400	112		122
Jan 8	2370			1400	388		
Jan 15	209			1600	151		
Jan 22	1700			1700	758		
Jan 29	2234			2100	65		
Feb 5	556			0	38	600	8
Feb 12	648			757	42		
Feb 19	24			75	662		
Feb 26	95			0	8		
Mar 5	32			21	5		0
Mar 12	3			21	5		
Mar 19	5			0			
Mar 26	0			0			
Total	8196	1600	0	9074	2234	2857	130
Wader days	57372	11200	0	63518	15638	19999	910

**Table 2c- Golden Plover 2007/08**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jul 1	0						
Jul 8	0	354					
Jul 15	0	900					
Jul 22	0						
Jul 29	0						
Aug 5	0						
Aug 12	0						
Aug 19	0						
Aug 26	0						
Sept 2	197						
Sept 9	41						
Sept 16	214						
Sept 23	443						
Sept 30	0						
Oct 7	22						
Oct 14	0					1	11000
Oct 21	145						
Oct 28	82	1340	38				
Nov 4	2		100			2	
Nov 11	13		202				
Nov 18	44	2600	600				
Nov 25	8						
Dec 2	0		5		1	1	
Dec 9	158		80				
Dec 16	24		90				
Dec 23	212		500				
Dec 30	0		620				
Jan 6	8		120				
Jan 13	6						20000
Jan 20	361						
Jan 27	0						
Feb 3	447						
Feb 10	0						
Feb 17	0		1250				
Feb 24	13		600				
Mar 2	91		30				

Mar 9	131						
Mar 16	0						
Mar 23	0						
Total	2662	5194	4235	0	1	4	31000
Wader days	18634	36358	29645	0	7	28	217000

NKHP = North Killingholme Haven Pits SSSI

ISI = Intertidal WeBS sector from East Halton Skitter to Killingholme Haven

ISJ = Intertidal WeBS sector from Killingholme Haven to LPG Jetty (South Killingholme)

**Table 2d- Golden Plover January to March 2007**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jan 1	0			0	0	0	15000
Jan 8	270			0	0	0	15000
Jan 15	0	8500		0	0	0	15000
Jan 22	0			0	0	0	
Jan 29	617			0	0	0	
Feb 5	20		650	0	0	0	
Feb 12	0			0	0	0	
Feb 19	0			0	0	0	
Feb 26	0			0	0	0	
Mar 5	0			0	0	0	
Mar 12	0			0	0	0	
Mar 19	0			0	0	0	
Mar 26	0			0	0	0	
Total	907	8500	650	0	0	0	45000
Wader days	6349	59500	4550	0	0	0	315000

**Table 2e- Curlew 2007/08**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jul 1	0				10		33
Jul 8	41	15		1		5	
Jul 15	31				31	4	88
Jul 22	150				8	3	
Jul 29	0			2	26	8	22
Aug 5	35				18	10	
Aug 12	40			2	29	5	69
Aug 19	32			3	17	1	55
Aug 26	14			3	9	6	
Sept 2	16			3	16	6	
Sept 9	4			4	20	5	
Sept 16	96			1	19	3	5
Sept 23	24			6	15	2	5
Sept 30	53			3	23	4	5
Oct 7	4	43				5	
Oct 14	44			1	7	3	32
Oct 21	38			2	27	2	29
Oct 28	61	25	52	3		57	7
Nov 4	40			3	32	5	88
Nov 11	12		44			2	2
Nov 18	29		34		27	1	22
Nov 25	18		65		63	17	42
Dec 2	30		38		43	2	25
Dec 9	110		18			2	7
Dec 16	53				37		67
Dec 23	114					9	9
Dec 30	4				30	1	118
Jan 6	52		31		11		62
Jan 13	110		5				42
Jan 20	29				115		59
Jan 27	99					3	20
Feb 3	139				121	9	155
Feb 10	68			14			16
Feb 17	2			5	61	2	53
Feb 24	27					6	4
Mar 2	43		8	2	14	3	62

Mar 9	58			1	1	13	37
Mar 16	100			1	15	3	77
Mar 23	170						150
Total	1990	83	295	60	845	207	1467
Wader days	13930	581	2065	420	5915	1449	10269

NKHP = North Killingholme Haven Pits SSSI

ISI = Intertidal WeBS sector from East Halton Skitter to Killingholme Haven

ISJ = Intertidal WeBS sector from Killingholme Haven to LPG Jetty (South Killingholme)

**Table 2f- Curlew January to March 2007**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jan 1	117			2	94	43	129
Jan 8	106				94	33	78
Jan 15	102				66	37	0
Jan 22	177				91	5	52
Jan 29	81				99	9	82
Feb 5	40			1	0		28
Feb 12	77				101	11	0
Feb 19	14				28	76	31
Feb 26	85				138	11	39
Mar 5	107			0	32	10	0
Mar 12	76				70	4	5
Mar 19	79				0	5	0
Mar 26	31				57	7	106
Total	1092	0	0	3	813	251	550
Wader days	7644	0	0	21	5691	1757	3850

Table 2g- Ruff 2007/08

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jul 1				0	0		
Jul 8				0	0		
Jul 15				0	0		
Jul 22				0	0		
Jul 29				0	0		
Aug 5				0	0		
Aug 12				0	0		
Aug 19				0	0		
Aug 26				0	0	1	
Sept 2				0	0	2	
Sept 9				0	0	4	
Sept 16				0	0		
Sept 23				0	0	2	
Sept 30				0	0		
Oct 7				0	0	1	
Oct 14				0	0		
Oct 21				0	0		
Oct 28				0	0	4	
Nov 4				0	0		
Nov 11				0	0		
Nov 18		4		0	0	5	
Nov 25				0	0		
Dec 2				0	0	7	
Dec 9				0	0	9	
Dec 16				0	0		
Dec 23				0	0		
Dec 30				2	0		
Jan 6				9	0		
Jan 13	3			2	0		
Jan 20				0	0		
Jan 27				3	0	2	
Feb 3	10			0	0		
Feb 10	6			0	0		
Feb 17				0	0		
Feb 24				0	0		
Mar 2				0	0		

Mar 9				0	0		
Mar 16	11			0	0		
Mar 23	13			0	0		
Total	43	4	0	16	0	37	0
Wader days	301	28	0	112	0	259	0

NKHP = North Killingholme Haven Pits SSSI

ISI = Intertidal WeBS sector from East Halton Skitter to Killingholme Haven

ISJ = Intertidal WeBS sector from Killingholme Haven to LPG Jetty (South Killingholme)

**Table 2h- Ruff January to March 2007**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jan 1	0					13	
Jan 8	14					11	
Jan 15	5			7			
Jan 22	10					5	
Jan 29	6						
Feb 5	4						
Feb 12	12					2	
Feb 19	0			12		12	
Feb 26	6						
Mar 5	9			11			
Mar 12	9						
Mar 19	11					11	
Mar 26	11				9	2	
Total	97	0	0	30	0	56	0
Wader days	679	0	0	210	0	392	0

**Table 2i- Black-tailed Godwit 2007/08**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jul 1				0			
Jul 8						109	
Jul 15					35	4	
Jul 22						51	
Jul 29				234	572	1950	
Aug 5					1400	3280	
Aug 12				37	1412	2740	
Aug 19				5	747	1450	
Aug 26						1550	
Sept 2					338	3500	8
Sept 9						3200	64
Sept 16				6	2200	2860	48
Sept 23						3400	38
Sept 30				432	1362	3560	83
Oct 7						1376	
Oct 14					223	2321	13
Oct 21					746	2190	
Oct 28						2550	
Nov 4				1		2840	
Nov 11						2620	
Nov 18					47	1430	
Nov 25					31	5	
Dec 2				3	423	326	
Dec 9						1400	
Dec 16					33	1	
Dec 23						4	
Dec 30					12	2	
Jan 6					10		
Jan 13							
Jan 20					2430		
Jan 27						5	
Feb 3					960		
Feb 10							
Feb 17					646		
Feb 24						1423	
Mar 2					296	168	

Mar 9							
Mar 16	2				47	229	
Mar 23							
Total	2	0	0	718	13970	46544	254
Wader days	14	0	0	5026	97790	325808	1778

NKHP = North Killingholme Haven Pits SSSI

ISI = Intertidal WeBS sector from East Halton Skitter to Killingholme Haven

ISJ = Intertidal WeBS sector from Killingholme Haven to LPG Jetty (South Killingholme)

**Table 2j- Black-tailed Godwit January to March 2007**

Date	Able Area	Goxhill Marsh	Thornton Abbey	ISI	ISJ	NKHP	Other
Jan 1	1					5	
Jan 8	8					1400	
Jan 15	3				481	2	
Jan 22	7					2800	
Jan 29	5						
Feb 5	0						
Feb 12	5					1	
Feb 19	0					842	
Feb 26	3						
Mar 5	9					102	
Mar 12	11					12	
Mar 19	0						
Mar 26	0						
Total	52	0	0	0	481	5164	0
Wader days	364	0	0	0	3367	36148	0

**Results 3b- Comparison of the application site with Lincolnshire Coastal Grazing Marsh Managed Wet Grasslands.**

**Table 3b a) Lapwing, Mid December to End March**

LGCM Site 1- 45 hectares, 5 years old			LGCM Site 2- 73 hectares, 2 years old			Application site 2007			Application Site 2007/08		
Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count	Activity
16/12/2008	3600	FR	16/12/2008	580	FR	16/12/2007	148	N	16/12/2007	148	N
14/01/2009	450	FR	14/01/2009	0		08/01/2007	0	R	13/01/2008	896	F
14/02/2009	4800	F + FI	14/02/2009	0		12/02/2007	648	N	17/02/2008	0	
23/02/2009	140	N	23/02/2009	0		19/02/2007	24	N	24/02/2008	195	F
07/03/2009	145	FR	07/03/2009	75	FR	05/03/2007	32	F	09/03/2008	19	N
14/03/2009	145	FR	14/03/2009	78	FR	12/03/2007	3	N	16/03/2008	24	N
29/03/2009	214	FR	29/03/2009	107	FR	26/03/2007	0		23/03/2008	33	N
Total	9494		Total	840		Total	855		Total	1315	
Mean	1356.29		Mean	120.00		Mean	122.14		Mean	187.86	
Wader days	151904		Wader days	13440		Wader days	13680		Wader days	21040	

**Table 3b b) Golden Plover, Mid December to End March**

LGCM Site 1- 45 hectares, 5 years old			LGCM Site 2- 73 hectares, 2 years old			Application site 2007			Application Site 2007/08		
Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count	Activity
16/12/2008	30	F	16/12/2008	0		16/12/2007	24	R&F	16/12/2007	24	R&F
14/01/2009	120	R&F	14/01/2009	0		08/01/2007	0	R	13/01/2008	6	N
14/02/2009	350	N	14/02/2009	0		12/02/2007	0		17/02/2008	0	
23/02/2009	0		23/02/2009	0		19/02/2007	0		24/02/2008	13	N
07/03/2009	400	R&F	07/03/2009	0		05/03/2007	0		09/03/2008	0	
14/03/2009	0		14/03/2009	0		12/03/2007	0		16/03/2008	0	
29/03/2009	0		29/03/2009	0		26/03/2007	0		23/03/2008	0	
Total	900		Total	0		Total	24		Total	43	
Mean	128.57		Mean	0.00		Mean	3.43		Mean	6.14	
Wader days	14400		Wader days	0		Wader days	384		Wader days	688	

**Table 3b c) Curlew, Mid December to End March**

LGCM Site 1- 45 hectares, 5 years old			LGCM Site 2- 73 hectares, 2 years old			Application site 2007			Application Site 2007/08		
Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count	Activity
16/12/2008	0		16/12/2008	60	F	16/12/2007	53	F	16/12/2007	53	F
14/01/2009	0		14/01/2009	15	F	08/01/2007	106	N	13/01/2008	110	F
14/02/2009	0		14/02/2009	6	F	12/02/2007	77	F	17/02/2008	2	N
23/02/2009	0		23/02/2009	0		19/02/2007	14	F	24/02/2008	27	N
07/03/2009	75	FR	07/03/2009	0		05/03/2007	107	N	09/03/2008	58	N
14/03/2009	774	FR	14/03/2009	0		12/03/2007	76	F	16/03/2008	100	F
29/03/2009	261	FR	29/03/2009	0		26/03/2007	31	F	23/03/2008	170	N
Total	1110		Total	81		Total	464		Total	520	
Mean	158.57		Mean	11.57		Mean	66.29		Mean	74.29	
Wader days	17760		Wader days	1296		Wader days	7424		Wader days	8320	

F = Feeding  
R = Roosting  
L = Loafing  
Fl = Flying  
N = Not recorded

**Table 3c - Lapwing and Golden Plover densities from RSPB Lowland Wet Grassland Reserves**

<b>RSPB reserves in E England Lowland Wet Grassland with mean densities of Lapwing and Golden Plover</b>						
2007/08						
					<b>GOLDEN PLOVER</b>	<b>LAPWING</b>
<b>Typical lwgs in eastern half of England</b>	<b>Location</b>	<b>Nearest SPA</b>	<b>Area of lwg (ha)</b>		<b>Oct- March mean</b>	<b>Oct - March mean</b>
Buckenham & Cantley Marshes	Norfolk Broads	Broadland	302		5.2	3
Dingle Marshes	Suffolk Coast	Minsmere-Walberswick	19			18.1
Elmley Marshes*	North Kent	Medway Estuary & Marshes	210		4.0	16.7
Minsmere	Suffolk Coast	Minsmere-Walberswick	109			3.2
North Warren*	Suffolk Coast	Sandlings+ Alde-Ore Estuary	98			3.3
Old Hall Marshes*	Essex	Blackwater Estuary	357		2.6	2.4
Rainham Marshes*	Essex	Thames Estuary & Marshes	203		1.1	5.7
Saltholme*	Tees Estuary	Teesmouth & Cleveland Coast	45		11	26.2
total of mean averages across reserves					24.1	78.6
<b>mean wintering birds per hectare across 8 reserves</b>					<b>4.8</b>	<b>9.8</b>

\* = Reserve near SPA designated for assemblages of wintering and passage waders, including golden plover and/or lapwing

### **Appendix 3. Citations and Conservation Objectives.**

#### **Explanatory notes for Humber Estuary SPA, Ramsar and SAC Conservation Objectives**

These conservation objectives are taken from *The Humber Estuary European Marine Site: English Nature's Interim advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994*, April 2003, (the 'Regulation 33 package'), and were written on the basis of the 2000 citations for the Phase II pSPA, pRamsar and the pSAC. These year 2000 proposals were not progressed, and were superseded by the 2004 Humber Estuary pSPA (now SPA), pRamsar (now Ramsar) and pSAC (now candidate SAC) citations. Revised Conservation Objectives have yet to be produced and so the following notes provide guidance on use of the Conservation Objectives in light of these changes.

For the SPA the Regulation 33 package includes 3 conservation objectives - one for Annex I species, one for regularly occurring migratory species and one for the assemblage. While there are differences between which Annex I and II species are present in qualifying numbers, and in the total size of the assemblage between the citations on which the Regulation 33 were based and the current 2004 citation, as long as the conservation objectives (and associated favourable condition tables) are applied to the species and number of birds listed on the 2004 citation, then there is no problem.

For the Ramsar site, the 2004 citation added 3 additional features to those previously listed, and for which there are therefore no conservation objectives in the Regulation 33 package. However, two additional features were already listed on the 2000 pSAC citation, and so effectively covered by proxy:

1) Qualifies under Criterion 1 because it contains a representative, rare or unique example of a natural or near natural wetland type.

This covers the estuary and component habitats so application of the pSAC conservation objectives for estuary and component habitats can be taken to cover this

2). Qualifies under criterion 8 because it is a migration path on which fish stocks...depend.

The grounds for qualification here are the sea and river lamprey, and so again application of the pSAC cons objectives etc for lamprey can be taken to cover this.

The only additional Ramsar feature added in 2004 for which there is no conservation objective (or effective proxy) is Natterjack Toad (for which the site qualifies under Criterion 3).

In 2004 English Nature also removed a previously listed Ramsar feature - 'internationally important wetland, hosting an assemblage of threatened coastal and wetland invertebrates'.

This was removed as specialists were not satisfied that there was sufficient data to support it. This feature had been added to the 2000 citation (hence its inclusion in the Regulation 33 package) but was not on the 'listed' (i.e. formally designated) citation in 1991 and so there is no need to take account of this feature.

The Regulation 33 package contains conservation objectives for 8 of the 13 features listed on the 2004 citation. Those which are not included fall into two categories:

1). a) Fixed dunes with herbaceous vegetation; b) embryonic dunes; and c) shifting dunes. These were all on the 2000 (as well as the 2004) citation but dunes are not considered to be 'marine'

features so aren't covered in Regulation 33 packages for European 'Marine' Sites

2). a) Grey Seal and b) Dunes with Hippophae, both of which were not on the 2000 citation but were added in 2004.

Application of the Ramsar conservation objective is appropriate for grey seal.

There remain 4 dune features for which no conservation objectives or associated favourable condition tables have yet been produced.

## **1. The Humber Estuary SAC conservation objectives**

### **1.1 The conservation objective for the estuary**

Subject to natural change, maintain\* the **estuary** in favourable condition, in particular the:

- Saltmarsh communities
- Intertidal mudflat & sandflat communities
- Subtidal sediment communities

### **1.2 The conservation objective for coastal lagoons**

Subject to natural change, maintain\* the **coastal lagoons** in favourable condition.

### **1.3 The conservation objective for Atlantic salt meadows**

Subject to natural change, maintain\* the **Atlantic salt meadows** in favourable condition, in particular the:

- Low to mid marsh communities
- Mid to upper marsh communities
- Transitional communities

### **1.4 The conservation objective for Salicornia and other annuals colonising mud and sand.**

Subject to natural change, maintain\* **Salicornia and other annuals colonising mud and sand** in favourable condition, in particular the:

- Annual *Salicornia* (samphire) saltmarsh community
- *Suaeda maritima* (sea-blite) saltmarsh community

1.5 The conservation objective for mudflats and sandflats not covered by seawater at low tide

Subject to natural change, maintain\* the **mudflats and sandflats not covered by seawater at low tide** in favourable condition, in particular the:

- Intertidal gravel and sand communities
- Intertidal muddy sand communities
- Intertidal mud communities
- Eelgrass bed communities

1.6 The conservation objective for sandbanks which are slightly covered by water all the time.

Subject to natural change, maintain\* the **sandbanks which are slightly covered by seawater all of the time** in favourable condition, in particular the:

- Subtidal gravel and sands
- Subtidal muddy sands

1.7 The conservation objective for *Lampetra fluviatilis* (river lamprey)

Subject to natural change, maintain\* the habitats of ***Lampetra fluviatilis* (river lamprey)** in favourable condition.

1.8 The conservation objective for *Petromyzon marinus* (sea lamprey)

Subject to natural change, maintain\* the habitats of ***Petromyzon marinus* (sea lamprey)** in favourable condition.

\* Maintain implies restoration if the feature is not currently in favourable condition.

## 2. The Humber Estuary SPA conservation objectives

### 2.1 The conservation objective for the internationally important populations of the regularly occurring Annex I species

Subject to natural change, maintain\* in favourable condition the habitats for the internationally important populations of the **regularly occurring Annex I species**, in particular:

- **Intertidal mudflats and sandflats**
- **Saltmarsh communities**
- **Tidal reedbeds**
- **Coastal lagoons**
- **Unvegetated sand and shingle**

### 2.2 The conservation objective for the internationally important populations of regularly occurring migratory bird species

Subject to natural change, maintain\* in favourable condition the habitats for the internationally important populations of the **regularly occurring migratory bird species**, in particular:

- **Intertidal mudflats and sandflats**
- **Saltmarsh communities**
- **Tidal reedbeds**
- **Coastal lagoons**

### 2.3 The conservation objective for the internationally important assemblage of waterfowl

Subject to natural change, maintain\* in favourable condition the habitats for the internationally important **assemblage of waterfowl**, in particular:

- **Intertidal mudflats and sandflats**
- **Saltmarsh communities**
- **Tidal reedbeds**
- **Coastal lagoons**

Note: These SPA conservation objectives focus on habitat condition in recognition that bird populations may change as a reflection of national or international trends or events. Annual counts for qualifying species will be used by Natural England, in the context of five year peak means, together with available information on UK population and distribution trends, to assess whether this SPA is continuing to make an appropriate contribution to the Favourable Conservation Status of the species across Europe.

\* Maintain implies restoration if the feature is not currently in favourable condition.

### **3. The Humber Estuary Ramsar site conservation objectives**

- 3.1 Criterion 2: Conservation objective for the internationally important wetland, hosting an assemblage of threatened coastal and wetland invertebrates**

Subject to natural change, maintain\* the wetland hosting an assemblage of threatened coastal and wetland invertebrates in favourable condition, in particular:

- Saltmarsh communities
- Coastal lagoons

**3.2 Criterion 3: Conservation objective for the internationally important wetland, supporting a breeding colony of grey seals *Halichoerus grypus***

Subject to natural change, maintain\* the **wetland hosting a breeding colony of grey seals** in favourable condition, in particular:

- Intertidal mudflats and sandflats

**3.3 Criterion 5: Conservation objective for the internationally important wetland, regularly supporting 20,000 or more waterfowl**

Subject to natural change, maintain\* the **wetland regularly supporting 20,000 or more waterfowl** in favourable condition, in particular:

- Intertidal mudflats and sandflats
- Saltmarsh communities
- Tidal reedbeds
- Coastal lagoons

**3.4 Criterion 6: Conservation objective for the internationally important wetland, regularly supporting 1% or more of the individuals in a population of one species or sub-species of waterfowl**

Subject to natural change, maintain\* the **wetland regularly supporting 1% or more of the individuals in a population of one species or sub-species of waterfowl** in favourable condition, in particular:

- Intertidal mudflats and sandflats
- Saltmarsh communities
- Tidal reedbeds
- Coastal lagoons

Note: The Ramsar site conservation objectives for **critterion 2 & 3** interest focus on the condition of the habitats that support or host species of international importance. Information on the status of the species in terms of national and international population and distribution trends will be used to inform judgements made with regards to the management and protection of the sites.

The Ramsar site conservation objectives for **critterion 5 & 6** interest focus on the condition of the habitats that support the bird populations. This is in recognition of changes in bird populations that may take place as a consequence of national or international trends or events. Annual counts for qualifying species will be used by Natural England in the context of five-year peak means together with other available information on the national and international population and distribution trends to inform judgements regarding the management and protection of the site.

\* Maintain implies restoration if the feature is not currently in favourable condition.

## **Appendix 4a. Natural England correspondence on the original proposal**

Our ref: HESSSI/O/N Lincs

Date: 17 July  
Your ref: PA/2009/0600

William Hill  
North Lincolnshire Council  
Church Square House  
PO Box 42  
Scunthorpe  
North Lincolnshire  
DN15 6XQ

Natural England  
Bullring House  
Northgate  
Wakefield  
WF1 3BJ

T - 01924  
334500

Dear Mr Hill,

**Re: Planning application reference PA/2009/0600  
Able Humber Ports Facility: Northern Area**

**Humber Estuary SSSI and North Killingholme Haven Pits SSSI  
Humber Estuary candidate Special Area of Conservation, Special Protection Area and  
Ramsar site**

Thank you for consulting Natural England on the above proposal.

As you will be aware, the application site lies close to the above-listed designated sites. The location of the proposed development in relation to the Humber Estuary and North Killingholme Haven Pits means that the provisions of the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations will apply. Under the auspices of the Habitats Regulations, in particular Regulations 48 and 49, North Lincolnshire Council are the Competent Authority when considering this development. The Council therefore has the statutory responsibility to determine whether or not the proposals are likely to have a significant effect, alone or in combination with other plans or projects, on the Humber Estuary SPA, Ramsar site and cSAC. Any assessment will need to consider potential impacts of the development on estuarine structure and function, and on all of the features of the Humber Estuary and North Killingholme Haven Pits SSSIs, SPA, Ramsar and cSAC.

Part I B of *ODPM Circular 06/2005 - Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System* describes the procedure for the consideration of plans and projects which may affect sites protected by the Habitats Regulations.

With regards to this development, it is Natural England's opinion that the proposal is likely to have a significant effect on the Humber Estuary designated sites, and therefore an appropriate assessment is required. We await consultation on this document and are likely to provide further detailed comments on the scope and content of this.

### **SPA/ Ramsar birds**

The survey work undertaken across the proposed development site demonstrates that the site is important for roosting and feeding SPA/ Ramsar birds, in particular golden plover, lapwing, curlew, ruff and black tailed godwit, and the site is also utilised by other SPA/ Ramsar species such as wigeon and mallard.

The fields which support greater than 1% of the estuary populations of each species are detailed below:

Golden plover – fields 1, 4 highest density 15.21bph

Lapwing – fields 1, 4, 6, 8, 11, 12, 17, 25, 26, 29 highest density 303.91bph

Curlew – fields 6, 8, 10, 11, 14, 15, 17, 24, 29, 31, 32, 33, 36, 38, 42, 54, 64 highest density 18.81

Ruff – fields 1, 4, 6, 11, 12, 17, 25, 29, 36, 42 highest density 2.27

Black tailed godwit field 24 highest density 3.24

Fields 42 and 64 were also utilised by significant numbers of mallard, wigeon and teal.

Where these species occur in numbers greater than 1% of the SPA/ Ramsar population, only lapwing are present in densities similar to the 93.17 birds per hectare proposed for the mitigation land. The other species almost always occur in densities of less than 20 birds per hectare. This is still the case in fields such as 37 and 42 which are described as 'conservation pasture'. It therefore appears unrealistic to suggest that achieving a density of 93.17 birds per hectare as "highly likely" and no indication is given as to how such high densities can be maintained on the relatively small area of mitigation land. Although it may be reasonable to assume that higher densities can be maintained on fields by roosting birds; many birds are likely to be feeding (both during the day and at night) and will require a greater area due to interference and food depletion.

There are a number of mistakes in the important field numbers in URS's balance sheet briefing note. We have compared Able's dataset with the report recently produced by Mott MacDonald "South Humber Bank Zone: Final report - Field usage by bird species from the Humber Estuary SPA". Unfortunately it appears that there are errors in both documents with discrepancies between the presentation of the dataset. Humber INCA has checked a number of these discrepancies with the original dataset and found a number of errors in Able's ruff dataset. Ruff were recorded in fields 30 and 41 (however they are marked as absent) and were not recorded in field 36 (however they are marked as present). We have obviously not checked the entire dataset; however as this information will underpin the appropriate assessment it is crucial that it is accurate. Natural England therefore advises that the entire dataset be reviewed. Another example of an error is how the density rows have been calculated at the bottom of each field dataset. The South Humber Bank survey work was undertaken every week, however the tables only present one count for each species per month. We assume that this is the peak count for the species recorded during the four separate surveys undertaken each month. These peak counts then appear to have been totalled together to give a maximum density for each field. If this is the methodology used, then it does not give an accurate record of the total densities occurring in each field as it is unlikely that the peak counts for each species always occurred on the same day. For example, the peak count for golden plover may have occurred during October week one, whereas the peak count for lapwing may have occurred during October week two. This methodology is likely to give a false impression that the birds are present in higher densities than in reality.

Noise and visual disturbance – it is highly likely that the construction work will result in noise and visual disturbance to SPA birds both on the development site and on the adjacent designated sites. Once a mitigation scheme is agreed, this will also need to be protected during the phased construction work, and also potentially the operational phase of the site. For example, mitigation area A is directly adjacent to phase 7 of the development. Using the timescales given in the phasing diagram, the mitigation area will be created in 2011-2013, with the development of phase 7 in 2016. It is therefore highly likely that development of phase 7 will be subject to stringent noise, visual and/ or timing restrictions over passage and winter periods to avoid disturbance to SPA birds utilising the mitigation land. Also depending on the habitat created, there may also be breeding bird interest, which would further restrict the working period.

We note that the Environmental Statement records a moderate negative impact from the proposed significant increase in the volume of rail traffic passing through North Killingholme Haven Pits designated sites. This will need to be considered fully in the appropriate assessment. We are aware of work undertaken by Niall Burton *et al.* BTO which found that "black tailed godwit numbers were reduced close to rail roads". It is thought that this is because rail traffic is less predictable and usually noisy, and birds are therefore less likely to habituate to it.

Proposed mitigation – Natural England believes the proposed mitigation areas for SPA birds to be insufficient. The proposed development site covers a large area (59 fields, 380ha) and the bird data demonstrates that this area is important for a number of SPA species. The areas proposed for mitigation by Able UK have a number of functions – the primary role appears to be flood

attenuation, but it is also proposed that the areas will support protected species such as badgers and farmland birds, in addition to providing mitigation for adverse effect on the Humber Estuary bird populations. We are therefore concerned that these functions could conflict and the mitigation area will not be adequate for any of its proposed nature conservation functions. Additionally, the proposal for site run off to enter the attenuation ponds must include a contingency plan for pollution events. The Council should be aware that any proposed mitigation areas must be created before habitat utilised by SPA birds is lost. This is to ensure that the new habitat has time to establish, management methods (such as water level management) can be refined and the areas are able to support the displaced birds – for feeding and roosting. The phasing diagram appears to show each mitigation area being created at the same time as the development, which is not appropriate. Timescales for the creation of mitigation areas must be covered by the appropriate assessment, and secured by a planning condition or a section 106 agreement. Able's proposed phasing plan for the site must also be tied into this legal framework.

The briefing note refers to the birds' usage of relatively enclosed fields (banks, trees, hedgerows), however no information is given on hedgerow size, and it may be that a number of these hedgerows are gappy, low structures which would not block bird view lines. A lack of information on field boundaries has been identified as a data gap in the recent Mott MacDonald report. They state that "field size data are based on mapped field boundaries rather than actual boundaries, which may include ditches.....Fields with open boundaries will be perceived as larger by plovers and may be preferred". All the proposed mitigation areas are adjacent to buildings/ structures along at least one side, which are likely to present more of an obstruction than hedgerows. The proximity of roads, external storage areas and public footpaths through the mitigation areas are likely to result in higher disturbance levels than currently experienced; which is also likely to reduce their ability to support high densities of birds. Area C appears to be in a particularly unsuitable location to function fully as part of the mitigation package for the proposed development. It is further inland from the estuary and will be surrounded on all sides by development. It is known and widely accepted that the SPA birds generally utilise land closest to the estuary for feeding and roosting, and birds will fly through gaps in industrial areas rather than over the top (Nick Cutts, IECS pers com).

Strategic work on the South Humber Bank - The Council will be well aware of the ongoing strategic South Humber Bank work involving industry, the conservation bodies, the local authorities, HINCA, the Environment Agency and Yorkshire Forward. This development must not compromise potential solutions emerging from this important work and must be compatible with the principles to establish mitigation areas which will safeguard the ornithological interest of the SPA, whilst allowing appropriate development throughout the South Humber Bank. Further guidance on mitigation areas can be found in the Mott MacDonald report, which states that areas selected with the following characteristics are likely to ensure the highest levels of success:

- Largest field size available
- Fields with open boundaries ie no tall hedges, trees or other barriers
- The least disturbed, especially from people and road traffic
- Situated within 500m of the estuary
- Have a managed sward height, by mowing or grazing, of less than 10cm in winter.

Without wishing to prejudge the findings of the Council's appropriate assessment, Natural England currently advises that areas A, B and C are insufficient to mitigate habitat loss and disturbance impacts from the proposed development, especially when considered in combination with other plans and Projects (as required by the Habitats Regulations 1994).

## **Protected species**

### **Badgers -**

Unfortunately Natural England has not been provided with the badger information as part of this consultation. As stated to the Council in our email dated 1 July 2009, appendix 10 was missing from the online documents. This was provided on CD by Richard Cram, however the badger

information was still absent. We will therefore provide further comments on the impacts of the proposed development on badgers once we have been provided with the full documentation.

The Council and developer should be aware that Natural England has recently produced guidance on 'current use of a badger sett' and the 'interpretation of disturbance in relation to badgers occupying a sett', which will be useful for this development.

We are also aware that the Council has a policy (LC5) that 'permission will not be granted for development that would have an adverse impact on badgers.....Where adverse impacts are identified, conditions or the use of planning agreements will be considered to minimise disturbance and maintain the current population levels". The proposal put forward as part of this planning application is contrary to this policy and we will be interested to know the Council's view on this apparent contradiction.

The Council will also need to assess the impacts of restarting the railway line on badgers. This does not appear to be covered in the Environmental Statement, however there is a main sett on railway line and the area is also used for foraging.

### **Water voles**

We note that water voles are present in a number of ditches on the development site and that it is proposed to exclude them from a number of drains. The ES states that this will be carried out at an appropriate time of year, where possible. Natural England advises that with a development of this scale and with a 6-7 year timeframe there should be ample time to employ best practice when working with water voles. For example there should be no need to exclude water voles from their burrows during the breeding season, strimming should not be used along more than 100m length of water vole habitat, etc. We also note the proposal for a 2m buffer along the ditch tops - EN415, (Water vole mitigation techniques) recommends a minimum disturbance buffer of 5m, with an optimal buffer zone of 10m. Natural England advises that the conservation of the water vole population at this site should be addressed through a water vole mitigation plan. A planning condition or section 106 agreement would be an appropriate way of securing the production and implementation of this plan, and we expect to be consulted on this in due course.

### **Bats**

We note that no roosts were found within the development site during the bat surveys, however there was some bat activity recorded across the site. The survey undertaken in July 2006 stated that the bridge at the eastern end of site 6 was suitable for roosting bats. However, it was inaccessible during the site survey and the ES states that works will be sufficient distance from this site to avoid disturbance. Two woodland sites were also identified as having the potential to support roosting bats – sites 7 and 9. It is our understanding that site 7 will not be affected by the proposed development; however as site 9 will be removed it was resurveyed in 2007. This survey recommends that should 12 months pass from the date of the survey (June 2007), the copse should be resurveyed. As the presence and impact of a proposal on a protected species must be determined before planning permission can be granted, Natural England advises that this survey work be undertaken before planning permission can be granted.

### **Great crested newts**

Natural England are satisfied with the results of the survey work stating that the ponds on the development site were not suitable for this species. We also agree that great crested newts are unlikely to access the development site from the pond at TA14291835 due to the distance (400m) and the unsuitable habitat.

With regards to the protected species which may be affected by the proposed development, the applicants should be informed that planning permission, if granted, does not absolve them from complying with the relevant law, including obtaining and complying with the terms and conditions of any licences required as described in Part IV B of the Government Circular 06/2005 – "*Biodiversity and Geological conservation – statutory obligations and their impact within the planning system*"

### **Non SPA and/ or Ramsar birds**

We note that the site supports a large and diverse suite of farmland birds, including 10 breeding species and 11 wintering species listed on the UK BAP, LBAP and/ or red or amber listed.

As you will be aware, Planning Policy Statement number 9: Biodiversity and Geological Conservation (PPS 9) paragraph 14 states;

*“Development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design. When considering proposals, local planning authorities should maximise such opportunities in and around developments, using planning obligations where appropriate.”*

Natural England requests further details of the proposals to mitigate for as many of these species as possible.

### **Flood defence works**

We are aware that Able UK and the Environment Agency have had a number of meetings to discuss the flood defence works that are required to ensure the proposed development is compatible with PPS25. These works need to be considered in the Council’s appropriate assessment. At the current time, it is our understanding that the Environment Agency are providing the compensation resulting from coastal squeeze along Able’s frontage; however any other direct impacts from the proposed defence works need to be considered under the Habitats Regulations. If there are any additional adverse effects resulting from these works, Able UK will be required to provide compensation, having passed the tests of no alternatives and imperative reasons of overriding public interest. It is expected that there will be a number of Competent Authorities for the defence works and we advise the Council to liaise closely with the EA and the Marine and Fisheries Agency to ensure consistency.

### **Outfall channel**

Natural England previously provided Able UK with comments on John Pethick’s report on the proposed outfall. Our national specialists stated the need to ensure that the onsite drainage system and balancing ponds are designed to minimise run-off and the resulting discharge to the Humber Estuary. It was their opinion that the discharge would result in a functional change to the designated site habitat rather than a loss. However, it would seem prudent to consider the outfall and pumping station in the appropriate assessment; particularly as timing restrictions may be required for its development. We are aware that John Pethick suggested alternatives for the outfall – a discharge to East Halton Skitter or the provision of a piped outfall - these do not appear to have been covered in the ES.

### **Landscape**

Natural England is committed to a future where the diversity and distinctiveness of England’s landscape are maintained and enhanced. With this in mind, Natural England expects any planning application for a major development to be accompanied by a comprehensive Environmental Statement that makes it possible to consider the full implications of the proposal on the environment.

In the case of the landscape and visual assessment of the proposed industrial development by Able UK, Natural England considers that the assessment is weak and does not enable an adequately informed judgement to be made about the potential impacts of the proposal.

In the description of the potential impacts, there is no mention of the specific built elements – warehouses, offices, car parks, lighting and communications masts, other structures – and of how they might fit in to the local landscape. There is a lack of either wireframe or photomontages, to provide a visual guide to the way in which the buildings, masts, bund and other structures will fit in to the local landscape, and their visual impacts. Such visualisations are the best means of communicating the landscape and visual effects of a development to both decision makers and the wider public. Whilst such visualisations can never match what is seen in the field, they can be done in such a way to assist in the understanding of the changes. Relying on fieldwork (para.

11.3.8) alone for such a major development is not adequate to enable a full understanding of the potential visual impacts and effects on landscape character. The preparation of photomontages / wireframes should always be backed up by comprehensive fieldwork.

Whilst the selection of viewpoints is adequate, the series of photographs provided are presented in a small format, and therefore do not approximate human vision, as recommended in 'Guidelines for landscape and visual assessment' 2002 Scottish Natural Heritage / Countryside Agency. Nor are they referred to within the text, so it is not possible to relate the judgements and comments made (as in section 11.16) to any particular viewpoint.

Table 11.1 'Principles of assessing significance of visual and landscape impacts' is helpful in setting out how the significance of effects will be assessed is useful and is in accordance with the national guidance. However, the potential visual and landscape impacts should be considered view by view, and the results tabulated, to be able to understand the process by which the judgements were arrived at, and to see how the principles have been applied. There is no clear exposition of the process of assessing magnitude of change, sensitivities and thus significance of the proposed changes, on either specific viewpoints or particular areas.

The Zone of Visual Influence that has been defined (para. 11.3.6) is too limited. It is noted here that 'it is usual to focus on a radius of approx. 1.5km. from the application site'. It is not clear how this distance is arrived at. The general standard is **10km.** for industrial buildings, vertical elements such as communications masts, etc. (going up to 20 – 30km. for windfarms). The proposed warehouses and masts will clearly be visible from some distance, so that a proper landscape and visual assessment should address a Zone of Visual Influence with a radius of up to 10km. Figure 11.6 is referred to as providing 'a visual assessment.. of the principle views in and out of the site to identify the extent of visual impact...' However, it only sets out the (very limited) Zone of Visual Influence, and does not give any information about views in or out.

There is also a general weakness in addressing the changes to landscape character. For example, in 11.9 the description of the local landscape character fails to mention the views across the estuary and out to the North Sea, and of the open character and extensive views obtained in this area, which are noted as key characteristics in the Countryside Agency's Character Area description of the Humber Estuary. Both the national Character Area description of the Humber Estuary, and the local landscape character assessment drawn up by North Lincolnshire Council make it clear that the open, expansive landscape and the extensive views are key features of this area. But the potential impacts on this and other aspects of landscape character are not adequately addressed. Most importantly, the potential impacts of the site when lit at night are not addressed. As you will be aware, paragraphs 17.35 and 17.36 of the North Lincolnshire Local Plan states that "Planning applications which include light generating development including floodlighting will only be permitted where it can be demonstrated that there would be no adverse impact on the local amenities"[...].

There is a disappointing lack of protection of existing landscape features, and it is not clear why more features such as hedges cannot be retained. Mitigation measures also need to take into account landscape character. The introduction of one long obviously man-made bund, 4m. high and of a landform unnatural within the largely flat local landscape, may in itself be as obtrusive within the generally open landscape as the proposed structures themselves. The proposed planting along the west boundary (tree planting as stated in the text, but indicated as 'carr / scrub' on the plan?) certainly does not reflect local patterns and scale of tree cover. New tree and shrub planting should aim at breaking up the massive forms of industrial buildings, rather than forming unsympathetic, long, uninterrupted blocks. These points are particularly important in view of your Council's aim as set out in the supporting text for policy IN6 in the Local Plan:

"5.44 On the South Humber Bank there is the potential to create a showcase where industry is placed in greater harmony with its surrounding countryside landscape character."

Furthermore it is not clear why it is considered necessary for the industrial development to intrude in to the amenity buffer area, which is against policy IN6:

"Development will not be permitted within the defined amenity buffer areas associated with the

South Humber Bank... “

Nor are there adequate proposals for mitigating the impacts of this reduction in the buffer zone. Natural England supports the full retention of this buffer zone, as a means of retaining existing landscape features, protecting the amenities of local residents, and reducing the impacts of large scale industrial development on the overall landscape character.

Development that encroaches upon the buffer zone would thus also prejudice the aims of policy LC20 for landscape and conservation in relation to industrial development in this area.

At the current time, Natural England advises that there is a lack of an adequate landscape and visual assessment in the Environmental Statement, which does not provide sufficient information for informed decisions to be made. There is also a lack of measures to conserve and enhance local landscape character.

### **Alternatives**

The Environmental Statement does not appear to consider alternatives and we did not find this covered in any other documents. As the Council will be aware, it is good practice to make a thorough appraisal of the different alternatives available in the environmental assessment. Alternatives will also need to be considered in the appropriate assessment if it is determined that the proposals would have an adverse effect on the integrity of the Humber Estuary designated sites. From the description of the proposal – open storage, waste management, warehousing, industrial units, plus offices, restaurants and motel, it is not clear to Natural England why this development needs to be directly adjacent to the Humber Estuary. It is our understanding that development land allocated under the local plan in this area should be strictly port related industry; this should be of particular importance as land adjacent to the estuary becomes more and more limited. The red line boundary of the development site also appears to fall outside of the allocated development land as shown in inset map 57-1 in the local plan.

The development site covers an extremely large area that has been estimated to be more than 1.7 times the size of nearby Immingham. From the Masterplan much of this area appears to be for car storage (the transport report states 1,436,672 m<sup>2</sup> of Vehicle Open Storage and Open Storage). The floor space of the development site could be greatly reduced by providing multi-deck car terminals as used at Southampton International Vehicle Terminal and Empress Terminal. It is reported on ABP's website that there is the capacity to store 3,120 cars on a 1ha footprint utilising a four storey purpose build car storage facility. The Port of Southampton is currently the UK's number one vehicle handling port with 80ha allocated for vehicle storage. These multi-deck terminals are used by a wide range of car manufacturers including Renault, Ford, Land Rover, Jaguar, Toyota and BMW, and the port is also Honda's UK export hub. It is therefore unclear why this option has not been considered for this development.

### **Sustainability**

For a development of this size, Natural England are disappointed that there has not been further consideration of sustainability.

Policy ENV5 of the Regional Spatial Strategy states that “all residential developments of 10 or more dwellings and non-residential developments with 1000m<sup>2</sup> or more of floorspace should provide 10% of their energy from decentralised and renewable or low carbon sources”. This does not appear to have been considered. For example, we note that it is proposed to use floodlighting FL444 for the 90 lighting towers, which have an energy consumption of 1000 to 2000 watts each. Energy consumption of the lighting towers can be reduced with systems such as high and low pressure sodium lights, and this should be considered.

As we have commented under the landscape section, the proposed bund and tree planting are not appropriate for the character area, which is a largely flat landscape. Further work should be done on building and site design to make it less intrusive in the natural environment. For example, buildings should be designed in accordance with the Institute of Civil Engineers CEEQUAL toolkit, and assessed in terms of BREEAM standards; and sustainable urban drainage systems and provision of green space should be incorporated into the site design.

## Transport and access

Whilst the framework travel plan hasn't been tailored to the development site, it provides options for more sustainable transport, which Natural England suggests should be followed. With regards to these suggestions, further work needs to be undertaken to identify potential new cycle routes, a viability assessment for the new public transport proposals, and car-sharing should be promoted by providing car parking spaces for car sharers.

Bicycle parking – drawing: Building Z – Bicycle Stand shows 10 spaces for bicycles. It is unclear whether this drawing is provided as an example of the bicycle stands which will be built or whether there are a total of 10 spaces for bicycles on the site. This is clearly insufficient for a development which is expected to create 5000 jobs.

Natural England also wishes to be assured of the continued enjoyment of the countryside by users of local routes and footpaths. We note that the footpath diversion routes drawing shows a footpath crossing east to west across the development site which has an unexplained gap in the middle. We assume this to be a mapping error.

Due to the issues described above, Natural England **objects** to the proposed development. To summarise, these issues are

- Awaiting the assessment of impacts on the SAC, SPA and Ramsar site under the Habitats Regulations. Following this, there will need to be an assessment of impacts on any additional features listed under the Humber Estuary and North Killingholme Haven Pits SSSIs. It is likely that further information will be required from the applicants.
- No consideration of alternatives
- Protected species – proposed mitigation needs to be secured through planning conditions or section 106 agreement
- Protected species – badgers, full details not provided with consultation documents
- Lack of information to assess full landscape impacts
- Conflicts with policies in the local plan

We may have additional comments to make when further information is received.

Natural England were first consulted on this proposal in December 2006 and has invested a significant amount of staff time to work through the issues with Able UK and their consultants. We will continue to make every effort to work with the company and North Lincolnshire Council to find acceptable solutions that safeguard the wildlife interest of the Humber Estuary designated sites and wider area. This may be best achieved through a meeting.

Yours sincerely

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April 23<sup>rd</sup> 2010

FAO William Hill  
North Lincolnshire Council  
By email

Dear Bill

**Humber Estuary and North Killingholme Haven Pits SSSIs  
Humber Estuary Special Area of Conservation, Special Protection Area and Ramsar site  
RE: Conservation management plans for Able UK development PA/2009/0600**

Thank you for consulting Natural England on the conservation management plans provided by Able UK for their planning application PA/2009/0600.

**Able conservation management plan for Area A, B and C**

As Natural England has previously stated, it is our advice that the proposed mitigation areas are insufficient. Significant numbers of SPA birds are known to use much of the development site – a total area of 380ha. It is our advice that a total area of 59ha, split up into 3 discrete blocks, is insufficient to mitigate for the loss of this much larger site. Smaller areas will be subject to much greater edge effect and as they will be located within a development site, they will be subject to much greater disturbance. It is therefore highly unlikely that they will be able to support the number of birds predicted, particularly as high densities of feeding birds are likely to deplete invertebrate prey throughout the winter. Additionally, these mitigation areas are also expected to support protected species such as badgers and farmland birds, and as section 2.8.8 states, function as “part of the surface water management system”. As water level control will be key to the success of any mitigation area, Natural England is particularly concerned about the volumes of water likely to come from a 235ha development site and how these will be managed. Many of the species for which mitigation must be provided require open, short vegetation or bare ground with unrestricted views and large field size, we are therefore concerned by the statement in section 2.8.8 which states that flooding would transform the mitigation areas and make them more attractive to birds. Whilst flooding would not reduce the openness of the areas, it would reduce the foraging habitat for largely terrestrial species such as golden plover and lapwing. Prolonged flooding would also reduce the abundance of terrestrial invertebrates.

Natural England has also previously questioned the likelihood of providing cattle to graze the mitigation areas and advised that consideration should be given to how the site will function and be managed if livestock cannot be found. For example, is vehicle access available to all parts of the site; how will the vegetation on the islands be managed if they are surrounded by deep water?

Notwithstanding these concerns, we have provided some comments below on the management plan.

In general, we found that the management plan downplayed the importance of the development site for SPA and Ramsar birds. The monitoring work which has been undertaken over the last few years clearly demonstrates that the site supports 1% or greater of 9 SPA and Ramsar species. Table 2.4 shows that many of these species were present on the development site on numerous occasions. The plan also focuses on the provision of roosting habitat. As the behaviour of the birds was not recorded during the surveys, and as largely terrestrial species such as lapwing and golden plover both feed and roost on fields, Natural England’s advice is that provision should be made for roosting *and feeding* birds. As stated in our response to the appropriate assessment dated 19 February 2010, the proposed mitigation areas are not sufficient to meet these functions.

## Specific comments

It is unclear why birds are referred to as SPA citation birds OR assemblage birds; the assemblage of waterbirds is one of the reasons for site qualification and is a feature listed on the citation.

Section 1.2.3 – significant numbers of additional SPA species have been recorded utilising the development site and therefore areas A, B and C should also mitigate for these species. This needs amending throughout the plan. Natural England has always advised that if 1% of more of an SPA population is present on a development site, then mitigation should be provided.

Section 1.3.2 – the mitigation areas must be provided to avoid an *adverse effect* on the integrity of the Humber Estuary designated site and are discussed in the LPA's appropriate assessment. The 'likely significant effect' stage has already been passed.

Section 2.1.5 this is not consistent with the LPAs appropriate assessment. Additionally, the Humber Estuary Ramsar site is designated for its populations of passage and overwintering bird populations, If the development will 'have an effect on birds using the site that are named in the SPA citation', then the development will also affect the Ramsar birds.

Section 2.1.7 requires amending to include 'disturbance to the mitigation areas' and reference to roosting *and feeding* habitat for SPA and Ramsar birds.

This section refers to the effects on water quality in the estuary by pollution – this is also an impact on the Special Area of Conservation.

Section 2.1.11 describes the mudflats fronting the development site are having 'virtually no biota'. Natural England has not been provided with the benthic data which supports this statement and we would be grateful if this could be forwarded to us.

Section 2.1.14 as discussed at a previous meeting with Able UK; Natural England disagrees that adverse effects and significant effects are equivalent. These terms have a specific meaning under the Habitats Regulations, and this is explained in detail in PPS 9 Biodiversity and Geological Conservation.

Section 2.3.2 it is unclear what is meant by the statement that some of the birds using the development site were relatively common, whereas others were considerably more rare or protected. The main purpose of areas A, B and C is to mitigate an adverse effect on the Humber Estuary SPA and Ramsar site; and therefore all birds which are protected by these designations should be considered.

Table 2.4 – whilst this is a useful table to demonstrate usage of the site by SPA and Ramsar birds, Natural England has previously advised that any species present in numbers of 1% or greater of the current Humber SPA and Ramsar populations should be considered in the Council's Habitat Regulations assessment. The figure for lapwing is also omitted from the table.

Section 2.3.6 there appear to be a number of errors in this section. For example, the curlew and lapwing figures for the most recent 5 year peak means do not match the figures given in table 2.4.

Section 3.2.4 Natural England agrees that the mitigation areas must be provided prior to the construction of the development site and the loss of the areas of land utilised by significant numbers of SPA and Ramsar birds (1% or greater of the Humber population). As stated in our response to the LPA's appropriate assessment, further detailed information on timescales involved is required.

Section 5.2.2 Natural England disagrees with the statement that area A will appear more open to the birds due to the presence of the brick pits and proximity of area B. Both mitigation areas are bunded to a height of approximately 3m and section 6.3.1 states that the vegetation on the bund will be allowed to "produce a tall, rough, grassy habitat". There are also trees and hedges around the brick pits – as recognised in section 5.2.4.

It is not clear in the plan who will be responsible for the ongoing management, monitoring and any required remedial works. Section 7.3.5 states that at the end of the fifth year, Able may submit a report detailing proposed amendments. As the mitigation areas are key to the development gaining planning permission, the success of the management informed by the twice monthly monitoring reports should be regularly reviewed, and discussed with the LPA, Natural England and other relevant stakeholders such as the RSPB.

It has been suggested that Natural England and the RSPB should provide further guidance on the required mitigation to enable the LPA to determine no adverse effect with regards to this impact on the SPA and Ramsar site.

Therefore, it is our advice that the mitigation areas should be:

- Sufficient to provide feeding and roosting habitat for the bird species present on the development site in numbers of 1% or greater of the current Humber Estuary SPA and Ramsar populations;
- Fields with open boundaries providing clear viewlines ie no tall hedges, trees or other barriers
- The least disturbed, especially from people, construction noise and road traffic
- Situated within 500m of the estuary
- Bare, cultivated arable, or if vegetated, a managed sward height by mowing or grazing, of less than 10cm in winter.
- The largest field size available. Due to the industrial nature of the South Humber Gateway and the potentially high levels of disturbance we have previously advised that 50ha is likely to be the minimum single block size that is required to meet the needs of SPA and Ramsar birds. With regards to this particular development, areas A, B and C are also required to provide mitigation for protected species such as badgers and farmland birds, and will have a key role in the surface water management of the development site. It is therefore our advice that a single mitigation area of 80ha is likely to be required to mitigate this proposal alone; additional mitigation may be required to avoid an adverse effect on integrity of the Humber Estuary SPA and Ramsar site when considered in-combination with other plans and projects

In order to progress this application, whilst meeting the requirements of the Habitats Regulations; Natural England and the RSPB would be happy to meet with the LPA and Able UK to discuss these requirements in more detail.

## **Conservation management plan 2**

As you will be aware, Planning Policy Statement number 9: Biodiversity and Geological Conservation (PPS 9) paragraph 14 states;

*“Development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design. When considering proposals, local planning authorities should maximise such opportunities in and around developments, using planning obligations where appropriate.”*

In addition, under the Natural Environment and Rural Communities Act (NERC), public authorities gained a new duty to have regard to the conservation of biodiversity in exercising their functions. This duty states that

*“Every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”*

Natural England were therefore disappointed by the conservation management plan for protected species, as there is no aim to maximise opportunities or to enhance the ecological value and conservation status of habitats and species present on the site. We were particularly concerned with sections 3.6.1 and 3.6.2 which appear to state that since the habitat creation area will be 23% of the development site area, the target for maintaining BAP bird species on site will be set to a minimum of 23%.

Similarly, section 3.7.2 on water voles states that the objective is to “maintain the existing ditch side habitat”. Natural England expects to see a much greater commitment regarding enhancements for a BAP species which is present in a number of ditches across the development site. The Environmental Statement states that ditches with water vole potential will have a verge of up to 5m in width on one side and up to 2m on the other side. This ditch side vegetation should be enhanced and managed, and there should be a commitment to link suitable habitats together to avoid isolation. As mentioned previously by ourselves and the Environment Agency, strimming should not be used along lengths of water vole habitat greater than 100m.

The species selected for planting within the development site should be native species commonly found in the locality. Thus non-native species such as *Cornus sanguinea*, *Pinus nigra 'maritima'*, *Pinus contorta* and *Aesculus hippocastaneum* should not be included. *Aesculus* in particular is not appropriate, as horse chestnut trees cast a dense shade and drop a heavy leaf fall, thus effectively preventing any vegetation from developing underneath. The shrub mixes have an unsatisfactory combination of plants needing alkaline soil conditions such as *Viburnum opulus*, and those needing

acidic conditions, such as gorse – such mixes do not occur naturally, and if not already known, then the soil conditions need to be ascertained before specifying species mixes. This also applies to the grass and wildflower mixes.

### **Specific comments**

Section 3 – it is unclear why information has been provided on the Humber Estuary designated sites and Habitats Regulation issues. It is our understanding that this management plan covers protected species and some landscape matters. Natural England disagrees with the comments made in this section with regards to the impact on the Humber Estuary, but we have provided a response to this above.

Section 3.3.3 - policies from the North Lincolnshire Local plan would be relevant to include in this section. It is stated in section 3.7.1 that a badger management plan has been issued to the Council; Natural England request sight of this document.

Section 3.3.4-3.3.6 as stated previously, there is a requirement to undertake further survey work for bats in site 9

Section 5.2 – 5.8 the dates given for the phasing of works are inconsistent with those provided on the phasing plan previously consulted on.

Section 5.8.2 states that the bund for mitigation area A will be created from the surface skimming undertaken in phase 7 dated 2018. It was our understanding that bunds would be created to reduce disturbance to SPA birds in the mitigation areas. However this section states that the bund will actually be created at the end of 6 development stages, we seek clarification on this.

Section 6 – as advised in relation to the conservation management plan for areas A, B and C, the success of the management should be informed by regular monitoring. Reports should be regularly reviewed and discussed with the LPA, Natural England and other relevant stakeholders and a clear process should be identified for remedial action.

### **Landscape comments**

The further detail of the proposed planting and other landscape measures are welcomed. However, Natural England remains of the view that one continuous line of planting along the north and west edges of the site is not the most appropriate way of either creating a satisfactory relationship with the surrounding landscape, nor of breaking up the massing of the proposed buildings or extensive storage areas. A wider buffer zone would provide more opportunity to introduce significant areas of grassland along with woodlands and copses.

The introduction of hedges to provide the site with a basic structure is supported, although it is still considered that more could be done to introduce small woodlands and copses within the site, in close relation to the proposed buildings, and not in locations that would affect the measures taken for wetland birds and other species.

The introduction of two ponds into the buffer zone is not considered appropriate in terms of landscape enhancement, as ponds of this sort are not typical features of the locality, and will require management to establish and function effectively. A simple and strong planting plan is considered to be more effective.

If you have any comments regarding this letter, please do not hesitate to contact me.

Yours sincerely

Emma Hawthorne  
Government and Maritime Team  
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CC Andrew Taylor North Lincolnshire Council  
Harriet Dennison RSPB

**February 19th 2010**

FAO Andrew Taylor

North Lincolnshire Council

By email

Dear Andrew

**Humber Estuary and North Killingholme Haven Pits SSSIs**

**Humber Estuary Special Area of Conservation, Special Protection Area and Ramsar site**

**RE: Appropriate assessment for Able UK development PA/2009/0600**

Thank you for consulting Natural England on the draft appropriate assessment for planning application 2009/0600. In general we found the appropriate assessment to be thorough in the list of potential impacts it covered. However, we believe that several of the conclusions of no adverse effect require additional information and explanation before the LPA can come to such a conclusion with the certainty that is required under the Habitats Regulations. We also advise that the terminology requires some amendments. For example, in a number of places (for eg 1.4.2.2) it states that „attempts have been made “to phase and time works to minimise construction disturbance to SPA birds on the designated site, existing farmland and/ or Able’s proposed mitigation land; or that seasonal timings have been planned “where appropriate”. The Council should be aware that It is Natural England’s opinion that construction noise can adversely affect SPA birds. The current wording is not sufficiently robust to meet the tests under the Habitats Regulations. It is also unclear as to what exactly is meant by some of the terminology – for example “planned where appropriate” – is this appropriate to avoiding disturbance to SPA birds or appropriate to the developer and their work schedule.

Whilst we agree that it may be possible to mitigate or avoid many of the potential effects of the proposal through the imposition of robust, enforceable conditions; we still believe that the proposed mitigation areas are inadequate. Significant numbers of SPA birds are known to use much of the development site, which covers 380ha. It is our advice that a total area of 59ha, split up into 3 discrete blocks, is insufficient to mitigate for the loss of a much larger site. Smaller areas will be subject to much greater edge effect and as they will be located within a development site, they will be subject to much greater disturbance. It is therefore highly unlikely that they will be able to support the number of birds predicted, particularly as food stocks are depleted throughout the year. Additionally, these mitigation areas are also expected to support protected species such as badgers and farmland birds displaced from the development site, and it is also thought that they have a flood storage role. It is Natural England’s opinion that *it is possible* to mitigate this proposal adequately if habitat of sufficient size, location and management was proposed. However, despite discussing these proposals with the developer and the LPA on many occasions over the last few years; the proposed mitigation areas have changed very little.

The Council will be well aware of the ongoing strategic South Humber Gateway work, and Natural England are concerned that this development must not compromise potential solutions emerging from this important work. Able’s mitigation must be compatible with the principles to establish mitigation areas which will safeguard the ornithological interest of the SPA, whilst allowing appropriate development throughout the South Humber Bank. We advise the Council to follow the guidance on mitigation areas provided in the RSPB’s paper “*The South Humber Bank: principles to underpin a strategic approach*” and the Mott MacDonald report, which states that areas selected with the following characteristics are likely to ensure the highest levels of success:

- Largest field size available
- Fields with open boundaries ie no tall hedges, trees or other barriers
- The least disturbed, especially from people and road traffic
- Situated within 500m of the estuary
- Have a managed sward height, by mowing or grazing, of less than 10cm in winter.

### **General comments on the appropriate assessment**

The Humber Estuary is no longer a candidate SAC, it is now a SAC.

References to English Nature should be amended to Natural England

Numbering errors from section 5 – always starts with .4 eg 5.4, 6.4, section 9.7 and 9.8 refers to "section 9.3 above" and "see 9.2" which are missing.

The works to the flood defence are described as restoration or repair, however it is our understanding that the flood defences will be improved.

### **Specific comments on the appropriate assessment**

1.4.1, 2.1 and 4.1 This states that 1.1ha of foreshore will be temporarily affected by the flood defence works. It is our understanding that this is no longer the case as the works will be undertaken from the flood bank. Richard Cram will confirm this in writing.

4.2 includes the provision of a new pumping station with an outfall onto the foreshore, this should be considered further.

4.5.2 It is stated that works on the seaward side of the defences will not be undertaken during the overwintering period October to March. Natural England advises that this period should be specific to the ornithological data for the area – for eg WeBS counts or other additional data. It is our understanding that the flood defence works will be considerable and also include works to the top, and in some locations, back of the flood defence; therefore impacts on birds on the intertidal and proposed development site must also be considered. Again, any timing restrictions should be specific to the ornithological data for the site.

Table 1 –This is a helpful collation of the proposed works and timescales; it would be a valuable addition to the appropriate assessment if a similar table could be produced for SPA birds, indicating when important fields will be lost and when the corresponding mitigation will be completed. This should clearly show that adequate mitigation will be created in advance of loss, and the timescales should demonstrate that the mitigation areas will be functional, able to support the displaced SPA and Ramsar birds.

Table 2 – again, this is a helpful collation of the proposed works which highlights that in 2012 and 2013 most of the development site could be under construction. Since areas A and B fall into the timescales 2011-2013 and 2012-2014 respectively, they may not actually be created until 2013, or 2014 in the case of area B. Mitigation must be created in advance of loss to enable the newly created habitat time to develop and ensure that it is able to support the displaced birds.

*Q1 – we advise that the impacts of site drainage on the flows of East Halton Skitter are added. They are currently covered under section 8 "Surface water drainage into intertidal habitat, causing pollution". However, the issue which is discussed is the impact of taking site drainage away from East Halton Skitter. It is thought that this outfall has a number of permissions for discharge consents, and if volumes of water into the Skitter are reduced, this will reduce the dilution of potential pollutants. We are awaiting further information from the Environment Agency on this. The impact of the new drainage outfall on the intertidal should also be considered in terms of the proposed footprint. The proposal refers to a 2410m spur which will run from the*

*consented hydrogen pipeline; there does not appear to be any further consideration of this in the LSE determination or in the appropriate assessment.*

6.4.1 refers to the creation of a managed realignment site, however the published Humber Flood Risk Management Strategy states that existing maintenance will be withdrawn from the areas currently undeveloped.

6.5.1 states that the CHaMP requires 700ha of new intertidal over the next 50 years, however the appropriate assessment for the FRMS states that just over 900ha is required. The Environment Agency have been undertaking some work on current rates of sea level rise on the Humber Estuary and may be able to provide a more up to date figure for this and the middle estuary figure quoted as per comm. Emma Hawthorne.

6.6.2 incorrectly states that there will be no coastal squeeze attributable to the Able UK development. This is not the case; holding the line along this stretch of the estuary *will* result in coastal squeeze, however the Environment Agency have agreed to compensate for coastal squeeze across the entire estuary and therefore where compensation is in place, this impact is removed from the Habitats Regulations assessment.

*Q2 – We believe that further information is required before the LPA can come to this conclusion. Whilst we agree that the EA’s commitment to compensating for coastal squeeze means that this impact is being dealt with through an alternative route, it is understood that there is currently a deficit in the middle estuary. Therefore any flood defence proposals in this part of the estuary are not currently compensated for under the EA’s flood risk management strategy. We suggest that this is clarified with the EA.*

7.7.3 Natural England advises that it is not considered to be best practice to refer to “*de-minimus*” losses to a designated site. This is because a number of small losses can add up to a significant loss when considered in combination – “death by a thousand cuts”.

*Q3 – it is still unclear exactly what is proposed for the flood defence enhancements. Natural England has received a number of flood wall section drawings, which appear to show the rock armouring being placed up to 4.5m from the existing toe. However, we also have a drawing KI-06031 A, which appears to show the rock armouring being placed up to 6m from the existing toe. Further information is required on the exact design, what the footprint of the works will be, and also what the proposals are for East Halton Skitter. This appears to be a new proposal that Natural England was not previously aware of. East Halton Skitter includes areas of saltmarsh – we are unaware of any information from the applicant which assesses the impacts on this habitat.*

8.6.1.2 Whilst this is not a matter for the appropriate assessment, it is unclear which drains are being referred to here as water voles are known to be present on site. Routing construction site drainage and runoff into drains “to contain before being disposed of off-site” is unlikely to be compatible with managing a habitat for water voles. We also question whether it is possible to store and contain water in drains throughout the year, including in bad weather. Contingency plans should be provided if there is the risk of this water being released into the Humber Estuary during adverse weather conditions.

*Q4 – yes we agree with this conclusion and advise that further information is required from the applicant and the Environment Agency regarding the impacts covered in this section.*

9.4.1.1 refers to “large numbers of birds” using the intertidal area with “the majority of these birds using the southern half of this sector”. These facts should not be simply stated without providing numbers, species and locations (a map would be helpful) to

support such arguments. For example, whilst the majority of birds may use the area to the south of the sector, how many birds remain in the area which will be affected by the development? Is there 1% or more of the estuary population of any SPA and/or Ramsar birds for example? If so, then this impact needs to be considered further in the assessment.

9.6.1.1 – see earlier comment regarding timing of works and disturbance from flood defence works on and/or landward of the flood bank.

9.6.1.4 states that “it is unlikely that the disturbance will result in an increase in mortality”. It is our opinion that it would be virtually impossible to attribute an increase in mortality to specific noise and/or visual disturbance. The conservation objectives refer to changes in bird populations or changes to site usage rather than attempting to measure whether mortality has occurred. We therefore advise that this is not an acceptable argument to measure whether an adverse effect may occur.

9.8.2 states that whilst there are a number of plans and projects which could act in combination with this development, they will all have their own mitigation and therefore in combination effects will not be significant. This approach can only be relied upon if each proposal is mitigated sufficiently to result in no outstanding effects. We would then agree that there are no in combination effects to consider.

*Q5 – Natural England disagrees with the conclusion of no adverse effect due to noise and visual disturbance to SPA birds. This section states that significant numbers of birds have been recorded both on the intertidal area and on the development site during the proposed working periods. With regards to the current approach to flood defence works on the Humber Estuary, Natural England and the Environment Agency have agreed that flood defence works will not be carried out during periods when significant numbers of SPA birds (1% or higher of the SPA population) are present in an area which may be affected by the works – for example on the adjacent intertidal area or on inland fields. A similar approach has been taken through planning for construction disturbance. This appropriate assessment considers an approach which is inconsistent with these current agreed methodologies, however no information is provided to explain why this is acceptable. Additionally, passage birds are less likely to habituate to disturbance.*

*We are unclear where some of the information in this section has been taken from. Section 9.6.1 states that construction noise will be above 55dB on the intertidal for construction works between 2011 and 2016 but that potentially disturbing works could only take place between July and September. It is not clear where this information is taken from as the ES section 10.5.53 states “the loudest works (the cut and fill earthworks) will be carried out predominately outside the overwintering period, from October to March inclusive”. As stated above, any proposed timing restrictions should be based on site specific information to determine the impact on SPA birds. If it is not possible to rule out an adverse effect should noisy construction works continue throughout the year, then wording such as “attempts have been made” or “works will be carried out predominately outside the overwintering period” are not acceptable.*

*We also disagree with the statement that birds displaced from the development site can move to managed realignment sites. These are generally compensation for the loss of existing intertidal habitat, and are therefore already providing for birds displaced from the estuary. Also, whilst the closest managed realignment site is Paull Holme Strays (5km away), other sites are a considerable distance from the development site - at least 15km.*

*For the LPA to conclude no adverse effect in this section, there needs to be considerable information added to support the arguments made. Natural England advises that robust enforceable planning conditions should also be applied.*

10.6.1 Natural England has previously questioned whether it is realistic to assume that the site will be grazed by cattle (the preferred option for sward management). We therefore advise that the assessment considers the potential impacts on the suitability of the mitigation areas without cattle grazing.

*Q6 – Natural England disagrees with the conclusion of no adverse effects due to a loss of habitat for feeding, roosting and loafing. Our advice has always been that if 1% or more of an SPA population has been recorded on the proposed development site, then mitigation must be provided. Using this criteria, a number of species which have been recorded on the development site appear to be omitted from the assessment – for example black-tailed godwit. The assessment states that the mitigation areas may not support the numbers of lapwing recorded on the development site; there is also uncertainty over predicted usage by golden plover as the mitigation areas are very different habitat to the current large expansive fields that they utilise. The conclusion of no adverse effect is supported by an argument that the fields are infrequently used. Whilst monitoring may have only shown occasional use by large flocks of golden plover, this monitoring can only be a snap shot of bird activity on the site. More frequent, longer term monitoring may indicate more frequent use, and therefore we disagree with this argument.*

*It is still the opinion of Natural England that the proposed mitigation areas are insufficient to avoid an adverse effect resulting from the permanent displacement of SPA and/ or Ramsar birds from the development site. As an example, curlew currently utilise much of the development site, with 1% or greater of the Humber population utilising roughly 95ha of the development area. If the other fields are included (those supporting less than 1% of the Humber population of curlew) the figure increases to roughly 280ha. Whilst we agree that habitat specifically managed for SPA birds will be able to support more birds over a smaller area, the mitigation areas must still be large enough to support birds throughout the year. It is likely that birds are currently moving throughout the proposed development site as food stocks are depleted. It is highly unlikely that considerably smaller areas will be able to provide enough food for the same numbers of birds. The wetness of the areas will also decrease terrestrial invertebrates. The proposed mitigation areas will also be affected by construction and possibly operational noise, area A is adjacent to the spine road, all the areas have considerable edge including screening barriers (in particular area B), area C is away inland from the estuary, steeply sloped and will be surrounded on all sides by development, and the recently proposed footpath routes will also cause disturbance. All of these factors will reduce the efficacy of the proposed mitigation. The in-combination assessment also appears to be inconsistent with some proposals included for some species, but not others.*

11.1.2.1 states that a 2.5m bund *is expected* to reduce traffic noise – again statements such as these need certainty, what are the predicted noise levels in area A?

11.1.3 this section requires updating with the most recent footpath proposals.

11.2.3 is it unclear why this impact has not been included in section 10

*Q7 – we disagree with this conclusion as further information is required in section 11.1.2.1 and 11.6. The most recent footpath proposals also need to be considered as they may affect the way the mitigation areas are utilised. We agree that a condition will be required to screen mitigation areas from proposed footpaths.*

12.1.2.2 requires additional information and a firm conclusion regarding the impact of the lighting columns.

12.3.1 it is unclear where this information has been taken from, we are unaware of such a commitment from the developer. Also see our comments on section 9. This section also states that "only areas that are being worked on... will require higher levels of illumination (25 lux average)", what is the impact of this when the development continues over a period of 7 years, including in 2012 and 2013 when much of the site could be under construction?

*Q8 – we disagree with this conclusion as the section appears to acknowledge that lighting can affect birds behaviour and may reduce the efficacy of the mitigation areas but does not explain clearly how the conclusion of no adverse effect has been reached. We would be particularly concerned about lighting levels in area C which appears to be surrounded by development (proposed and existing) on all sides. It is likely that the impact of lighting can be resolved through condition, however the section requires greater explanation and more robust conditions – for example who will be responsible for assessing bird behaviour to lighting, will there be a monitoring scheme, how will any required changes to lighting be enforced?*

13.1.3 please add the predicted noise levels on the SSSIs

13.2.4 we disagree that "activities that are not subject to regulation" do not need to be considered in the in-combination assessment; these should form part of the background assessment of activities.

*Q9 – the Environmental Statement and the references mentioned in Section 13.1.2 recognise that the start up of the railway line could have a negative impact on waterbirds currently using North Killingholme Haven Pits. We therefore disagree with the conclusion of no adverse effect which appears to rely on a single observation of birds resettling quickly after a loud noise impact. However, we believe that any adverse effects which may arise from this proposal can be mitigated through condition which should include the requirement for screening sections of the rail corridor and habitat enhancements within the pits.*

14.5 these conditions should be amended to include reference to the predicted bird usage figures, for example "has been satisfactorily completed and is successful as predicted in the Conservation Management Plan".

*Q10 – Whilst Natural England agrees that several of the potential impacts of the development can be mitigated through condition, we believe that the conditions currently proposed are not sufficiently robust or precise to enable them to be enforced. Heavy reliance is placed on the Waterbird and Construction method statement (14.3.1) and the Waterbird Protection Plan (14.6.1); will there be an opportunity for Natural England (and other consultees) to input to these? One obvious omission is that these documents must provide details of the mitigation which will be put in place during construction to avoid impacts. Whilst we welcome the proposals covered by these conditions, annual reporting is clearly insufficient and is inadequate to deal with incidents that may require a more immediate response.*

*We will provide further comments when the exceptions taken from the Fulseas report are provided. Our advice is that the two cases are not directly comparable – the Fulseas outfall was a very discrete area, screened by reeds, whereas the Able defence works are required along a stretch of the Humber foreshore.*

*We advise that conditions relating to noise and visual disturbance require set parameters; without objectives or criteria, it will be virtually impossible for the applicant to ascertain what they are required to do, and for the LPA to determine*

*whether a breach has occurred. Terminology such as "frequent or prolonged disturbance" is not quantifiable, nor is it clear who will decide whether such disturbance has occurred and how remedial measures will be enforced. In some cases, it may be that working practices cannot be amended. Again, this reporting is tied into a document which is only submitted to the LPA annually.*

*Whilst we welcome the proposal to form an Environmental Steering Group, we query how this could be enforced and how the Council could monitor the details of the Group. We are concerned to see that only the developer and the Council are standing members, other organisations are to be invited "by agreement". It is unclear what is meant by this. Again annual meetings are insufficient, particularly during the first few years of the development.*

*Q11 – no further comments, specific issues are addressed under each section*

*Q12 – this section should be updated following the suggested amendments to the appropriate assessment*

*Q13 – the RSPB's paper "The South Humber Bank: principles to underpin a strategic approach"*

*Q14 - The in-combination assessment requires further information to ensure a thorough assessment has been undertaken. We disagree with the current approach that states that since other developments will have their own mitigation, there can be no significant in-combination effects to consider.*

*Q15 – N/A*

*Q16 – Natural England believes that the additional public footpaths as proposed should be assessed in the updated appropriate assessment. Without prejudice to any further advice we may give when formally consulted on this assessment, we advise that the new proposals may lead to an adverse effect. The success of the mitigation areas is key to avoiding adverse effects on the Humber Estuary SPA and Ramsar site. As we have highlighted, we believe that the size of the areas is insufficient. The presence of pedestrians is known to be one of the most severe forms of disturbance to birds and locating public footpaths around all three mitigation areas is likely to reduce their efficacy considerably.*

**Due to the issues raised above, we maintain our objection to this development. We advise that until the Habitats Regulations process has been concluded satisfactorily, North Lincolnshire Council is not in a position to grant planning permission for this application.**

Yours sincerely

Emma Hawthorne

Government and Maritime Team

Natural England

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CC Harriet Dennison RSPB

Elizabeth Biott LWT

Natural England spreadsheet collating known inter-tidal habitat losses  
- Emma Hawthorne 22 June 2010

<b>Intertidal habitat losses</b>				
<b>Intertidal sediment</b>	<b>Permanent</b>	<b>Temporary</b>		<b>Saltmarsh</b>
ABP - Grimsby	0.00512			not aware of any
ABP - Hull	0.0009			
EA - Sunk Island	0.0075	0.03		
EA - Whitton to East Halton	?			
EA - Tetney to Saltfleet	?			
Drax	0.0095			
New Holland Shipyard	0.225			

Emma Hawthorne e-mail re Bird data and Spartina anglica 02 July 2010

Dear All,

I've been looking at the bird data for the Able defence stretch following our meeting last month. Whilst I've done an initial assessment, further data and analysis is required. We feel that it is not appropriate for Natural England to undertake further work as it is normal practice for us to ask the developer to obtain the data and then present their findings.

Having said this, I have assessed the data we have, which is the Graham Catley work (provided by Andrew Taylor) and the low tide data from ENRR656.

We also have the assessment that the EA undertook for the works at Halton Marshes. As I explained at the meeting, they used a number of data sources to inform their working period – this included their own survey work for the defence stretch as obviously the WeBS data covers the entire sector. We can forward this if required.

I've attached a table of my initial analysis, this shows that there are significant numbers of SPA/ Ramsar birds in the WeBS sector during all months except for May and June (although the estuary population of turnstone is low, which gives a low fig for 1%). High tide WeBS data is not included in this assessment and therefore it should be obtained – either from the BTO, or Faith Spencer is able to pass it to Nick Kite within the EA (the WeBS data has to be purchased and therefore it is not possible to distribute it to another organisation/ developer). This will enable us to obtain a full picture of birds usage of the intertidal. Of course, there will also need to be some assessment of impacts on birds landward of the floodbank, which will need to take into account access routes, terrestrial development programme etc.

**Proposed way forward**

- Able to purchase high tide WeBS data for sector 38407 or Faith to pass high tide data to Nick to add significant nos of SPA/Ramsar birds to my spreadsheet. (I can provide estuary populations)
- Andrew to confirm whether GC's data is high tide or low tide
- Once table is complete, it should be circulated and Able to suggest proposed mitigation programme
- Able to assess impacts on birds landward of the floodbank

Also, I have received some advice from our national specialist regarding the SM6 community. Although *Spartina anglica* can be described as a non-native invasive species, it does not act in an invasive way on the Humber Estuary. Our recent condition assessments have shown that *Spartina* can provide an important functional link to native,

more diverse saltmarsh communities and the Spartina can develop into these communities over time. These other saltmarsh habitats are part of the qualifying features and therefore the Spartina forms part of the 'structure and function' for these habitats as well as transitions between mudflat and saltmarshes. Obviously estuarine systems are dynamic and it is not possible to consider features independently. Our advice therefore, is that the loss of the SM6 community should be included in the Habs Regs assessment.

Best wishes

Emma

Natural England response to proposals for amending draft appropriate assessment  
- Emma Hawthorne 06 July 2010

Advising how NE should respond to the proposed changes is complicated by the fact that timescales prevented the issues raised within our advice note informing the original NE consultation response. **As a result many of the issues we raised are not specifically addressed through the proposed changes to be made to the AA. Of particular note, the specific questions we raised in our preliminary advice at para 43 (a, b, and c) are not addressed by the proposed changes.** The questions that are relevant to the comments and input that we have provided are 1, 2, 3, and 11. Whilst accepting that they will not address our key questions, each question and the proposed actions are briefly considered in turn below:

**Question 1: Do you agree with the list of Likely Significant Effects? If not, which effects would you add or remove?**

The proposed actions seem appropriate in light of the comments however, as the concerns we raised in para 60-61 of our preliminary advice note were not provided within the formal consultation, , the proposed actions do not address them. We suspect therefore that the revised AA may still therefore not clearly distinguish the decision 'alone' from that taken 'in-combination'.

**Question 2: Do you agree that the Environment Agency's existing commitment to habitat creation will remove any Adverse Effect on Integrity due to coastal squeeze in the East Halton Area?**

The Action here is that the response to issues of coastal squeeze is to be agreed with NE and EA. This appears to be helpful but we acknowledge that this action was proposed without NLC having been made aware of the full implications of our comments provided in the advice note. We note that the flawed approach of concluding no aeoi on the basis that compensation has been secured without first passing the tests of Regulation 62 has not been recognised by NLC at this stage. See further our final advice sent today

**Question 3: re Loss of intertidal habitat due to construction of floodbank toe beam within the current intertidal area**

We would advise that NE accept the reference to de-minimus and agree with the EA NLC response. Whilst in-combination does prevent small impacts from being over-looked, there must be a point at which an impact is so small to be irrelevant or *de-minimus* even in the context of in-combination requirements. The issue with de-minimus as we see it is not in relation to it as a concept *per se*, but the question over where the line is drawn to ensure significant combined effects are not missed.

We acknowledge that this is really an issue more relevant to the EA AA but there are unavoidable overlaps and interrelationships between the two.

**Question 11: Do you agree with the overall determination of adverse effect on the integrity of the International Nature Conservation Sites?**

NLC action here is to review the decision on AEOI which we would support in principle, but would seriously worry us if it is leading up to a conclusion of no AEOI.

**Sig numbers of birds (1% or greater of the Humber pop assessed using WeBS report 07/08)**

Graham Catley counts - assume low tide?

**2007 survey (only covered Jan to March)**

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Lp	Lp										
Ruff	Ruff										

**2007-08 surveys July to March**

	Teal								Teal		
Mallard											Mallard
		Avocet									
Lp	Lp										Lp
Turnstone						Blackwit	Blackwit	Blackwit	Turnstone	Turnstone	Turnstone

**NE low tide survey 2003-04**

		Turnstone					Turnstone	Turnstone			Lp
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Also, I have received some advice from our national specialist regarding the SM6 community. Although *Spartina anglica* can be described as a non-native invasive species, it does not act in an invasive way on the Humber Estuary. Our recent condition assessments have shown that *Spartina* can provide an important functional link to native, more diverse saltmarsh communities and the *Spartina* can develop into these communities over time. These other saltmarsh habitats are part of the qualifying features and therefore the *Spartina* forms part of the 'structure and function' for these habitats as well as transitions between mudflat and saltmarshes. Obviously estuarine systems are dynamic and it is not possible to consider features independently. Our advice therefore, is that the loss of the SM6 community should be included in the Habs Regs assessment.

Best wishes

Emma

Issued by Greg Smith, Environmental Impacts Team, English Nature. Tel: 01733 455210

## The Appropriate Assessment (Regulation 48) The Conservation (Natural Habitats &c) Regulations, 1994

### Introduction

1. This Guidance Note has been prepared to assist competent authorities and English Nature staff when undertaking the "appropriate assessment" required by Regulation 48 of the *Habitats Regulations 1994* implementing Article 6(3) of the *Habitats Directive* (92/43/EEC). Only the Courts can provide authoritative interpretation of the Regulations, but these notes have been developed in the light of practical experience and a close examination of the Regulations, the *Habitats Directive* and central government guidance, particularly in PPG 9.

### When Does An 'Appropriate Assessment' Need To Be Undertaken?

#### Types of Proposal

2. Under Regulation 48(1), an appropriate assessment needs to be undertaken in respect of any plan or project which:
- either alone or in combination with other plans or projects would be likely to have a *significant effect* on a European Site, and
  - is not directly connected with the management of the site for nature conservation.
3. Appropriate assessment is required by law for all European Sites (Regulation 48). A European Site is any classified SPA and any SAC from the point where the Commission and the Government agree the site as a Site of Community Importance. Appropriate assessment is also required, as a matter of Government policy, for potential SPAs, candidate SACs and listed Ramsar Sites for the purpose of considering development proposals affecting them. (PPG 9 paras 13 and C7).

#### Timing of the Assessment

4. An appropriate assessment needs to be undertaken in respect of a plan or project described above **before** any "competent authority":
- decides to undertake the plan or project, in cases where no consent, permission or other authorisation is required. (Reg. 48(1));
  - decides to give any consent, permission or other authorisation for the plan or project. (Regs. 48(1) *et al*);
  - reviews the decision to undertake a plan or project or reviews consents, permissions or other authorisations for plans or projects that are incomplete. (Regs. 50(2) *et al* - see also EN Habitats Regulations Guidance Note No. 2);
  - decides whether to approve an application for development that would otherwise be permitted development. (Reg. 62(6)).

#### Significant Effects

5. The plan or project does not have to be located within the designated area. Significant effects may occur even if the plan or project is some distance away and even outside any consultation area defined by English Nature (PPG 9 paras 30-32). The effects may be direct or indirect, temporary or permanent, beneficial or harmful to the site, or a combination of these.

6. The initial determination of likely significance is intended to ensure that all relevant plans and projects likely to have a material effect on these internationally important sites are subject to an appropriate assessment. In all but the most clear cut cases, competent authorities are likely to need advice. English Nature will advise, on request, as to whether any particular plan or project may be likely to have a significant effect on any of these sites. If the decision as to whether or not the development would have a significant effect on the designated site is inconclusive, on the information available, the competent authority should make a fuller assessment; in doing so they may ask the developer or other parties for more information. (PPG 9 para C10).

### Who Undertakes the Appropriate Assessment?

7. The appropriate assessment must be undertaken by the *competent authority*, as defined in Regulation 6(1) of the *Habitats Regulations*, which includes any Minister, Government Department, public or statutory undertaker, public body of any description or person holding a public office. The developer or proposer of the plan or project is required to provide relevant information. English Nature must be consulted, during the course of the assessment, but it is the duty of the competent authority to undertake the assessment itself.

8. Most competent authorities will not have the technical expertise "in house" to assess the effects of the plan or project on the international nature conservation interests. Most will need to rely heavily on the advice, guidance and recommendations of English Nature, at each stage, including the scope and content of the assessment, the site's conservation objectives, the information required from the developer or proposer and the effects on the integrity of the site, all of which are discussed below. The appropriate assessment, in many cases, is likely to be an iterative process. In the simplest cases a general statement in a single consultation response from English Nature may suffice to enable the competent authority to complete the assessment. However, in most cases, it is envisaged that a more detailed response from, and dialogue with, English Nature is likely to be necessary.

### What is an 'Appropriate Assessment'

9. It is a self contained step in a wider decision making process, required by the *Habitats Regulations* and described more fully in PPG 9, Annex C. Its conclusions must be based only on the scientific considerations under steps laid out in the *Habitats Regulations*. The assessment should not be influenced by wider planning or other considerations.

10. The *Regulations* do not specify how the assessment should be undertaken but describe it simply as "an appropriate assessment". This is taken to mean that the assessment must be appropriate to its purpose under the *Regulations* (and also the *Directive*, which originated the use of the term). Its purpose is to assess the implications of the proposal in respect of the site's "conservation objectives". The conclusions of the assessment should enable the

competent authority to ascertain whether the proposal would adversely affect the integrity of the site.

### Scope and Content

11. PPG 9 indicates that the scope and content of an appropriate assessment will depend on the location, size and significance of the proposed plan or project (PPG 9 box C10). The PPG indicates that English Nature will advise on a case-by-case basis. According to the nature conservation interests of the site, English Nature will identify particular aspects that the appropriate assessment should address. Examples given are hydrology, disturbance and land-take, but there are clearly many other potential matters that may need to be addressed in particular cases.

12. Procedures under the Habitats Regulations should be confined to the effects on the internationally important habitats or species for which the site is or will be internationally designated or classified, including any indirect effects on these interests, for example, via their supporting ecosystems and natural processes. Notwithstanding a favourable assessment in respect of the plan or project's effects on the international nature conservation interests for which the site was classified or designated, decisions to undertake or give consent to the plan or project may need to take account of other international, national, regional or local nature conservation interests in the light of other policy and legislative provisions. (PPG 9 paras 4, 18 and 27).

### Environmental Assessment

13. The appropriate assessment is not the same as an environmental assessment under the provisions of the various *Environmental Assessment (EA) Regulations* (1988-95), in compliance with the Directive 85/337/EEC. In many cases, plans or projects that will be subject to an appropriate assessment will need an Environmental Statement (ES) to be prepared under the EA Regulations. (PPG 9 paras 38 and 39).

14. The ES will address all significant environmental effects. It will be appropriate to use the information assembled for the ES when carrying out the appropriate assessment under the Habitats Regulations. In view of this it would be helpful if the relevant ES clearly identified, under a specific subject heading, the likely significant effects on the internationally important habitats and/or species.

## How is an Appropriate Assessment Undertaken?

### Key Steps

15. Having established that an appropriate assessment is required, the following conclusions may be drawn (from the foregoing considerations and Government guidance) in respect of how it should be undertaken.

#### The Key Steps in An Appropriate Assessment

The competent authority:

I

Must consult English Nature

II

May consult the general public

III

Should clearly identify and understand the site's conservation objectives having regard to the advice of English Nature

IV

Should require the applicant to provide such information as may reasonably be required for the purposes of the assessment

V

Should identify the effects of the proposal on the habitats and species of international importance and how those effects are likely to affect the site's conservation objectives

VI

Should decide whether the plan or project, as proposed, would adversely affect the integrity of the site in the light of the conservation objectives

VII

Should consider the manner in which the plan or project is proposed to be carried out, whether it could be modified, or whether conditions or restrictions could be imposed, so as to avoid adverse effects on the integrity of the site

VIII

Should conclude whether the proposal, as modified by conditions or restrictions, would adversely affect the integrity of the site

IX

Should record the Assessment and notify English Nature of the conclusions

## The Key Steps Explained

These key steps are explained in more detail below.

### I. Consulting English Nature

16. Under Regulation 48(3) the competent authority must consult English Nature and must have regard to any representations made by English Nature. It may be inferred from PPG 9 (box C10 and para C9) that the competent authority would be expected to follow the advice of English Nature and normally to decide the case “*in accordance with the recommendations of English Nature*”. If it does not do so, the competent authority should be prepared to explain its reasons. In cases where it proposes to agree to a plan or project notwithstanding a negative assessment, the competent authority is required to notify the Secretary of State in advance of any decision.

### II. Consulting the General Public

17. Under Regulation 48(4) the competent authority may (if it considers it appropriate) take the opinion of the general public, on the implications of the proposal for the site’s conservation objectives, using whatever steps they consider necessary. This may usefully include taking the opinion of others with relevant knowledge or expertise.

### III. The Site’s Conservation Objectives

18. The Regulations do not define what is meant by the site’s conservation objectives but PPG 9 box C10 describes them as:

*“the objectives... / the reasons for which the site was classified or designated”*

English Nature will be able to give a clear statement of the site’s conservation objectives in the light of its European Site Register entry (compiled by Government under Regulation 11), its citation, its reasons for recommendation, English Nature’s knowledge of the site, national and international objectives for the international nature conservation interests (such as may be contained in the UK Biodiversity Action Plan) and any Management Plan or Management Statement for the site in so far as they relate to the interests for which the site was selected.

19. The site may also host habitats and/or species of Community interest (see Article 1 of the Habitats Directive) which are not mentioned in the European Site Register, the citation or the reasons for recommendation because they were not, at the time, a reason for classification or designation. Such features are not relevant to the appropriate assessment itself. Nevertheless their presence may be material to the decision as to whether or not to undertake or to consent to the plan or project.

### IV. Requiring Further Information

20. The competent authority, taking the advice of English Nature where necessary, should require the applicant to provide such information as the competent authority may reasonably require for the purposes of making the assessment (Reg.48(2)). The information required may relate to any environmental information, or information about the proposal, relevant to the assessment and may include:

- i. information already available, or
- ii. new information from surveys that may need to be carried out, or
- iii. data analysis, predictions, comparisons or assessments of a technical nature.

### V. Identifying the Effects

21. Having regard to English Nature’s advice and other consultation responses and, where relevant, taking account of the ES or any other information supplied by the developer/proposer, or otherwise available, the competent authority should identify what the effects of the proposal are likely to be. The effects considered should be those of the plan or project, either alone or in combination with other plans or projects, on the habitats and species of international importance and how those effects are likely to affect the site’s conservation objectives. This will involve considering, for example, the nature,

scale, geographic extent, timing, duration and magnitude of direct and indirect effects; considering the degree of certainty in the prediction of effects; considering all mitigating measures already contained in the proposal and the extent to which these measures are likely to avoid, reduce or ameliorate adverse effects on the international nature conservation interests. It is the residual effects, after mitigation, that are considered at this stage.

### VI. Integrity of the Site

22. Having regard to English Nature’s advice, other consultation responses and any other information available, the competent authority should decide whether the plan or project, as proposed, would adversely affect the integrity of the site, in the light of its conservation objectives. That is, whether the plan or project would adversely affect the “*coherence of the site’s ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified*” (PPG 9 box C10). An adverse effect on integrity is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of its designation.

23. The form of words used in Regulation 48(5) implies that a precautionary approach should be taken in considering effects on integrity, in line with the Government’s principles for sustainable development (see *Sustainable Development: the UK strategy* page 33). Regulation 48(5) says that (subject to Regulation 49) projects may only proceed if the competent authority has ascertained that it **will not adversely affect** the integrity of the European site.

### VII. Considering How To Avoid Adverse Effects

24. If the proposal would adversely affect the integrity of the site then, having regard to English Nature’s advice, the competent authority should consider the manner in which it is proposed to be carried out and whether the plan or project could be modified, or whether conditions or restrictions could be imposed, so as to avoid the adverse effects. This may include, for example, changes to the siting, layout, timing or use of the proposal and the use of obligations or legal agreements. (Reg. 48(6)).

25. Compensatory measures that may be offered in the proposal at this stage, seeking to redress but not remove residual harm to the international interests (such as the provision of land for habitat creation purposes), should not be considered in the appropriate assessment, but may be considered later in the decision making process. (See Reg. 53).

### VIII. Conclusion on Effects In The Light of Conditions and Restrictions

26. The competent authority should reassess the conclusions in the light of any such modifications, conditions or restrictions that may be agreed or imposed.

## IX. Recording the Assessment

27. It would be advisable for this conclusion, and the reasons for it, to be recorded. English Nature should be notified of the conclusion of the appropriate assessment and the authority's decision as to the effects on the integrity of the site, before the authority undertakes the plan or project or issues any permission, consent or other authorisation (PPG 9 para 30).

28. The subsequent courses of action open to a competent authority are set out in Regulations 48(5) - (7), 49 and 54(3). The Regulations prohibit a competent authority from undertaking or giving consent to any plan or project unless the appropriate assessment concluded that it would not have an adverse effect on the integrity of the site, or specific criteria are met and the Secretary of State has been informed.

## Good Practice Outline of an Appropriate Assessment Record

29. A suggested model or good practice outline record of an appropriate assessment is set out below. It may be contained in, for example, a planning officer's committee report or the minutes of a competent authority's decision. In other cases it may be a file note, clearly recording compliance with the Regulations. The record may take many different forms because each assessment needs to be appropriate to the type,

scale, location and significance of the proposal and to the relevant nature conservation interests. It is provided here as a guide to assist competent authorities and English Nature staff, not as an authoritative legal formula. Any record made of an appropriate assessment should be copied to English Nature and to any other parties who were consulted on the assessment.

<p><i>Title of Plan or Project/Application</i> <i>Location of Plan or Project/Application</i> <i>[With location plan attached showing relationship to the international designation]</i> <i>International Nature Conservation Site</i> <i>Nature/Description of Plan or Project/Application</i> <i>[Including brief description of manner in which plan or project is proposed to be carried out]</i> <i>Date Appropriate Assessment Recorded</i></p>
<p><i>This is a record of the appropriate assessment, required by Regulation 48 of the Habitats Regulations 1994, undertaken by [name of competent authority] in respect of the above plan/project, in accordance with the Habitats Directive (Council Directive 92/43/EEC). Having considered that the plan or project would be likely to have a significant effect on the [name of international site] and that the plan or project was not directly connected with or necessary to the management of the site, an appropriate assessment has been undertaken of the implications of the proposal in view of the site's conservation objectives.</i></p>
<p><i>English Nature was consulted under Regulation 48(3) on [date] and their representations, to which this authority has had regard, are attached at Annex 1. The conclusions of this appropriate assessment * are/are not in accordance with the advice and recommendations of English Nature.</i></p>
<p><i>*The applicant was required to submit further information reasonably necessary for this assessment on [date] under Reg.48(2) * and replied with the information on [date]/but did not supply the information.</i></p>
<p><i>* The opinion of the general public was taken under Reg. 48(4) by way of *public advertisement/further consultation etc and the views expressed (attached at Annex 2) have been taken into account.</i></p>
<p><i>The site's conservation objectives have been taken into account, including consideration of the citation for the site and information supplied by English Nature (see Annex 1). The likely effects of the proposal on the international nature conservation interests for which the site was designated may be summarised as:</i> <i>[List of Effects]</i></p>
<p><i>The assessment has concluded that:</i></p>
<p><i>*a) the plan or project as proposed would not adversely affect the integrity of the site,</i> <i>or</i> <i>*b) the plan or project as proposed would adversely affect the integrity of the site.</i></p>
<p><i>[If (b):]</i></p>
<p><i>The imposition of conditions or restrictions on the way the proposal is to be carried out has been considered and it is ascertained that:</i></p>
<p><i>*a) conditions or restrictions cannot overcome the adverse effects on the integrity of the site.</i> <i>or</i> <i>*b) the following conditions and/or restrictions would avoid adverse effects on the integrity of the site. [list conditions/restrictions]</i></p>
<p><i>Signed ..... Date .....</i></p>
<p><i>(* delete as appropriate)</i></p>
<p><i>Annexes to also include relevant correspondence, minutes or meetings with English Nature, the applicant etc.</i></p>



## Supplement to Habitats regulations guidance note no. 1 For English Nature staff responding to habitats regulations consultations on the appropriate assessment

### Good Practice Outline of an English Nature Consultation Response

This Supplement should be read in conjunction with the Habitats Regulations Guidance Note No. 1. It is intended to help English Nature staff draw up their response to consultations under Regulation 48 of the Habitats Regulations in respect of an "appropriate assessment" being carried out by a competent authority.

#### General Advice:

- Consultation under Reg. 48 may be explicitly initiated by a competent authority. However it is more likely to be buried or obscured in a more general consultation over a plan or project. In such cases English Nature should respond to the consulting authority by letter/pro forma in the normal way, referring to all relevant nature conservation issues. However our specific advice under the Habitats Regulations should be clearly set out either in the letter, or in a separate Annex to it.
- If objecting to a proposal it is important to distinguish between an objection based on the international nature conservation interests for which the European Site was selected (and to which specific procedures in the Habitats Regulations apply) and one based on other nature conservation interests. If the effects on the international nature conservation interests are such that, although significant, they would not adversely affect the integrity of the site, we should say so.
- In the case of any uncertainty over the application of the Regulations, the use of terms such as "significance", "integrity", "in combination" etc, or the likely impacts of a proposal, feel free to seek further advice from the relevant individuals in English Nature's national office. Our participation in Habitats Regulations cases will come under close scrutiny and it is important that we can demonstrate that we operate within the requirements of the Regulations and take a consistent approach.
- We should involve the Regional Government Office in such cases at an early stage and keep them advised of progress. In some cases, particularly where there is a risk of damage to a European site, we should also consider informing European Wildlife Division at Bristol.

#### Example of a Summary of Representations

If the letter in response to a consultation under the Regulations is long, or an Annex is used for the international considerations, it may be helpful to include summary paragraph(s) early in the covering letter, perhaps along the following lines:

*This letter [and attached Annex] may be taken to be English Nature's formal consultation representations under Regulation 48(3) of the Conservation (Natural Habitats &c) Regulations 1994. English Nature \*objects/ does not object to the proposal.*

*English Nature is of the opinion that the proposal \*would/ would not be likely to have a significant effect on the [name and status of site] and is/ is not directly connected with the management of the site for nature conservation.*

*\*English Nature recommends that the applicant be required under the provisions of Regulation 48(2) to provide the following information which English Nature considers to be reasonably necessary to enable the competent authority to undertake an appropriate assessment.*

*English Nature is of the opinion that the plan or project, as proposed, \*would/ would not adversely affect the conservation objectives and the integrity of the site as defined in Annex C of PPG 9.*

*English Nature is of the opinion that \*the following conditions/ restrictions/ legal agreements/ planning obligations could overcome adverse effects on the integrity of the site/ conditions or restrictions could not avoid harm to the integrity of the site.*

*English Nature advises that the site \*does/ does not host a priority natural habitat type/ priority species within the meaning of Article 1 of the Habitats Directive (PPG 9 p.36). (\* delete as applicable)*

#### Recommended Content of Detailed Representations

Our response to a consultation under the Regulations should clearly state English Nature's position and should generally follow the model response letters outlined in Appendix 4 of the Local Authorities Handbook. That part of the letter relating to the Reg. 48(3) consultation should include the points set out below:

#### *The Conservation Status of the Site*

Including all relevant designations, dates and area/extent with copy of citation (or reasons for recommendation) and maps attached.

#### *The International Nature Conservation Importance of the Site*

Including the reasons why the site was or is to be designated as a European site and drawing attention to any priority habitats or species which the site supports.

#### *The Conservation Objectives of the Site*

Clearly setting out the objectives relating to all habitats and species of Community interest / Ramsar interest etc. drawing on the citation, selection criteria, Site Objective Statement, Site Management Statement, Management Plan or Strategy, BAP targets, national or international policy objectives and other sources as relevant.

#### *Further Information Required (if any)*

Setting out, as precisely as possible:

- a. what information is currently in the public domain or could be made available but which is not yet submitted to the competent authority, and how they may obtain it; and
- b. what further information is required from the applicant, in your opinion, to enable the competent authority to undertake, and English Nature to further advise on, the appropriate assessment.

#### *The Effects of the Development as Proposed*

Identifying all direct/indirect, temporary/permanent effects and their significance related to their nature, scale, geographic extent, location, duration, magnitude etc.

#### *Implications for the Conservation Objectives*

Setting out all implications for the conservation objectives and identifying clearly those which would be adverse to the integrity of the site.

#### *Conditions or Restrictions*

Identifying clearly which adverse effects on integrity (if any) could be overcome by, for example, conditions, planning obligations, other legal agreements etc. (See Sections D28 and D29 and E2 of the LA Handbook).

#### *Conclusions and Recommendations*

The summary paragraphs provided as examples above.

#### *Further Assistance*

Offer to provide further explanation or clarification should this be needed. Always offer to meet with the competent authority to explain our advice and to guide them through the Regulatory procedures.

## The Determination of Likely Significant Effect under The Conservation (Natural Habitats &c) Regulations 1994

### 1. Introduction

- 1.1 Consistency in applying the requirements of the Habitats Directive, and in interpreting the Conservation (Natural Habitats &c) Regulations 1994, is important for all the country agencies in their casework on international sites. One of the key procedures is under Regulations 48-53, the consideration of plans and projects affecting the Natura 2000 series. If a plan or project is not connected with or necessary for the management of the site **and is likely to have a significant effect**, the competent authority is required to carry out an appropriate assessment to determine whether it will have an adverse effect on site integrity.
- 1.2 This note provides guidance to staff on how to decide whether or not a plan or project “is likely to have a significant effect”. It applies also to the other parts of the Conservation Regulations where the same test is used (e.g. Regulations 20, 24 & 60).
- 1.3 Only the courts can provide authoritative interpretation of the Regulations, but these notes have been developed in the light of practical experience and a close examination of the Regulations, the Habitats Directive and central government guidance, particularly PPG 9.

### 2. The purposes of the test of significance

- 2.1 The ‘significance’ test acts as a coarse filter for all proposed plans and projects which are not directly connected with or necessary to the management of the site (whether or not the effect is likely to be adverse or beneficial) so directing attention to those which require further assessment. The importance of the international conservation interest of the site should be at the forefront of decision-making.
- 2.2 The attached flow chart provides a step by step approach to recording a decision on likely significant effect in all cases. It includes provision for a fuller consideration to justify the decision in cases where

the qualifying feature is directly or indirectly affected but the effect is not considered likely to be significant and therefore there is no need for an appropriate assessment.

#### Summary of principles in judging significant effect

- The test of significant effect (‘significance test’) must be made by the ‘competent authority’, but exchange of advice between the competent authority and the country agency is strongly encouraged.
- The ‘significance test’ is a coarse filter intended to identify which proposed plans and projects require further assessment. It is the first stage of the process, and is distinct from the appropriate assessment of ‘adverse effect on integrity’ that follows (see section 1).
- Consideration of ‘likely significant effect’ will have practical and legal consequences and must be based on sound judgement and bear scientific or expert scrutiny (section 2).
- Judgements of likely significant effect should be made in relation to the features for which the European site was designated and their conservation objectives - (Regs 20, 33 and 48); judgements should be made on a case-by-case basis (section 3).
- Proposals having no, or *de minimis*, effects can be progressed without further consideration under the Habitats Regulations although reasons for reaching this decision must be justified and recorded (section 4).
- Some cases require more systematic evaluation of risk, but if a clear judgement cannot be made on the basis of available information, then an appropriate assessment will be required (section 5).
- In all cases, the reasons for reaching the judgement must be recorded by the competent authority and by the country agency when advice is given (section 6).

- 2.3 The country agencies must clearly distinguish their advice on likely significant effect, from that given on the effects on site integrity which competent authorities are

required to obtain during an appropriate assessment (Reg. 48(3)). The separate stages in this process are explained in other guidance such as PPG9, Circular 6/1995 (Scotland) and TAN5 (Wales). However, as explained in the flow chart (Annex A), there may be circumstances where a fuller, more in depth level of consideration may be needed in order to determine whether significant effects are likely.

### 3. Implications of the test of significance

3.1 All judgements about 'significance' need to be fully documented and dealt with in a systematic manner by all competent authorities including conservation agencies. A judgement that a plan or project is likely to have a significant effect can have financial implications for developers. For example it brings development which is otherwise permitted under the Town and Country Planning (General Permitted Development) Order 1995 (in England and Wales) and Town and Country Planning (General Permitted Development) (Scotland) Order, 1992 (in Scotland), under the scrutiny of the local planning authority. Conversely, the opinion (under Regulation 61(3) of the Habitats Regulations) of the country agencies that a permitted development is **not** likely to have a significant effect is conclusive and cannot be amended. Agencies will be held accountable for the advice given and will need to be able to justify decisions both for and against a 'significant effect'.

#### 4. Making judgements of "likely significant effect"

4.1 Likely significant effect is, in this context, any effect that may reasonably be predicted as a consequence of a plan or project that may affect the conservation objectives of the features for which the site was designated, but excluding trivial or inconsequential effects.

4.2 The likely scale of impact is important. In some cases the decision that no significant effect is likely will be obvious. Very short lived impacts would generally require only minimal further consideration under such conditions, provided there were no persistent, cumulative effects from repeated or simultaneous impacts of the same nature. Even here there will be exceptions, however. For example very brief disturbance to a seabird colony may have a lasting effect on the population (as determined by careful monitoring), even though activity may appear (through casual observation at the time) to return rapidly to normal.

4.3 At the other extreme, some cases will very clearly be likely to have a significant effect. Any proposal which would require an environmental assessment

under the Environmental Assessment Directive (85/337/EEC) (as amended) on account of its effects, among others, on a European site, can be judged as being likely to have a significant effect, although reasons for this must still be recorded. This will then require an **appropriate** assessment under the Habitats Regulations, which may be addressed by the competent authority alongside or as part of the wider environmental assessment.

4.4 In some cases the judgement about a likely significant effect will be less clear cut and it will be necessary to look particularly at the nature of the effect and its timing, duration and reversibility, taking into account any readily available information on the site, and especially its conservation objectives.

4.5 Permanent reductions in habitat area or species populations are likely to be significant unless they are very small scale. In the case of certain sites a loss of, say, a few square metres of the site area **may** not be considered significant (for example, there may be circumstances when this might apply in the case of estuarine SPAs which are selected for their bird interest), in others, such as limestone pavement, **any** further loss of the area of qualifying interest may be unacceptable. Any activity which affects the attainment of conservation objectives will probably be significant.

4.6 The following is a list of **examples** of types of effects which are likely to be significant and therefore need to be considered more fully as part of the consideration in the flow chart (Annex A). It is important to remember that they may result from either on-site or off-site activities and may need to be considered in combination with other plans or projects.

- Causing change to the coherence of the site or to the Natura 2000 series (eg presenting a barrier between isolated fragments, or reducing the ability of the site to act as a source of new colonisers);
- Causing reduction in the area of habitat or of the site;
- Causing direct or indirect change to the physical quality of the environment (including the hydrology) or habitat within the site;
- Causing ongoing disturbance to species or habitats for which the site is notified;
- Altering community structure (species composition);
- Causing direct or indirect damage to the size, characteristics or reproductive ability of populations on the site;
- Altering the vulnerability of populations etc to other impacts.

- Causing a reduction in the resilience of the feature against external change (for example its ability to respond to extremes of environmental conditions);
- Affecting restoration of a feature where this is a conservation objective.

## 5. When there is 'no significant effect'

5.1. When it is clear that the plan or project is not likely to have a significant effect then only limited further consideration - to enable the reasons for reaching this decision to be justified and recorded - is required. After this, permission for the plan or project may be granted.

## 6. Use of evidence in judging likely significant effect

6.1 The judgement of whether a significant effect is likely should be based on the best readily available information. Where full information does not exist or is not readily available it will not usually be appropriate for further data (eg survey work) to be collected at this stage in the process although in some circumstances further information may be requested in order to clarify decision-making. Sources of information may include evidence of similar operations affecting sites with similar conservation objectives and the judgement of relevant specialists that an effect is likely, based on available evidence. However cases will always be different, and consideration must be given to the local circumstances. Early consultation between project promoters, competent authorities and country agencies is encouraged, in order that the best information can be made available to help to define the likely significance of effects.

## 7. Suggested process for documenting judgement of 'likely significant effect'

7.1 Preliminary Considerations The competent authority should, with advice from the country agencies, first consider and record the features for which the site has been selected and the conservation objectives for the site. In all cases, the following should be recorded:

- What are the qualifying interest features?
- What are the conservation objectives?
- What other relevant site information is available? e.g. site (SSSI, NNR, SAC/SPA, European Marine site) management plans; list of operations which may cause damage or deterioration.

7.2 As a first step it is necessary to determine whether the proposal is connected with or necessary for the management of the site for its conservation objectives. A judgement then needs to be made as to whether to proceed to a fuller consideration or to state at this stage that an appropriate assessment is not needed (ie that there is no likely significant effect). The latter would be the case only when it was beyond doubt that the interest features would not be directly or indirectly affected.

7.3. Fuller Considerations Where there is not a clear cut case for there being no likely significant effect on the interest features or conservation objectives, you should carry out and record a brief risk assessment, e.g:

- The **potential hazards** of the plan or project and their likely consequences for the conservation objectives of the SAC/SPA features.
- For each hazard, the **probability** that the hazard will affect the SAC/SPA conservation objective in this case.
- For each hazard, the **magnitude**, likely duration and irreversibility or reversibility of the effect (recording briefly the assumptions made or evidence used in reaching that conclusion).

7.4 It may be possible to reach a decision as to whether a significant effect is likely at this stage, or you may wish to ask for further information - although not at this stage requiring an appropriate assessment. If such information is not readily available or if the results are inconclusive, then an appropriate assessment would normally be required.

7.5 The outcome of this fuller consideration should be a fully justified decision that either:

- an appropriate assessment is not needed; or
- an appropriate assessment is needed, together with some guidance on the likely scope of this assessment.

If in doubt please seek advice from the relevant country agency specialist.

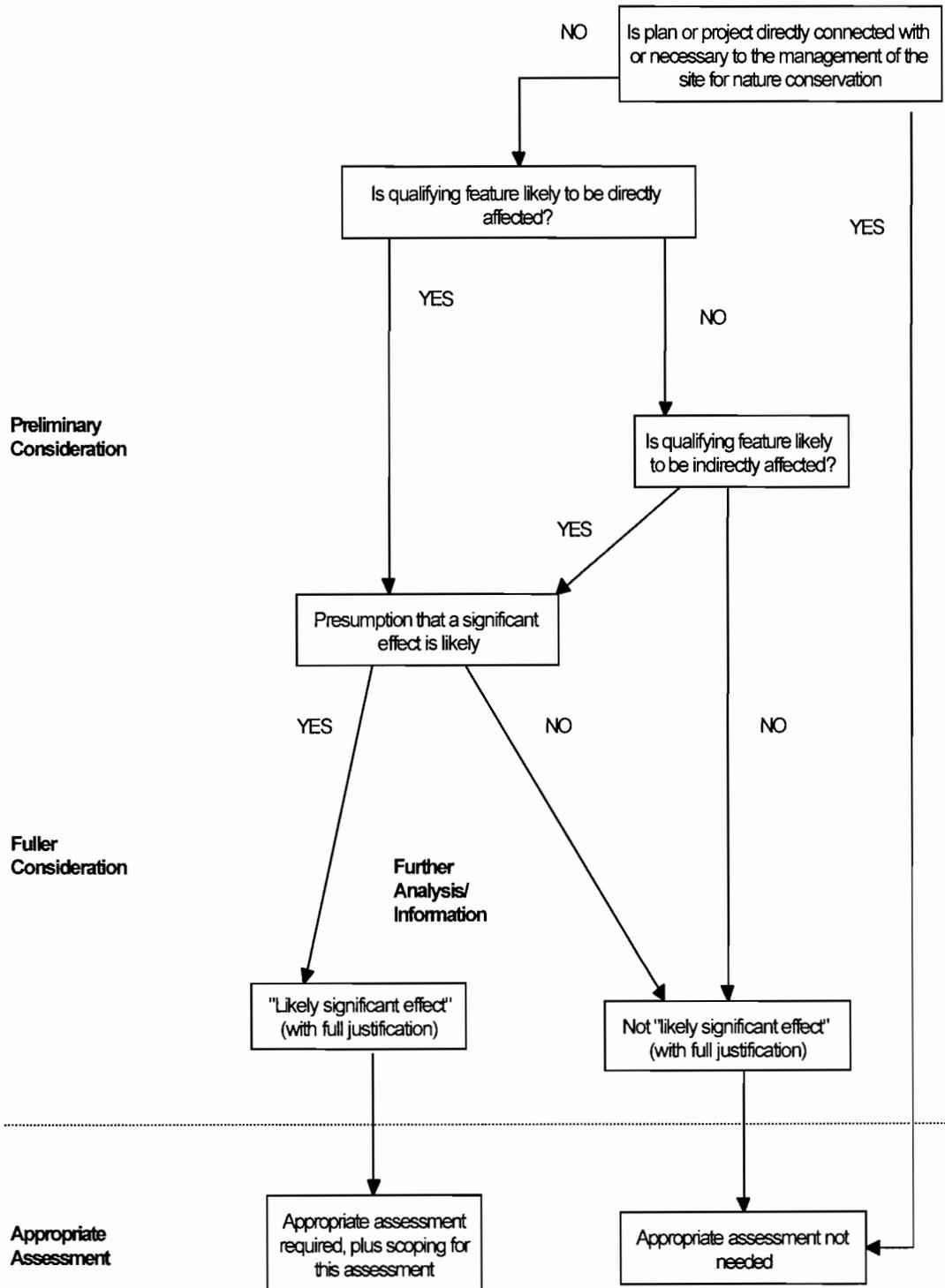
The text of this guidance note was developed by the country agencies for the Government's inter-departmental steering group on the Habitats Directive and approved by it. It is the third in a series of guidelines which has been developed for

staff in the country agencies, but may also be useful for other competent authorities, and developers and promoters of projects to help their understanding of the key principles used in the decision making process. Further guidance notes are planned in the series which will cover the effects of plans or projects alone and in combination; adverse effect on integrity and the consideration of permitted developments affecting European sites.

The guidance notes supplement existing guidance available in PPG9 on Planning and Nature Conservation (in England) and Planning Guidance (Wales) (Planning Policy and Technical Guidance Note (Wales) 5: (Nature Conservation and Planning) and Circular 6/1995 (in Scotland).

**A step-by-step approach to determining whether a significant effect is likely on a Natura 2000 site**

**ANNEX A**



Issued by Wyn Jones, Strategic Development and Reporting Team, English Nature. Tel: 01733 455148

## Alone or in combination

### 1. Introduction

- 1.1 The Conservation (Natural Habitats, & c.) Regulations 1994 (the Regulations) require competent authorities to make an appropriate assessment of any plan or project which is likely to have a significant effect on a European site, **either alone or in combination with other plans or projects** and is not directly connected with or necessary to the management of the site (for nature conservation). This test appears in regulations 20, 24, 48 and 60 and is therefore implicit in many other regulations. It is derived from the obligations of Article 6(3) of the EC Habitats Directive (the Directive).
- 1.2 Neither the Directive nor the Regulations provide a definition of alone or in combination. The phrase has yet to be considered by the courts.
- 1.3 The European Commission produced guidance on the provisions of Article 6 in April 2000, which together with experience gained from casework, has been used to inform the interpretations contained in this guidance note.

### 2. Application

- 2.1 The purpose of the tests in the Directive and Regulations is to ensure that the integrity of a European site is **not** adversely affected by a plan or project. It is therefore logical that when applying the test of likely significance *either alone or in combination with other plans or projects*, "alone or in combination" should be treated as "alone and/or in combination". Where the plan or project;
- alone is likely to have a significant effect;
  - alone is not likely to have a significant effect but in combination with other plans or projects is likely to have a significant effect;
  - an appropriate assessment will be required.
- 2.2 Although the reference to *alone or in combination* is restricted to the likely significance test, having ascertained the need for an appropriate assessment it would be illogical and inconsistent with the purposes of the tests in the Directive and the Regulations, not to consider the appropriate assessment in the same context. The appropriate assessment of the implications of the plan or project for the site should be made alone or in combination with other plans or projects.
- 2.3 The Regulations limit the scope of the *in combination* test to "other plans or projects". These should include:
- approved but as yet uncompleted plans or projects;
  - permitted ongoing activities such as discharge consents or abstraction licences, and
  - plans and projects for which an application has been made and which are currently under consideration but not yet approved by competent authorities.
- Any consideration of the effects of the plan or project currently on the table, in combination with other plans or projects, may involve consideration of its effects in combination with any of

the above notwithstanding that they may have previously been considered not likely to have a significant effect, either alone or in combination.

**Note** that in some circumstances, it may also be appropriate to include plans and projects not yet submitted to a competent authority for consideration, but for which sufficient detail exists on which to make judgements on their impact on the European site. For example, an Environmental Impact Assessment may be being carried out and consulted on by a developer prior to an application being submitted.

- 2.4 Whilst the "in combination" test is restricted to other plans or projects, in considering whether a plan or project either alone or in combination is likely to have a significant effect it is necessary to consider the influences on the site which have affected and are continuing to affect the condition of each European interest feature on the site. These influences constitute what is often referred to as the "*cumulative effect*". The current condition of the interest features may be a reflection of the cumulative effect on them. However, any assessment of their condition must be separated from the cumulative effect on them as there may be a time-lag between the influences exerting themselves and any effect on the site becoming manifest. It should be noted that a plan or project may be likely to have a significant effect on a site or result in the integrity of the site being adversely affected even though the interest features on it remain in favourable condition.
- 2.5 Where judgements are being made for the purposes of a review of consents under Regulation 50, it may be appropriate to assess the contribution of a consent as a proportion of the total influences on the site for the purposes of prioritising the review of that consent. If the majority of the influences on a site arise from sources other than the consented activity it may not be a priority for review. This approach is **not** appropriate however for the purpose of assessing the effects of a consent under Regulation 48 or 50. The effects must be assessed either alone or in combination with other plans or projects and not as a proportion of the total influences on the site.
- 2.6 The term *cumulative effect* is not found in the Directive nor in the Regulations. However, it is commonly used to include all of the plans or projects referred to in 2.3 above together with:
- completed plans or projects
  - activities for which no consent was given or required
  - natural processes (by natural mechanisms and at a natural rate)
- 2.7 Whilst the Directive and the Regulations require a precautionary approach, it is necessary to base any judgements on the impact of plans or projects on information which reasonably indicates likely cause and effect.
- 2.8 Where a feature for which the site has been selected as being of European importance is already in unfavourable condition or critical thresholds are being exceeded (or is subject to cumulative effects which will lead to either of these being the case), any additional plan or project which, either alone or in combination, adds to these

levels is likely to have a significant effect on the European Site.

- 2.9 Equally there may be the possibility that plans or projects may be considered so trivial or inconsequential as not to be significant either alone or in combination with other plans or projects. (Please see HRGN3 on "likely significant effect"). An example of this would be a discharge consent for a few cubic metres of treated sewage many miles upstream of a European site.

### 3. Implementation

- 3.1 Competent authorities in considering a plan or project *alone or in combination* require a good overview of plans and projects likely to affect the site, including:

- those requiring approval or consent from other competent authorities;
- similar and different types of plans and projects, even where their effects may be different, for example some resulting in disturbance and some in loss of habitat;
- those that alone may be insignificant;
- the state of completion of the plans and projects.

- 3.2 When dealing with the in combination effects of plans or projects, the following should be considerations which will influence any assessment:

- (a) each case must be assessed on its merits, either alone or in combination, looking at the cumulative effect on the site at the time the case is being considered;
- (b) completed plans or projects, insofar as they form part of the cumulative effect, will be considered in that they have affected and may continue to affect the condition of the interest features on the site. Commission guidance states that "it is important that some account is still taken of such plans and projects in the assessment, if they have a continuing effect on the site and point to a pattern of continuing loss of integrity";
- (c) the cumulative effect on the site should be assessed relative to the conservation objective for the site and the favourable condition table which is attached to the conservation objective for the European interest features on the site;
- (d) a point will be reached, if adequate information exists to make a judgement, where in view of the conservation objective for the site and the cumulative effect on it, it will be clear that any additional effect is likely to be significant;
- (e) depending on the cumulative effect on the site, the conservation objective and the nature of the application (including scale, duration, method and timing) it may be possible to conclude that there is not likely to be a significant effect;
- (f) in permitting a plan or project, a competent authority is not setting a precedent creating a presumption in favour of future unproposed developments. Each case must be treated on its merits at the time it arises for consideration;
- (g) the strategic approach recommended at paragraph 3.6 should assist in dealing with applications affecting these sites.

- 3.3 Where detailed information is not available at this stage, a judgement must be reached on likely significant effect on the information that is available. The precautionary approach would be that where there is uncertainty the conclusion should determine a likely significant effect, unless available information clearly indicates otherwise, and consider the detailed analysis as part of the

appropriate assessment.

- 3.4 In view of their role as a statutory consultees, the country agencies are well placed to form an overview of plans and projects being dealt with by several competent authorities and may be able to provide guidance on how best to progress a cooperative approach between competent authorities in determining a case. At some sites the number of competent authorities involved are so numerous that the establishment of a comprehensive communication network is necessary. In the case of European marine sites the management group may provide a means by which an overview may be maintained and information communicated.

- 3.5 It would be sensible for competent authorities to discuss proposed plans and projects with the country agencies at the earliest opportunity so that measures may be introduced to avoid the potential for any significant effects or any potential adverse effect on the integrity of the site.

- 3.6 At a number of large and complex sites where many competent authorities are involved, a strategic and pro-active approach is desirable. The benefit of establishing such an approach is that it can provide a focus for communications and a framework within which to identify the category of plans and projects with the potential to affect the site and their location. The product of this approach should be a clear working document for the reference of competent authorities in exercising their functions.

- 3.7 At the Humber SPA a number of competent authorities were proposing to authorise or undertake plans or projects adjacent to the site which, if undertaken simultaneously, would have resulted in considerable disturbance to the species of European importance and an adverse effect on the integrity of the site. The competent authorities together agreed to a timetabling of the plans and projects and were able to reduce the disturbance so as to avoid the adverse effect.

- 3.8 Finally, Regulation 52 does not require a competent authority to assess any implications of a plan or project which would be more appropriately assessed by another. The Secretary of State may issue guidance to competent authorities for the purposes of regulations 48 to 51, as to the circumstances in which an authority may or should adopt the reasoning or conclusions of another competent authority in determining likely significant effect or adverse effect where a plan or project

- is undertaken by more than one competent authority, or
- requires the consent, permission or other authorisation of more than one competent authority, or
- is undertaken by one or more competent authority and requires the consent, permission or other authorisation of one or more other competent authorities.

If in doubt seek advice from the relevant country agency specialist

The text of this guidance note was developed by English Nature for the Government's inter-departmental steering group on the Habitats Directive and approved by it. It is the fourth in a series of guidelines which has been developed for staff in the country agencies but may be useful for other competent authorities, and developers and promoters of projects to help their understanding of the key principles used in the decision making process. Further guidance notes are planned in the series will cover appropriate assessments, adverse effect on integrity and the consideration of permitted developments affecting European sites.

**ADVICE TO NATURAL ENGLAND  
YORKSHIRE AND HUMBER REGION  
REGIONAL FRAMEWORK CONTRACT 2010  
TASK 7  
IN RELATION TO:  
PLANNING APPLICATION  
MADE TO THE NORTH LINCOLNSHIRE COUNCIL  
FOR  
PROPOSED PORT RELATED DEVELOPMENT  
BY  
ABLE UK LTD  
PLANNING APPLICATION REF PA/2009/0600**

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Doc. Ref. 1768 10 01 Able UK Final advice 2 Date: 29th June 2010

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## **INTRODUCTION**

- 1 1. DTA has been commissioned by Natural England, Yorkshire and the Humber region, in respect of the planning application submitted by Able UK Ltd for port-related development in North Lincolnshire (application reference PA/2009/0600) as follows.
- 1 2. To provide professional guidance and advice on the planning application relating to EIA and HRA, and the Environment Agency's HRA of the proposed flood defence works. Clarify the issues raised by Natural England Government and Marine team are correct and identify any additional issues that need to be raised with the LPA/ Developer relating to Landscape, Biodiversity, Heritage and Access.
- 3. Work to be undertaken
- 1 a) Assess application information details and EIA relating to Natural England's remit of Biodiversity, Landscape, Historic and Access. This needs to include all additional information submitted by the applicant over the two year period to date.
- 1 b) Assess all Natural England responses over the last two year period to the above and advise on any additional issues missing or requiring further supporting evidence or justification to strengthen Natural England's position relating to the proposal. Provide additional written wording to further strengthen Natural England's position relating to this development.
- 2 c) Provide further guidance and advice relating to the two Habitat Regulation Assessments of the Planning Application and Environment Agency's flood defence works. Ensure all issues have been addressed and mitigation is acceptable, relevant and achievable.
- 3 4. This advice note provides this information under the broad topic headings of the remit: Landscape and Visual impacts, including effects on Countryside Recreational Access; The Habitats Regulations Assessments; Wider Biodiversity and Heritage Issues.

## **Documents reviewed**

- 1 5. A list of the documents reviewed is provided at the end of this advice note as Annex A.

## **Summary of landscape and access issues**

- 1 6. In summary, we have concluded that the landscape and visual impacts and impacts on countryside recreation and access have been considered by Natural England in a competent, clear and professional manner, with positive and constructive engagement at all stages. Any misunderstandings have been promptly and fairly remedied. Concerns have been expressed and re-expressed consistently. We would not interpret Institute guidance as indicating that the LVIA "table of significance" was "wrong", for reasons we explain, but the applicant's rebuttal of the point is ill-founded, on the evidence they submit themselves, and more importantly, the point made by Natural England that they underestimate impacts is a fair one, with which we concur.
- 1 7. Some further weaknesses in the LVIA material submitted by the applicant were not explicitly identified in the Natural England responses, and we set them out below, but overall the response is proportional to the scale and importance of the issues. More detailed examination of impacts on the visual amenity of the community and locality,

- and local changes to recreational access, would more appropriately be dealt with by the Council. We would not expect Natural England normally to have got involved in any more detail than has been the case here.

### **Summary in respect of the Habitats Regulations Assessments**

- 1 8. Even if the FRMS / CHaMP have anticipated a strategic need for compensatory measures and the EA is committed to providing them, it does not absolve projects from being subject to the Habitats Regulations decision making process at project application stage. .
- 9. Commencing with the first steps of the Habitats Regulations Assessment (HRA) of the EA flood defence project, we would expect the HRA to conclude likely significant effect, alone or in combination, because of cumulative effects of coastal squeeze as a result of the retention of the sea wall as proposed.
- 1 10. The EA could not, in our view, ascertain that there would not be an adverse effect on integrity (in combination). The EA may then apply the tests of regulation 62.
- 1 11. It may be argued that there are no alternative solutions that would better protect the European and Ramsar sites, so the EA would progress to consider imperative reasons of overriding public interest (IROPI). At present there are none because the sea wall would protect undeveloped land. There could only conceivably be IROPI if there is, or certainly will be, development landward of the sea wall that would rely on its protection. There is no such development and unless planning permission is granted there never will be. So will planning permission be granted? If the answer is „no“, compensatory measures are irrelevant, no matter who might provide them, and when.
- 1 12. In our view **it is inconsistent with the Directive and Regulations to argue either:**
  - 1 a) **that because compensatory measures are expected to be delivered, a project that could not otherwise pass the test of regulation 62 should be granted; and**
  - 2 b) **that the effects that would be compensated need not be taken into account in the assessment of the project under regulation 61.**

Regulation 61 must address all the relevant effects without taking account of compensatory measures and regulation 62 must be addressed in its entirety before considering compensatory measures under regulation 66.

- 13. So we must now turn to the HRA of the planning application. It is our opinion that the NLC should conclude a likely significant effect alone, on the SPA and Ramsar site, as a result of bird disturbance and loss of supporting habitat. The proposed mitigation measures, in our view, fall well short of what would be required to conclude no adverse effect on site integrity. The NLC must therefore apply the tests of regulation 62 to the planning application. There are plainly a range of alternative solutions which would have a lesser effect on the European and Ramsar sites. These include undertaking a different form of development (e.g. multi-storey decking of car storage areas), and / or reducing the

scale and extent of the development, and / or sustaining and providing more supporting habitat than is currently proposed. In light of this, the planning application cannot be granted as it is currently proposed. IROPI do not apply. Compensatory measures are irrelevant. If the planning application is refused permission because it fails the alternative solutions test of regulation 62, the EA cannot give consent to the maintenance of the sea wall.

- 1 Whether or not compensatory measures could be provided is irrelevant to both projects.
- 1 14. Given the current situation, and how this point has been reached, we find it extraordinary that the applicants have so firmly resisted improving the mitigation measures to the point where Natural England would withdraw its objection. It seems to us that that could be achieved without a profound impact on the concept of the development at this stage.

### **Summary of wider biodiversity and heritage Issues**

- 5 15. The case does not raise significant heritage issues for Natural England. Protected species have been dealt with consistently in correspondence and meetings and Natural England's expectations for dealing with bats, badgers and water voles have been made clear to the applicant, even though these expectations have not yet been fully met. The important issue of potential conflict in the habitat creation and management requirements of the differing SPA, protected and BAP species in the mitigation areas has not been convincingly answered by the applicants.
- 1 16. Wintering farmland birds and breeding birds and BAP species and habitats have all been raised in ways that seem appropriate and proportional. There do not appear to be any wider biodiversity impacts that have not been raised, although not all have been adequately dealt with by the applicant so far.
- 1 17. The Key Principles expounded in paragraph 1 of PPS 9 could have been used more pro-actively by Natural England to demonstrate the need to avoid harm to biodiversity conservation interests by considering alternatives, improving mitigation to avoid and minimise harm and seeking compensatory measures for biodiversity losses. This is quite apart from the statutory requirement to consider alternative solutions and compensatory measures that arise from the application of the Habitats Regulations.
- 11 18. This application will not be considered in isolation and does not seem to fit well with a careful, balanced estuary-wide approach. The applicants seem reluctant to modify the proposals in any substantive way. They have taken a robust and at times adversarial stance, rebutting soundly supported advice and rejecting calls for improved mitigation. With this in mind, and given Natural England's promotion of an ecosystem services approach, Natural England could raise a further point relating to sustainable economic, social and environmental benefits on the estuary.

## **LANDSCAPE, VISUAL AND COUNTRYSIDE ACCESS**

**Advice provided by Anthony W Brown, Chartered Member of the Landscape Institute confirmed by David Tyldesley qualified landscape architect and Chartered Town Planner**

### **Pre-application scoping advice**

- 6 19. Concern was expressed with Able UK's suggestion that landscape will not be a key factor. The general scoping advice given by NE & NLC was that impact on landscape character is unlikely to be significant given the scale of existing industrial development, but visual impact could be significant.
- 1 20. Responses from NE & NLC to Able UK's request for scoping opinion in 2006/7 made it clear that the ES should include:

- Separate assessments of landscape and visual impacts using GLVIA
- Measures to enhance the landscape based on local landscape character assessment
- Assessment of light pollution including glow of the evening sky
- Assessment of impact on local recreation including public rights of way
- An assessment of alternatives
- Assessment of the cumulative impact of the proposal with existing development

### **DTA advice:**

The advice is clear, appropriate and covered all relevant issues.

### **Pre-Application Meeting 20 April (2009)**

- 1 21. Minutes of this meeting record that Able distributed a list of projects to be included in the cumulative impact assessment, and asked NE & NLC to advise whether others should be included.

### **DTA advice:**

- 1 22. It is not known what response, if any, was given by NE or NLC. It would have been helpful to have made it clear that the assessment of cumulative effects should include detailed consideration of cumulative landscape and visual effects caused by the scheme in conjunction with existing development, as recommended in GLVIA.

### **NE comments on planning application, (Paul Duncan letter 17 July 2009 and Nancy Stedman email 12/08/09)**

- 4 23. L&VIA considered weak and does not enable an adequately informed judgement to be made about the potential impacts. There is also a lack of measures to conserve and enhance local landscape character. Concerned mainly with:
- Lack of visual guide via wireframe or photomontages to show how built elements will fit the landscape, and their visual impacts (*Able confirmed in letter dated 19 August 2009 that these will be prepared*)
  - Selection of viewpoints adequate but photographs too small and not cross-referenced in text – need to follow SNH/CA 2002 guidelines

- Significance of impacts should be considered view by view and tabulated to record sensitivity, magnitude of change and how judgements have been made to reach overall significance for each viewpoint and particular areas
- ZVI is too limited – need to be a radius of 10km (ES says radius of 1.5km is usual but does not justify this). Figure 11.6 only shows the limited ZVI with no views in or out and thus is not a visual assessment/analysis
- General weakness in addressing changes to landscape character, in particular impacts on the key characteristics of open expansive landscape and extensive views of the Humber Estuary. Significance of impacts need to be determined
- Most importantly the potential impacts of the site when lit at night are not addressed
- Disappointing lack of protection of existing landscape features including hedges, trees and watercourses. Mitigation needs to take account of landscape character – proposed 4m high bund and planting along western boundary does not reflect local patterns and largely flat landscape. New planting should include hedges with occasional trees and small copses to break up the massive forms of industrial buildings, which should not intrude into the NLC amenity buffer in accordance with Local Plan Policy IN6 & LC20. Also creation of wetland features
- ES doesn't consider alternatives (*Able responded in letter dated 19 August 2009 that the proposed development needs considerable space in a location close to existing ports, and that the site is allocated in the Local Plan*)
- Need to identify potential new cycle routes
- Need assurance of the continued enjoyment of the countryside by users of local routes and footpaths – noted that a footpath crossing east/west across the site has an unexplained gap in the middle (assumed to be a mapping error). (*Able confirmed in letter dated 19 August 2009 that the footpath will be continuous with no gap – revised drawing attached with letter. NE confirmed that they have no comments on footpath diversions in Emma's & Nancy's emails dated 11/02/2010*).

#### DTA advice:

- 1 24. We agree with NEs overall comment that the L&VIA is weak and does not enable an adequately informed judgement to be made about the potential impacts. All the above bullet points are justified. The following additional issues could be considered:

#### General

- 1 25. It is arguable whether the ES meets the requirements of the T&CP (EIA) (England & Wales) Regulations 1999, which implement Council Directive 85/337/EEC as amended by Council Directive 97/11/EC, in that:
  - 1 (i) The description of the physical characteristics of the whole development including the production processes, for instance the nature and quantity of the materials used is poor (the project description in Section 4 is not sufficiently detailed e.g. it makes no reference to the 20m tall buildings – this information is only found from the drawings)

- 1 (ii) It does not include an outline of the main alternatives studied by the applicant, which should indicate the main reasons for the choice of site taking into account the environmental effects

### Methodology

- 1 26. Table 11.1 is a matrix of significance of landscape and visual impacts. This is different to the matrix given in Table 2.2 in Section 2 of the ES which describes the environmental assessment process. Levels of significance are generally lower in Table 11.1 than in Table 2.2 (e.g. in Table 2.2 a High sensitivity and High magnitude will give a Major significance, but in Table 11.1 the significance is Moderate/Major) but no explanation is given for this
- 1 27. Table 11.2 gives significance criteria for landscape and visual impacts together. This is too simplistic and doesn't enable, for example, the assessment of significance of impact on individual visual receptors with different sensitivity. There should be separate criteria for landscape and visual impacts which will help justify the judgements made on significance given in Table 11.1
- 1 28. Similarly Table 11.5 provides criteria for assessing the magnitude of landscape and visual impacts together. This table is reproduced from GLVIA page 147 but it is considered that for the proposed development it would be much clearer to have separate criteria for the magnitude of landscape and visual impacts (as suggested in GLVIA page 87, para 7.18 which states "Different sets of criteria will be applied to landscape and visual effects, but in all cases the criteria and thresholds should be clearly defined, simple, readily understood and applicable for all circumstances in which they are applied")
- 5 29. Where split levels of significance are given in Table 11.1 (e.g. for a High sensitivity and High magnitude the significance is given as Moderate/Major) a judgement needs to be made as to which level of significance applies in accordance with the criteria in Table 11.2. A clear justification for the judgement needs to be given
- 1 30. Table 11.4 gives criteria for assessing sensitivity of visual receptors. It differentiates between principal views from residential buildings (Very High sensitivity) and secondary views from residential buildings (High sensitivity). The assessment therefore needs to clearly state whether views from residential buildings are principal or secondary views, but the assessment of visual impacts does not do this.

### Visual Assessment

- 1 31. There is no assessment of views out of the site, despite para 11.13.1 saying there is. No visual receptors are shown on Figure 11.06 despite being in the drawing key. The ZVI shown on the drawing and described in the ES appears to refer to the extent of current views of the existing site and not potential views of the proposed (20m tall, etc.) development. Photograph 1 shows views south-east from Lynton Stud where existing industrial buildings beyond the site are clearly visible, suggesting that development proposals within the site would also be visible, in which case the ZVI should extend much further to the west towards Lynton Stud.
- 1 32. As well as being too small, some photographs are confusing e.g. Photos 15 and 18 are the same.

1 33. Table 11.6 lists significant visual receptors numbered 1-24 but these are not identified on a drawing. The ES refers to receptors and different locations, roads etc. which are not shown on a drawing and therefore cannot be identified. The Impacts

1 Table in Appendix 11.3 lists visual receptors which are numbered differently to Table 11.6.

#### Landscape Assessment

- 34. The site falls within 2 National Landscape Characterisation Areas (NLCA) in accordance with NLCs Landscape Assessment and Guidelines, namely the “Humber Estuary” NLCA and the “Lincolnshire Drift” NLCA. The ES identifies these on Figure 11.5 but the ES text only mentions the former, not the latter.
  - 35. Within the “Humber Estuary” NLCA the site would lie within the “Flat Open Farmland” Local Landscape Type. This is not described in the ES. Instead the “Industrial Landscape” Local Landscape Type immediately to the south-east of the site is described.
1. 36. Within the “Lincolnshire Drift” NLCA the site would lie within the “Undulating Farmland” Local Landscape Type, briefly mentioned within the ES.
- 1 37. Table 11.7 gives an assessment of landscape sensitivity to change of two national joint landscape character areas in which the site falls (area 41 “Humber Estuary” and area 42 “Lincolnshire Coast and Marshes”) but not the NLCAs or the Local Landscape Types mentioned above. A three point scale of High / Medium / Low is given for a range of constituent aspects of sensitivity including landscape character sensitivity, sensitivity of individual elements, sensitivity of aesthetic aspects, value of landscape etc. without explaining what each of these refers to and how the judgement of sensitivity for each has been made.

#### Cumulative Effects

1 38. The introduction to the L&VIA in Section 11 suggests that cumulative impacts are considered as part of the conclusions. The presence of nearby industry is mentioned but there is no detailed consideration of cumulative landscape and visual effects caused by the scheme in conjunction with existing development, as recommended in GLVIA.

#### **NE comments on Supplementary Landscape & Heritage Assessment (Nancy Stedman letter dated 11 February 2010) and Able UK’s Response dated 23 February 2010**

- 1 39. NE considers that there are still some serious issues as to its adequacy in enabling NLC to reach an informed decision on potential impacts. Concerned mainly with the following:
- Additional views used to carry out the visual assessment are welcomed (following previous discussion to agree which viewpoints to use for the wireframe / photomontages) but in a number of instances NE consider that the significance of potential impacts are underestimated or errors made in reaching conclusions on significance. This is because NE considers that Able UK’s significance matrix is wrong because a major significance level is only achievable with a receptor of very high sensitivity (in Nancy’s letter to NLC dated 26 April 2010 she attaches what she considers to be the “correct” matrix table – see below). In the assessment of some

views NE consider that the level of High sensitivity is correct but that the magnitude of impact should be higher, giving a higher significance (Able described in letter dated 23 February 2010 that their matrix follows GLVIA. They set out a table addressing NEs comments on each of the viewpoints).

- Viewpoints show that mitigation proposals of planting on a bund does not contribute to landscape character nor effectively integrate the buildings. Mitigation should be as discussed previously (Able confirmed in letter dated 23 February 2010 that changes to mitigation proposals are included within the Conservation Management Plan No. 2).
- NE acknowledge that the NLC buffer zone is indicative but that there is no justification for developing within it which is contrary to LP Policy IN6 (Able confirmed in letter dated 23 February 2010 that the ES demonstrates that there is no significant detriment to amenity by encroaching into the buffer zone where impact is low and on a residential scale).
- Impact of night-time lighting close to residential areas is not adequately addressed.
- Proposal to re-align footpath from East Halton east to follow the railway line is not supported, and would be contrary to PL Policy LC20 (Able confirmed in letter dated 23 February 2010 that they understood NE had withdrawn their comments on 12 February 2010 by email).
- The scale of development proposed presents an ideal opportunity to create a showcase in accordance with NLCs South Humber Bank Landscape Initiative, including increasing the recreational use of the area (Able explained in letter dated 23 February 2010 how in their opinion recreational facilities are provided within the proposals).

**NE comments (Nancy Stedman letter dated 26 February 2010 on Able UK's Response of 23 February 2010, NE letter 23rd April 2010) and Able UK's Response dated 6 May 2010**

- 1 40. Nancy confirmed that her approach to assessing significance is also based on GLVIA but NE judgement differs from Able UK's for 2 reasons:
  - 1 (i) Able UK's matrix is inaccurate and she attaches what she considers to be the "correct" matrix table (*Able reply that there is no "correct" matrix given in GLVIA and attach illustrations of matrices produced in other ESs which are all different*)
  - 2 (ii) Judgement and NEs reservations about the adequacy of the treatment of the proposed reduced buffer zone and the efficacy of the mitigation proposals in 15 years time
- It needs to be kept in mind that the views in the photomontages are wide views and thus comprise a substantial proportion of one's view at any one time (*Able noted this without commenting further*)
- NE has commented on the Conservation Management Plan No. 2 and still has reservations on proposed mitigation representing a missed opportunity to assimilate the development (*Able confirmed that NE comments are in their letter dated 23 April 2010 and will be addressed separately*)

- Judgements are made that underestimate the magnitude of change and are not entirely objective – NEs main concern is to work with and enhance local landscape character, as well as protecting amenity of residents and passers-by
- NE acknowledge that buffer zones are indicative but detail of how they are treated needs to be effective and appropriate, reflecting the spirit of policy IN6 and the aim of policy LC20 to create a showcase.

**DTA Advice on the above correspondence February to May 2010:**

- 3 41. Able is correct in that GLVIA does not prescribe a “correct” matrix table. The guidelines make it clear that ...”*Significance is not absolute and can only be defined in relation to each development and its location. It is for each assessment to determine the assessment criteria and the significance thresholds, using informed and well-reasoned judgement supported by thorough justification for their selection, and explanation as to how the conclusions about significance for each effect assessed have been derived*” (GLVI para 7.38). However, DTA consider that the example matrices from other ESs put forward by Able demonstrate that Able UK’s matrix does underestimate the significance thresholds – with the Able matrix a Major significance can only be achieved with a High magnitude of impact on a receptor with Very High sensitivity; in the other examples a Major significance is achieved with either a High magnitude of impact on a receptor of Medium sensitivity or a Medium magnitude of impact on a receptor of High sensitivity
- 4 42. NE mostly agrees that receptors have been correctly identified as being of High sensitivity. However, according to Able UK’s criteria for assessing sensitivity of visual receptors in Table 11.4, sensitivity could be Very High if the view is the principal view from a residential building; cycle routes or rights of way whose attention is focused on the landscape; or important landscape features with physical, cultural or historic attributes.
- 11 43. Able UK’s matrix includes split thresholds of significance e.g. Major/Moderate but there is no criteria for these i.e. criteria is given for Major significance and Moderate significance. A judgement therefore needs to be made as to which level of significance applies, and this needs to be fully explained
- 1 44. The mitigation proposals illustrated in the photomontages are considered reasonably accurate, but the negative impacts are underestimated
- 1 45. DTA agrees, subject to a site visit and examination of the NLC Landscape Character Assessment, that the mitigation proposals are unlikely to contribute to local landscape character nor effectively integrate the buildings. The two national joint landscape character areas are quoted but not the local NLCA or local landscape types which are more appropriate at this scale. NEs suggestions on mitigation appear sensible and appropriate
- 1 46. Impact of night-time lighting on local amenity has not been adequately assessed.
- 47. The proposed landscape mitigation is likely to be achievable, but is not entirely appropriate for reasons already set out by Natural England. No additional wording is necessary other than the points made in paragraphs 19 – 32 above.

## THE HABITATS REGULATIONS ASSESSMENTS

*Advice provided by Dr Caroline Chapman Senior Habitats Regulations Specialist and confirmed by David Tyldesley Principal Habitats Regulations Specialist*

### A Summary View of How the Habitats Regulations Assessments are Likely to be Determined

- 6 48. Commencing with the first steps of the HRA of the EA flood defence project, we would expect the HRA to conclude likely significant effect, alone or in combination, because of cumulative effects of coastal squeeze, even assuming that the habitat loss arising from the extended footprint of the sea wall as proposed is regarded as *de minimis*.
- 49. Coastal squeeze must be taken into account because, no matter how compensation for coastal squeeze has been calculated in the FRMS HRA, and whether or not it is included in the EA compensatory figures, there is no other proposed plan or project that would lead to the improvement and retention of the existing sea wall. If it were not for this proposal seeking consent, the existing sea wall would eventually fail because the EA is not proposing to maintain it in the FRMS. Its retention relies on someone else proposing its retention and improvement, for example, by a proposal of the kind being assessed here. The effects of the flood defence works will result in coastal squeeze that would not otherwise occur and that is an effect that must be considered in the HRA of the proposed flood defence works. For reasons explained below, it is wrong at this stage to discount coastal squeeze even if it is convincingly demonstrated that its effects have been allowed for in some compensatory calculation by the EA.
- 1 50. There is a disagreement about the amount of habitat that would be lost from the designated sites. There is a lack of clarity within the EA's AA over the spatial extent of the "impact" associated with the proposed works. The footprint is stated to be 0.9ha (or about 9,000m<sup>2</sup>) but the area of existing mudflat / salt marsh affected is only 810m<sup>2</sup>. There is an underlying question here over how the "impacts" of the proposed works should be assessed. Again it depends on whether you are assessing a world in which it is assumed the sea wall will be retained, or a world in which no one would maintain it. In a world where the sea wall would not otherwise have been maintained, there is the additional effect of the perpetuation of the sea wall footprint already in the European site, which would otherwise eventually return to intertidal habitats as the sea wall fails, breaches, and is removed by erosion or engineering works, and the landward area of the marshes floods. However, the disagreement over scale of change and what should be included ought to be capable of resolution. The effects on the estuary are potentially slight and may be regarded as *de minimis* even though habitat loss from a classified SPA is always potentially significant because of the duty of the Government to classify all of the most suitable territory as SPA. In any event we do not think it ultimately changes the outcomes of the HRAs.
- 1 51. We consider that disturbance resulting from construction works of the sea wall should be capable of mitigation so as to result in no significant effect, by imposition of a condition restricting the season in which works can take place.
- 1 52. One of the plans or projects which would need to be considered "in combination" is, of course, the planning application, to consider whether its effects would interact with the effects of flood defences.

- 1 53. The EA could not, in our view, ascertain that there would not be an adverse effect on integrity (in combination), again because of the effects of coastal squeeze.
- 1 54. The EA may then apply the tests of regulation 62. It may be argued that there are no alternative solutions that would better protect the European and Ramsar sites, because the sea defences cannot be built in a way that would have less effect on the sites. In that case, the EA would progress to consider imperative reasons of overriding public interest (IROPI). At present there are none because the sea wall would protect undeveloped land. There could only conceivably be IROPI if there is, or certainly will be, development landward of the sea wall that would rely on its protection. There is no such development and unless planning permission is granted there never will be.
  - 55. So, will planning permission be granted? If the answer is “no”, compensatory measures are irrelevant, no matter who might provide them, and when.
- 1 56. In our view **it is inconsistent with the Directive and Regulations to argue either:**
  - 1 c) **that because compensatory measures are expected to be delivered, a project that could not otherwise pass the test of regulation 62 should be granted; and**
  - 2 d) **that the effects that would be compensated need not be taken into account in the assessment of the project under regulation 61.**
- 1 57. Regulation 61 must address all the relevant effects without taking account of compensatory measures and regulation 62 must be addressed in its entirety before considering compensatory measures under regulation 66.
- 1 58. So we must now turn to the HRA of the planning application. It is our opinion that the NLC should conclude a likely significant effect alone, on the SPA and Ramsar site, as a result of bird disturbance and loss of supporting habitat. The proposed mitigation measures, in our view, fall well short of what would be required to conclude no adverse effect on site integrity. The NLC must therefore apply the tests of regulation 62 to the planning application.
- 1 59. There is a range of alternative solutions which would have a lesser effect on the European and Ramsar sites. These include undertaking a different form of development (e.g. multi-storey decking of car storage areas), and / or reducing the scale and extent of the development, and / or sustaining and providing more supporting habitat than is currently proposed. In light of this, the planning application cannot be granted as it is currently proposed. IROPI do not apply. Compensatory measures are irrelevant. If the planning application is refused permission due to it failing the alternative solutions test of regulation 62, the EA cannot give consent to the maintenance of the sea wall, because there are no IROPI. Whether or not compensatory measures could or would be provided is irrelevant.

### **Assessment of Coastal Squeeze Impacts**

- 1 60. The issue arises from references in the HRAs to a “legal agreement” with the Environment Agency, for example, referred to in 14.1 of the NLC HRA. We cannot find any “concrete” evidence as to a legal agreement or commitment or undertaking between EA and NE or EA and the applicants.

1 61. With regard to what the proposed managed realignment schemes assessed in the EA FRMS HRA Volume 2 Stage 4 are intended to provide for, section 2.2(c), states:

*“The managed realignment schemes meet the primary purpose of replacement of intertidal habitat to maintain the estuary’s integrity and conservation value as compensation for the adverse effects of the Strategy”.* (emphasis added)

1 62. The origin of Able UK’s assertion and the adoption of that assertion by NLC in its AA may arise from bullet point 3 of section 2.4 of the FRMS HRA. It is entitled “Securing Compensatory Measures” and states

*“The Strategy and the 50 year „balance sheet” (Appendix A2) set out the Environment Agency’s proposed compensatory measures over the next 50 years. These measures are based on the following commitments:*

- *to replace any direct loss of intertidal habitat from the works, based on a 3:1 ratio;*
- *to replace any intertidal habitat temporarily disturbed from the works, based on a 1:1 ratio;*
- *to replace any intertidal habitat lost to coastal squeeze, based on a 1:1 ratio;*
- *the compensatory habitat will be created in the same part of the Estuary (inner, middle or outer) in which it had been lost;*
- *monitoring habitat losses and gains over the life of the Strategy and revision of the habitat gains and losses calculations (by updating the “balance sheet”) with the latest monitoring information at least every five years through the Environment Agency’s managed realignment (and habitat creation) programme; and*
- *the compensatory measures and habitat creation schemes and their programme will be adjusted as necessary so that the overall gains and losses in the “balance sheet” will always be positive. In other words, any defence works that damage the European sites will not be carried out until the replacement habitat has been delivered in the appropriate part of the estuary. Likewise, losses to coastal squeeze will be addressed through compensation so that the balance of gains and losses remains positive.*

*The main purpose of the suite of habitat creation schemes is to compensate for the adverse effects resulting from the Strategy but in some cases also provides flood risk management benefits through storage and reduction in water levels during peak/surge tides. These schemes are therefore integral to the Strategy as well as to maintaining the cohesion of the European Sites.* (emphasis added)

- 63. However as 2.4 refers to “compensatory measures” and follows on from 2.3 (consideration of IROPI) and a statement that there are “no alternative solutions” we feel that it may be inappropriate to take the bullet point emphasised above as a standalone comment which can be applied to any coastal squeeze impacts beyond those associated with the works pertinent to the report in question.

2 64. Indeed in the Appendix 20 form, Section H, which outlines the compensatory measures, provides some further clarification over what the compensation is for and states:

*“Using these principles that the Environment Agency has committed to the current estimates for compensatory habitat required:*

- *921.5 ha to compensate the losses caused by the Strategy through direct losses due to works, cross estuary impacts and the predicted coastal squeeze. (This is comprised of 787 ha to compensate for losses caused by coastal squeeze and cross-estuary*

*impacts and (3x 44.8 ha) for losses directly as a result of the works.)” (emphasis added)*

65. In this statement the reference to coastal squeeze impacts is clearly limited to those caused by the strategy.

1 66. The Conclusions and Way Forward at section 4: provide further assurances where bullet point 5 states:

*“Appropriate „compensation□ in the form of habitat creation can be secured to offset the adverse impacts of the Strategy” (emphasis added)*

- 67. According to the Intergovernmental Panel on Climate Change, coastal squeeze occurs when coastal habitats are squeezed between rising sea level and fixed hard defences. As the Environment Agency is generally responsible for the maintenance of such fixed hard defences it would follow that the Agency would assume responsibility for coastal squeeze impacts associated with such works. However, the important underlying factor here is that, in coming to decisions regarding “maintenance” of fixed hard defences which have an influence on European sites, the Environment Agency applies the test of the Habitats Regulations to all such works.

1 68. Subject to the conclusions of an appropriate assessment the Agency only maintains such defences where they can ascertain no adverse effect on integrity of the relevant European sites. Where a conclusion of no adverse effect on integrity cannot be determined the Agency may still maintain defences on the basis of imperative reasons of over-riding public interest, in the absence of alternative solutions. Under such circumstances the Agency is obliged to secure compensatory measures to protect the overall coherence of the Natura 2000 network which, in the case of the Humber Estuary, is delivered through the Humber CHaMP in the context of the Flood Risk Management Strategy (FRMS).

1 69. We understand that it is being argued that the EA FRMS assumes (although it does not appear to explicitly say) that because there is nothing stopping someone coming along and maintaining the sea defences, compensatory measures have been built in to the FRMS and CHaMP in anticipation of the sea wall being maintained beyond its present anticipated life of about 5 – 15 years? Having reviewed the Humber FRMS Vol 2 Stage 4 document, we feel that such an assumption is very difficult to support. Within the Appendix 20 form, Box H (alternative solutions) states that *“where holding the line or managed realignment options are not justifiable in economic terms, a strategic withdrawal of maintenance is proposed”*. Box G considers IROPI and goes on to state that:

*“The Strategy as described represents „imperative reasons of over-riding public interest (IROPI) because there is:*

- *“a need to address a serious risk to human health and public safety”;*
- *It will protect nearly 400,000 people; and*
- *It will protect industry, port facilities and the infrastructure on which both local economies and a substantial part of the national economy is based”*

The land beyond the sea wall is currently undeveloped; in the absence of any economic justification to “hold the line” and without any of the reasons put forward for IROPI applying, it seems extraordinary to argue that the EA “assumed” that works not considered to be part of “the strategy” may be carried out anyway and that proposed compensatory measures provided for such works? Section 4 of the document outlines the “way forward”

for the approval of schemes supported by the Strategy and appears to provide further reassurances with regard to any such proposed assumptions; it states that:

*“ However, if the Competent Authority determines that the scheme has adverse effects on the integrity of the European Sites in addition to those approved under the Strategy or cannot be demonstrated to be mitigated/compensated in line with the Strategy, then the Habitats Regulations consent supplied for the Strategy will no longer apply. In this situation, a separate approval under the Habitat Regulations will be required and may require separate determination by the SoS.”*

As the proposed maintenance works were not approved under the Strategy, which explicitly specifies the withdrawal of maintenance along this stretch, the document itself states that a separate approval under the Habitat Regulations will be required.

- 1 70. But even if such an assumption can be argued, it is our opinion that the 700ha of land within the CHaMP is that which should be required to offset impacts associated with flood defence works which are required for imperative reasons of overriding public interest, in the absence of alternative solutions, because otherwise they would not be compensatory.
- 1 71. However, we rather doubt that this issue is actually determinative of either of the HRAs and project consents.
- 1 72. **Even if the FRMS / CHaMP have anticipated a strategic need for compensatory measures and the EA has committed to providing them, it does not absolve projects from being subject to the Habitats Regulations decision making process at project application stage.**
- 73. We are also concerned that in any event there may be difficulties in the EA actually delivering what it needs to, in terms of compensatory measures, in the inner, middle and outer sections of the estuary, but we will not dwell on this, simply because it becomes an academic point in this case (though certainly not in many other cases).
- 13 74. There is a critical issue here over how potential compensatory measures are being put forward as the basis for a conclusion of no adverse effect on integrity. The Regulations provide for compensation to be secured in circumstances where a plan or project is given permission notwithstanding a negative assessment of the implications for the site. However, Regulation 62 states that such a permission can *only* be granted where the competent authority are satisfied that “there being no alternative solutions, the plan or project must be carried out for imperative reasons of over-riding public interest”.
- 1 75. The presence of secured compensatory measures cannot in their own right be used as the basis for a decision that there will be no adverse effect on integrity as proposed at section 6.8.2 of the NLC AA. Indeed “compensatory measures” are by definition required to “compensate” for an adverse effect on integrity.
- 1 76. The approach adopted in the NLC AA is flawed. It fundamentally misapplies the sequential tests of the Directive and Regulations, bringing compensatory measures into consideration before ascertaining the effect on site integrity. This is directly in conflict with EC guidance and recognised good practice. In most cases, where compensatory measures have erroneously been considered at this stage, by applicants in the past, it has been the result of them being mistakenly applied as mitigation measures (for example in the cases of the Harwich Haven Deep Water Dredge and the Dibden Bay

port development). However, here it is accepted by the Council that the measures are compensatory measures, under regulation 66, but it is argued that they are secured and therefore the project may go ahead, in effect regardless of it being able to survive the tests of regulation 62.

- 1 77. The proposed conclusion of no adverse effect on integrity as a result of coastal squeeze impacts being compensated for by the Agency, recorded in sections 6.8.2 and 15.2.2.1, is considered to be open to challenge.

#### **Other Comments on the NLC HRA**

- 1 78. In many cases throughout the document the adverse effect on integrity conclusions are worded in terms of “would have an adverse effect on integrity” (7.7.2 and 15.7.1), “is an adverse effect on integrity” (8.8.5, 15.2.3.1, 15.2.4.2) and “could have an adverse effect on integrity” (15.1.3). In many cases such a conclusion is followed with text such as “this determination reflects the current scientific doubt.... rather than any quantified degree of demonstrable harm” (15.2.4.2). We would advise in such circumstances that the conclusion would be more appropriately re-worded to read “*it has not been possible to ascertain no adverse effect on the integrity of the site in respect of xxxxxx*”. Such wording more closely reflects the tests of the Regulations and the fact that a competent authority is not required to demonstrate an adverse effect on integrity, but the absence of an adverse effect on integrity; this is a very different test which incorporates the precautionary principle and reasonable scientific doubt.
- 79. In addition to points raised by Natural England, we have a number of other concerns about the NLC AA which are also important and some could lead to a potential challenge.
- 1 80. In the summary of the Likely Significant Effect analysis, it is frequently unclear as to whether the effects are being considered alone or in combination, and which interest features of which European or Ramsar sites are being considered. The exclusion from consideration, in the LSE test, of mitigation measures actually proposed by the applicant (in respect of surface water drainage into intertidal habitats causing pollution) is inconsistent with court judgments. We are uncertain why there are LSE on Avocet, when the species is not found on or near the development area (summary table on SPA interest features).
- 1 81. In respect of the AA itself, there appears to be an uneven application of the alone or in combination test (e.g. for the flood bank toe beam it is decided no LSE alone, but there appears to be no in combination analysis). The conservation objectives used on pages 21 to 22 appear to differ from those cited in the Annex. The approach in 10.1.1.1 appears to contradict the objectives set out in 10.1.1.3. There is a heavy reliance on birds using other sites around the Humber, including those specifically provided as compensatory measures for other plans or projects, without any analysis of carrying capacity (e.g. 10.4.3.4 and 10.5.3.5). We cannot trace any assessment of effects on Black tailed godwits or Mallard, Teal and Wigeon. The logic in paragraph 11.5.3 seems to be flawed.
- 1 82. Section 15.6 should not be regarded as a comprehensive, or indeed appropriate, consideration of alternative solutions under regulation 62. There is a lack of clarity as to what it is that is being defined as the project to which solutions would be an alternative. Some obvious alternative solutions which would lead to a lesser effect on the European

sites are not considered (including an increase in mitigation areas as consistently urged by Natural England).

- 1 83. However, we find the very brief summary of the outcome of the AA in 15.7, a reasonable summary of the conclusions that the competent authority would be likely to come to.

#### **Other comments on the EA's HRA of the flood defences**

- 1 84. Perhaps the key consideration in this HRA record is how this assessment is informed by and integrated with the "Shadow AA" of the Flood Risk Management Strategy (FRMS) already undertaken by the EA. There appears to be substantive inconsistency between the EA view and that expressed by Able UK over how these two documents sit together. The ES submitted by Able UK states in section 10.5.13 that:

*"The work that needs to be completed on the flood defence has however already been addressed by the Environment Agency (EA) within Defra's Appropriate Assessment (AA) for all of the flood defence works within the Humber Estuary, this includes the proposed works along East Halton Marshes frontage, that are now being adopted by Able UK"*

- 1 85. However the EA AA states that accepting the defences will fail along this stretch (and subsequent flooding of the land beyond) was "the default and assumed outcome for this area under the shadow AA undertaken by the EA". If this is true then it is difficult to see how the shadow AA could have already addressed the implications of the proposed works as asserted by Able UK.
- 1 86. As the EA undertook the shadow AA referred to, it is assumed that their understanding of the assumed outcome for this area is correct. Their position is supported by the published Humber Flood Risk Management Strategy (March 2008) which states for Flood Area 23 (Halton and Killingholme Marshes) that "we will improve the defences that protect existing development but plan to stop maintaining those that protect currently undeveloped areas". As Halton Marshes is currently "undeveloped" we do not see where the EA FRMS HRA assesses the effects of maintaining the defences, even if it assumed someone would come along and maintain them along the stretch in question.
- 1 87. We need to be mindful of precedent setting with this situation. It would seem extraordinary to us if the EA has undertaken to compensate, at public expense, for all coastal squeeze in the Humber, irrespective of its cause, and including in particular additional coastal squeeze brought about by additional or life-extended flood defences to protect new private developments, on land that the Agency would not have contemplated protecting.

#### **In-combination assessment**

- 1 88. As part of the assessment of in-combination impacts the AA refers to other development resulting in habitat loss and states that "A request was made by the Environment Agency for such information on 11 January 2010 but no additional information was provided". Reg 61(2) states that the applicant "shall provide such information as the competent authority may reasonably require" for the purposes of the AA. If the applicant failed to provide such information then the Agency needs to consider first whether it was reasonable to request it and to what extent it was

required for the purposes of the assessment. If the Agency is confident that the information is reasonably required for the purposes of the assessment then it is difficult to see how the Agency can go on to conclude the AA without it having been provided, unless the precautionary principle is relied upon and the flood defence works are not permitted. If however the Agency feels upon reflection that the information is not actually required for the purposes of the assessment then the AA should state this within the text. The wording leaves the question unanswered.

- 14 89. With regard to the overall conclusion the difficulties with the provision of information for the purposes of the in-combination assessment become more apparent. The overall conclusion for the assessment is "in combination, the residual habitat loss impact cannot be shown to have no adverse affect on the integrity of the European site". However prior to this conclusion it is clear that this in-combination judgement is in relation to habitat loss rather than coastal squeeze and this habitat loss is associated with "other development". As no information was provided by the applicant as to the spatial scale of the habitat losses associated with the other development listed within Appendix 15 of the ES it is difficult to fully justify the basis for this in-combination decision (in particular in the absence of an "alone" decision).
- 1 90. It would be helpful therefore if the decision was first taken "alone" and it was clearly recorded whether it was possible to conclude no adverse effect on integrity "alone" as a result of this development. A separate conclusion should then be recorded for the in-combination impacts of the project which includes some information of the spatial extent of the habitat losses elsewhere.
- 19 91. If it is not possible to conclude no adverse effect on integrity "alone" there is much ongoing discussion over whether the Regulations actually require an in-combination assessment to be undertaken. However we are aware that it is Agency policy for appropriate assessments to be undertaken *both* alone *and/or* in-combination. Therefore, as this assessment is being undertaken in accordance with existing EA guidance it would also be appropriate (even if perhaps unnecessary) for a conclusion to be recorded "in-combination", irrespective of the "alone" decision.
- 1 92. Considering the in-combination assessment in some more detail, it is noted that only plans or projects with habitat loss impacts were included in this assessment. Existing Agency guidance states that "In combination refers to the sum of influences acting on a feature from all plans and projects in the context of prevailing environmental conditions". Such influences could be associated with a variety of different impact mechanisms. The guidance goes on to state that "Consideration of impact mechanisms should therefore concentrate on those acting upon attributes of the same feature, as this is where in combination effects will occur". It is therefore our opinion that by limiting the in-combination assessment to plans with associated habitat loss impacts only it may not have identified all the potential influences acting on the features in question. There is potential for other impact mechanisms to act in-combination with habitat loss to represent a threat to the integrity of the site which may have been overlooked.
- 1 93. Natural England may need to help in the provision of information about other plans or projects the effects of which may interact with the effects of the planning application and flood defences.

## **Resolving the Habitats Regulations issues**

- 94. Given the current situation, and how this point has been reached, we find it extraordinary that the applicants have so firmly resisted improving the mitigation measures to the point where Natural England may consider withdrawing its objection.
- 16.95. In our extensive experience of HRA cases across England and elsewhere, when the implications of the Habitats Regulations become apparent and Natural England sustains a reasoned objection to a project proposal, we find that project promoters are keen to engage and discuss, generate and offer alternative mitigation packages that would remove the objection.
- 18.96. It seems to us that that could be achieved without a profound impact on the concept of the development at this stage.
- 15.97. In summary, we consider that the existing “package” of mitigation measures is substantially short of the mark to enable a competent authority to ascertain no adverse effect on the integrity of the European and Ramsar sites. There is currently in the order of 59 hectares of mitigation land in three blocks. Area C is of little effect as a mitigation measure and should be effectively discounted. Areas A and B are separated and thus have less effect than if they were in a single area, in a single ecologically functioning unit. They do not exhibit the qualities that would make them fully effective as mitigation. Thus, the land that is being offered as mitigation is not being used as efficiently as it should be. There is the further consideration that arguably the mitigation land cannot entirely be regarded as mitigation because it already has some significant relevant ecological value.
- 1 98. We understand that the applicants have tentatively discussed another 20 hectares of mitigation land if monitoring over time showed it to be necessary. This has two drawbacks. Firstly, it seems to us that an additional 20 hectares to the three blocks of 59ha would not be effective enough to enable the competent authority to ascertain no adverse effect, even if it was guaranteed “up front”. Secondly, the caveat that it would be provided only if monitoring showed it to be necessary does not sit comfortably with the precautionary principle embedded in the Regulations.
- 1 99. Rather, in order for the competent authority to be able to conclude no adverse effect on integrity, with no scientific doubt remaining as to the absence of such effects, the additional mitigation should be guaranteed from the outset. If the applicants are so convinced that monitoring will show the additional mitigation would not be needed, it will be open to them to put the measures in place and carry out monitoring to show that this is the case, whereupon a decision can be taken as to what is required to be retained.
- 1 100. It seems to us that a single block of suitable habitat, managed appropriately, in perpetuity, and in the order of 80 to 100ha in area, close to the estuary bank, and all provided from the outset, would be more appropriate mitigation for the effects of the planning application. In light of the difficulties the application will have in surviving the tests of the Habitats Regulations, we wonder if it may be in the applicants’ best interests to guarantee such a mitigation package and ask the NLC to review its HRA.

## **WIDER BIODIVERSITY AND HERITAGE ISSUES**

***Advice provided by David Tyldesley Member of the Institute of Ecology and Environmental Management and Chartered Town Planner***

- 1 101. Natural England has always made it clear to the Council and applicant that its principal concerns have related to the impacts on the interests of the internationally designated sites. Natural England, nationally, has sought to encourage local planning authorities to consider protected species issues and wider biodiversity and heritage issues in planning case work. It has encouraged LPAs to use standing advice, Government policy and guidance as a framework for planning decision making, rather than a detailed engagement with these issues by local and regional teams. Consequently, it is to be expected that protected species and wider biodiversity issues would not be covered in the same level of detail as impacts on the European and Ramsar sites and SSSI, even in a major case involving EIA development.
  
8. 102. Nevertheless, concerns about protected species and wider biodiversity issues have been raised by Natural England through pre-application consultation meetings and correspondence (e.g. meeting of 9th March 2009 and e mail of 26th June 2009), to the most recent inputs relating to the Conservation Management Plan. The initial response to the application of 17th July 2009, appears well written, clear and comprehensive of the key issues. It is explicit and accurately uses PPS9 and related Circular and some of the development plan policies.
  
- 1 103. The case does not raise significant heritage issues for Natural England and archaeological issues will be dealt with appropriately by the local authority in this case.
  
- 104. Protected species have been dealt with consistently in correspondence and meetings and Natural England's expectations for dealing with bats, badgers and water voles (and initially the possible effects on great crested newts) have been made clear to the applicant, even though these expectations have not yet been fully met. The important issue of potential conflict, or at the very least tensions, in the habitat creation and management requirements of the differing SPA, protected and BAP species in the mitigation areas A, B and C has been well made by Natural England. The applicant's response asserting these will be compatible and met through the Conservation Management Plan is unconvincing.
  
- 1 105. Wintering farmland birds and breeding birds and BAP species and habitats have all been raised in ways that seem appropriate and proportional. I cannot identify any wider biodiversity impacts that have not been raised, albeit not all have been adequately dealt with by the applicant so far.
  
- 1 106. The Key Principles expounded in paragraph 1 of PPS 9 include avoiding harm to biodiversity conservation interests and, where that is not the case as here, being satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. This is quite apart from the tests in the Habitats Regulations and the policy framework I refer to here relates to biodiversity conservation generally. It seems to me that the development would not meet this principle. Whilst some of the proposed land uses and development logically need to be reasonably close to a port, it does not necessarily require an estuary-bank-side location.
  
- 1 107. There appears to have been no serious attempt to investigate alternative landward locations that may have less impact on biodiversity. On the evidence of the material I have read there appears to have been no serious examination of the very

obvious alternative of substantial reduction in car storage area, by using multi-storey decks.

- 108. PPS 9 goes on to say that even if a development goes ahead that would result in significant harm to biodiversity, which cannot be prevented or adequately mitigated, appropriate compensatory measures should be sought. Again this is quite apart from the statutory requirement for compensatory measures that may arise from the application of the Habitats Regulations.
- 1 109. If it is accepted, as I do, that the proposed measures will not satisfactorily mitigate the effects on important habitats and species, more could have been made, by Natural England, about progressing through the sequence of measures set out in the Key principles of PPS 9. Natural England could argue for compensatory habitat, off-site. Natural England could have placed greater emphasis on the statement in PPS 9 paragraph 1(vi) that says *"If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused."*
  - 1) 110. The promotion of biodiversity enhancement is a recurring theme throughout PPS 9. This has not figured prominently in Natural England responses. However, given the significance of the scale and nature of the impacts, on an area of high biodiversity value, and despite some mitigation measures being proposed, I accept that enhancement seems to be a futile objective without substantive change to the proposals and Natural England is right to concentrate on achieving better avoidance, mitigation and compensation measures.
- 10 111. This application will not be considered in isolation. I am mindful of the „bigger picture“, which Natural England has helped to promote. For example, through the Humber INCA, and the valuable work undertaken in a cooperative and integrated analysis of the opportunities for economic development on the Humber banks in light of the international designations. Natural England has commented on the need to see the proposals in the light of other developments. This application does not seem to fit well with that careful, balanced estuary-wide approach. The applicants seem reluctant to modify the proposals in any substantive way, to meet clearly and consistently expressed objections from Natural England. They have taken a robust and at times adversarial stance, rebutting soundly supported advice and rejecting calls for improved mitigation.
  - 1 112. With this in mind, and given Natural England's promotion of an ecosystem services approach, Natural England could raise this further point. *"Social, economic and environmental benefits flow from the eco-system services provided by the functioning of the natural environment of the Humber. Natural England looks for win-win-win solutions whereby development should lead to economic, social and environmental benefits. Sustaining the estuary-wide eco-system services is vital to the area's sustainable economic development and social well-being, as well as international, national and local nature conservation."*

**ANNEX A  
LIST OF DOCUMENTS REVIEWED**

<b>Author</b>	<b>Date</b>	<b>Document</b>	<b>Topic</b>
Able UK	9 3 09	Minutes	Able's record of a meeting 9 3 09
21 5 09		Application form	Application form
18 2 09		Plan	Location plan
23 9 09		Plan	Site Masterplan Amended Revision L
Plan		Phasing plan	
13 5 09		Plan	Flood defence works
Plan		Footpath diversion routes	
Plan		Footpath diversion cross sections	
Plan		Footpath diversion cross sections	
Proposed landscaping			
May 09	ES		Environmental statement sections 1, 4 – 6, 10 (Ecology), 11 (LVIA) 15 (Cumulative), 16 (Mitigation) 17 (Summary effects)
May 09	ES		Environmental statement Appendices 10 (Ecology Reports), 11 (LVIA) 15 (Cumulative), 16 (Ecological Impact Assessment)
May 09	Statement		Design and Access Statement (as far as relevant)
May 09	ES		ES Non Technical Summary
Aug 09	Management Plan		Conservation Management Plan
1 7 09	Letter		Able response to NE e mail of 25 6 09
19 8 09	Letter		Able response to NE consultation response of 17/7
7 9 09	Letter		Able to NLC re RSPB concerns of 13 8 09
14 9 09	Letter		Able response to RSPB letter of 13 8 09
Nov 09	ES		Supplementary Landscape and Heritage Assessment (exc section 7 on Heritage)
17 2 10	Letter		Able response to NLC's draft AA
23 2 10	Letter		Able response to NE comments on Landscape and Heritage Assessment

of 11 2 10

Mar 10	Management Plan	Conservation Management Plan 2
6 5 10	Letter	Able response to NE 2nd response to Landscape and Heritage Assessment

<b>Author</b>	<b>Date</b>	<b>Document</b>	<b>Details</b>
Natural England			
25 6 09	E mail		Expressing outstanding concerns
17 7 09	Letter		Consultation response to application P Duncan
6 8 09	E mail		Clarification of above letter E Hawthorne
12 8 09	E mail		Request for further information in ES N Stedman
24 8 09	E mail		Concerns about viewpoints N Stedman
11 2 10	E mail		Submitting NE comments on supplementary landscape assessment N Stedman
11 2 10	Letter		NE comments on supplementary Landscape and Heritage Assessment N Stedman
11 2 10	E mail		AT NLC to N Stedman
11 2 10	E mail		Amend consultation response re above
19 2 10	Letter		Consultation response to draft AA E Hawthorne
26 2 10	E mail		And tracked changes NE response to EA AA of flood defence
4 3 10	E mail		NE further response and e correspondence EA

<b>Author</b>	<b>Date</b>	<b>Document</b>	<b>Details</b>
Natural England			
23 4 10	Letter		NE consultation response to Conservation Management Plan 2
26 4 10	E mail		Submitting the above letter
26 4 10	E mail		NE response to Able's response to NE's consultation response to Landscape and Heritage Assessment

NLC	1 2 09	AA	Draft Appropriate Assessment of application
Environment Agency	?	AA	Draft Appropriate Assessment of flood defences

**DTA WILL EXAMINE THE FOLLOWING DOCUMENTS TO INFORM THE REVIEW**

<b>Author</b>	<b>Date</b>	<b>Document</b>	<b>Topic</b>
NLC officers	Various	Letters and e mails	Internally in NLC and between NLC (A Taylor ecologist) and Able UK on rights of way and ecological issues
RSPB	30 6 09	Letter	Representations on application
13 8 09	Letter		Further concerns
19 2 10	Letter		Representations on draft AA
5 5 10	Letter		Representations on CMP 2
LWT	30 9 09	Letter	Representations on application
19 2 10	Letter		Representations on draft AA

## **SPA and Ramsar site non-breeding waterbird mitigation requirements for Able UK Planning application PA/2009/0600**

The purpose of this paper is to briefly set out the rationale behind the current position from Natural England (endorsed by the RSPB) on the SPA and Ramsar waterbird mitigation requirements for Able UK's c.380ha development proposal at East Halton. The following mitigation requirements are based on the best available data of bird usage, and conclusions drawn from scientific evidence, grey literature and a considerable amount of experience elsewhere.

### ***Importance of the northern SHG for SPA and Ramsar waterbirds***

Surveys of the whole of the South Humber Gateway (SHG) from East Halton to Grimsby during the winters of 2007 to 2009 highlight that the area between North Killingholme Haven Pits up to East Halton Skitter is of major importance for a number of SPA and Ramsar site waterbirds including golden plover, lapwing, curlew, ruff and black tailed godwit. This area consistently supported the most significant numbers of waterbirds within the SHG area analysed within the Mott MacDonald report (2009). The northern SHG is used by several species of waterbirds for a range of functions including roosting, loafing and foraging. North Killingholme Haven Pits SSSI (part of the Humber Estuary SPA and Ramsar site) provides a crucial roosting function for black-tailed godwit in the middle estuary.

### ***Mitigation requirements***

More than 1% of the Humber Estuary SPA and Ramsar site populations of golden plover, lapwing, curlew, ruff and black-tailed godwit have been recorded using approximately 235ha of the 380ha of the proposal area<sup>1</sup>. We are of the opinion that this existing habitat could be considered largely sub-optimal for the range of species and the ecological functions they require, due to the lack of specific waterbird focused management. This means that mitigation areas could conceivably be smaller, subject to their physical structure, design, location and management. The lower limit for the size of any given mitigation area is a function of the species' requirements for openness, disturbance distances and the densities in which the target species can effectively meet their daily ecological needs.

The area required by the SPA and Ramsar waterbirds can be smaller than the area of habitat lost, provided that the following criteria are met:

- 1 a. The mitigation area is provided in a single block
- 1 b. The mitigation area is in optimum management for the key target species in terms of their number and ecological requirements. Where a range of species are to be supported by a single refuge, it is likely that a larger area would be necessary in order to accommodate appropriate management for the range of the target species' needs. There are a number of documents including the Mott MacDonald report<sup>2</sup> 2009 which indicate the general target waterbird species ecological needs. This report also references a number of scientific papers which report this type of information.
- c. The mitigation area is in appropriate condition at the essential times of year when it will be required by waterbirds. This requires that any other functions (e.g. flood amelioration) will not conflict or compromise the ability to manage the area optimally and it can be demonstrated that the site can be managed in the most appropriate way from a practical perspective.
- d. The geometry of the mitigation area is closer to a square or circle than linear or complex in shape. This is because a single large block with minimum edge effect is more effective than several smaller blocks or an irregularly shaped area. It may however be advantageous to the ecological function of the site to secure a longer estuary frontage. However, there will be a limit to the narrowest width the birds will tolerate; this will obviously be influenced by the potential impacts of adjacent activities and land use.

<sup>1</sup> This calculation is based on the map produced by Natural England in July 2009 illustrating a summary of all the fields where greater than 1% of the Humber Estuary population of the named species was recorded during the 2007/08 HINCA co-ordinated survey period. This map was a summary of the data analysed by IECS presented in the Mott MacDonald Report published in June 2009.

<sup>2</sup> South Humber Bank Zone Functional Capacity Study

e. The mitigation area cannot be totally isolated from the estuary; it must be near the estuary and have several clear lines of access for birds flying to and from the estuary.

Any mitigation areas which fail to meet the criteria set out above will need to be bigger to compensate for sub-optimality. For example, if an area is required to have other functions such as flood relief, public access and other protected species habitat requirements, then these functions may decrease the value of the area and the overall area required for SPA/ Ramsar mitigation will therefore increase.

It is the opinion of Natural England that the current proposal to develop c.380ha of the northern SHG will require 80ha of optimally designed and managed habitat to support the affected waterbirds and avoid an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site. The 80ha mitigation area is based on the principle of a core area of c.40ha of open habitat that will function optimally for the target species and their roosting, foraging and loafing requirements; plus a supporting area (c.150m) surrounding the core which will be subject to edge effects.

Eighty hectares equates to just a fifth of the total habitat loss and a third of the habitat which was recorded as supporting more than 1% of the estuary's populations of a given species of waterbird.

It is our view that 80ha of mitigation habitat is required to enable the LPA to conclude **with certainty** that there will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site from the loss of waterbird foraging, loafing and roosting habitat. This is because:

- the development site is clearly of key importance within the whole SHG for SPA and Ramsar waterbirds in terms of the proportion of the area used, functions, regularity of use and numbers of waterbirds using the 380ha
- the total area of any mitigation land will not function optimally for the SPA/ Ramsar bird requirements/ For example, the proximity of the adjacent development will affect how the mitigation land is utilised. There are also some doubts over the practicalities of management in this area e.g. optimal management of the grassy islands
- the mitigation areas are required to be multi-functional, also providing flood attenuation for the developed site, and mitigation for protected species

Some fields within the northern SHG already support significant numbers of waterbirds on a regular basis such as field 29 which forms part of the East Halton Pits SINC. Such high value fields are worthy of retention and protection or enhancement but are not appropriate to be included in the area calculation of new refuges or mitigation areas. Clearly any extension of these areas to create new or enhanced habitat could be beneficial to some SPA and Ramsar waterbirds provided it did not detract from its existing nature conservation value.

### ***Delivery of mitigation habitat***

Mitigation habitat designed for non-breeding SPA and Ramsar waterbirds will need time to develop, and this is likely to be in the order of years rather than months. Any mitigation must be effective before the loss of habitat in order to retain ecological function and avoid adverse effects on the integrity of the Humber Estuary SPA and Ramsar site. Where there is doubt (i.e. it cannot be ascertained that the plan or project will not have an adverse effect on integrity) it is not acceptable to suggest that a further area may be available for mitigation at some point in the future. The mitigation must be secured in perpetuity and delivered before loss of existing habitat in terms of design, location and area; and secured by a legal agreement to ascertain that there will be no adverse effects. Monitoring of the habitat function for waterbirds must also be secured and the flexibility to adapt management or secure additional habitat if required is necessary and must be implemented within a suitable timeframe. Appropriate detailed monitoring including timescales will need to be agreed with North Lincolnshire Council and Natural England and secured as part of a legally binding agreement. Having additional areas over and above the required mitigation (80ha) would be extremely advantageous to the applicant.

### ***Data***

The SHG has an unusually consistent and comparable dataset for non-breeding waterbird populations which has been collected over the past three years with support from both the local authorities and others, with the help of Humber INCA. This dataset represents a considerable move forward in our understanding of how waterbirds are using the SHG and provides a helpful basis for comparisons across the whole area.

All datasets have limitations and recognising these is a key part of understanding how the data may be used, analysed and interpreted. Any limitations of data such as the absence of survey and recording during an important period or because of the short timeframe for the dataset require a precautionary approach to analysis and interpretation of the data.

The main limitations of the INCA co-ordinated data are:

- The data does not include comprehensive nocturnal surveys. The night time distribution of some of the target species, (particularly foraging golden plover) may be significantly different to that observed during the day
- The data covers one full winter and one part winter. This is a relatively short timeframe in terms of ecological data of this type and therefore inter-annual variation is not well reflected.

We accept that since the data has some limitations, it must therefore must be treated with an appropriate degree of caution when interpreting and using this information to inform mitigation requirements.

## **Appendix 4b Natural England correspondence on the revised proposals.**

Emma Hawthorne e-mail dated 06 January 2011

Subject: RE: Able UK Planning Application

Dear All,

Thank you for sending through the various documents and maps relating to the Able UK application 2009/0600. We are pleased to see that good progress is being made and hope that we can continue working together to achieve a successful outcome prior to the Government Office deadline of Jan 17<sup>th</sup>. Natural England has the following comments to make on the documents received:

Andrew's email of December 17<sup>th</sup> advises that it will be impossible to write an enforceable planning condition which allows one of two mitigation proposals to be delivered (ie an either/ or approach). After speaking to Richard Cram, it is suggested that the 2 x 20ha core with buffer option should be selected and the documents drawn up for this proposal.

We agree that it is sensible to go with one option; however it is our advice that the 32ha core with buffers must be selected. This is because although Able may use their best endeavours to purchase suitable land in a suitable location offsite; if no-one wants to sell the land, it won't be possible to deliver the mitigation. The immediate provision of 2 x 20ha core option had already been ruled out at an earlier meeting because Able confirmed that they did not currently own enough land in a suitable location offsite. To achieve the certainty required by the Habitats Regulations, it is our advice that the 32ha core option is selected and the new drawings prepared to show this option. If, and when, Able purchase suitable land offsite, then they can apply to vary the application. Natural England (and the RSPB) would support this variation as it would contribute to the strategic mitigation package needed for the SHG. Natural England (and the RSPB) are also happy for the creation of the mitigation areas to be phased – for eg, a 20ha core area with buffers will be created during development phases A-B, additional mitigation to create a total core area of 32ha plus buffers will be created before the start of phase C.

Andrew also states that the required offsite mitigation cannot be delivered through planning conditions, and would need to be a S106 agreement or unilateral agreement. We presume that a legal agreement could also be drawn up that gives Able the confidence that they will be able to reduce the onsite mitigation once they have provided a suitable 20ha core with buffers off-site?

Andrew's email also says he understands that Able do not have any plans to develop areas B and C at the moment and therefore these will be subject to future applications where impacts on protected species and the Local Wildlife Site can then be considered.

However, if the new submitted Masterplan only shows one large mitigation area, then the assumption must be that areas B and C will be available to be developed and it is unclear why development of these areas would need a new application?

With regards to these areas, Natural England's advice is that for the purpose of the new mitigation plan, they should remain undeveloped. We take this view because it is our understanding that area C is required for badgers, so this must remain until it is no longer required. Part of Area B is a Local Wildlife Site and supports significant populations of SPA/ Ramsar birds. Whilst discussions may have taken place that areas B and C were not required for the new SPA/Ramsar mitigation proposal, this does not mean that the entire area can now be developed. Part of area B has always been shown in our proposed mitigation area maps, and it would be contrary to local plan policy to develop this area. The LWS site with a buffer to the development site should not therefore be developed.

In-combination assessment

It is Natural England's opinion that the Marine Energy Park is a plan/ project as it is at scoping stage with the IPC. However, it is our opinion that this development should not be considered in combination with other plans and projects as it will have an adverse effect on the Humber Estuary 'alone'. We believe that any other plan or project considered in combination with an 'adverse effect' project, will also lead to an overall conclusion of adverse effect. This will result in large projects precluding all other plans and projects. We believe that the Habitats Regulations require that plans/ projects with an adverse effect can only go ahead if there are no alternatives and the proposal is of imperative reasons of over-riding public interest. Smaller plans/ projects should be assessed in combination to ensure that a 'death by one thousand cuts' situation does not occur.

Draft agreement attached to Pete Barham's email

The additional text is fine. The total mitigation area figure is still missing; this will need to be incorporated once the preferred option (32ha core with buffers) is agreed.

Coastal squeeze – We continue to work closely with the EA to help them complete their Habitats Regulations Assessment of the strategy and have another meeting scheduled with them early next week.

We would also be grateful if you could update us on progress with the Section 106 agreement and how the new mitigation proposals will be delivered – for eg is it possible to apply new/ amended conditions to the existing planning permission?

Best wishes

Emma

Emma Hawthorne  
Conservation Adviser - Humber Estuary  
Marine and Coastal Team  
Natural England  
25 Queen Street  
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LS1 2UN

### Emma Hawthorne e-mail dated 17 May 2011 re Addendum to Environmental Statement

Subject: EIA land off Skitter Road (North Lincs) PA/2009/0600

Thank you for consulting Natural England on the updated information relating to Able UK's proposed development at East Halton Skitter.

As you will be aware, Natural England has objected to this development and following the planning committee meeting in October 2010, we have met frequently with the applicant, the Council and the RSPB to try and resolve the outstanding issues.

We welcome the progress made with this application and the production of the MOU that was signed by all parties in Feb 2011 describing the proposed way forward wrt the mitigation for SPA and Ramsar waterbirds. However, our response to this consultation should not be taken as Natural England's formal response as we have not been provided with a number of key documents including:

Updated Habitats Regulations Assessment

Amended planning conditions

Mitigation management plan

Legal agreement to secure the necessary financial arrangements for the mitigation area/s

These documents and the intention to involve Natural England is set out in Simon Driver's letter dated 28 February 2011 "...the Council's planning officers will revise the planning conditions in accordance with the attached agreement and in collaboration with the above parties. The conditions will set out the requirements for the agreed waterbird mitigation. Additional documents such as mitigation management plans and legal agreements to secure the implementation and necessary financial arrangements will also be required by the Council from the applicant, Able UK".

We have provided some comments on the documents received which we hope are useful:

#### **Addendum to ES**

1.3.1 states that the previous conservation mgt plan has been withdrawn. We ask to be consulted on the new updated version ASAP.

Also states that lighting plans have been withdrawn – again we expect new lighting plans to be assessed in the updated HRA.

Table 4.1 refers to potential development areas – it would be useful to indicate these on a map and explain what this means

2.3.2 – 1.1ha impact on foreshore. We understand that this is the placement of rock on the existing rock areas on the foreshore as described in Richard Cram's email of 6 May 2011.

2.4.10 – states that flood defence works will commence in 2012 and be completed by 2014. In the previous HRA, flood defence works are described as taking place from 2010 – 2011. Obviously this timetable has now slipped, but it is unclear why the works now appear to be taking longer. This needs to be clarified, and if necessary assessed in the HRA.

Table 4.2 – option 2 mitigation land needs to specify that this is *in addition* to the mitigation land specified under option 1

13.9.1. – it is our understanding that noise cannot be described in this way – 55dB (A) - the variable and time period is also required. This is repeated a number of times in this section and needs clarifying.

With regards to the noise drawings received, ALP 02009 and ALP 02008; unfortunately we do not understand these. Where is the source of the noise? The drawings appear to show noise up to 95dB out in the Humber Estuary? Again, the noise period and measurement – eg max, average is required. We assume this is operational noise, are there similar drawings for construction noise? We would expect to see

both these impacts assessed in the HRA.

6.1.2 as stated above, amended lighting may need to be assessed in the HRA.

16.3.18 describes the mitigation areas as "The mitigation areas will be made up of wet meadows and dry grassland". Drawings ALP 02005 and 02005 shows the mitigation areas as wet grassland

We also note that the addendum does not specify what the offsite mitigation habitat consists. This should be conditioned, or a condition should reference the MOU which sets out the specific requirement.

We also note from the new drawings that a balancing pond has appeared in the SPA/ Ramsar waterbird mitigation since our earlier discussions and agreement in February. However, as recognised in these discussions, the buffer is required to ensure that the core area functions optimally and the SPA/ Ramsar waterbirds can be catered for within the entire mitigation area. It is therefore possible that the balancing pond is compatible with these objectives and this should be considered in the HRA. We also assume that the maximum size of the balancing pond will be secured by planning condition and the design and footprint of the pond will be clarified (we note there are 2 designs in the drawings we have been sent).

Ecological advisory group - this group was suggested in earlier documents and we welcome this suggestion and the opportunity to be part of the group.

We also had some concerns regarding protected species and we would be grateful for clarification that these matters have been dealt with accordingly.

Please note that Natural England will send our formal response to this development and consider whether to remove our objection (which we believe is possible) once we have been consulted on the above mentioned documents.

Best wishes

Emma

Emma Hawthorne  
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## **Memorandum of Understanding For Able UK East Halton Application, 24<sup>th</sup> February 2011**

**This agreement between Natural England, RSPB, and Able UK has been drafted to describe the Humber Estuary SPA and Ramsar waterbird mitigation which Able UK will deliver under Planning Application, PA/2009/0600**

### **AIM**

This Memorandum of Understanding (Agreement) sets out the objectives and mechanisms which would allow Able UK to deliver the mitigation required to ensure compliance with the EU Birds Directive and UK Habitat Regulations<sup>1</sup> in a phased manner. If Government Office for Yorkshire and the Humber are agreeable, planning application PA/2009/0600 will be referred back to North Lincolnshire Planning Committee together with the new mitigation proposals and maps, and new and amended planning conditions.

### **INTRODUCTION**

- 5.4 Able UK proposes to develop port related facilities and has submitted a planning application to North Lincolnshire Council reference PA/2009/0600.
- 5.5 As part of the application, Able UK acknowledge that the development would have an adverse impact on the Humber Estuary SAC, SPA, SSSI and Ramsar Site. However, following extensive consultation with conservation organisations, it has been agreed that the potential impacts of the development as a result of direct loss of waterbird habitat from within the footprint of the development could be mitigated if sufficient and appropriately managed habitat is provided to cater adequately for the affected SPA and Ramsar waterbirds. Able UK also acknowledge that if sufficient mitigation can be provided to protect the birds, none of the actions taken would necessarily resolve the wider issues covered in their Environmental Statement which accompanied the planning application. These would need to be addressed through full consideration of the conclusions of the EIA by the production and implementation of a construction and environment management plan
- 5.6 In this document it is agreed that all buffer widths will be subject to review should additional scientifically robust information be available. It is also agreed that the size of the buffer could be re-considered should clear evidence be provided and agreed that demonstrates these could be reduced in size.

### **THE SOUTH HUMBER GATEWAY STRATEGIC MITIGATION**

- 3.1 This agreement acknowledges that a number of organisations have been working together to prepare a Mitigation Strategy to deliver conservation mitigation for birds cited in the Humber Estuary SPA and Ramsar site and likely to be affected by port related development in the South Humber Gateway (SHG). The organisations signed up to this process recognise that strategic delivery of conservation mitigation would avoid a less useful piecemeal approach to development and would ensure the delivery of a fully ecologically functioning approach to protecting the well-being of waterbirds for which the Humber Estuary is designated. To this end those organisations have signed a Memorandum of Understanding (ref 1) and have recently prepared a Delivery Plan (ref 2) for the planning and delivery of an agreed strategy.
- 3.2 While some details of the Mitigation Strategy still require clarification and are being addressed in the Delivery Plan, there is a common understanding from

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<sup>1</sup> The Conservation of Habitats and Species Regulations 2010

all the bodies involved that a successful strategy would comprise four 'stepping stones' of appropriately located mitigation habitat within the SHG and an, as yet unquantified, area outside the SHG. Work on the Mitigation Strategy has also indicated that to provide the right ecological function for the birds, the 'stepping stones' would be optimally managed as wet grassland with a central 'core' of 20 ha, surrounded by a 'buffer'<sup>2</sup> of 150m to provide clear sightlines for the birds. The 'buffer' can be reduced to 50m where stepping stones are adjacent to the public footpath along the flood defences of the estuary, subject to appropriate screening.

#### MITIGATION REQUIREMENTS FOR PA/2009/0600

- 4.1 Following discussions with RSPB, NE and NLC, Able UK agree that mitigation for birds cited in the Humber Estuary SPA and Ramsar site for the Planning Application, PA/2009/0600 shall comprise an area of 32ha of 'core' habitat, surrounded by a buffer of 150m where the edge of the mitigation is adjacent to development and Halton Marsh Clay Pits Local Wildlife Site (LWS) and a buffer of 50m where the mitigation is adjacent to the public footpath along the flood defences of the estuary and appropriately screened from disturbance from public access. The core area and buffer together comprise a 73.96 ha block (ref 3 Drawing ALP-08025 A Option 2 Site Plan), all of which will be optimally managed, retained and maintained as wet grassland, as defined in the final conservation management plan, which will be reasonably agreed between Able UK, NE, RSPB and NLC.
- 4.2 This agreement sets out how Able UK can deliver sufficient mitigation in a phased way linked to the phased commercial development of the site. Able UK also commit to ensuring that, as part of the phased approach, they will deliver sufficient ecologically functioning mitigation prior to the commencement of further stages of development in this planning permission as shown on ref 4 Drawing ALP-02004 B Phasing Plan. The mitigation will be provided in line with the ecological design principles which have been identified as part of the SHG strategic mitigation approach and an agreed conservation management plan.

#### **DELIVERY OF MITIGATION FOR PA/2009/0600**

- 5.1 Planning application PA/2009/0600 will be referred back to North Lincolnshire Planning Committee with an updated committee report, which will mirror this agreement. The new mitigation proposals and maps described in this agreement will accompany the application. Planning conditions will be revised and new ones drafted, where necessary, to ensure that they are sound and appropriately reflect the material changes since the October 14 2010 planning committee resolution (see paragraph 5.3 below). The planning conditions will reflect the two possible options for delivery of the mitigation, and be accompanied by any agreement necessary to secure the legal and financial arrangements for its management. NE, RSPB and Able will be involved in the preparation of these conditions. A revised version of the Appropriate Assessment will also be provided, to reflect the mitigation options described in this agreement, and to reflect resolution of the outstanding flood defence issues.
- 5.2 This agreement acknowledges that the proposed commercial development of the site will take place over a period of two to seven years and that, as a consequence in the early phases significant amounts of land will continue to be available for waterbirds. The phasing of the delivery of mitigation will ensure that there is no net loss of habitat to development before functioning mitigation habitat is delivered (as shown on Map ALP-02004 B Phasing Plan). This agreement also acknowledges that Able UK can mitigate some of the impacts of

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<sup>2</sup> Buffer is used in this context to describe the managed habitat around the core 20ha. The buffer is considered to function sub-optimally i.e. contributing less ecological function than the core due to exposure to edge effect effects such as disturbance from adjacent activity

this development outside the SHG,. This would require Able UK to construct a mitigation area comprising 20 ha of core habitat surrounded by an agreed and appropriate buffer<sup>3</sup> outside of the application site in an area to be reasonably agreed with NE, RSPB and NLC. Completion of this mitigation outside the application site would enable Able UK to reduce the mitigation inside the application site to 20 ha of 'core' habitat plus 150 m of buffer adjacent to development and Halton Marsh Clay Pits Local Wildlife Site (SINC) and 50m buffer adjacent to the the public footpath along the flood defences (and subject to appropriate screening). This would comprise 55.06ha in total (Ref 5 Drawing ALP-08024 A Option 1 Site Plan) all of which to be optimally managed as wet grassland, as defined in the final conservation management plan, which will be reasonably agreed between Able UK, NE, RSPB and NLC. This agreement acknowledges that the land released by the reduction in mitigation requirement inside the application site would be available for commercial development.

5.3 This agreement also acknowledges that Able UK will develop the site through a phased programme of work and that the first phase of work will comprise a number of elements:

11.1.1 Flood defence and drainage works along the Halton Marshes frontage as agreed with the Environment Agency.

7 Phase 1 development as shown in drawing ALP 02004 B, including delivery of mitigation as shown in ref 5 Drawing ALP-08024 A Option 1 Site Plan.

8 Establishing the location and commencing delivery of 20 ha core habitat and buffering, as described in 5.2 above, outside the SHG

5.4 Able UK acknowledge that details of this agreed approach to mitigation require more detailed planning and therefore through this agreement Able UK will work with NE, RSPB and NLC to determine the following:

5 The detail of what is required to optimally manage the mitigation areas and the adoption of a final conservation management plan

6 The location of mitigation outside the SHG

7 A full mitigation monitoring programme

5.5 This agreement also acknowledges that Able UK may seek to apply for further development in the SHG and that subject to ensuring continued compliance with the Habitats Regulations and all other controls, there may be variation to the development proposals.

5.6 As part of the commitment by Able UK to resolve all environmental issues associated with PA/2009/0600, the company recognises that other matters must also be fully addressed in addition to the non-breeding waterbird mitigation. These include:-

7 Obtaining a flood defence consent for works to the sea wall.

8 Any revisions to the mitigation for SPA and Ramsar waterbirds is compatible with the necessary provisions for protected species or other features of nature conservation interest as outlined in the EIA accompanying the application.

9 A revised copy of the Appropriate Assessment by NLC is made available

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<sup>3</sup> As detailed in section 3.2 of this document

to interested parties.

Able UK.....  
Peter Stephenson, Chief Executive



Natural England.....28<sup>th</sup> February 2011  
Peter Nottage, Yorkshire and Humber and East of England Regions, Regional Director

RSPB.....  
Peter Robertson, RSPB Northern Region, Regional Director

Reference Documents:

- 1 Memorandum of Understanding, June 2010
- 2 SHG SPA Mitigation Delivery Plan Version 1, August 2010
- 3 Drawing ALP-08025 A Option 2 Site Plan
- 4 Drawing ALP – 02004 B Phasing Plan
- 5 Drawing ALP-08024 A Option 1 Site Plan

Date: 23 June 2011  
Our ref: HESSI/O/NLincs  
Your ref: None

Bill Hill  
Acting Head of Planning  
North Lincolnshire Council  
**By Email**

Dear Bill,

**Humber Estuary and North Killingholme Haven Pits SSSIs  
Humber Estuary Special Area of Conservation, Special Protection  
Area and Ramsar site**

**RE: Able UK development PA/2009/0600**

As you are aware, Natural England was first consulted on this proposed development in December 2006. Since then, we have invested a significant amount of staff time to work with Able UK and the Local Planning Authority. At all times we have sought a solution which meets the requirements of the Habitats Regulations, whilst allowing Able to fulfil its development aspirations in the South Humber Gateway.

Thank you for providing Natural England with the proposed planning conditions and final appropriate assessment prior to the Committee Meeting, which we understand is due to take place tomorrow on 24 June 2011. Since we only received these final documents in the last couple of days, we have obviously not had the time to read them thoroughly. However, we have previously provided the Council with comments on earlier drafts.

This letter represents Natural England's formal consultation response under Regulation 61 of the Habitats Regulations 2010<sup>1</sup> and Section 28 of the Wildlife and Countryside Act 1981 (as amended).

Whilst Natural England disagrees with a number of points made within the appropriate assessment document produced by North Lincolnshire Council and sent to us on 22 June 2011, we do agree with the conclusions of the assessment. Namely that an adverse effect on the integrity of the internationally important sites (listed above) can be ruled out if certain conditions and restrictions are applied to the permission. We have reviewed the proposed planning conditions and confirm that we have no

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<sup>1</sup> The Conservation of Habitats and Species Regulations 2010

specific comments to make on these as it is for the developer and the Local Planning Authority to agree the precise wording, based on their own legal advice. However, we do agree that the conditions proposed in the document entitled "2009/0600 – draft conditions for June 2011 committee report" are suitable to address our outstanding concerns that relate to:

- The avoidance of an adverse effect on the integrity of the Humber Estuary designated sites
- Impacts on protected species

As regards the Humber Estuary and North Killingholme Haven Pit's status as Sites of Special Scientific Interest (SSSI), Natural England's advice, under Section 28I of the Wildlife and Countryside Act 1981(as amended), is that compliance with the conditions suggested will mean that the proposal should not cause significant damage to the special interest of the SSSIs.

We have seen the RSPB's letter dated 21 June 2011, which sets out a number of concerns with regards to the proposed planning conditions. We understand that the Council may make a number of minor amendments to the conditions in light of these concerns. As the Authority finalise the wording of the planning conditions, Natural England would expect it to act in accordance with its statutory duties under the Habitats Regulations 2010, including Regulation 9(5); and in its capacity as a Section 28G authority under the Wildlife and Countryside Act 1981 (as amended) to take reasonable steps, consistent with the proper exercise of its functions, to further the conservation and enhancement of the SSSI. We would also expect it to act in accordance with relevant guidance, including PPS9 and Circular 06/2005.

We understand that pursuant to best practice set out in Circular 11/95 on the use of conditions that you do not propose to name Natural England as a third party in these conditions. As stated, we leave it to you to decide the precise wording of these conditions, however Natural England is keen to continue to work with you and Able UK on the environmental issues connected with this development and to continue to play a key role going forward. We therefore welcome Bill Hill's commitment set out in his email of 23 June 2011 to fully involve Natural England in the discharge of ecological matters and we will, of course, continue to give our advice on the effectiveness of the plans pertaining to this development in protecting the environment.

The Council has also asked us to provide our opinion on how coastal squeeze should be dealt with in relation to this application. Our advice is as follows:

Sea levels are rising globally as a result of climate change (global warming). This means that intertidal habitats will increasingly come under threat. Where there are no man-made coastal defences, these intertidal habitats will be able to 'roll back' inland in response to sea level rise until

they reach naturally occurring high ground. However, when there is a man-made sea defence in place intertidal habitat will be lost. The loss of intertidal habitat against man-made sea defences is known as “coastal squeeze”.

The decision as to whether man-made sea defences should be maintained is generally made as a policy under a Shoreline Management Plan (SMP) or Flood Risk Management Strategy (FRMS). It is likely that SMPs and FRMSs will be deemed to be plan or projects for the purposes of the Habitats Regulations and therefore it is necessary to determine whether the plan will have a significant effect on a European site. If it is determined that an appropriate assessment is required and, following that assessment, that an adverse effect on the integrity of a European site cannot be ruled out, then a case must be made for no alternatives and imperative reasons of over-riding public interest (IROPI). If these tests are passed, compensatory habitat must be provided in accordance with Regulation 66 of the Habitats Regulations.

It is our understanding that the UK Government has decided that no one individual can be held responsible for coastal squeeze and therefore has accepted responsibility for providing the compensatory habitat required to address the losses to European sites caused by coastal squeeze. This compensation will be delivered on behalf of the Government by the Environment Agency. Even though compensation in respect of coastal squeeze will be delivered by the Government, it is still necessary for individual plans and projects to follow the proper steps under the Habitats Regulations (likely significant effect, adverse effects on integrity, alternatives, IROPI) before compensation can be proposed.

Following this, in circumstances in which:

- an appropriate assessment has been made which investigates coastal squeeze which may be caused in a European site because of the decisions made within an SMP or FRMS, and
- where the conclusions of that appropriate assessment are that it is not possible to ascertain that the proposals under the SMP or FRMS will not adversely affect the integrity of a European site, leading to the consideration of alternative sites, IROPI and compensation,

a developer who proposes a plan or project within that coastal cell which is **in line** with an SMP or FRMS may rely on the appropriate assessment that has been made in respect of it. However, the developer can **only** rely on this appropriate assessment **with regards to coastal squeeze**.

If there is no completed and signed off SMP or FRMS available in respect of a particular stretch of coast which incorporates a European site then there will not be an appropriate assessment in place which a developer can rely upon for their proposed plan or project. Coastal squeeze will therefore have to be taken into account as part of the appropriate assessment for that plan or project.

As coastal squeeze is a potential issue with regards to Able UK's proposed development at East Halton Skitter, it will need to be considered in accordance with the Habitats Regulations. It appears that there may be two possible ways forward which could address this:

- First, North Lincolnshire Council could delay taking the application to Committee until the Environment Agency's Habitats Regulations Assessment ("HRA") has been signed off by Defra. If the assessment is approved, Able could rely on this with regards to coastal squeeze compensation, as their proposals are in line with those already assessed under the strategy.
- Second, if the LPA does not wish to delay Able's development whilst it waits for the Secretary of State to make a decision on the Environment Agency's HRA, another option might be for coastal squeeze to be incorporated into the appropriate assessment for Able's proposed development. If, in light of the conclusions of the assessment, it cannot be ascertained that the development will not adversely affect site integrity, the Council will have to go on to consider alternatives and IROPI. If Able's proposed development passes these further tests it can rely upon the compensation which the Environment Agency has proposed in respect of this stretch of the European site coastline. It should be possible for Able to rely upon parts of the Environment Agency's reasoning when the coastal squeeze impacts of the proposed development are assessed under the Habitats Regulations.

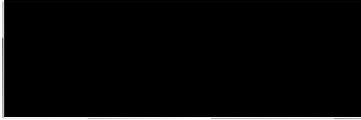
Please note that this advice is given as Natural England's advice on the Habitats Regulations; it is not legal advice to North Lincolnshire Council or Able UK. North Lincolnshire Council and Able UK should rely upon their own legal advice at all times.

If this application is amended with additional information, Natural England should be re-consulted for a further 21 days.

**In light of the comments made above and with the proposed mitigation and the conditions in place, Natural England is able to remove its objection to this application.**

Please do not hesitate to contact me if you wish to discuss the contents of this letter.

Yours sincerely,



Emma Hawthorne  
Marine Northern North Sea Team  
Natural England  
Direct dial: 0300 060 1873  
Email: [Emma.Hawthorne@naturalengland.org.uk](mailto:Emma.Hawthorne@naturalengland.org.uk)

CC. Andrew Taylor North Lincolnshire Council  
Harriet Dennison RSPB

**Appendix 5a. Applicant correspondence on the original proposal**



## Able UK Ltd

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Environment Agency  
Development & Flood Risk  
Guy Gibson Hall  
Manby Park  
Louth  
Lincolnshire LN11 8UR

Your Ref: L/001718/09  
Our Ref: KI/241  
GD.LH.A.L10/0002  
Date: 7<sup>th</sup> January 2010

For the attention of Debbie Morris

Dear Debbie

### **AHPF – FLOOD DEFENCE WALL, ADDITIONAL INFORMATION**

I refer to your email of 24<sup>th</sup> December 2009 to Richard Cram in which you listed the topics where additional environmental information is needed in order to assess our application.

#### **1. Assessment of Construction Disturbance on Designated Features**

The designated features at potential risk of disturbance include the '*intertidal part of the East Halton Skitter, the intertidal part of the Humber Estuary and the Main Channel to the Humber Estuary, [these] are designated as the Humber Estuary cSAC, SPA and Wetland of International Importance (commonly referred to as a Ramsar Site)*', (Environmental Statement (ES) Section 10.4.4.)

There are also areas of relevance that are outside the designated sites. These are the actual or potential bird roosting sites which border the estuary and extend an undefined distance inland. They are used by SPA birds which, on finding their intertidal feeding grounds covered by water at high tide, migrate inland to feed, loaf, or just roost until the tide turns. These areas are not defined in the legislation, but their availability or otherwise may have an indirect impact on the functioning of the SPA. There are no other designated features, or features of indirect importance.

The strategy for avoiding disturbance of designated sites and functionally linked areas follows precisely the procedure also adopted by the Environment Agency when upgrading or repairing sea defences to the south of our section.

The birds at risk are over-wintering or passage species which are present at times from October to March. As stated in the ES Section 10.5.52, '*works on the seaward side of the seawall will be conducted between April and September, to minimise temporary disturbance to bird populations during the overwintering period (October to March)*'. No construction works will take place on the eastern face of the flood defence wall, or adjacent to that side when the birds are present in significant numbers in the Estuary. Our view is that disturbance from our proposed works on the flood defence wall cannot have any impact, alone or in combination, with designated birds using the estuary or roosting sites within the hinterland, as the events do not coincide. This approach has been accepted by Natural England for many schemes on the Humber Estuary.



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## 2. **Assessment of Habitat Loss on Designated Features**

The nature of the foreshore adjacent to the flood defence wall along the Halton Marshes frontage has been detailed in the application for consent for works affecting flood defences, (Application No. L/001718/09). The appendices attached to the application were:-

1. Figures and Photographic Record.
2. Abstract from Existing Conditions Report (Halcrow July 2006).
3. East Halton Overtopping Report (H R Wallingford Oct 2009).
4. Humber Estuary SPA, Ramsar and cSAC citation.
5. Extended English Nature Phase 1 Habitat Survey of the shoreline at Halton Marshes (URS March 2009).

We attach a revised Appendix 1.

The Supplementary Planning Document attached to the application notes that Halton Marshes has an eroding foreshore (Section 1.1.4) so that there can be little development of mudflat against the flood defence wall; a point confirmed in the trial pit excavation report by Halcrow in Appendix 2.

Appendix 4 sets out the Humber Estuary citations. Designated habitats are listed in the Ramsar citation, comprise:-

Dune systems  
Humid dune slacks  
Estuarine waters  
Intertidal mud and sand flats  
Saltmarshes  
Coastal brackish/saline lagoons

Reference to the URS Phase 1 Habitat Survey included in Appendix 5 shows that only one of the citation habitats occurs within 5m of the toe of the flood defence wall. The habitat comprises 'estuarine waters'. This is the situation at high tide when the foreshore is submerged below tidal waters but at such times it is uninhabitable to SPA cited birds.

Within the Estuary as a whole, it is primarily the intertidal mudflats which provide the habitat within which birds find the invertebrates on which they feed.

Analysis of the photographs in Appendix 1 shows that the rocky foreshore is in places covered by a deposit of estuarine sediments, to variable depth. The distribution of this is quantified in Table 4.1 of the Supplementary Planning Document dated November 2009 and equates to 753m<sup>2</sup>. To some extent the processes which brought silts to 753m<sup>2</sup> of the existing foreshore are likely to repeat the process in future.

Even if mud adjacent to the flood defence wall contained the worms and other invertebrates on which birds feed the wall carries a public footpath well used by

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walkers and fishermen (particularly during the cod season of November and December). This brings people to within 6m of where Able proposes to lay rock armour. SPA birds have not been recorded this close to a source of human disturbance, hence not only is the footprint of the proposed rock armour installation, not a significant feeding ground, but birds cannot explore it because of the disturbance created by moving people. The Coastal Bird survey by Just Ecology, included in Appendix 10.1.8 of the ES, verifies the very low usage of Halton Marsh's frontage by SPA birds at low tide.

In the email dated 12<sup>th</sup> November 2009 from Keith Slaney of the Environment Agency to Richard Cram of Able UK Ltd, the following statement is made regarding the design of rock armour placement as proposed and implemented by the Environment Agency. It relates, for example to the section of flood defence wall adjacent to Halton Marshes. *'The rock is illustrated on the attached sketch. The lower rock is to provide an access within the footprint of the finished rock toe. The overall width is 5m.'*

Reference to Appendix 1 (Revised) shows that the rock armour placement for which Able UK Ltd seeks EA consent will extend typically 5.3m seawards from the existing toe beam, when measured at existing shoreline level. This is not a significant difference from EA's own design proposals.

Coastal squeeze is the term used when rising sea levels lead to a reduction in intertidal exposure. This loss of inter-tidal area within the SPA would occur whether or not Able UK had any proposal to develop at Halton Marshes. Able's proposed development is not responsible for causing sea level rise or the loss of intertidal feeding areas. As to whether Able UK should avoid works that might prevent a benefit from arising, Counsel's opinion was, *'(e)ven on a purposive and wide reading of the [Habitats] Directive, I do not think that preventing an off site benefit from occurring is an effect on a Natura 2000 site which is subject to Article 6(3). ... In any event, Article 6(2) puts obligations on the Member States to take action and does not restrict private parties .... The Habitat Directive does not lead to an obligation on Able (or the [land] owner Elba) to provide replacement land simply because of sea level rises'*.

Philip Winn of the EA has confirmed that the Agency has a programme to acquire land around the Estuary as compensation for inter-tidal land lost within the SPA by rising sea levels. Able UK believes that the measures being taken by the Agency will be adequate to fully offset these losses. With full provision of adjustment land by the Agency, there can be no subsequent incombination effect with placement of rock armour on the foreshore.

In summary:-

- The dominant habitat within the footprint of the proposed works is rocky foreshore. This is not a Ramsar designated habitat.
- The loss of silty habitat has been quantified in the supplementary planning document (already submitted to the EA) as 753m<sup>2</sup>. This is 4/10,000ths of one percent of the SPA/Ramsar citation area. (Supplementary Planning Document Sections 4.1.4 and 4.1.6.). No measurable impact on the overall ecological coherence of the cSAC/SPA/Ramsar site will result

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- Case law resulting from ADT Auctions v Secretary of State for the Environment (2000) has resolved that Regulation 48 of the Habitat Regulations is breached only if there is a 'significant' effect on a designated habitat or feature.
  - The Extended Phase 1 Habitat Survey (Supplementary Planning Document Appendix 5) shows that when mapped on a 1:7,500 scale the only citation habitat present within 5m of the flood defence wall, is 'estuarine waters'. Birds on the foreshore and estuarine waters (high tides) cannot co-exist.
  - Birds have not been recorded close to the toe beam of the flood defence wall. This is not surprising as a public footpath overlooks the foreshore so that walkers and fishermen using the path are highly visible from the proposed works corridor. (See Supplementary Planning Document Section 4.1.10)
  - The proposed width of rock armour placement is similar to that proposed by the Environment Agency for an adjacent downstream section of river frontage.
  - The processes which have resulted in very limited deposits of estuarine sediments being placed between, and over the existing rocks, on the foreshore (see Supplementary Planning Document Appendix 1) will continue. As a result, some coverage of any new rock armour is inevitable resulting in the recreation of the same habitat.
  - Loss of intertidal feeding areas is not caused by Able UK, it is the result of sea level rise for which Able is not responsible. The Environment Agency is implementing a programme of land acquisition to offset loss of intertidal feeding areas. It is assumed that the Agency will achieve this objective, in which case there is no incombination effect with rock armour placement. In any case, the placement of rock armour, very largely on top of existing rock, may not be considered a significant change. Where rock armour is to be placed over silt, this would cover a maximum of 4/10,000ths of one percent of the designated site.

### 3. **Assessment of Alternative Options**

The need for the development and the choice of site are set out in Sections 5 and 6 of the Environmental Statement.

The question as to alternative options is therefore assumed to relate specifically to the engineering design as shown in the figures in Appendix 1.

The Environment Agency commissioned H R Wallingford to review overtopping calculations and identify design options for potential sea wall modifications to limit overtopping of the flood defences along the Halton Marsh frontage. H R Wallingford reported their findings to the Environment Agency in September 2009. Their report is attached to this letter. Table 1 in the H R Wallingford report lists six design options. A seaward berm is identified as the simplest engineering option and we chose to develop that option. This option was specifically chosen because it represented a very simple development of the

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downstream EA toe protection works and predominantly used material in their natural state; avoiding processed materials minimises embodied energy.

Six draft designs were submitted to H R Wallingford for appraisal, whose findings are reported in Appendix 3 of the application. Judged on armour stability/constructability and wave overtopping, options 4 and 5 as shown in Figure 3 of Appendix 3 would deliver the desired results. Overtopping should not exceed 2 litres per second per metre. In the event option number 4 was chosen.

The design proposed has no significant environmental impacts over and above the works currently being undertaken by the Environment Agency in the immediate downstream section.

I hope the information set out here will assist you to complete your assessment of the application. If, however you require any further clarification, please do not hesitate to contact me.

Kind regards

Yours sincerely,



*G. GARY DOUBLEDAY*  
Group Environmental Manager

Encl: Halton Marshes - Wave Overtopping Assessment  
Appendix 1 (Revised)  
21 No. Plans

C.C. Emma Hawthorn, Natural England

cont./...

## Halton Marshes – wave overtopping assessment

### 1. *The problem*

A major development is proposed by Able UK at Halton Marshes along the bank of the Humber Estuary. The land is generally low-lying, presently used for agriculture, and is protected against flooding from the Humber by embankments. The proposed development would include industrial and commercial uses with a designated life of 60 years. In specifying the performance of any enhanced defences, it is important to identify what overtopping limits can be applied in setting “safe” overtopping performance limits for the site. This was the initial question asked in this study.

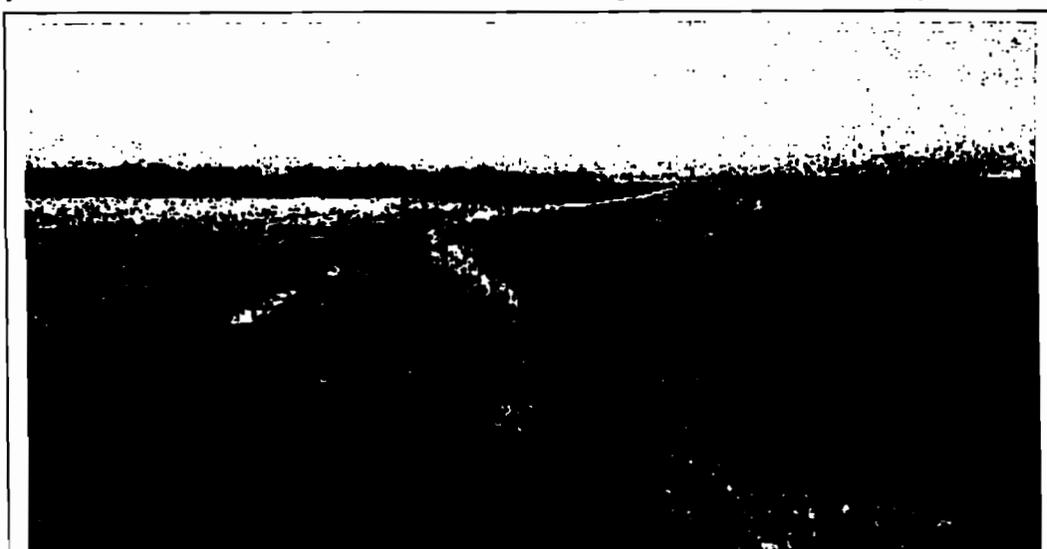


Figure 1 Sea defence at East Halton Marsh (courtesy Halcrow)

In turn, specifying appropriate performance limits requires that a number of other questions need to be answered (at least partially), summarised by:

- what are the primary hazards driven by wave overtopping;
- what overtopping assessments have been completed, and what results have they given;
- what form of wave breaking at the defence is likely;
- are the proposed forms of modification to the seawall likely to give appropriate overtopping under future conditions?

The study reported by this note by HR Wallingford (HRW) for the Environment Agency (EA) sought initially (Stage 1) to address the first two or three of these questions, but only to the degree needed to develop initial answers to the headline question. That required brief review of previous work by Halcrow and others, but none of that work constituted any formal review per se of previous studies.

Then in Stage 2, a number of alternative modifications to the sea defences were considered. The first type of modifications tried to develop the simplest possible changes / additions to the defence seeking to minimise complexity and/or volume.

The second type of improved defence focussed on high-efficiency structure options that might minimise the structure footprint

The note is presented in ten short sections, this being section 1. Section 2 presents a few details of the present defences, and section 3 identifies the main source of wave and water level data, and shows an example presentation of Joint Probability Analysis results. Section 3 also discusses depth-limited breaking and presents example results. Section 4 discusses a few details of two previous studies on wave overtopping, and section 5 discusses the overtopping limits used in those assessments.

This revised and extended note is concluded by a discussion on overtopping prediction methods in Section 6, some short exploratory calculations using empirical methods for vertical and perforated walls in Section 7, discussion on potential improvements and recommendations in Section 8.



Figure 2 Rear side of sea defence at East Halton Marsh (courtesy Halcrow)

## 2. The site

Halton Marshes are on the south bank of the Humber, immediately to the NNW of Killingholme Oil Terminal. The coastline is relatively straight and faces WNW across a relatively wide inter-tidal margin with a slope at approximately 1:30.

Along the edge of Halton Marshes, the present sea defences are formed by a steep sided embankment (1:2-3) topped by a small concrete wave wall with an upper bull-nose (Fig 1). The front face of embankment is protected by pitch-stone at 1:2 slope. The embankment crest is protected by a concrete roadway, but the steep rear slope is simply protected by grass. There does not appear to be any significant drainage ditch at the rear toe of the embankment (Fig 2).

A number of key levels / slopes were summarised for sections 3, 5, 8 and 9 in a set of Halcrow calculations sheets (HEFRM – Halton Marshes Tidal Defence Improvements). Those dimensions were not however sufficient on their own to reconstruct the cross-section geometry so the sections summarised in Figure 3 assume a vertical upstand height of 1.5m, used to calculate the level at the top of the pitchstone slope. Section 5 as illustrated in Figure 3 has been used for the main exploratory calculations here.

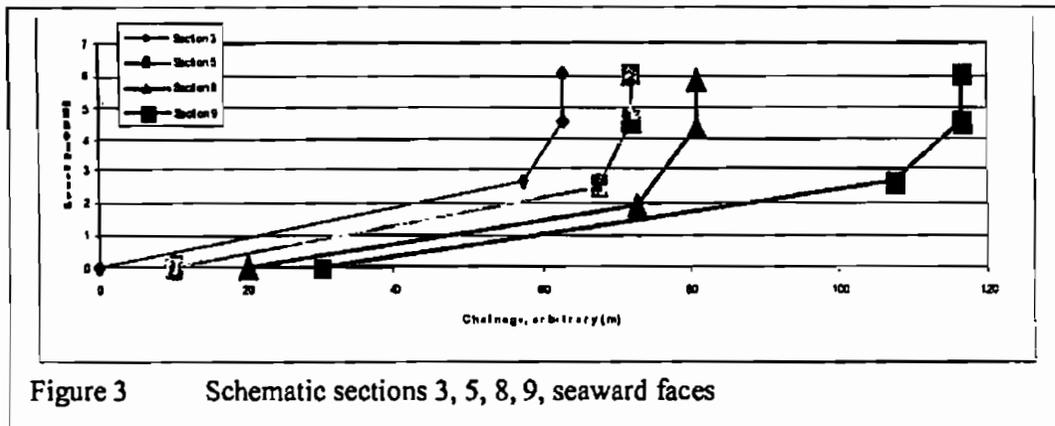


Figure 3 Schematic sections 3, 5, 8, 9, seaward faces

The primary hazards from overtopping at this site are likely to be:

- flood volume (generally assessed over a tide);
- potential for instantaneous overtopping discharges to damage the defence;
- danger to property close behind the defence;
- danger to users of the defence (in this instance, on the roadway / footpath on top of the defence).

The issues of principal concern here are the potential for damage to the defence; and potential hazard to pedestrian users of the footpath. This note is not concerned with flood volumes per se. No information on potential property exposure has been furnished to HRW, so property damage is not covered here.

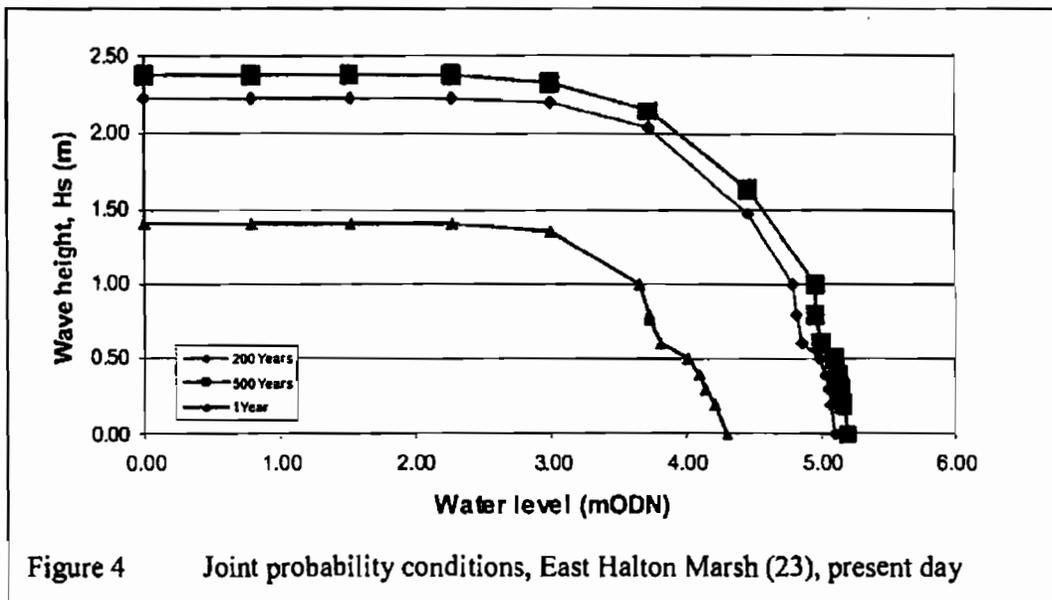


Figure 4 Joint probability conditions, East Halton Marsh (23), present day

### 3. Exposure to waves and water levels

Waves and water levels in the Humber have been derived for the Environment Agency in a major Joint Probability Analysis (JPA) by ABPmer (2007). Extracts from the JPA for positions 23 (East Halton Marshes) and 24 (East Halton Skitter)

were summarised by Halcrow in spreadsheets for various future scenarios. Example conditions from the Halcrow spreadsheet have been plotted in Figure 4.

It is important to note that the wave conditions in the Halcrow spreadsheets are not broken by depth-limiting, which is likely to be severe at this site at all except the highest water levels. Waves at water levels near or below the toe of the defence will only generate very small waves at the defence itself, rather contrary to the effect implied by the data in Figure 4.

The effects of depth-limiting can be illustrated by contrasting the 1:200 year (offshore) conditions in Figure 4 with incident conditions calculated in Figure 5. In these calculations, a depth-limiting method developed by Goda (1985, 2000) which includes shoaling by Shuto has been used to calculate incident significant wave heights ( $H_{s,i}$ ) for section 5 using equations for a 1:23 approach bed slope. The effect is to limit all wave heights for water levels below about 3.7mODN for the 1:1 year wave conditions, and below about 4.5mODN for 1:200 year conditions. Results from Figure 5 clearly illustrate the potential dangers of using un-modified JPA conditions alone.

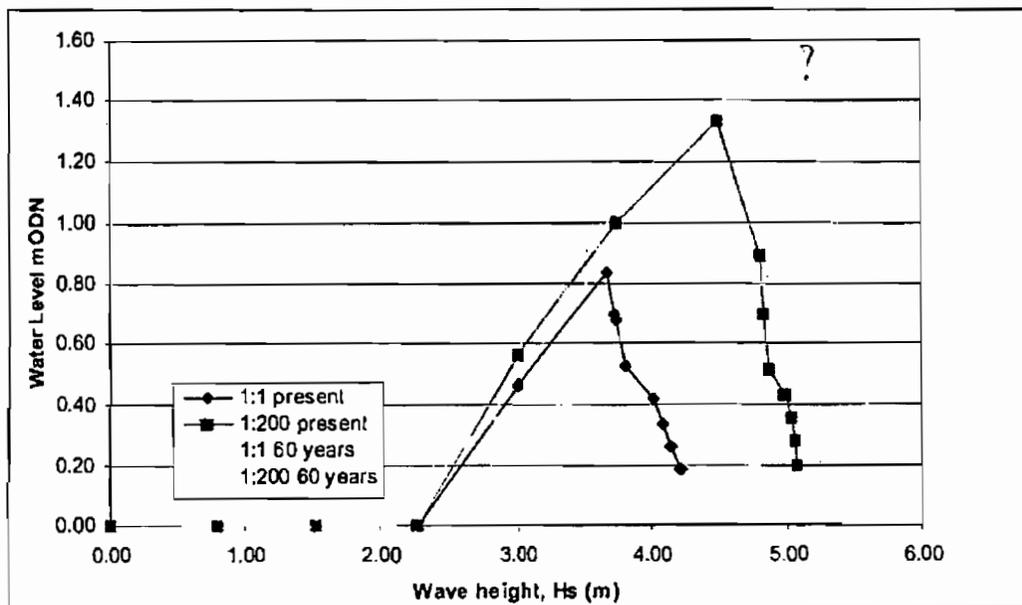


Figure 5 Depth-limited incident wave conditions and water levels, East Halton Marsh (section 5), present day and 60 years, 1:200 and 1:1 year returns

Simple empirical depth-limiting methods developed by Owen (1980), have also been used to calculate incident significant wave heights for section 5 using equations for a 1:30 approach bed slope. Whilst admittedly less complete than the method by Goda, use of Owen's simple equations allow rapid calculations of depth-limited wave conditions for use in overtopping calculations.

#### 4. Wave overtopping – previous assessments

An outline assessment of overtopping conducted for Able UK by Hannah Reed was reviewed by Halcrow in October 2008. The overtopping equations used by Hannah Reed were those for simple slopes developed by Owen (1980), then applying the method for recurve walls developed by Owen & Steele (1991), as summarised in the

EA Overtopping Manual by Besley (1999). Halcrow's review questions the use of these methods for the given structure, arguing that use of the recurve wall inherent in Owen & Steele's data would give over-optimistic predictions of overtopping in relation to the simpler vertical wall with bullnose. Halcrow separately argue that the wave wall crest levels were taken too low by Hannah Reed (using the roadway level of +5.4mODN instead), leading to over-pessimistic calculations of overtopping.

For acceptable overtopping limits, Hannah Reed are quoted by Halcrow as using a threshold limit of  $Q \leq 50$  l/s/m, based on the stability of crest protection on a revetment seawall. That choice is however only appropriate for a revetment seawall, i.e. one with no rear slope where the ground behind rises, rather than falls. Use of that limit therefore ignores the danger of erosion to the (steep grassed) rear face of the embankment, as well as any danger to pedestrian users of the roadway / footpath.

Halcrow argue that the appropriate discharge for an embankment seawall should be reduced to  $Q \leq 20$  l/s/m, citing the USACE Coastal Engineering Manual (Table VI-5-6). Even that limit relates however to the most optimistic end of a range covering  $Q \leq 2$  to 20 l/s/m, the lower limit being derived from classic Dutch analysis of the failure of rear grass slopes. No evidence is given by USACE to support the higher limit. It is therefore recommended that the limit for 1:200 year overtopping should certainly be set no higher than  $Q \leq 20$  l/s/m, and it may indeed be unwise to allow overtopping above  $Q \leq 2$  l/s/m, see section 5 below.

In considering the input wave conditions and water levels, neither Hannah Reed, nor Halcrow, have identified that the appropriate wave height to be used in calculating overtopping is not the "offshore" condition determined in (relatively) deep water out in the estuary, but should be as defined at the toe of the defence, i.e. as modified by any relevant depth-limiting. It is probable therefore that both sets of calculations will have used over-large wave heights for the lower water levels, see discussion with Figure 5 earlier.

A second limitation on all work so far is the effect of wave obliquity. Only waves from directly across the estuary will reach this wall at  $\beta=0^\circ$ . Waves from the longer fetches up-estuary or down-estuary towards the North Sea will reach these defences at oblique angles, say  $\beta \geq 45^\circ$ . Use of wave obliquity in future overtopping predictions might therefore reduce overtopping if data are available on wave directions within the JPA such that the results can be interrogated by direction sector.

Later work by Halcrow in 2009 uses overtopping prediction methods for sloping walls as described in the recent EurOtop manual, see Pullen et al (2007, 2008). Halcrow do not however apply any modification for the (shape of the) wave wall. This is clearly a rather pessimistic assumption in relation to Hannah Reed's approach. The Halcrow calculations have not been seen by HRW, and it is not known whether they identify whether the form of wave breaking at the (assumed) slope is "impulsive" or "pulsating". The use of alternative prediction methods is discussed further in sections 6 and 7.

## **5. Overtopping limits**

Halcrow use two overtopping thresholds:  $Q \leq 0.1$  l/s/m for pedestrians, citing guidance on tolerable limits given in the EurOtop manual, derived by Allsop et al

(2008). Halcrow recommend applying this limit for 1:1 year return period, but do not give any particular reason for choosing this return period.

Halcrow also suggest using  $Q \leq 50$  l/s/m at 1:200 year return, citing improvements to the (front face) revetment. These improvements are entirely irrelevant, as it is the rear face that will be damaged by overtopping, not the front face, and no evidence has been given of any proposal to protect the unprotected steep grassed rear face. It seems most unwise therefore to accept any overtopping limit above  $Q \leq 2$  l/s/m, that limit being derived from classic Dutch analysis of the failure of rear grass slopes, unless other data are available, see Van der Meer (2008). Following the logic of PPS25, this limit should be applied up to and including the 1:200 year conditions.

For pedestrians, a precautionary limit of  $Q \leq 0.03$  l/s/m might apply for conditions where pedestrians have no clear view of incoming waves; may be easily upset or frightened; are not dressed to get wet; may be on a narrow walkway; or are in close proximity to a trip or fall hazard. Along this frontage, users of this footpath will have a clear view of the estuary, will be able to see large waves approaching, have a wide footpath, and are at least partially sheltered by the wave wall. Previous research studies have shown that this low limit is only required where these conditions are not met. It is therefore appropriate to use the general limit given by Allsop et al (2008) and included in the EurOtop manual, of  $Q \leq 0.1$  l/s/m for this footpath. It is however possible that use of this footpath might be restricted in adverse conditions, or users might be warned about potential hazards, so it may be possible to apply this limit at return periods much shorter than 1:200 year.

## **6. Wave overtopping – exploratory calculations**

The defences along this site consist of a number of elements each influencing the overtopping performance in different ways. The overall overtopping performance is expected to vary quite significantly with water level. It is not obvious therefore whether any one empirical prediction method might be most appropriate for these defences. Indeed, it is very probable that the “best” method will change with water level.

Thus far Hannah Reed and Halcrow have used two different methods:

- Simplifying the structure to a simple slope;
- Using a simple slope and adding a wave wall.

The approach taken by Halcrow (simple slope only) is too simple and will generally over-predict overtopping. Whilst potentially able to give some indications of when wave breaking at the wall changes the character of the overtopping process, those results have not been extracted.

The approach (rather than the details) taken by Hannah Reed is generally more realistic in that the effect of the wave wall is included explicitly, although it might under-estimate overtopping by over-predicting (slightly) the effect of the wave wall. This prediction method is however mono-tonic, so does not identify when wave breaking at the wall changes the character of the overtopping process.

Both these assumptions become less valid at higher water levels, when the defence might be better represented as a vertical wall with a toe berm or slope. This approach is explored briefly in section 7 below.

A fourth prediction method might be more appropriate than any single empirical method, or even combinations of empirical methods. Neural Network (NN) methods are non-linear artificial intelligence models that have been trained on large sets of data, so that generic patterns and/or solutions can be obtained. NNs are particularly useful where a large data set is available, but where no single expression or model is capable of describing the phenomenon.

During the EC research project CLASH (see De Rouck et al. 2005), results from 10,000 overtopping tests from laboratories around the world were entered into an overtopping database. The database was used to train an NN to make overtopping predictions, primarily of benefit for structures where no single empirical prediction method is available. The CLASH NN uses 11 structural parameters and 4 hydraulic parameters. The hydraulic parameters are wave height, wave period, wave angle and the water depth at the toe of the structure. The structural parameters describe almost every conceivable structural configuration with two toe parameters, two structure slope parameters, two berm parameters and four for the configuration of the crest.. The eleventh structural parameter is the roughness factor for the structure and is the average roughness for the whole structure. To run the model the 15 input parameters are entered, and a mean overtopping discharge is predicted. A detailed description of the CLASH NN is given by van Gent et al. (2004).

## **7. Wave overtopping for simple slopes or walls**

At low water levels, the present defences along this site might perform like a simple slope, or a slope with a wave wall. At higher water levels, however, the wave wall dominates the overtopping process, so the most appropriate prediction method may be based on equations for vertical walls with toe slope / berm. Exploratory calculations for section 5 and the wave conditions / water levels for 1:200 and 1:1 year returns derived previously in Figure 5 used each of these simplifications in turn.

### **7.1 Simple slopes (smooth and armoured)**

These first calculations explored the overtopping performance of the present defence simplified as simple impermeable slopes under wave conditions and water levels 60 years ahead. For simplicity, and ease of comparisons, the simple approach of Owen (1980) was used with coefficients as given by Besley (1999). The first set of calculations shown in Figure 6 used simple smooth (impermeable) slopes of 1:2 and 1:3. For comparisons with some of the earlier work, a second set of calculations used rock armoured slopes of 1:1.5 and 1:3, Figure 7.

The present defences (to crest at +6.02mODN) substantially fail the less onerous  $Q \leq 20$  l/s/m limit under the 1:200 year condition, and dramatically fail the pedestrian safety limit of  $Q \leq 0.1$  l/s/m even under the 1:1 year condition.

Modifying the defence by adding an armoured slope of either 1:1.5 or 1:3 to the present crest level (+6.02mODN) improves the performance, but only moderately for the more extreme conditions where the length of emergent armoured slope available is still rather short. Overtopping for the 1:1.5 armoured slope meets neither limit. The

1:3 slope (which will require a substantially greater footprint than a 1:1.5 slope) still fails the less onerous  $Q \leq 20$  l/s/m limit under the 1:200 year condition, but does deliver an appropriate reduction for the frequent (1:1 year) conditions.

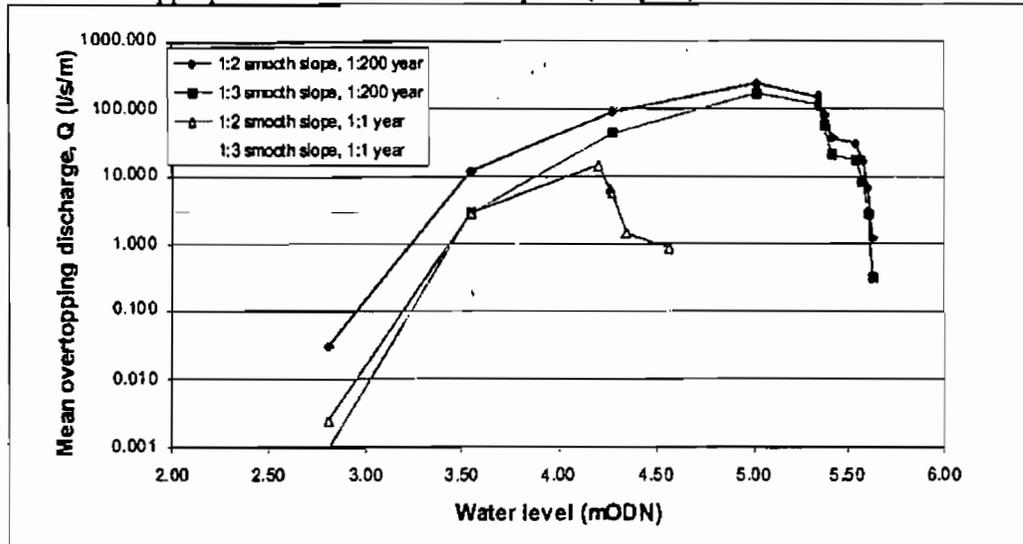


Figure 6 Overtopping for East Halton Marsh (section 5), simple smooth slopes (1:2 and 1:3) to +6.02mODN, 1:200 and 1:1 year return, 60 years ahead

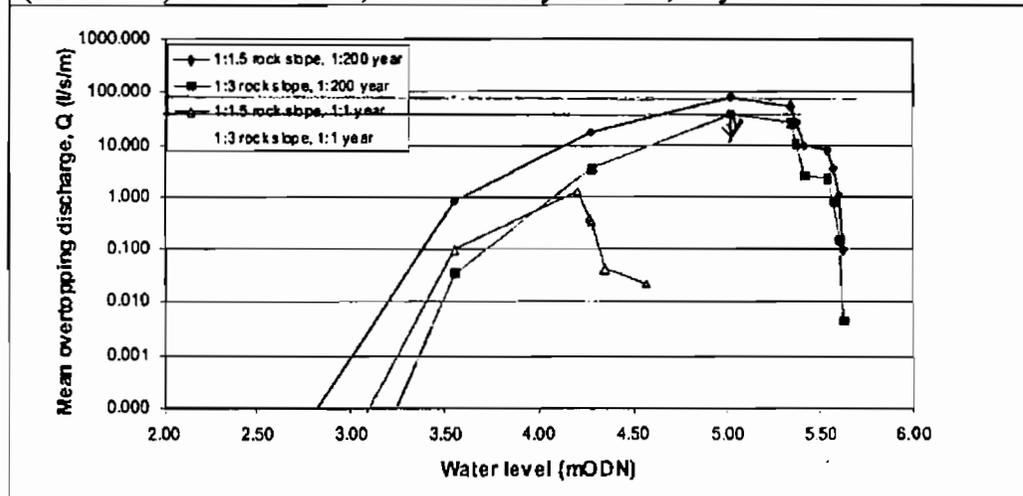


Figure 7 Overtopping for East Halton Marsh (section 5), rock armoured slopes (1:1.5 and 1:3) to +6.02mODN, 1:200 and 1:1 year return, 60 years ahead

## 7.2 Vertical walls (simple and voided)

A second set of calculations explored the overtopping performance of a simple vertical wall to +6.02mODN under 1:1 and 1:200 year conditions at 60 years ahead. For simplicity, and ease of comparisons with other simulations, a simplified method based on the approach of Owen (1980) was used with coefficients as given by Besley et al (1994). Overtopping test results for perforated walls, using a voided chamber behind a perforated screen, see Allsop (1995), have also been used by Besley et al (1994) to determine equivalent empirical coefficients for the perforated walls.

Treating the present defence as a simple vertical wall to the +6.02mODN crest level gives better performance than the smooth slopes, but the defence still fails the  $Q \leq 20$

l/s/m limit (marginally) under the 1:200 year condition. The current structure again fails the  $Q \leq 0.1$  l/s/m limit substantially under the 1:1 year conditions, Figure 8.

Adding a perforated screen to the vertical wall (also in Figure 8) does however reduce overtopping for the 1:200 condition so that it might now pass a  $Q \leq 20$  l/s/m limit, and easily passes the  $Q \leq 0.1$  l/s/m limit under 1:1 year conditions. Raising the wall to +6.5mODN improves the performance of the vertical wall slightly, but substantially for the perforated wall (Figure 9) which now easily passes the more onerous limit of  $Q \leq 2$  l/s/m for the 1:200 conditions, and the  $Q \leq 0.1$  l/s/m limit under 1:1 year.

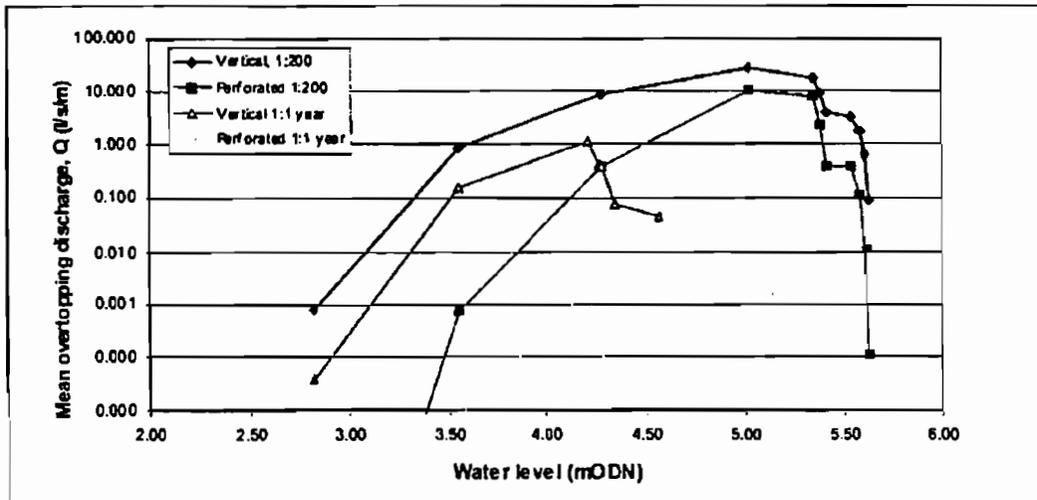


Figure 8 Overtopping for East Halton Marsh (section 5), vertical and perforated walls to +6.02mODN, 1:200 and 1:1 year return, 60 years ahead

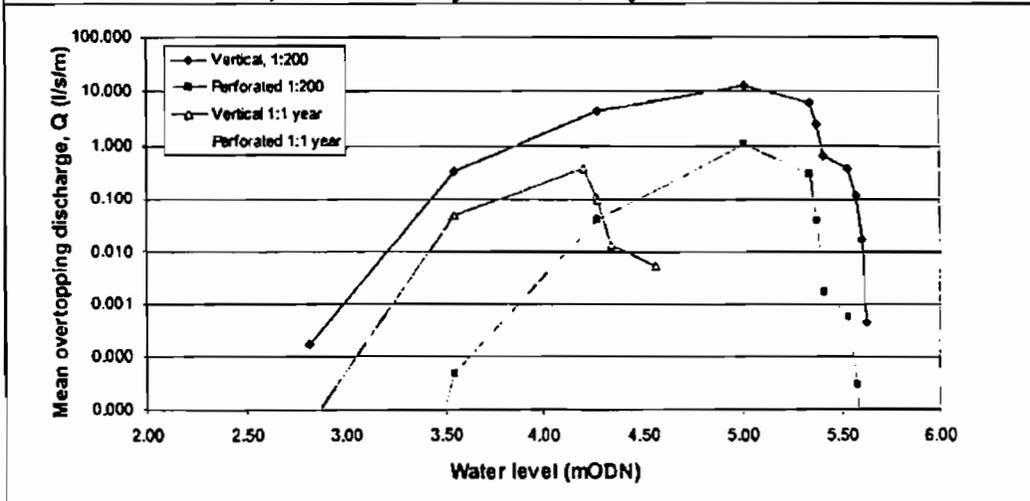


Figure 9 Overtopping for East Halton Marsh (section 5), vertical or perforated walls raised to +6.5mODN, 1:200 and 1:1 year return, 60 years ahead

## 8. Initial conclusions / recommendations

### 8.1 Overtopping calculations

Whilst apparently simple, the defences at this site are however rather complicated and no single empirical method will give reliable overtopping predictions over the full

range of wave conditions and water levels of interest. Neither the Hannah Reed nor Halcrow overtopping studies for this site are complete, as they use simplifications that are not necessarily valid (see above), and fail to calculate / use the appropriate incident wave conditions.

Any overtopping analysis of these defences, with or without any modifications, should use the appropriate empirical or Neural Network methods to predict overtopping, using more than one method if required to give realistic estimates of the inherent uncertainties. The calculation methods should include correct incident wave conditions limited by depth where appropriate.

## **8.2 Overtopping limits**

The overtopping thresholds used by Hannah Reed and by Halcrow are generally too optimistic. For acceptable overtopping on an embankment defence with un-protected steep grass rear face classic Dutch analysis of the failure of rear grass slopes suggests that  $Q \leq 2$  l/s/m should be used. This might be raised to  $Q \leq 20$  l/s/m, if site specific test data were available, but it would not be safe to assume that can necessarily be justified without those data.

Pedestrians on this footpath will have a clear view of the estuary, will be able to see large waves approaching, have a wide footpath, and are at least partially sheltered by the wave wall. It is therefore appropriate to use the general limit of  $Q \leq 0.1$  l/s/m given by Allsop et al (2008) and included in the EurOtop manual.

## **8.3 Modifications to the defences**

The present defences at this site cannot deliver acceptable overtopping performance to 1:200 or 1:1 year conditions even under current conditions, so will require significant improvement to resist projected wave conditions and water levels in 60 years time. A number of potential modifications might be used to achieve the appropriate performance, but most will require extending the defence footprint seaward. Other modifications might achieve the desired overtopping reductions, but will require more sophisticated (and potentially expensive) engineering. The main options considered during this study are summarised in Table 1 below.

## **8.4 Discussion and future work**

Revised use to this site will require improved (reduced) overtopping under the projected future conditions that cannot be met by the present defences, and cannot easily be met by simple modifications to the existing structure without extending the defence footprint into the estuary. Other modifications that could yield the required overtopping improvements without increasing the defence footprint will require significant engineering. The choice between improvement options is therefore substantially complicated by the need to minimise the defence footprint. The problem is then further complicated by the lack of overtopping prediction methods (other than physical model tests) that can be applied universally to each option, requiring use of a number of alternative prediction tools for different options.

It is recommended that the requirements for defence footprint be clarified to inform the ranking of alternative options for improvement. A minimum set of alternative should then be considered further for initial engineering and environmental analysis, including more detailed calculations of overtopping performance and assessment of

wider consequences. The conclusions of that stage would allow no more than two options to be taken forward.

<b>Modification</b>	<b>Overtopping effectiveness</b>	<b>Wider consequences</b>
Form armoured slope in front of and over present slope / wall.	Not very effective unless the crest is raised significantly.	Will require an extended footprint.
Form seaward berm to reduce wave action at the wave wall.	Could be effective if the berm could be placed at an appropriate level (probably at +4.5 to +5mODN), and width (5-10m).	This could use inexpensive materials with simple engineering, but the berm would require a significant seaward footprint
Extend the present wave wall upwards.	Could deliver required limits, but overtopping may be impulsive, increasing hazards to pedestrian.	Will require significant engineering to ensure that the wall can accommodate impulsive wave forces.
Replace present upper slope by large recurve wave wall.	Could deliver required overtopping reduction without raising the crest, but will require careful detailing to give this performance and avoid causing impulsive overtopping which would increase hazards to pedestrians.	Will require significant engineering to accommodate wave forces.
Construct simple vertical wall.	May give improved overtopping with lower crest than most smooth / armoured slopes, but will increase wave reflections.	Significant engineering required, but will minimise footprint. Potential to increase scour by increased reflections.
Construct voided vertical wall.	Will require internal chamber of about 5m depth, but could give substantial overtopping reduction for minimal crest level increase.	Significant engineering required, but will minimise footprint. Less scour potential than simple vertical wall.

### **Acknowledgements**

This study has been conducted by William Allsop (HRW) for Philip Winn / John Pygott (EA) using information kindly supplied by Ben Purkiss (Halcrow). Samantha Dawson and Tim Pullen (HRW) assisted devise / execute some of the calculation methods.

N.W.H. Allsop  
 HR Wallingford  
 Release 2  
 14 September 2009

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Your Ref: L/001718/09  
Our Ref: KI/241  
GD.LH.A.L10/0033  
Date: 14<sup>th</sup> January 2010

For the attention of Debbie Morris

Dear Debbie

### **AHPF – FLOOD DEFENCE WALL**

Thank you for your email of 11<sup>th</sup> January to which I now respond addressing the topics in the order set out in your message.

#### **Bullet Point No 1**

I am uncertain as to what you require. The results of the assessment of intertidal mud were given in the original application and again in the response dated 7<sup>th</sup> January to your request for additional information. As you have again asked for an assessment, I assume you wish to see how the assessment was done, and not just the results.

Appendix 1 (Revised) forwarded to you on 11<sup>th</sup> January, contains photographs of the foreshore at 12 locations. Each photograph was taken at a cross section shown on Drawing No KI-06022B. At locations A-M the camera faced north. At locations P and N the camera faced east. This gave views of the foreshore. Where it occurs, estuarine mud is clearly visible. The pattern and density of occurrence was compared with the charts comprising Figure 5 in the soil survey Field Handbook – Technical Monograph No 5 (Soil Survey of England and Wales, 1976 Harpenden). This gives a means of translating a matrix of irregular shapes in percentages of a whole. Table 1 below shows how the quantum of mud on the foreshore has been calculated. In the photographs a staff is being held at a distance of 5m from the toe beam of the existing flood defence wall.

The proposed footprint of rock armour shown in Appendix 1 (Revised) extends to 5.3m from the toe beam, whereas the original design was 5.0m. All photographs have been re-analysed as the calculated mud flat area uses a 5.3m corridor rather than the original 5.0m design. The total area of mudflat is now estimated to be 757m<sup>2</sup>, instead of 753m<sup>2</sup>.

cont./...



Environment Agency  
 Development & Flood Risk  
 Guy Gibson Hall  
 Manby Park  
 Louth  
 Lincolnshire LN11 8UR

Your Ref: L/001718/09  
 Our Ref: KI/241  
 GD.LH.A.L10/0033  
 Date: 14<sup>th</sup> January 2010

For the attention of Debbie Morris

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**Table 1**

Calculation of Mud area at Halton Marshes

Section	Overall Distance (M)	Distance with mud (M)	% Mud	Width (M)	Area of Mud (m <sup>2</sup> )
P-N	57	0	0	5.3	0
N-M	77	20	50	5.3	53
M-A	73	73	25	5.3	97
A-B	145	145	10	5.3	77
B-C	145	145	5	5.3	38
C-D	146	0	0	0	0
D-E	152	0	0	0	0
E-F	166	0	0	0	0
F-G	178	140	30	5.3	223
G-H	183	183	10	5.3	97
H-J	160	160	5	5.3	42
J-K	128	128	30	2.7	104
K-L	145	145	2	5.3	15
L-end	106	106	2	5.3	11
Total	<u>1,861m</u> ===				<u>757m<sup>2</sup></u> ****

It should be noted that 757m<sup>2</sup> is an estimated figure and that it will alter depending upon preceding conditions in the Estuary.

**Bullet Point No 2 - Scour**

Reference to Appendix 8.5, attached to the Environment Statement, shows that scour from the site land drainage outfall is expected to form a channel across the South Bank mud flats of between 1,362m<sup>2</sup> and 2,026m<sup>2</sup>. It has been accepted by Natural England that this simply represents a functional change and not an adverse effect.

**Bullet Point No 3**

Your attention is drawn to Section 15 of the Environmental Statement. It is not possible from your comments to identify the precise area of the in-combination impact assessment where you consider further information is required. If you can be more specific we will endeavour to address any omission in the ES.

cont./...

Environment Agency  
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Date: 14<sup>th</sup> January 2010

For the attention of Debbie Morris

- 3 -

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#### **Bullet Point No 4**

You have been provided in Appendix 5 of the original application, with an Extended Phase 1 Habitat Survey of the shoreline at Halton Marshes. Figures 1 and 2 in the survey show no saltmarsh within the footprint of the proposed flood defence works or in the area of the site drainage outfall where drainage water would cross the foreshore. This survey was carried out by URS. On that basis we confirm that no saltmarsh will be affected.

#### **Assessment of Potential for Slumping**

As explained in my previous response for additional information, the design of the rock armour is based on the guidance of H R Wallingford; proposals were aimed at identifying a stable and effective rock slope. However, should slumping occur the rock armour can be topped up by additional material brought in my means of the access road running along the top of the wall. Any such work would be undertaken during the period April to September in any one year. (In any event, we would be surprised if occasional slumping from a maintained slope was sufficient to adversely affect the ecological coherence of the European Site or have any impact on the Site's ability to maintain the population of species present at the time when it was classified - in other words, the site's 'integrity').

#### **6. Alternatives**

The need for the development and choice of site are addressed in Sections 5 and 6 of the Environmental Statement. Natural England also questioned alternatives. This was fully explored in my letter to William Hill, dated 12<sup>th</sup> August 2009, from which I enclose a copy of the relevant section. The full letter can be downloaded from the NLC website.

The object of our endeavours is to secure planning consent to develop industry (and jobs) on the South Humber Bank, within a site allocated for such use. Establishment of a cross wall linked with managed retreat allowing flooding of Halton Marshes is not an option that is consistent with the application.

#### **Water Voles**

For your information, strimming of bank sides was a technique approved by Natural England on our Area E development at Killingholme. We implemented the agreed scheme in 2007. Lincolnshire Wildlife Trust (LWT) monitored the work and reported that we had complied fully with Natural England's requirements and that the transfer of water voles had been successfully achieved.

#### **Appropriate Assessment**

We are grateful to be given the opportunity to provide you with information needed for an appropriate assessment, and will continue to assist to the best of our ability. However, as you have already begun repairs to the flood defence wall running southwards from the Halton Marshes frontage, you must already have successfully completed an appropriate assessment including all necessary consultation with Natural England. Thank you inviting us to draft an appropriate assessment for works similar to flood defence wall repairs to the Halton Marshes frontage, but we decline your invitation and defer to your experience in the matter.

cont./...

Environment Agency  
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Your Ref: L/001718/09  
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Date: 14<sup>th</sup> January 2010

For the attention of Debbie Morris

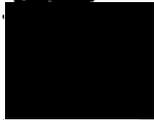
- 4 -

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An alternative way forward would be for the EA to adopt the AA being prepared by North Lincolnshire Council (NLC) for the project as a whole, including the flood defence works. We understand that project AA will be drafted and distributed for comment in a couple of weeks. It would seem sensible for you to submit the same AA to NE in support of the Drainage Consent application once comments are received. North Lincolnshire Council would have no objection to this approach which seems to be the most efficient use of resources in any event. If you wish to proceed on this basis I suggest that you contact Andrew Taylor of NLC.

Kind regards

Yours sincerely,



**GARY DOUBLEDAY**  
Group Environmental Manager

Enc: Extract from letter to William Hill, 12<sup>th</sup> August 2009

### **Paragraphs 34 and 35: Alternatives**

The choice of site is considered in Section 6 of the Environmental Statement. The object of the development is to provide a comprehensive facility for port users on the South Humber Bank. This includes the provision of open space storage and mixed warehousing facilities for importers to handle goods. These operations may include sorting, batching up and labelling before onward delivery to retail outlets.

While some transport to and from the site will be by rail, much will be by road. Access to motorway and rail was a large factor in identifying this allocated site for development. Considering the amount of HGV traffic attracted by the development it is only logical to provide servicing facilities on site, for vehicles. A restaurant and a motel would be used primarily by drivers who could park their vehicles off road with security and convenience.

A large development of this nature will produce waste. The waste management facility proposed will take waste, primarily from the development, separate it into streams and dispatch it offsite in bulk loads for recycling, treatment or disposal. This is compliant with the proximity principle and minimises vehicle movement on public roads.

An office block development is included for shipping and distribution firms and any others who visit to operate close to the port facilities.

The value of the development is its coherent nature, but this demands considerable space centered on a location close to existing ports. Equivalent sized allocated areas on the South Humber Bank, with similar road and rail connections do not exist elsewhere. As the site is already allocated for estuary related industry it is a natural location for the development. Able UK Ltd does not have to defend the original allocation.

Regarding the use of multi story car storage, Able UK's experience is that importers prefer not to use such facilities on account of the higher risk of accidents and slow handling of vehicles compared with open air storage. Not only is turn around faster, but costs are less when multi story facilities are not involved. It is also of note that open air storage maintains flexibility to change from vehicles to other goods if market conditions change. This is not possible with multi storey facilities.

Natural England's information on the status of Southampton as "The UK's number one vehicle handling port" is incorrect. Current statistics for vehicle importation are published in the trade journal Automotive Logistics, (July-September 2009). As a group, Grimsby, Killingholme and Immingham rank fourth in Europe in 2008, up one place since 2007. Southampton is ranked eleventh, down four places since 2007. In 2008 the South Humber Ports handled 674,458 vehicles, mostly VW group, Toyota, KIA and BMW whereas Southampton handled 541,000 vehicles.

Able UK Ltd is confident that port related trade will continue to grow on the South Humber Bank for the reasons set out in the environmental statement section 5.3. It is a shorter sea passage from the main European Ports of Bremerhaven, Zeebrugge and Rotterdam to the Humber Ports than, to Southampton. Distribution within the UK involves shorter distances to Midland and Northern markets compared to import via Southampton. However, this expansion of trade on Humberside depends on ports expanding port related facilities such as those proposed in this application



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Mr Andrew Taylor  
The Environment Team,  
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DN15 6XQ

Your Ref: PA/2009/0600

Our Ref: RC.JD.A.D10.003

Date: 17<sup>th</sup> February 2010

For the attention of Mr Andrew Taylor

Dear Mr Taylor

### **PA/2009/0600 RESPONSE TO DRAFT APPROPRIATE ASSESSMENT**

Dear Andrew,

Thank you for forwarding a copy of the draft Appropriate Assessment. In accordance with your accompanying request, we set out below our detailed comments.

#### **Paragraph 3.3.2**

This paragraph quotes a section of Circular 06/2005. The quote omits the underlining of the phrase, 'no reasonable scientific doubt', whilst retaining 'certain' and 'convinced' in bold type as in the original document. 'Certain' and 'convinced' are commonly understood by the layman to mean an issue that is beyond the possibility of doubt, whereas both the law and science make judgements on the basis of likelihood and probabilities. For example, in criminal law, guilt must be established 'beyond reasonable doubt'. However, case law has established that this does not mean certainty, '*but it must carry a high degree of probability. Proof beyond reasonable doubt does not mean proof beyond a shadow of a doubt*', (per Denning, *Miller v Minister for Pensions* [1947]).

The evidential bar established in the Waddenzee judgement is that decision makers, in giving consent for a project under Article 6(3) of the Habitats Directive may only do so after, '*they have made certain that it will not adversely affect the integrity of that site. That is the case when there is no reasonable scientific doubt about the absence of such effects*'. The final sentence is crucial to understanding the judgement, the absence of **reasonable** scientific doubt defines on what basis decision makers may be 'certain' that there would not be an adverse effect on the integrity of the European Site.

The issue of what constitutes 'scientific doubt' was considered by the Court of Appeal in *R (Merricks) v. S/S Trade and Industry and another* [2007] EWCA Civ 1034. The Court of Appeal upheld the following;

*"In the absence of scientific evidence to support suggestions of adverse effects, the (planning) inspector was entitled to conclude that he could be certain that the development would not adversely affect the integrity of the site, and that there was no reasonable scientific doubt as to the absence of such effects."* (as per Wall J, paragraph 12)



This effectively provides at least one objective test for 'scientific doubt'; such doubts must, in the first instance be grounded in scientific evidence. So a party that asserts doubts, or hypotheses of doubt, must at the very least provide scientific evidence to substantiate them. Otherwise, as the Courts observed, *'it would be open to any interested party to raise doubts without providing any reasonable scientific evidence for doing so'* (per Hamilton, *R (Merricks) v. S/S Trade and Industry and another* [2005] EWHC 2698).

The Waddenzee judgement also contains the standard legal qualification of 'reasonableness', indicating that a judgement needs to be made with respect to the quality and weight of scientific evidence. In *Hart District Council v The Secretary of State for Communities and others* [2008], EWHC 1204 (Admin), the Courts considered the apparent anomaly that a Planning Inspector had doubts that a likely significant effect of a housing project on a nearby SPA could be excluded, yet the project was consented by the decision maker without an appropriate assessment. The Court found that the decision maker was not *'obliged to accept that there were such doubts, or that they could not ... "be excluded on the basis of objective information"'* (per Sullivan, paragraph 81). Accordingly, whether scientific evidence is sufficiently compelling to give rise to **reasonable** scientific doubt seems to be a matter of judgement for the decision maker alone and can be concluded despite the harboured doubts of others. This case law developed following the publication of Circular 06/2005 and needs to be borne in mind by the competent authority.

Regulation 48 does not therefore require an absolute guarantee (proof beyond the possibility of doubt) that the integrity of a site would not be adversely affected by a development. Although a Scottish precedent, one specific finding in *WWF UK Ltd and RSPB v Secretary of State for Scotland and others* [1999] Env 632 is of further note. In this case the petitioners sought judicial review in the Scottish Courts of various decisions connected with the exclusion of areas of Cairngorm from a candidate SAC. In dismissing the petition, the court held, inter alia, that, *'there can never be an absolute guarantee about what will happen in the future, and the most that can be expected of a planning authority, as a competent authority under the regulations, or of SNH, as the appropriate nature conservation body, is to identify the potential risks, so far as they may be reasonably foreseeable in the light of such information as can reasonably be obtained and put in place a legally enforceable framework with a view to preventing these risks from materialising'*, (Able underline).

#### Key Points

1. The law generally makes a judgement based on probability and reasonableness, not absolute certainty.
2. Circular 05/2006 should be read in the context of subsequent case law.
3. One objective test for 'scientific doubt' is the existence of supporting scientific evidence.
4. A competent authority can set aside hypotheses of doubt that are not substantiated by scientific evidence.

#### Paragraph 3.4.1

The precautionary principle has not been incorporated directly into domestic legislation although the requirement to take account of the precautionary principle in European law and policy is enshrined in Art. 174(2) of the EC Treaty. There is no universally accepted definition of the precautionary principle but the guidance provided by Natural England generally follows that given in ILGRA<sup>1</sup> Report, *'The Precautionary Principle: Policy and*

<sup>1</sup> Inter-Departmental Liaison Group on Risk Assessment



*Application'* (2002), which is itself based on 1992 Rio Declaration on Environment and Development. The ILGRA report provides some guidance on how the principle should be applied in practice by government Departments. The current EC and UK approach to the principle is a 'weak' version which requires precautionary action to be balanced against the costs and benefits of taking the action.

One contentious aspect of the formulation of the precautionary principle cited by Natural England is the reference to '*full scientific certainty*'; many scientists would consider this to be an illusory concept. Indeed, since the early 20<sup>th</sup> century, scientific reporting has generally been based on likelihood or quantifiable probabilities<sup>2</sup>. The advice given by ILGRA is that the principle should only be invoked when, '*scientific uncertainty is a significant factor and there is **good reason to expect harmful effects***', (Able emphasis). When the principle is invoked, ILGRA note that '*it doesn't mean that a risk based approach is abandoned – decisions continue to be informed by the best available scientific advice, taking into account the uncertainties.*' Thus there should be no 'step change' in the decision making process. Application of the precautionary principle is essentially a matter of making assumptions to establish credible scenarios, and then using standard procedures of risk assessment and management to inform decisions on how to address the hazard. In decision making, the report states that '*action in response to the precautionary principle should accord with the principles of good regulation, i.e. be proportionate, consistent, targeted, transparent and accountable*'.

The development proposal submitted for consent incorporates a precautionary approach. It has done this by responding proportionately to the environmental issues identified by the extensive scientific evidence collected for the site. This evidence has been accumulated in site specific studies over the last 2-3 years, by reference to relevant research, and by the use of suitably experienced and qualified people, including, where deemed necessary to do so, national experts in their field.

#### Key Points

1. Science reaches conclusions that are qualified on the basis of probability.
2. The practical application of the precautionary principle in environmental decision making is set out in government guidance, '*The Precautionary Principle: Policy and Application*' (2002).
3. The design submitted for consent has been undertaken by suitably qualified and experienced persons.

#### **Section 5 – Q1**

You have included 'coastal squeeze' as a likely significant effect of the project.

Coastal squeeze is the term used to describe the loss of inter-tidal habitat in an estuary due to sea level rise. As sea levels rise, so the low water mark will rise and some habitat that is currently exposed at low tide will in the future be permanently under water. This loss of inter-tidal habitat will occur irrespective of the project that you are assessing.

<sup>2</sup> For example, The Stern Review: The Economics of Climate Change, reports that, inter alia, '*(m)ost climate models show that a doubling of pre-industrial levels of greenhouse gases is very likely to commit the Earth to a rise of between 2 -5°C in global mean temperatures*', and that, '*(s)everal new studies suggest up to a 20% chance that warming could be greater than 5°C*'. There is no 'certainty' in these statements as that word might be commonly understood (certainty being defined as something beyond the possibility of doubt); only varying degrees of likelihood and probability. This is how good science is reported.



Under Regulation 48(1)(b) of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended), the appropriate assessment of a project must be strictly limited to the 'implications for the site in view of (the) site's conservation objectives', (Able underline). The conservation objectives for the Humber Estuary European Marine Site are set out in English Nature's Interim Advice under Regulation 33(2) issued in April 2003. The conservation objective for mudflats and sandflats not covered by sea water at low tide are set out in Section 6.5 which is reproduced below:

**"Subject to natural change, maintain the mudflats and sandflats not covered by seawater at low tide in favourable condition, in particular the:**

- Intertidal gravel and sand communities
- Intertidal muddy sand communities
- Intertidal mud communities
- Eelgrass bed communities" (Able emphasis).

The definition of natural change is given in the Section 18 of the Interim Advice and is also reproduced below:

**"Natural change** Changes in the condition of features that result wholly from natural causes, **such as sea level rise**. Natural change is determined to be something that is outside the control of the relevant authorities."

Clearly therefore the conservation objectives do not encompass or relate to the effects of sea level rise, so the intertidal habitat loss that occurs due to sea level rise should not be considered in the appropriate assessment of a plan or project.

The obligation to maintain the habitats in favourable condition and so avoid this natural deterioration falls on the UK government under Article 6(2) of the Habitats Directive and we note that the EA has developed a strategy to avoid this deterioration in any event.

Key Points	
1.	The conservation objectives for the site are all subject to natural change; by definition this includes the effects of sea level rise.
2.	The EA is compensating for predicted losses of inter-tidal habitat on the Humber due to sea level rise.

#### **Paragraph 6.4.1**

The AA states that, 'the Environment Agency's preferred option for this area would be for managed realignment of the floodbank'. For the avoidance of doubt, the EA has not declared a preferred option for this length of flood defence. The Draft Humber FRMS HRA, Appendix B3 (April 2009), actually states the following:

*"Less clear is the preferred option along 2,000m of the Halton Marshes reach because of the conflict with local development plans for the area landward of the tidal defence. Option 5 involves leaving the existing tidal defence to deteriorate by natural processes and construction of cross banks both upstream and downstream of the abandoned defence to prevent outflanking. Upon failure of the defence an area of 126ha will become inter-tidal area extending to high ground approximately 1km landward. Due to the social and local economic issues associated with allowing inundation of the area landward of the existing defence **it is not possible to resolve the preferred option for this part of the Halton Marshes reach at this stage.** Consultation on this issue is to be continued with the local and regional authorities, property owners and developers by the Environment Agency." (Able emphasis)*



**Key Point**

The EA does not have a preferred solution for the Halton Marshes' frontage at this time.

**Paragraph 6.5.1**

The reference to 'an estimated 17.2 ha deficit in provision of intertidal habitat for the Middle Estuary', is potentially misleading if the context is not understood.

The strategy for habitat replacement to negate the effects of sea level rise on the intertidal area of the Humber is comprehensively set out in the 'Humber Estuary Coastal Habitat Management Plan', EA, 2005 ('the CHaMP'). Section 8.2.5.2 of the CHaMP sets out the strategy for the provision of replacement habitat in the Middle Estuary. It states that,

*"A likely pragmatic approach to the provision of habitat given the likely economic and social constraints in particular in the middle estuary would be to look to replace the total middle and outer estuary losses throughout these sections of the estuary."*

Therefore whilst the current estimated deficit in the middle estuary is 17.2ha (Draft Humber FRMS HRA Volume 2), this is part of the strategy set out in the CHaMP whose Working Group included Natural England. Over the fifty year timescale of the CHaMP, the deficit in the middle estuary will increase gradually to an estimated 439.7ha; see the summary in Table 1 below which is provided by the EA.

**Table 1: Summary of Intertidal habitat Losses and Gains in the Humber Estuary**

Band (years from start of strategy)	Permanent losses and gains in 5-year bands (ha)										
	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	
Cumulative surplus/deficit											
Inner estuary and rivers	146.2	102.3	116.8	111.1	104.3	92.7	81.1	69.6	58.0	46.5	34.0
Middle estuary	43.6	-17.2	-42.0	-71.0	-103.2	-158.5	-213.8	-269.2	-324.5	-379.8	-439.7
Outer estuary	-16.8	85.9	73.4	201.3	186.1	160.1	445.5	419.5	393.5	367.4	339.3
Total	173.0	171.0	148.2	241.4	187.2	94.3	312.8	219.9	127.0	34.1	-66.4

In this context, the current deficit should not be seen as an issue that 'needs to be addressed', because it is simply part of an on-going overarching strategy for replacement habitat on the Humber. This is a strategy that has been agreed upon by statutory authorities and by other stakeholders.

**Key Points**

The current (predicted) loss of 17.2ha of Intertidal habitat in the Middle estuary is part of the on-going CHaMP strategy.



**Section 6 – Q2**

Coastal squeeze losses are fully assessed in the CHaMP.

Able UK has had numerous meeting with EA and been assured on many occasions that coastal squeeze will be fully compensated for within the EA's flood risk management strategy. As noted above, we assert that this is the correct approach under the Habitats Directive.

**Section 7 –Q3**

Able has provided the clarifications requested by you in your letter dated 27 January 2010.

You state that the EA consider the loss of inter-tidal mudflat and saltmarsh to be a likely significant effect, *'partly due to possible in-combination effects and partly due to the overall footprint within the designated site of 0.8 to 0.9ha'*.

Able consulted widely on plans and projects that needed to be considered in combination with our proposals. We specifically wrote to the EA on 10<sup>th</sup> March 2009, asking for details of any of their plans or projects within a 5 mile radius of the site. They replied on 26<sup>th</sup> March 2009 referring us to, inter alia, their publication, *'Planning for Rising Tides'*, March 2008. Section 3 of that document states that, *'We will meet our obligations under the Habitats Regulations by creating new intertidal habitat to replace the losses caused by the strategy, as set out in our Coastal Habitat Management Plan'*, (Able underline). The EA undertaking regarding habitat loss is set out in Section 11 of the CHaMP; Actions 2 and 3 are reproduced below:

<p><b>Action 2</b></p>	<p><i>... habitat replacement will be based on the prediction that the overall loss of intertidal habitat due to coastal squeeze in the estuary is expected to be 600ha over the next 50 years. This prediction will be reviewed after the first 20 years (from a baseline year of 2000) to ensure that habitat replacement requirements are in line with observed sea level rise and coastal squeeze losses.</i></p>
<p><b>Action 3</b></p>	<p><i>Replacement habitat <b>will also</b> be provided for the losses resulting from improvement and maintenance works needed to implement the proposed flood defence strategy. This is estimated as a total of 45ha within the estuary over the next 50 years. (Able emphasis)</i></p>

The commitment in the CHaMP is reinforced in the Draft FRMS HRA Report, Volume 1 (April 2009). Table 3.3 of that report states that, *'replacement habitat will be created to compensate for the losses in habitat to ensure there is no net loss in intertidal habitat in the estuary'*. The EA position is clear and consistent and unless they are withdrawing these commitments there can be no possibility of in-combination effects of habitat loss with their schemes. We have not been advised by any other statutory authority of any plans or projects that may give rise to adverse effects in the estuary leading to habitat loss, and must conclude that there are none.

So far as the works proposed by us are concerned, we have sought a solution to prevent the toe of the existing wall from being undermined and to ensure that overtopping over the next 60 years does not exceed a maximum rate of 2l/s/m in order to avoid erosion of its grassed landward face. Able has adopted a very similar solution for toe protection to that used by the EA for the section of wall immediately downstream of the Halton Marshes frontage. Briefly, these works comprise driving sheet piles in front of the toe of the existing wall, excavating an area of rocky foreshore up to 5.3m seaward of the existing toe



and backfilling this with clean rock. Able's proposals then include for a rock berm that would cover the existing defence and the rock toe. The EA design does not include this rock berm as they are not addressing overtopping at this stage.

EA's works downstream of Halton Marshes, which include a 5m footprint of rock armour, were assessed to have no likely significant effect on the European site and this was agreed by Natural England. The effect of the proposals was recorded as being the permanent loss of mudflat amounting to 95m<sup>2</sup> and a temporary disturbance to mud of 725m<sup>2</sup>. The temporary disturbance is considered by EA to last 'only a short time'. The in-combination assessment of EA's project considered that the works 'could not act in combination with permissions and/or plans/projects of other competent authorities'. This statement is dated 10<sup>th</sup> June 2009, at a time when the EA was fully aware of our proposals.

#### Effect of the Project on Mudflat

Considering firstly the consequential loss of mud habitat due to Able's works; the net 'effect' of our proposal is calculated to be the loss of 704m<sup>2</sup> of mud which currently occupies gaps between the existing rocks on the foreshore. Setting aside, any arguments as to the relative quality of that habitat, the percentage of mudflat that this would represent is calculated below:

**Table 2: Area of Mud Habitat Lost from the European Site as a Percentage of the Site**

	Area (ha)*	Percentage
The whole Ramsar Site	38,040	0.00018%
All intertidal areas	9,882	0.00071%
Middle & Outer Estuary intertidal areas	7,711	0.00091%

\*All areas abstracted from the CHaMP, Table 5.1

Note: Section 5.2 of the CHaMP quotes 17,400ha of intertidal habitat. The JNCC website, updated on 14-12-2009, quotes 9,384.23Ha, and English Nature Research Report 547 (ENRR547) quotes 10,000ha of intertidal area.

The question now arises as to whether this is a significant effect that will have an adverse, (that is a significant), impact on the ecological coherence of the European site taken as a whole.

The EC document, 'Managing Natura 2000 Sites; The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC', (MN2000), provides some guidance on the definition of a significant effect. That document records that the assessment of significance must be objective, rather than arbitrary, noting, for example, that the loss of 100m<sup>2</sup> of a small rare orchid site may be significant while a similar loss on a large steppic site may be insignificant. Whilst therefore the quantum of loss is relevant, it is not conclusive per se and we recognise that the contribution made by this particular area of the site to the integrity of the whole site must be assessed by the decision maker as well.

#### Quantum of Mud

English Nature Research Report 704 (RR704) reviews a number of planning decisions where a loss of existing habitat within a European site would result from the development. The percentage losses quoted in the report generally relate to the area of the entire site rather than the habitat feature itself. In only one of the cases was the percentage loss of habitat less than 0.00018%. In that case confounding factors were present and weight was given to the disturbance impacts of the proposal, post development, arising from increased leisure activity generally within the SPA.



In the two cases that were granted on the basis that they would not have an adverse impact on integrity, the loss of habitat was:

- 0.056% (0.0665ha) of the Folkestone to Etchinghill Escarpment cSAC (260.75ha) for the creation of a white horse on a hillside.
- 0.063% (5.7ha) of a mudflat resource totalling 9000ha in the Dee Estuary SPA/Ramsar site. The site was also recorded by the Inspector as supporting 'less than 100 birds'.

The percentage loss of mudflat caused by the works to the flood defences at East Halton is two orders of magnitude less than either of the above cases, indicating that the quantum by itself is not significant.

Ecological Impact of lost Mud Habitat

The foreshore along Halton Marshes is eroding; this erosion has been taking place for decades and will continue to do so. This results in a very dynamic environment in which the mud is continually disturbed. Whilst mudflat is normally a productive habitat with high biomass of particular value to feeding birds, bird counts on the Halton Marshes foreshore generally are very low. Natural England Research Reports 339 (RR339) and 656 (RR656), provide details of low water bird counts within the Humber Estuary. According to RR339, the sector along Halton Marshes (Sector ISI) supports a maximum density of 35.1 birds/ha at low water<sup>3</sup>. The majority of these birds are lapwing; they occupy a high tide roost close to Humber Sea Terminal, over 1km from the Halton Marshes frontage. If the lapwings are excluded because we know they are not using Halton Marshes' frontage, the density of birds reduces to 5.52 birds/ha<sup>4</sup>. This pattern of usage is confirmed in the Coastal Bird Survey undertaken by Just Ecology on behalf of Able and submitted with the planning application.

As the area of intertidal mudflat that will be lost is 0.07ha, the bird carrying capacity of the Sector (assuming conservatively that it is currently at capacity) would reduce by a fraction of one whole bird which is clearly a trivial amount. If the frontage is not at capacity it would mean that it could absorb at least one extra bird and there would be no impact on avifauna whatsoever.

The only conclusion that can be drawn from the above is that the loss of this small area of intertidal mud, which has no unique characteristics compared to the remaining 7,711ha of mudflat in the middle and outer estuary, is inconsequential.

Effect of the Project on Saltmarsh

Based on NVC mapping provided by North Lincolnshire Council, the following areas of saltmarsh could be lost as a consequence of the development:

SM6	Common cordgrass	<i>Spartina anglica</i>	133m <sup>2</sup>	(0.0021%)
SM12	Sea aster community	<i>Rayed Aster tripolium</i>	392m <sup>2</sup>	(0.0063%)
<b>TOTAL</b>			<b>525 m<sup>2</sup></b>	<b>(0.0084%)</b>

<sup>3</sup> RR339, p81 January

<sup>4</sup> RR339, p81 February



Of the two saltmarsh communities affected by the project, SM6 is not an interest feature and SM12 was not a primary reason for selection of the site as an SAC, but is an interest feature (JNCC).

#### Quantum of lost Saltmarsh

The figures given in brackets above give the habitat lost as a percentage of the total area of saltmarsh habitat within the European site based on the area of saltmarsh given in the CHaMP. Again, by reference to precedent planning decisions, the losses are an order of magnitude less than those on the Dee Estuary, or on the Folkestone to Etchinghill Escarpment.

The percentages are based on an area of saltmarsh equal to 627ha, as given in the CHaMP. However an IECS Report, 'Habitat Status of the Humber Estuary, UK', April 2008, states that:

*"The intertidal saltmarsh composition within the Humber is quite distinct with an estimated total area of **1,472.02ha** comprising of **Salicornia** and other annuals colonising mud and sand (61.48ha), **Atlantic salt meadows (899.42ha)**, Mediterranean and thermo-Atlantic halophilous scrub and associated intertidal marsh (0.04ha), and other NVC communities (511.08ha). The lower marsh is dominated by the species poor, common cord-grass *Spartina anglica* saltmarsh community, together with smaller areas of the annual glasswort *Salicornia* community. Together these lower marsh communities account for slightly more than 25% of the saltmarsh in the Estuary," (Able emphasis).*

The IECS report is, in turn, based on data included in ENRR547. The issue is complicated further by reference to the JNCC website which quotes an area 784.46ha of Atlantic salt meadows within the SAC.

Based on IECS figures the percentage of the total area of saltmarsh within the Humber affected by the development is 0.0036%; based on JNCC figures, the percentage loss of Atlantic salt meadows is 0.005%.

The quantum alone does not therefore appear significant, whichever baseline is adopted.

#### Ecological Value of lost Saltmarsh

SM6 is characterised by common cordgrass. Rodwell (*British Plant Communities, Volume 5: Maritime Communities and Vegetation of open Habitat*), reports that '*S. anglica* can be found in almost every saltmarsh community, the distinctive situations of the community are towards the seaward fringes of marshes, on creek sides, colonising old pans in the upper marsh zone and, more rarely, in brackish water behind sea walls'. JNCC meanwhile state that '*the rapid colonisation of *Spartina* over extensive flat sites with large populations of waders and wildfowl is a major concern because of the birds' loss of habitat for feeding and roosting'*. NE's Regulation 33 advice for the site records similar concerns. Not surprisingly, SM6 is not a qualifying habitat of the Humber Estuary SAC and the conservation objectives for the site require '*no significant increase in (its) extent*'. The loss of 133m<sup>2</sup> cannot therefore result in any adverse impact on the integrity of the European site.

SM12 is part of the Atlantic salt meadows habitat; there are more than 29,000ha in the UK and 784.46ha within the Humber (JNCC, 2009). Sea aster is common along the banks of the Humber and the River Hull and whilst it is a European interest feature, it is not cited as a primary reason for the selection of the site as an SAC; the primary reasons were the estuary and the mudflats and sandflats. Relevant abstracts from the JNCC website are included in Attachment 1 of this letter



The conservation objective for the Atlantic salt meadows, as detailed in the Regulation 33 advice is no '*significant decrease (in abundance) from an established baseline*'.

Again the conclusion that we draw from the above is that the loss of a very small area of habitat (0.005% of the total) that was not one of the primary reasons for the selection of the site as an SAC, is inconsequential with respect to the site's overall integrity.

Notwithstanding the above, we note the value placed on saltmarsh by the competent authority and believe there is an opportunity within the development for planning gain. By realigning the flood defences within the Skitter a new area of inter-tidal habitat outside the existing SAC boundary can be created and we will include this in revised plans to the planning authority, refer to Attachment 2 of this letter.

#### Key Points

1. The loss of a very small area of mud habitat is not, per se, an adverse impact on integrity of the designated site.
2. The loss of a very small area of Atlantic salt meadows, which is common on the Humber and was not a primary reason for selection of the site as an SAC is not, per se, an adverse impact on integrity of the designated site.
3. The impact of the losses cannot be expected to manifest itself in any measurable way on the interest features of the site.

#### Section 8 –Q4

The appropriate assessment cannot consider the impact on East Halton Beck itself as this is outside of the European site. Instead the AA may only consider the impact on contamination levels in the Skitter and thereafter in the Humber. However we fully recognise that the potential environmental impact on the Beck needs to be addressed under the EIA Regulations and we believe the Environmental Statement adequately addresses this issue.

Having noted the above, we record that Able first met with the EA in February 2007, and we agreed the principle of separating the site from the East Halton Beck catchment with them at a meeting on the 31<sup>st</sup> August 2007. The benefit of this approach is that since the catchment is already subject to periodic flooding (refer to the Strategic Flood Risk Assessment (SFRA), Figure 1.5), the proposed separation will reduce flood risk upstream of the Drain's confluence with the Beck, albeit by a small margin.

According to the SFRA (paragraph 4.59), the East Halton Beck catchment covers 124km<sup>2</sup> and is almost entirely agricultural. The application site lies partly within the catchment forming approximately 3% of its total area. Agricultural run-off is a source of diffuse pollution which includes phosphates and nitrates. In 2006, 50% of rivers had elevated concentrations of phosphate and 28% of nitrate (Bell and McGillivray, p581). Not surprisingly therefore, Defra records that East Halton Beck has elevated concentrations of these pollutants. As the application site is currently agricultural, it must be expected to give rise to run-off with pollutant concentrations similar to the catchment as a whole. This being the case it cannot dilute the flows in the Beck as EA assert, it can only add to the pollutant load entering the Skitter.

With regard to the potential for the East Halton Drain to 'flush' the latter reaches of East Halton Beck, this scenario does not seem credible. 'Flushing', would only occur if the Drain had a significant influence on the velocity of discharge from the Beck. East Halton Drain is, to all intents and purposes, flat with commensurately low velocity flows which enter the Beck at right angles, so there is no component of velocity in the direction of flow in the



main channel. Discharge into the Beck is also constrained by a culvert (see Photograph 1) at the discharge point. Channel flow velocity can be calculated using Manning's Formula (Fluid Mechanics for Civil Engineers, Webber, SI Edition, p153), and whilst velocity is related to flow depth<sup>5</sup>, the reduction in flow velocity in the Beck due to the small reduction in run-off will be trivial.

With respect to any current applications for Discharge Consent from the EA; under the Habitats Directive, these can only be granted after an assessment of the Impact upon a European Site. In accordance with EU guidance MN2000, applications must be considered in combination with proposed projects (MN200, paragraph 4.4.3). Accordingly, any application for Discharge Consent submitted since Able's planning application must be considered in combination with that application and not vice-versa.

Notwithstanding any of the above, the degree to which your appropriate assessment needs to consider in detail (ie. numerically) the impact of drainage discharges on the European site might be informed by reference to *R v Bolton Metropolitan Borough Council ex p Kirkman* [1998]. In this case, the Court of Appeal held that a planning authority had not erred in relying on the existence of dedicated controls under the Environmental Protection Act 1990, when it granted a planning consent; it did not matter that the LPA did not have the detailed figures before them. It would seem reasonable to expect a parallel argument to apply to the appropriate assessment process. Namely, that you can, and should be able to, rely on the EA to undertake an appropriate assessment of the environmental impact of discharges from the development site when they consider any subsequent application to them for Discharge Consent.

#### Key Points

1. Separation of the site from the East Halton Beck catchment was agreed with EA in August 2007.
2. There is no prima facie case for believing run-off into East Halton Drain is less polluted than run-off into the catchment as a whole.
3. There is no prima facie case for believing that the Drain has a flushing action on the Beck.
4. The appropriate assessment for the planning application should be able to rely on the fact that an appropriate assessment will be undertaken in respect of any future application for Discharge Consent.

<sup>5</sup> velocity  $\propto$  (cross sectional area of flow)<sup>2/3</sup>



**Photograph 1: Culvert connecting East Halton Drain (foreground) to East Halton Beck**



#### **Paragraph 8.4.2**

Impact on water quality is easiest to measure and control at the point of discharge (directly from the waste water plant). EC Waste Water Directive 91/271 and the Water Resources Act 1991 set the statutory requirements for discharges from waste water treatment plants and the package plants proposed would achieve the specified limits. Cognisance has also taken of EA's publication, '*PPG4: The Treatment and Disposal of Sewage where no Foul Sewer is Available*'. Given the lack of capacity in the public sewer, the proposed package treatment plants with supplementary reedbed treatment provide a sustainable means of disposing of the foul water generated by the development.

The design provides for the foul drainage to be piped from the package plants to reedbeds for tertiary treatment before being discharged into the attenuation ponds (refer to ES Section 8.2). These attenuation ponds will be flushed through with surface water run-off during each rainfall event. The total surface water run off from the completed development will be around 1.5Mm<sup>3</sup>/annum, compared to an annual foul flow of 60,000m<sup>3</sup>; this provides significant treatment and dilution on site before discharge into controlled waters. The treated water will also be beneficial in maintaining water levels in the conservation areas during any prolonged dry spells and the reedbeds will provide additional bio-diversity.

The EA's primary concern appears to be the lower compliance figures for private sewage treatment plants compared to public sewage treatment works. This however can be addressed by good management and routine maintenance of the plant and this can be enforced through appropriate planning conditions if deemed appropriate.



Estimating the impact of the treated foul sewage on the receiving watercourse (the Humber) is not a precise exercise, but may not be necessary in any event. The Humber drains 20% of the land mass of the UK and all liquid effluent discharged within that area must ultimately find its way to the mouth of the Humber.

The effluent from the site will pulsate up and down the Humber over several tidal cycles before finally discharging into the sea. (The net rate of flow per spring tide is 5km eastwards) On a spring tide 160Mm<sup>3</sup> of water passes through the mouth of the Humber (*'The Humber Estuary Environmental Background Report', Shell, 1987.*). The development will not increase the effluent load on the Humber by any measurable value.

The foul drainage can be designed to comply with all statutory waste water requirements.

### **Section 9 -05 and other references**

Planning consent for the hydrogen pipeline (PA/2006/1133) lapsed on 6<sup>th</sup> November 2009. It is not necessary to consider it in combination with Able's planning application.

### **Section 10 - 06**

In paragraph 10.2.3.4 you state that the *'predicted peak counts for the mitigation areas are bald projections, albeit projections made by a wetland manager with considerable experience'*.

The latter point is actually very important. Able recognised during the design process that predicting the future use of the habitat mitigation areas was not a precise science; it could only be estimated on the basis of empirical data. Accordingly we sought the expert judgement of an independent and experienced wetland manager who is versed in the development of similar sites. In addition, we have assessed the potential consequences of the mitigation habitat being used by fewer birds than predicted by the expert advisor and included our assessment of this impact in the Conservation Management Plan, refer to Appendix 5.2 of that document. This is a transparently precautionary approach to the risk of bird displacement and its potential consequences.

In consultations with Natural England, they have expressed concern that the carrying capacity of the estuary may be limited by the availability of high tide roosts. In response to a specific request to provide their evidence to support these doubts, they have stated the following:

*'There is no direct evidence (that fields adjacent to the Humber SPA are at capacity) as it is very difficult to establish if a population or community of birds has reached the capacity of its supporting habitat. The recent decline in some SPA populations indicates that resources (within and/or outside the SPA) are limiting. In the face of such uncertainty Natural England would argue that it is precautionary to assume that habitat availability is limiting. In any case, it is the consenting authority's responsibility under the Habitat Regulations to show no adverse effect (and thus show that offsite habitats are not currently 'at capacity')*

Paraphrasing; Natural England have no evidence, it would be difficult for them to prove anything in any event, but the competent authority is left with the responsibility to disprove their doubts.



Natural England seem to be seeking a 'proof' as to the absence of an effect, but as alluded to in our opening comments, 'proof' is of little relevance in environmental cases. Since the Waddenzee decision, it has been clear that, applying the precautionary principle, significant harm to an SPA is "likely" for the purposes of Article 6 and Regulation 48 if the risk of it occurring cannot be excluded on the basis of objective information.

As further noted at the beginning of this letter, case law requires that any party harbouring doubts that adverse effects of a project on a European site cannot be excluded, must provide the competent authority with scientific evidence to support those doubts, otherwise it is open to any party to express doubt and thereby to paralyse the decision making process. The evidence base provided by Natural England, is, a 'recent decline in some SPA populations'.

Natural England's 'doubt' therefore is predicated on a single piece of evidence, that there has been a 'recent decline in some SPA populations'. On the face of it, this 'doubt' seems to be nothing more than an intuitive judgement which is not a reliable tool for any decision maker. This introduces, in the first instance, an argument over whether the precautionary principle should be invoked to consider hypotheses based on weak evidence; bird numbers fluctuate year by year and are subject to natural variation, so the recent decline may not become a statistically significant trend. Setting aside this issue, we can still consider whether Natural England's doubts can be excluded in this appropriate assessment on the basis of objective information. Accordingly, we assess below whether the causal link put forward by NE is a 'credible scenario'. This is done by assessing, numerically, whether the key species on the South Humber Bank are in decline, based on objective information reasonably available to us.

According to Mott Macdonald's (MM's) report, 'Field Usage by Bird Species from the Humber Estuary SPA', May 2009, part funded by Natural England, the key SPA bird species using the South Humber Bank Zone are: Golden Plover, Lapwing, Curlew, Ruff and Whimbrel.

The following Table shows the change in species numbers, based the five year peak mean to screen out year on year changes, between 1996 and 2004.

Species	Source: ENRR 547	Source: WeBS Counts 1999/00 – 2003/4	Peak Monthly Count 1999 - 2004
Golden Plover	Wintering 5 year peak mean 1996/7- 2000/1 30,709	Wintering 5 year peak mean 37,674 Change: (+22.7%)	50,662
Lapwing	Wintering 5 year peak mean 1996/7- 2000/1 22,765	Wintering 5 year peak mean 27,297 Change: (+19.9%)	39,865
Curlew	Wintering 5 year peak mean 1996/7- 2000/1 3,253	Wintering 5 year peak mean 3,714 Change: (+14.2%)	4,277
Ruff	Wintering 5 year peak mean 1996/7- 2000/1 14	Wintering 5 year peak mean 16 Change: (+14.3%)	25
	Passage 5 year peak mean 1996/7- 2000/1 128	Passage 5 year peak mean 136 Change: (+6.3%)	187
Whimbrel	Autumn 5 year peak mean 1996/7- 2000/1 113	Autumn 5 year peak mean 123 Change: (+8.9%)	275



The numerical analysis shows that every 5 year peak mean population indicator is positive. The above figures are in contrast to national 10 year trends for Lapwing and Curlew as reported in RSPB's report, 'The state of the UK's Birds 2008'. Nationally, these two species have shown modest declines of 9% and 6% in the ten year period from 1995/6. RSPB records long term increases however in the national populations of Golden Plover, Lapwing and Curlew between 1980/1 – 2005/6 of 332%, 129% and 34%.

On the basis of the above, there is no prima facie case for believing that the key species using the South Humber Bank are in decline on the SPA as a whole.

If we further postulate that the carrying capacity of the hinterland for each species must at least equal the seasonal peak number for that species recorded in any year, then the margin between 'capacity' and 'usage' can be crudely estimated if a target number is set for each species on the site. Circular 06/2005 states that, '(t)he integrity of a site is the integrity of its ecological structure and function, across its whole area, that enable it to sustain the habitat, complex of habitats, and/or the levels of populations of the species for which it was classified' (paragraph 20). The Humber Estuary SPA was classified in two phases, Phase 1 being first in 1994, Phase 2 followed in 2007. Taking into account Circular 05/2006, and noting the conservation objectives, a 'target population' equal to the 5 year peak mean between 1999/00 and 2003/4 would be reasonable.

The above table shows the peak monthly count on the estuary for each of the key species on the South Humber Bank for the period 1999-2004. Peak monthly counts are not necessarily a reliable measure of the potential carrying capacity of the estuary over a season however, so the Table below shows the seasonal comparison for the five species and the percentage usage based on the assumptions noted.

Species	1999/00 – 2003/4 Peak Mean Seasonal Count	Max seasonal WeBS Count from ENRR 339	Typical percentage Usage
Golden Plover	37,674	c.60,000	63%
Lapwing	27,297	90,288	30%
Curlew	3,714	c.4100	91%
Ruff	136	Not Given	-
Whimbrel	123	Not given	-

The numbers of Ruff and Whimbrel are simply too small to believe that habitat limits their number on the site. Only a few hundred of each is present in the UK, (JNCC).

The peak Golden Plover and Lapwing counts happened to occur in the same year. On the basis of the above there is no prima facie case for believing that either Golden Plover or Lapwing are limited by the available habitat, the average peak counts mask a very high natural variation in numbers.

The peak winter seasonal count for the curlew is only 10% higher than the 5 year mean suggesting a relatively stable population of between 3-4,000. Understanding the ecology of this species is key to establishing whether habitat might limit its numbers on the site. ENRR 547 states that this species feeds on inland fields up to 5 miles from the SPA boundary; thus the extent of their potential feeding habitat is very substantial indeed; there is a plentiful supply of suitable habitat within 5 miles of the estuary. MM's report included a statistical analysis of field usage and proximity to the SPA. Data was collected



up to 4km from the SPA boundary. For Curlew, the report found a weak but statistically significant correlation between field usage and distance from the SPA boundary. This means that Curlew use nearly as many fields 3-4km from the SPA boundary as immediately adjacent to the boundary. The MM report also found that of the four habitat types considered, arable land was the least used by Curlews. This statistical analysis reinforces the observational data.

On the basis of information available to us, the assertion that the bird carrying capacity of the SPA hinterland is limited by the availability of suitable habitat does not appear credible for the key species on the South Humber Bank.

### **Section 11 - Q7**

You state that, *'(p)rovided that the wetland areas are created and maintained in accordance with the submitted drawings ..... there will be no adverse impact...'*

Your conclusion appears to be based on the premise that the effect of displacing SPA birds from the application site would be an adverse impact. This would only be the case if the hinterland was at bird carrying capacity and there is no evidence for this. Indeed, birds are periodically displaced by changes in agricultural practices and on occasion the displacement effect is significant with no evident impact on the population at all. Conversely, bird numbers can rise significantly due to changes in agricultural practices. The Humber Management Scheme, Appendix E notes that, *'the dramatic increase in golden plover on the Humber in the late 20th Century (may) reflects the change from spring to autumn sown crops (Nick Cutts, pers com). Cereal fields are now clear by late July or early August in time for returning golden plover to use them. In the past, these large areas would not have been available until late September.'*

Examples of significant displacement due to agricultural changes are recorded by local ornithologists. The following passage is taken from Graham Catley's report on bird surveys undertaken for HINCA in 2007;

*'Field number 1 (Most north-easterly field within the application site)*

*This extensive field immediately adjacent to the estuary was under autumn cereals which had grown to a height in excess of 15cm by January. The crop was dense and appeared to be quite unsuitable for roosting and feeding waders.*

*Past studies have shown this field to be of particular importance for roosting Lapwing and Golden Plovers with up to 10,000 Golden Plovers and 5,000 Lapwing having been counted. The roost of these species usually peaks in November - December but has typically been at its height when the field was either ploughed or had short cereals. Extensive under draining in the past two years may also have affected the surface moisture content of the field and affected its attraction to feeding waders. At times when the field has had standing surface water a wider range of species including Dunlin, Ruff, Redshank, Curlew and Ringed Plover have been found roosting and feeding there."*

The displacement recorded above occurred against a background of rising numbers on the estuary as a whole. It is entirely possible that the hinterland has sufficient capacity to absorb all those birds displaced by the development without adverse impact on the population levels within the SPA and without any on site mitigation. We reiterate our response to Q6; the historic maxima of golden plover and lapwing (by far the most dominant species on the application site) indicate that demonstrable spare capacity exists over and above the citation number.



### Key Point

The 'effect' of displacing birds is not, per se, an adverse impact on integrity.

### Section 13 – Q9

We note your personal observations that the birds currently using North Killingholme Haven Pits show a high degree of habituation to HGV traffic and port operations. For your information, similar observations were recorded by Andrew Ward Associates in their report, 'Assessment of Proposed Works on North Killingholme Pits SSSI', May 2005, in a report to North East Lindsey Drainage Board. Paragraph 5.3.2 of their report states:

*"Although shielded from the road by a hedge, there is regular loud noise at this point from HGV's using the adjacent North Killingholme Haven Port; freight trains use the railway between Pits A and B and people walk along the sea wall in view of the birds using Pit A. Personal observation in November 2003 at a time when there were black tailed godwits and redshank (500+) in Pit A indicated a **high degree of habituation** to human presence and noise", (Able emphasis).*

For your further information, Network Rail has confirmed that freight trains used the track regularly until 2003 and used it again for a six month period in 2005, (e-mail G bounds to R Cram, 28-07-2010). It is therefore clear that the Pits became a valuable habitat whilst trains used the track on a regular basis demonstrating that they do not have an adverse effect on avifauna at this location.

As an aside, during a recent visit to the site we observed lapwing feeding in close proximity to the Ro-Ro berths at Humber Sea Terminal, further demonstrating a high degree of habituation to industrial activity.

### Photograph 2: Lapwing feeding alongside the HST Ro-Ro Berth



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20. 'Assessment of Proposed Works on North Killingholme Pits SSSI', Andrew Ward Associates, 2005.

Yours sincerely

*Richard Cram*  
Design Manager

Encs:

Attachment 1: AHP Proposals for Works on the South Bank of the Skitter Estuary.  
Attachment 2: JNCC Humber Estuary SAC information.

CC:

Philip Winn – Environment Agency  
William Hill – North Lincolnshire Council (Planning)



## ATTACHMENT 1

AHP Proposals for Works on the South Bank of the Skitter Estuary.





**ABLE HUMBER PORT  
PROPOSALS FOR WORKS ON THE SOUTH BANK OF  
THE SKITTER ESTUARY**

**APPLICATION REF: PA/2009/0600**

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APPLICATION REF PA/2009/0600**

**FEB  
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## 1. INTRODUCTION

- 1.1 In the draft Appropriate Assessment circulated by Mr Andrew Taylor of North Lincolnshire Council on 27<sup>th</sup> January 2010, Section 15.6 therein sets out concerns which are considered to be adverse effects on the integrity of the designated site (AEOI). One such concern related to potential damage to an area of saltmarsh adjacent to the existing flood defence wall along the south bank of the mouth of the Skitter.
- 1.2 The purpose of this report is to address and resolve this issue.

## 2. EXISTING SITUATION

- 2.1 Figure 1 is a plan provided by the Highways and Planning Service of North Lincolnshire Council for OS Grid TA14602294 which shows an area of saltmarsh identified as SM12, occupying 610m<sup>2</sup>, along a length of 74m against the Skitter South Bank sea wall. This particular plant community is characterised by the occurrence of sea aster, *Aster tripolium*, which is noted in the English Nature Humber to Pennines Team SSSI NVC survey of June/July 2001. Sea aster (Figure 2) occurs commonly along the coasts of Europe. Emma Hawthorne of Natural England has confirmed (Personal Communication 2010) that these survey data remain valid.
- 2.2 Close to the point at which the flood defence wall turns southwards, there is another saltmarsh community, SM6, which is characterised by common cord-grass. This is the result of hybridisation between the native small cord-grass with smooth cord-grass which is a non-native species introduced in the ballast water of ships travelling from the east coast of USA during the 19<sup>th</sup> Century. It is noted by the JNCC in its Marine Advice (Non-native Flora) as being:
- "widespread around the east and west coasts and is still expanding in the west .... The rapid colonisation of Spartina over extensive flat in sites with large wintering populations of waders and wildfowl is a major concern because of the birds' loss of habitat for feeding and roosting"* (Davidson N.C. et al 1991. Nature conservation and estuaries in Great Britain. Peterborough, Nature Conservancy Council; www.jncc.gov.uk page 1680).
- 2.3 The JNCC, in its 'Habitat account for marine coastal and halophytic habitats' provides further information on halophytic habitats, e.g. '1320, *Spartina* swards'. SM6 *Spartina anglica* is one of the component types but '... in many areas *Spartina anglica* is considered a threat to the intertidal mudflats used as feeding grounds by large populations of waders and wildfowl. ... *Spartina anglica* is generally considered to be a negative conservation feature of the sites where it occurs...'.
- 2.4 In its advice dated April 2003, given under Regulation 33(2) of the Conservation (Natural Habitats & ) Regulations 1994, English Nature sets out in Table 3 of that document management targets for the Humber Estuary pSAC Interest Features. The target for *Spartina anglica* is '... no significant increase ....'.

- 2.5 This saltmarsh community adjoins 25m of the existing flood defence wall where the structure turns southwards at the mouth of the Skitter and it also lies next to passing bay 67, (see Figure 1).
- 2.6 The sea aster community is characterised by *Aster tripolium* which is illustrated in Figure 2. Figure 3 is a photograph of the area it occupied in 2001 when the Natural England survey was carried out. The photograph was taken on 9<sup>th</sup> February 2010, and at that time of the year it might be difficult to see evidence of *Aster tripolium* among the other vegetation. Certainly it was not dominant. Other plant communities now established in the SM12 area as shown in Figure 1 include *Spartina anglica*.

**Table 1**

NVC Plant Community Code	Characteristic Plant	JNCC Management Objective	Status
SM6	<i>Spartina anglica</i>	No significant increase as it is a negative conservation feature	Invading adjacent areas, but 5.3m (133m <sup>2</sup> ) adjacent to wall almost devoid of all plants (Fig 4)
SM12	Rayed Aster <i>tripolium</i>	Abundance not to deviate significantly from an established baseline subject to natural change	Within 5.3m adjacent to wall (392m <sup>2</sup> ) occurrence of sea aster diminished by natural succession and increasing sea levels since 2001 survey (see Fig 3)

- 2.7 Drawing No. K1 – 09001 A shows the locations and directions of the photographs in Figures 3 and 4.

### 3. **PROPOSED WORKS**

- 3.1 Two options are proposed for works along the south bank of the Skitter. Both are designed to have less impact on the saltmarsh.
- 3.2 The works would be undertaken during the period April to September in any year so as to eliminate disturbance to SPA birds.
- 3.3 OPTION 1
- 3.3.1 In Option 1 overtopping of the wall is limited by placing rock armour in front of the structure as shown on Drawing 06041 B. This would encroach by up to 5.3m at its eastern end upon the saltmarsh community SM6 which comprises common cord-grass.
- 3.3.2 In view of the JNCC comments on the adverse impact of this species on the ability of mudflats to provide feeding and roosting opportunities for estuary birds, no risk to the integrity of the designated site is foreseen.

- 3.3.3 From passing bay 67 eastwards to the point where vegetation gives way to bare mud and stone, the dominant species are Festuca spp next to the toe of the wall, increasingly colonised by common cord-grass towards the Skitter channel.
- 3.3.4 Small isolated clumps of sea aster can also be found, usually in close proximity to the toe of the wall.
- 3.3.5 Bearing in mind the degraded nature of SM12 as a sea aster community, it is not considered that loss of these isolated areas of sea aster would constitute a significant adverse impact on the integrity of the designated site.
- 3.3.6 The second element of this option is offered as enhancement and involves 0.27ha comprising a grassed area surrounded on its northern and eastern sides by an earth bund. It is proposed to remove the bund replacing it along the southern side as shown in Drawing KI-06041 B.
- 3.3.7 The existing ground which is covered by topsoil and grass has levels in the range 2.7-3.1m AOD.
- 3.3.8 Immediately adjacent land within the estuary, to the east of the car park has levels around 3.3m AOD. Removal of the bund will allow periodic tidal inundation and deposit of silt over the grassed area. Sea aster seed will be collected from the remaining isolated plant groups close to the sea wall and sown on the newly deposited silt in the car park area.
- 3.3.9 The sequence of events to create this habitat would be as follows:
- **Year 1** – A new bund will be created to link the tidal gates across the Skitter to the end of the existing flood defence wall. The existing bund will be removed leaving the grassed area at 2.7-3.1m AOD. Grass on this area will be sprayed off using glyphosate or equivalent herbicide.
  - **Year 2** – By now the new intertidal area will have a thin deposit of alluvial silt. Seed, by agreement with North Lincolnshire Council, will be gathered from sea aster plants along the south bank of the Skitter and sown in the upper areas, the remaining surface being allowed to colonise naturally as saltmarsh. Placement of rock armour from passing bay 67 to the corner of the mouth of the Skitter will be undertaken and completed.
  - **Year 3 onwards** – Colonisation of the former grassed area will be monitored, ground levels will be adjusted if necessary reflecting any instruction from North Lincolnshire Council.

#### 3.4 OPTION 2

- 3.4.1 The area of the flood defence wall to be upgraded is shown crosshatched on Drawing KI-06042 B. The work is needed only to limit overtopping to 2 l/s/m to prevent erosion of the landward face of the wall.



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- 3.4.2 In this option the existing splash wall would be left in situ but a new higher splash wall would be secured in position, the wall widened and a new concrete roadway would be constructed. There would be no work to the part of the wall where it is in contact with designated habitats, so that saltmarsh vegetation would be undisturbed. Details are shown on Drawing KI-06043 A.
- 3.4.3 Rock armour would be placed for a distance of 15m westwards from the corner of the wall. Figure 4 shows that there is no significant vegetation within 5.3m of the toe of the wall at this location.
- 3.4.4 The landward face of the upgraded flood defence wall will be sown down to a salt tolerant grass sword as specified in Conservation Management Plant No. 2.

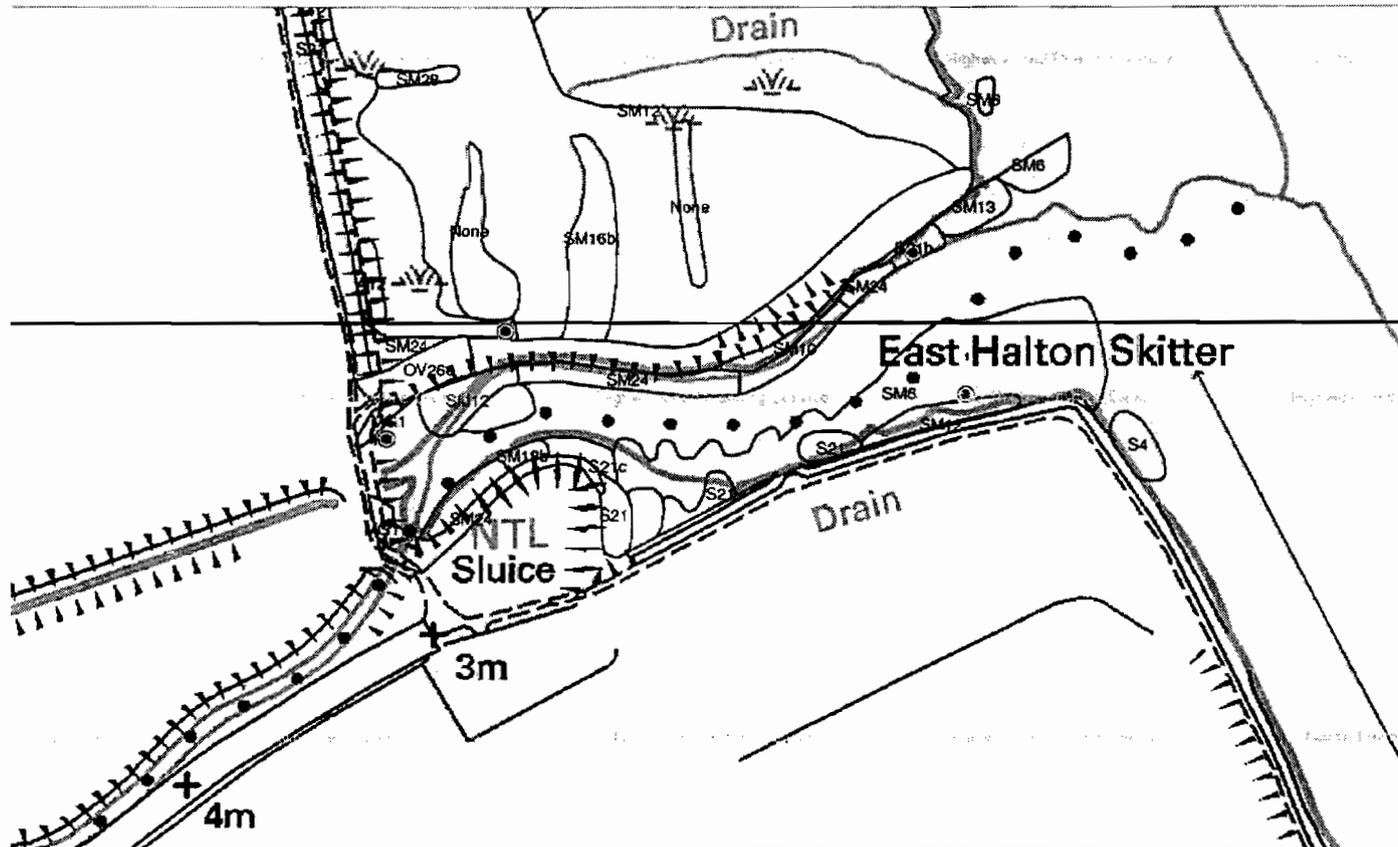


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**FIGURES**

**Figure 1: NVC Survey of the East Halton Skitter (Not to Scale)**



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	Drawn by: AT Date: 02/02/2010 Scale: 1:2,500 OS Grid Ref: TA14602294		

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**ENGLISH NATURE HUMBER TO PENNINES TEAM - SSSI NVC SURVEY**

<b>Site Name:</b> Pyewipe and Cleethorpes Coast	<b>Site Area:</b> 1314 hectares
<b>Grid Reference:</b> TA 338051 - TA144229	<b>Surveyor:</b> L. M. King and K. J. Mastel
<b>Date(s) of Survey:</b> June and July 2001	<b>Time on Site:</b> 12.5 days
<b>Natural Area:</b> <ul style="list-style-type: none"> <li>◆ Lincolnshire Coast and Marshes</li> <li>◆ Humber Estuary</li> </ul>	

**NVC Communities**

Code	Community	Area (ha)
MG1	<i>Arrhenatherum elatius</i> grassland	7.80
SM6	<i>Spartina anglica</i> salt-marsh community	11.10
SM8	Annual <i>Salicornia</i> salt-marsh community	13.28
SM10	Transitional low-marsh vegetation with <i>Puccinellia maritima</i> , annual <i>Salicornia</i> species and <i>Suaeda maritima</i>	0.05
SM11	<i>Aster tripolium</i> var. <i>discoideus</i> salt-marsh community	1.26
SM12	Rayed <i>Aster tripolium</i> on salt-marshes	1.93
SM13	<i>Puccinellia maritima</i> salt-marsh community	30.37
SM13b	<i>Puccinellia maritima</i> salt-marsh community - <i>Glaux maritima</i> sub-community	0.02
SM14	<i>Halimione portulacoides</i> salt-marsh community	0.81
SM14c	<i>Halimione portulacoides</i> salt-marsh community, <i>Puccinellia maritima</i> sub community	21.95
SM16	<i>Festuca rubra</i> salt-marsh community	0.28
SM16a	<i>Festuca rubra</i> salt-marsh community <i>Puccinellia maritima</i> sub-community	0.94
SM16c	<i>Festuca rubra</i> salt-marsh community <i>Festuca rubra</i> - <i>Glaux maritima</i> sub-community	0.27
SM24	<i>Elymus pycnanthus</i> salt-marsh community	6.03
SD4	<i>Elymus farctus</i> ssp. <i>boreali-atlanticus</i> foredune community	0.27
SD5	<i>Leymus arenarius</i> mobile dune community	0.13
SD5c	<i>Leymus arenarius</i> mobile dune community <i>Festuca rubra</i> sub-community	0.19
SD6e	<i>Ammophila arenaria</i> mobile dune community <i>Festuca rubra</i> sub-community	0.42
SD7	<i>Ammophila arenaria</i> - <i>Festuca rubra</i> semi-fixed dune community	0.39
SD7a	<i>Ammophila arenaria</i> - <i>Festuca rubra</i> semi-fixed dune community, Typical sub community.	0.16



STRANDKIL, ASTER TRIPOLIUM L.

**Figure 2**

Sea aster – *Aster tripolium*



**Figure 3**

Area mapped as SM12, sea aster community in 2001



**Figure 4**

SM6 vegetation is sparse along the south bank near the mouth of the Skitter

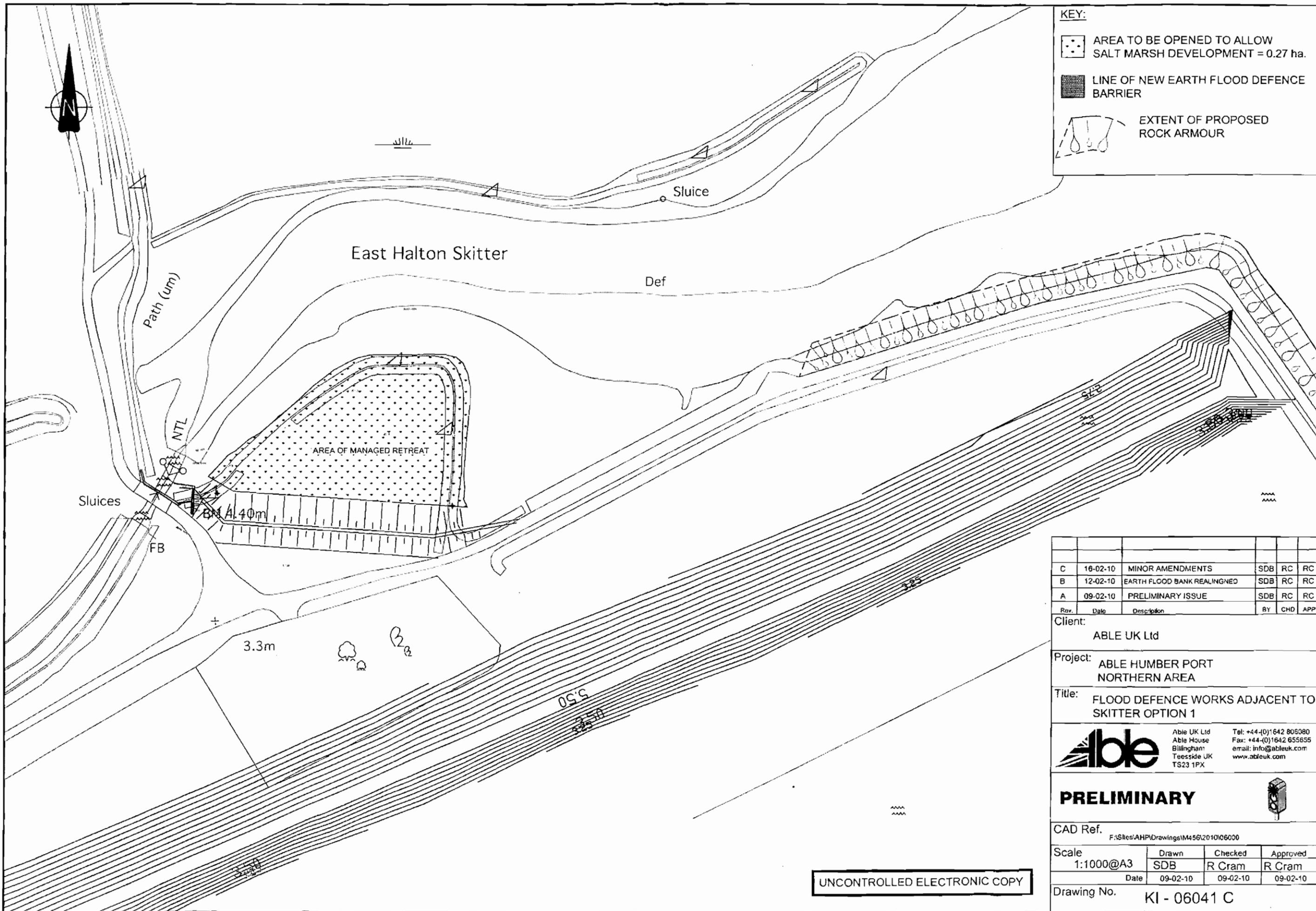


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**DRAWINGS**

- KI - 06041 C** - Flood Defence Works Adjacent to Skitter Option 1
- KI - 06042 B** - Flood Defence Works Adjacent to Skitter Option 2 Sheet 1
- KI - 06043 A** - Flood Defence Works Adjacent to Skitter Option 2 Sheet 2
- KI - 09001 A** - Photograph Location Plan



**KEY:**

-  AREA TO BE OPENED TO ALLOW SALT MARSH DEVELOPMENT = 0.27 ha.
-  LINE OF NEW EARTH FLOOD DEFENCE BARRIER
-  EXTENT OF PROPOSED ROCK ARMOUR

Rev.	Date	Description	BY	CHKD	APP
C	16-02-10	MINOR AMENDMENTS	SDB	RC	RC
B	12-02-10	EARTH FLOOD BANK REALIGNED	SDB	RC	RC
A	09-02-10	PRELIMINARY ISSUE	SDB	RC	RC

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Project: ABLE HUMBER PORT NORTHERN AREA

Title: FLOOD DEFENCE WORKS ADJACENT TO SKITTER OPTION 1



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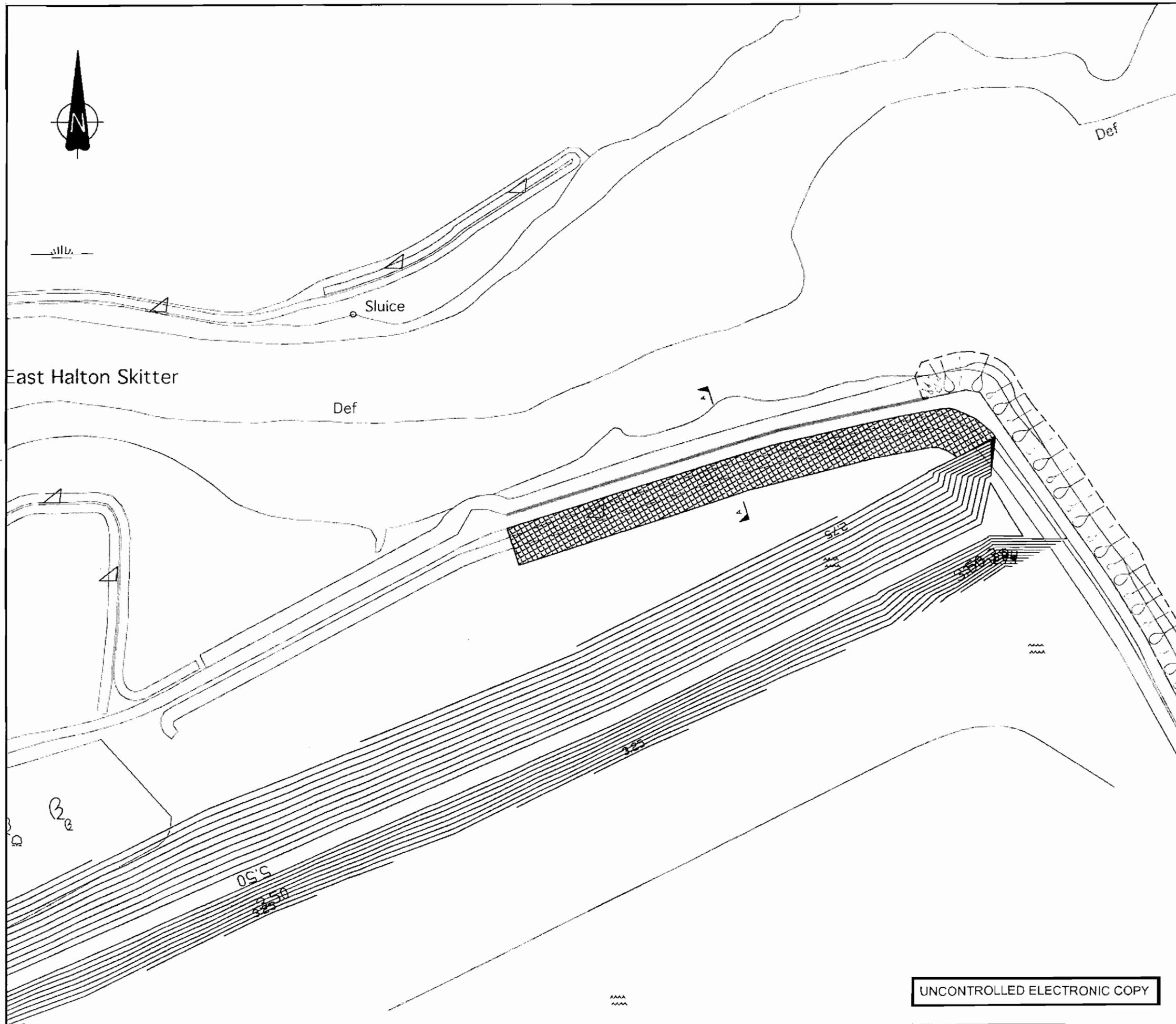
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Date	09-02-10	09-02-10	09-02-10

Drawing No. KI - 06041 C

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**KEY:**

-  RAISE TOP OF SPLASH BARRIER BY 0.5m
-  EXTENT OF PROPOSED ROCK ARMOUR
-  EXTENT OF GRASSCRETE

FOR SECTION SEE DRG. NO. KI - 06043 B

Rev.	Date	Description	BY	CHKD	APP
B	12-02-10	SECTION LINE ADDED	SDB	RC	RC
A	09-02-10	PRELIMINARY ISSUE	SDB	RC	RC

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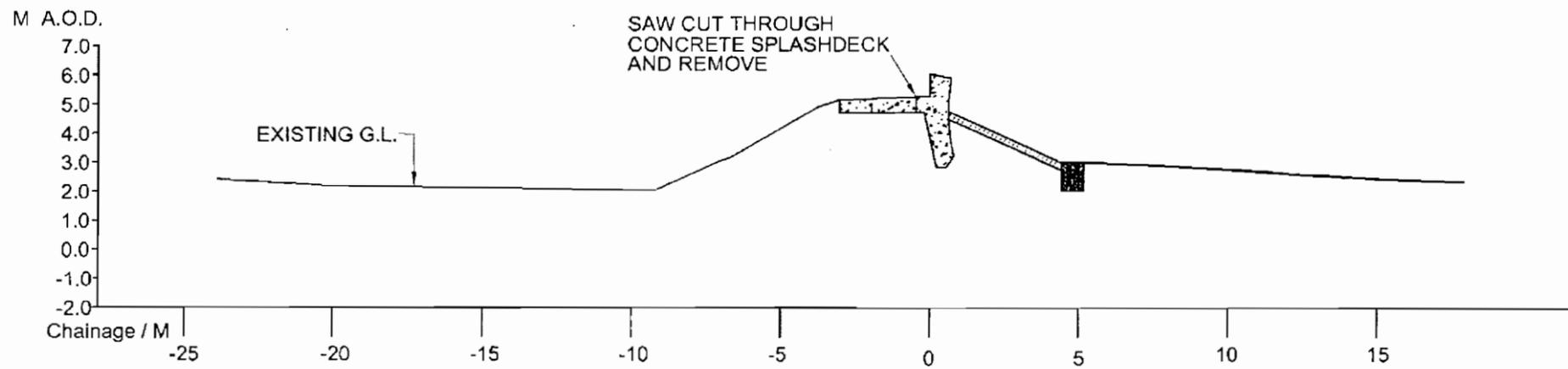
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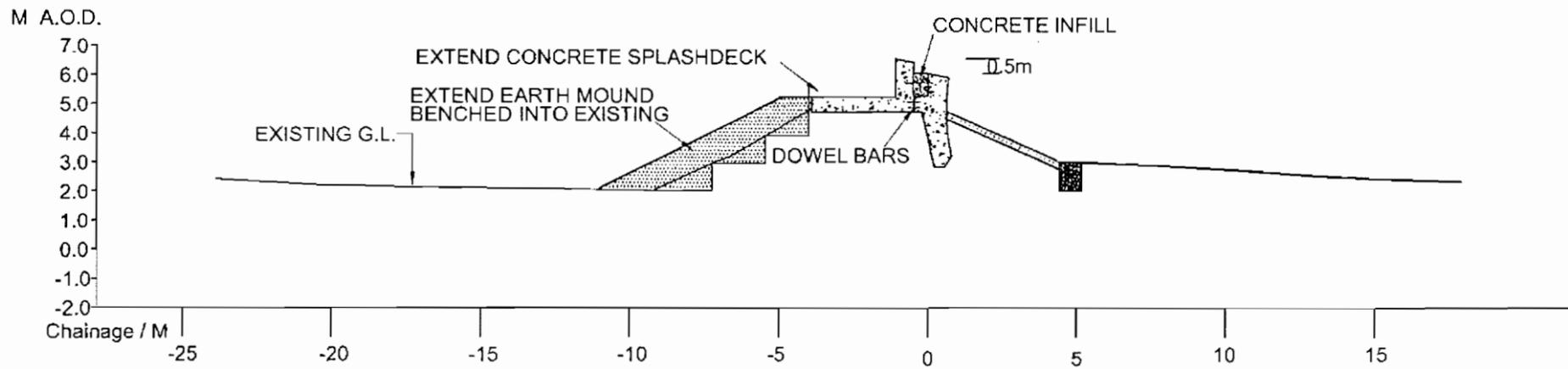
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SECTION A - A EXISTING



SECTION A - A PROPOSED

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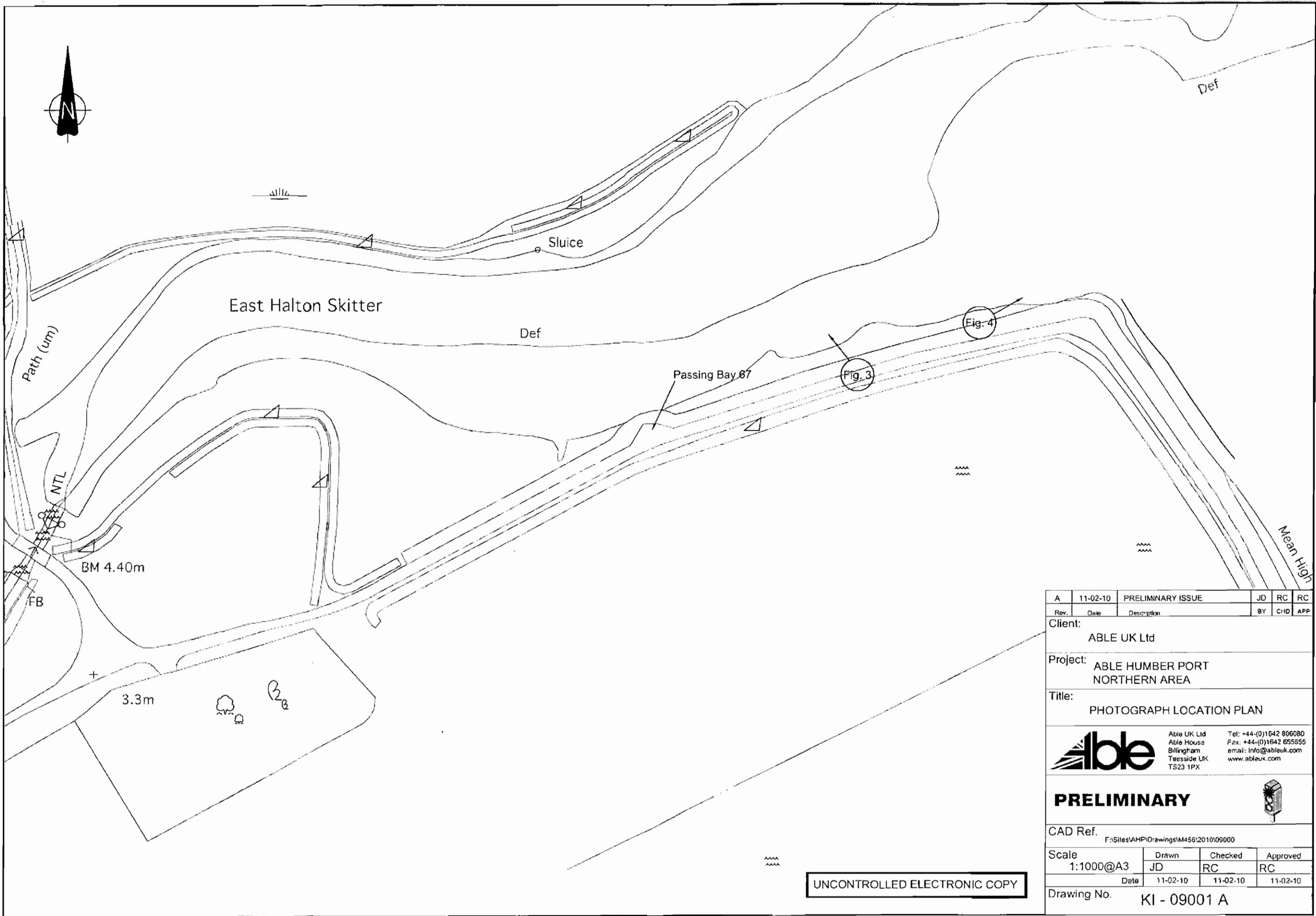
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A	11-02-10	PRELIMINARY ISSUE	JD	RC	RC
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## ATTACHMENT 2

JNCC Humber Estuary SAC information.





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# Habitat account - Marine, coastal and halophytic habitats

## 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

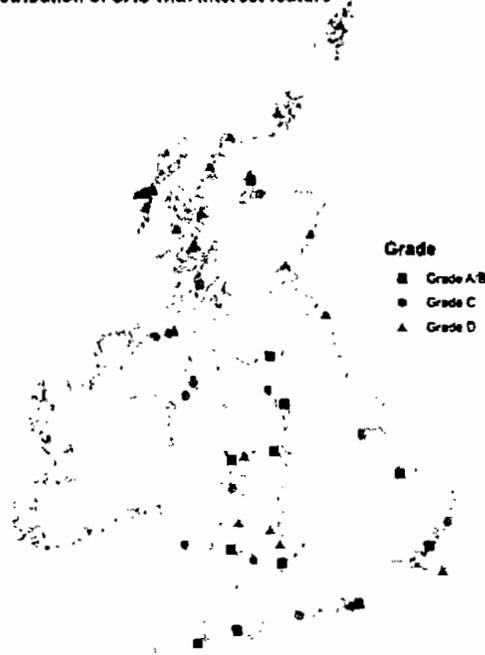
[UK resource for this habitat](#) [Compare with UK distribution](#)

### Background to selection

### Description and ecological characteristics

Atlantic salt meadows develop when halophytic vegetation colonises soft intertidal sediments of mud and sand in areas protected from strong wave action. This vegetation forms the middle and upper reaches of saltmarshes, where tidal inundation still occurs but with decreasing frequency and duration. A wide range of community types is represented and the saltmarshes can cover large areas, especially where there has been little or no enclosure on the landward side. The vegetation varies with climate and the frequency and duration of tidal inundation. Grazing by domestic livestock is particularly significant in determining the structure and species composition of the habitat type and in determining its relative value for plants, for invertebrates and for wintering or breeding waterfowl. In the UK this Annex I type corresponds to the following NVC types:

Distribution of SAC with interest feature



Distribution of SACs/SCIs/CSACs with habitat 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*). Click image for enlarged map.

- SM10 Transitional low-marsh vegetation
- SM11 *Aster tripolium* var. *discoideus* salt-marsh community
- SM12 Rayed *Aster tripolium* salt-marsh community
- SM13 *Puccinellia maritima* salt-marsh community
- SM14 *Halimione portulacoides* saltmarsh community
- SM15 *Juncus maritimus* – *Triglochin maritima* salt-marsh community
- SM16 *Festuca rubra* salt-marsh community (coastal examples only)
- SM17 *Artemisia maritima* salt-marsh community
- SM18 *Juncus maritimus* salt-marsh community
- SM19 *Blysmus rufus* salt-marsh community

- SM20 *Eleocharis uniglumis* salt-marsh community.

Inland stands of SM16 are referable to Annex I type **H1340 Inland salt meadows**.

At the lower reaches of the saltmarsh the vegetation is often naturally species-poor and may form an open sward of common saltmarsh-grass *Puccinellia maritima*. Further up the marsh, the vegetation becomes herb-dominated and red fescue *Festuca rubra* becomes more important. The upper saltmarsh shows considerable variation, particularly where there are transitions to other habitats. Communities present may include tussocks of sea rush *Juncus maritimus* dominating a herb-rich vegetation, and saltpans supporting patches of species-poor vegetation dominated by saltmarsh flat-sedge *Blasmus rufus* (in the north) or slender spike-rush *Eleocharis uniglumis*. Grazed saltmarsh in northern Scotland may contain frequent turf fucoid *Fucus cottonii*.

There may be transitions from upper saltmarsh to a number of habitats, including sand dune, machair, coastal shingle, freshwater marshes and woodland. This part of the saltmarsh succession has been particularly vulnerable to destruction by enclosure, usually involving the erection of a sea bank to exclude sea water, and remaining areas are regarded as particularly important for biodiversity conservation.

There are marked regional variations in the **Atlantic salt meadow** communities of the UK. In east and south-east England low to mid-marsh communities predominate, owing to extensive enclosure of the upper marsh. In contrast, the salt meadows of north-west England and south-west Scotland are dominated by extensive areas of grazed upper marsh communities characterised by *Puccinellia maritima* and saltmarsh rush *Juncus gerardii*. Swamp communities are particularly common in the upper marsh in south-west England, while *Juncus maritimus* communities are characteristic of Welsh saltmarshes, and transitional common reed *Phragmites australis* communities are common in south-east Scotland. Some characteristic plant species of southern saltmarshes are absent from Scotland, while others such as sea-purslane *Atriplex portulacoides* have a restricted distribution in northern Britain.

## European status and distribution

This Annex I type is predominantly found on Atlantic coasts in western Europe.

## UK status and distribution [Click to view UK distribution of this habitat](#)

**Atlantic salt meadows** occur on North Sea, English Channel and Atlantic shores. There are more than 29,000 ha of the habitat type in the UK, mostly in the large, sheltered estuaries of south-east, south-west and north-west England and in south Wales. Smaller areas of saltmarsh are found in Scotland.

## Site selection rationale

Sites have been selected to cover the geographical range and ecological variation of **Atlantic salt meadows** in the UK. The sites selected are for the most part the largest examples of this habitat type, with good structure and function, and which support a well-developed zonation of plant communities within the saltmarsh. There are transitions to other high-quality habitat assemblages at many of the sites that have been selected. Sites with complete sequences of vegetation and transitions to other habitats, such as sand dunes, represent the range of variation of the habitat type, and this has been an important consideration in site selection.

## Site accounts

### Carmarthen Bay and Estuaries/ Bae Caerfyrddin ac Aberoedd

Abertawe/ Swansea; Caerfyrddin/ Carmarthenshire; Penfro/ Pembrokeshire

This extensive site in south Wales has a complete sequence of saltmarsh vegetation, from pioneer vegetation through to upper saltmarsh transitions. The grazed saltmarshes include upper margins with sea rush *Juncus maritimus* and marsh-mallow *Althaea officinalis*, which are a particularly distinctive ecological feature of this site. The area is also important for transitions from saltmarsh to sand dune and other habitats.

### Dee Estuary/ Aber Dyfrdwy Cheshire; Sir y Fflint/ Flintshire; Wirral

The Dee Estuary is representative of **H1330 Atlantic salt meadows** in the north-west of the UK. It forms the most extensive type of saltmarsh in the Dee, and since the 1980s it has probably displaced very large quantities of the non-native common cord-grass *Spartina anglica*. The high accretion rates found in the estuary are likely to favour further development of this type of vegetation. The saltmarsh is regularly inundated by the sea; characteristic salt-tolerant perennial flowering plant species include common saltmarsh-grass *Puccinellia maritima*, sea aster *Aster tripolium*, and sea arrowgrass *Triglochin maritima*. In a few areas there are unusual transitions to wet woodland habitats.

**Dornoch Firth and Morrich More** Highland

Dornoch Firth and Morrich More is the most northerly site selected for Atlantic salt meadows and represents this habitat type in the northern part of its UK range. The site supports a wide variety of community types, with the characteristic zonation from pioneer to upper marsh vegetation. At Morrich More the saltmarshes lie adjacent to sand dunes and there are important transitions between these habitats.

**Essex Estuaries** Essex

Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire *Inula crithmoides* is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.

**Fal and Helford** Cornwall

The Fal and Helford is an example of saltmarsh vegetation in a ria (drowned river valley), a physiographic type restricted to south-west England and west Wales. There is a narrow saltmarsh zonation typical of rias, from pioneer to upper marsh, and transitions to woodland where the fringing trees overhang the tidal river, an unusual juxtaposition of vegetation in the UK.

**Glannau Môn: Cors heli / Anglesey Coast: Saltmarsh** Ynys Môn/ Isle of Anglesey

This site, which includes both the Braint and Cefni estuaries, forms a complex of saltmarsh and dune habitats lying either side of the dune systems at Newborough Warren. Atlantic salt meadows form the bulk of the saltmarsh vegetation, but much of it is far from typical. In the Braint estuary the vegetation is characterised by unusually large amounts of greater sea-spurrey *Spergularia media*, whilst in the Cefni estuary the more typical Atlantic salt meadow is subordinate to saltmarsh dominated by sea rush *Juncus maritimus*. In fact, this is one of the largest stands of *Juncus maritimus* saltmarsh in Britain, and has affinities with **1410 Mediterranean salt meadows (*Juncetalia maritimi*)**, an Annex I vegetation type that is not now considered to occur in the UK.

**Morecambe Bay** Cumbria; Lancashire

Morecambe Bay is characteristic of saltmarshes in north-west England, with large areas of closely grazed upper marsh. The mid-upper marsh vegetation is strongly dominated by the saltmarsh-grass/fescue *Puccinellia/Festuca* communities, of which over 1,000 ha occur here, and by smaller areas of saltmarsh rush *Juncus gerardii* community. NVC type SM18 *Juncus maritimus* community is also more strongly represented here than elsewhere in England. The plant species include both southern elements, such as lesser centaury *Centaureum pulchellum*, and northern elements, such as saltmarsh flat-sedge *Blysmus rufus* and few-flowered spike-rush *Eleocharis quinqueflora*.

**North Uist Machair** Western Isles / Na h-Eileanan an Iar

The saltmarshes of north-west Scotland are usually small, and differ considerably from other saltmarshes in Europe, notably in their morphology, the scarcity or absence of a pioneer zone and the prevalence of the turf fuoid *Fucus cottonii* in closely-grazed turf. North Uist Machair is one of the larger composite examples. Many species dominant on southern British saltings are completely absent, and much of the expanse comprises common saltmarsh-grass *Puccinellia maritima*, sea-milkwort *Glaux maritima*, plantain *Plantago* spp. and thrift *Armeria maritima*, with red fescue *Festuca rubra* and saltmarsh rush *Juncus gerardii* at higher levels. Transitions to terrestrial habitats tend to be richer in species, featuring silverweed *Potentilla anserina* and smooth meadow-grass *Poa pratensis* while transitions to fens have saltmarsh flat-sedge *Blysmus rufus* and sea arrowgrass *Triglochin maritimum*. Locally there are also fine transitions to dune and machair, making this one of the most varied of north-western saltmarshes.

**Plymouth Sound and Estuaries** Cornwall; Devon; Plymouth

This site is representative of a ria system in south-west England. The well-developed salinity gradient supports Atlantic salt meadow together with natural transitions to brackish and freshwater communities, including reedbeds supporting the only UK population of triangular club-rush *Schoenoplectus triquetus*. Some stands of saltmeadow are structurally and botanically diverse and include sea club-rush *Scirpus maritimus* and saltmarsh rush *Juncus gerardii*, with red fescue *Festuca rubra*, sea rush *J. maritimus* and thrift *Armeria maritima* at higher levels. The locally common parsley water-dropwort *Oenanthe lachenalii* is also found in some parts of the site, and there are stands of sea-purslane *Halimione portulacoides*, which is unusual in Cornwall. The Atlantic salt meadows make a vital contribution to the structure and function of the estuary and the other habitats within it.

**Severn Estuary/ Môr Hafren** Bro Morgannwg/ Vale of Glamorgan; Caerdydd/ Cardiff; Casnewydd/ Newport; City of Bristol; Fynwy/ Monmouthshire; Gloucestershire; North Somerset; Somerset; South Gloucestershire

Habitat occurrence account not yet available.

**Solent Maritime** City of Portsmouth; City of Southampton; Hampshire; Isle of Wight; West Sussex

The Solent contains the second-largest aggregation of Atlantic salt meadows in south and south-west England. Solent Maritime is a composite site composed of a large number of separate areas of saltmarsh. In contrast to the Severn estuary, the salt meadows at this site are notable as being representative of the ungrazed type and support a different range of communities dominated by sea-purslane *Atriplex portulacoides*, common sea-lavender *Limonium vulgare* and thrift *Armeria maritima*. As a whole the site is less truncated by man-made features than other parts of the south coast and shows rare and unusual transitions to freshwater reedswamp and alluvial woodland as well as coastal grassland. Typical Atlantic salt meadow is still widespread in this site, despite a long history of colonisation by cord-grass *Spartina* spp.

**Solway Firth** Cumbria; Dumfries and Galloway

The Solway Firth, between north-west England and south-west Scotland, has been little affected by enclosure, with the result that it demonstrates unusually large areas of upper marsh and transitions to freshwater grassland communities. There is a greater proportion of sand in the substrate than is found in more southern saltmarshes. The mid-upper marsh is heavily dominated by saltmarsh rush *Juncus gerardii* community with smaller areas of the saltmarsh-grass/fescue *Puccinellia/Festuca* communities. The site has been selected because of its large size and uninterrupted transitions. Some of the species present, for example sea-purslane *Atriplex portulacoides*, common sea-lavender *Limonium vulgare* and lax-flowered sea-lavender *Limonium humile*, are at their northern limit in the UK.

**The Wash and North Norfolk Coast** Lincolnshire; Norfolk

This site on the east coast of England is selected both for the extensive ungrazed saltmarshes of the North Norfolk Coast and for the contrasting, traditionally grazed saltmarshes around the Wash. The Wash saltmarshes represent the largest single area of the habitat type in the UK. The Atlantic salt meadows form part of a sequence of vegetation types that are unparalleled among coastal sites in the UK for their diversity and are amongst the most important in Europe. Saltmarsh swards dominated by sea-lavenders *Limonium* spp. are particularly well-represented on this site. In addition to typical lower and middle saltmarsh communities, in North Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats.

## SACs/SCIs/cSACs where this Annex I habitat is a qualifying feature, but not a primary reason for site selection

<u><b>Alde, Ore and Butley Estuaries</b></u>	Suffolk
<u><b>Bann Estuary</b></u>	Londonderry
<u><b>Chesil and the Fleet</b></u>	Dorset
<u><b>Culbin Bar</b></u>	Highland; Moray
<u><b>Drigg Coast</b></u>	Cumbria
<u><b>Humber Estuary</b></u>	City of Kingston upon Hull; East Riding of Yorkshire; Lincolnshire; North East Lincolnshire; North Lincolnshire
<u><b>Kenfig/ Cynffig</b></u>	Bro Morgannwg/ Vale of Glamorgan; Pen-y-bont ar Ogwr/ Bridgend
<u><b>Mòine Mhór</b></u>	Argyll and Bute
<u><b>Murlough</b></u>	Down
<u><b>North Antrim Coast</b></u>	Antrim
<u><b>Pembrokeshire Marine/ Sir Benfro Forol</b></u>	Penfro/ Pembrokeshire
<u><b>Pen Llyn a'r Sarnau/ Llyn Peninsula and the Sarnau</b></u>	Ceredigion; Gwynedd; Powys
<u><b>Strangford Lough</b></u>	Down

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# Habitat account - Marine, coastal and halophytic habitats

## 1320 *Spartina* swards (*Spartinion maritimae*)

### Background to selection

[UK resource for this habitat](#) [Compare with UK distribution](#)

### Description and ecological characteristics

Cord-grass *Spartina* spp. colonises a wide range of substrates, from very soft muds to shingle, in areas sheltered from strong wave action. It occurs on the seaward fringes of saltmarshes and creek-sides and may colonise old pans in the upper saltmarsh. The corresponding NVC types are:

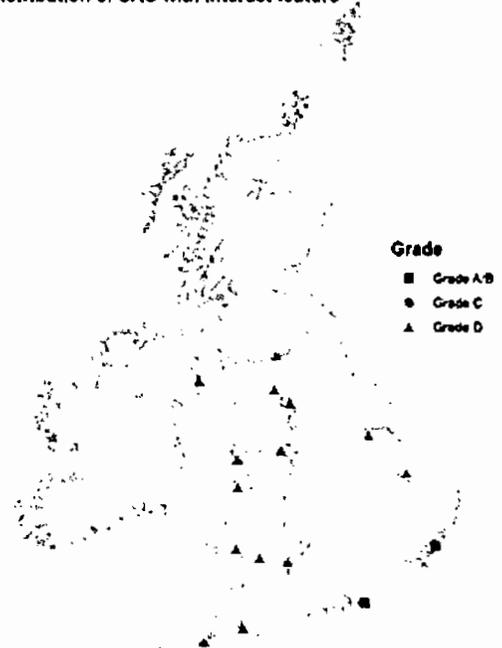
- SM4 *Spartina maritima* salt-marsh community
- SM5 *Spartina alterniflora* salt-marsh community
- SM6 *Spartina anglica* salt-marsh community

Four cord-grasses occur in the UK: small cord-grass *Spartina maritima*, smooth cord-grass *S. alterniflora*,

Townsend's cord-grass *S. x townsendii* and common cord-grass *S. anglica*. The only native species is *S. maritima*. *S. alterniflora* is a naturalised non-native species that was accidentally introduced to the UK in the 1820s via ships' ballast from the eastern USA, where it is a major component of saltmarshes. The introduction of *S. alterniflora* and its subsequent crossing with *S. maritima* resulted in both a sterile hybrid *S. x townsendii* and later a fertile hybrid, *S. anglica*. Although a non-native, the surviving population of the parent *S. alterniflora* is of great scientific importance to evolutionary biologists.

*Spartina anglica* was extensively planted in the past as an aid to stabilisation of intertidal mudflats and a stimulus to enclosure and land-claim. It also readily colonises open mudflats and consequently has spread rapidly around the coast. Monoculture swards of either *S. anglica* or *S. x townsendii* are of little intrinsic value to wildlife, and in many areas *S. anglica* is considered a threat to the intertidal mudflats used as feeding-grounds by large populations of waders and wildfowl. As a result, attempts have been made to control *S. anglica* at several sites over many years, but these have largely been unsuccessful in eliminating it. *S. anglica* is generally considered to be a negative conservation feature of

Distribution of SAC with interest feature



Distribution of SACs/SCIs/cSACs with habitat 1320 *Spartina* swards (*Spartinion maritimae*). Click image for enlarged map.

the sites where it occurs, although in some areas, such as the Dee Estuary, it can act as a pioneer species for the formation of **1330 Atlantic salt meadow** (Dargie 2001).

## European status and distribution

*Spartina* swards have a wide distribution in the EU, especially on Atlantic coasts.

### UK status and distribution [Click to view UK distribution of this habitat](#)

*Spartina maritima*, *S. alterniflora* and *S. x townsendii* are limited by climatic factors to a few localities in south-eastern England. Since the 1960s, *S. alterniflora* has declined, largely due to industrial and marine developments, and in the UK it is now restricted to a single site in Southampton Water (Maskell & Raybould 2001). *S. maritima* has also declined, but there are still substantial populations on the Essex coast. *S. x townsendii* is present in quantity only in Southampton Water.

*S. anglica* is widespread and locally abundant on saltmarshes in England and Wales, but has only a few scattered localities in Scotland and Northern Ireland.

## Site selection rationale

In the UK stands of this Annex I type have only been considered for selection as SACs where they are dominated by *Spartina maritima*, *S. alterniflora*, or support the rare and local hybrid *S. x townsendii*. The two significant stands of these species known in the UK have both been included within the SAC series. Monoculture swards of the widely-planted invasive *S. anglica* have not been considered for SAC selection.

## Site accounts

### Essex Estuaries Essex

The most extensive remaining stand of the native small cord-grass *Spartina maritima* in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.

### Solent Maritime City of Portsmouth; City of Southampton; Hampshire; Isle of Wight; West Sussex

Solent Maritime is the only site for smooth cord-grass *Spartina alterniflora* in the UK and is one of only two sites where significant amounts of small cord-grass *S. maritima* are found. It is also one of the few remaining sites for Townsend's cord-grass *S. x townsendii* and holds extensive areas of common cord-grass *Spartina anglica*, all four taxa thus occurring here in close proximity. It has additional historical and scientific interest as the site where *S. alterniflora* was first recorded in the UK (1829) and where *S. x townsendii* and, later, *S. anglica* first occurred.

## SACs/SCIs/cSACs where this Annex I habitat is a qualifying feature, but not a primary reason for site selection

Not applicable.

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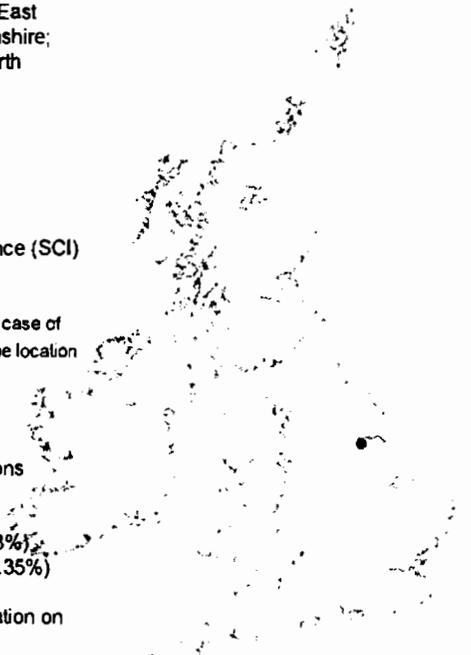
[Marine SACs](#)

# Humber Estuary

## Site details

<b>Country</b>	England
<b>Unitary Authority</b>	City of Kingston upon Hull; East Riding of Yorkshire; Lincolnshire; North East Lincolnshire; North Lincolnshire
<b>Centroid*</b>	SE838110
<b>Latitude</b>	53 35 21 N
<b>Longitude</b>	00 44 05 W
<b>SAC EU code</b>	UK0030170
<b>Status</b>	Site of Community Importance (SCI)
<b>Area (ha)</b>	36657.15

\* This is the approximate central point of the SAC. In the case of large, linear or composite sites, this may not represent the location where a feature occurs within the SAC.



## General site character

Tidal rivers. Estuaries. Mud flats. Sand flats. Lagoons (including saltwork basins) (94.89%)  
 Salt marshes. Salt pastures. Salt steppes (4.38%)  
 Coastal sand dunes. Sand beaches. Machair (0.38%)  
 Bogs. Marshes. Water fringed vegetation. Fens (0.35%)

[Boundary map](#) and associated biodiversity information on the NBN Gateway.

[Natura 2000 data form](#) for this site as submitted to Europe (PDF format, size 30kb). Location of Humber Estuary SAC/SCI/cSAC

[Interactive map](#) from MAGIC (Multi-Agency Geographic Information for the Countryside).

### Note:

When undertaking an appropriate assessment of impacts at a site, all features of European importance (both primary and non-primary) need to be considered.

## Annex I habitats that are a primary reason for selection of this site

### 1130 Estuaries

The Humber is the second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. It is a muddy, macro-tidal estuary, fed by the Rivers Ouse, Trent and Hull, Ancholme and Graveney. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. This is the northernmost of the English east coast estuaries whose structure and function is intimately linked with soft eroding shorelines. Habitats within the Humber Estuary include 1330 Atlantic salt meadows and a range of sand dune types in the outer estuary, together with subtidal sandbanks (H1110 Sandbanks which are slightly covered by sea water all the time), extensive intertidal mudflats (H1140 Mudflats and sandflats not covered by seawater at low tide), glasswort beds (H1310 *Salicornia* and other annuals colonising mud and sand), and 1150 coastal lagoons. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary. These are best-represented at the confluence of the Rivers Ouse and Trent at Blacktoft Sands. Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks, for reasons that have yet to be fully explained. This section of the estuary

is also noteworthy for extensive mud and sand bars, which in places form semi-permanent islands. Significant fish species include 1099 river lamprey *Lampetra fluviatilis* and 1095 sea lamprey *Petromyzon marinus* which breed in the River Derwent, a tributary of the River Ouse.

**1140 Mudflats and sandflats not covered by seawater at low tide**

the Humber Estuary includes extensive intertidal mudflats and sandflats not covered by seawater at low tide. Upstream from the Humber Bridge, extensive mud and sand bars in places form semi-permanent islands.

## **Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site**

1110 Sandbanks which are slightly covered by sea water all the time

1150 Coastal lagoons \* Priority feature

1310 Salicornia and other annuals colonising mud and sand

1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)

2110 Embryonic shifting dunes

2120 Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')

2130 Fixed dunes with herbaceous vegetation ('grey dunes') \* Priority feature

2160 Dunes with *Hippophae rhamnoides*

## **Annex II species that are a primary reason for selection of this site**

Not applicable.

## **Annex II species present as a qualifying feature, but not a primary reason for site selection**

1095 Sea lamprey *Petromyzon marinus*

1099 River lamprey *Lampetra fluviatilis*

1364 Grey seal *Halichoerus grypus*

*Many designated sites are on private land: the listing of a site in these pages does not imply any right of public access.*

**From:** "Jenn Dawes" <jdawes@ableuk.com>  
**To:** "Andrew Taylor" <Andrew.Taylor@northlincs.gov.uk>  
**cc:** <rcram@ableuk.com>, <gdoubleday@ableuk.com>

**Date:** Thursday, April 22, 2010 10:39AM  
**Subject:** AHP - NORTHERN AREA A.A. APPLICATION REF: PA/2009/0600

Andrew,

Thank you for your emails of 15<sup>th</sup> April. Please could you allow us a few days to prepare a response to the Environment Agency's comments. I also wish to consult on the footpaths issue but I can respond on two topics.

### **Request No. 1 SPA Birds in the Intertidal Zone**

Appendix 10.1.8 (attached) provides bird count data for lapwing, dunlin, blacktailed godwit, curlew and redshank on the intertidal area adjacent to Halton Marshes, during the period September 2006 to February 2007. The survey looks at Sector ISI and divides it into two lengths, one is the Able UK Halton Marshes frontage which runs for 1,700m from the Skitter to Brickpits Lane. The other continues from Brickpits Lane to HST (also 1,700m). In the tables below these are termed ISI (North) and ISI (South). Data in these tables are taken directly from Figure 7.1 to 7.16 which are include in E.S. Appendix 10.1.8.

**Table 1: Key Species Bird Counts Sector ISI (North).**

Species	Month 2006				Month 2007	
	S	O	N	D	J	F
Lapwing	-	-	-	-		
Dunlin	-	40	20	-		
Black-tailed godwit	-	-	-	-		
Curlew	10	-	10	10	10	
Redshank	-	30	20	10	70	10

**Table 2: Key Species Bird Counts Sector ISI (South).**

Species	Month 2006				Month 2007	
	S	O	N	D	J	F
Lapwing	-	180	490	2100	880	-
Dunlin	-	140	360	250	-	-
Black-tailed godwit	820	-	-	-	-	-
Curlew	10	-	10	30	10	-
Redshank	-	10	-	-	-	-

Table 1 gives a total of 240 birdsightings in the Section ISI (North) which is the intertidal area adjacent to the proposed development. Table 2 gives a total of 5,290 birdsightings in Section ISI (South). Able UK Ltd proposes no work on this length of flood defence wall. We understand that the Environment Agency is currently upgrading the flood defence wall in Section ISI (South), this being with all necessary approvals.

Table 3 gives the citation levels of sea bird species using the Humber Estuary SPA/Ramsar site. The table also takes the numbers of each key species quoted in Table 1 and provides the percentage of each species using the intertidal zone adjacent to the Able UK frontage at Halton Marshes.

**Table 3: SPA Bird Statistics**

Bird Name	Citation No.	Period	5 Year Mean Peak 1999/00–2003/04	Max No. on ISI (North)	% Estuary Population
<b>Article 4.1 Species</b>					
Golden plover	30,709	1996/97	37,674	None	Nil
Ruff	128	2000/01 1996/2000	16	None	Nil
<b>Article 4.2 Species</b>					
Dunlin	22,222	1996/97	22,152	40	0.2
Redshank	4,623		4,915	30	0.6
Black-tailed godwit	1,113	2000/01	1,116	None	0
Shelduck	4,464		3,260	None	Nil
<b>SPA Assemblages</b>					
Lapwing	22,765	1996/97	27,297	None	0
Curlew	3,253		3,714	10	0.3
Wigeon	5,044	2000/01	3,728	None	Nil
Teal	2,322		2,535	None	Nil
Mallard	2,456		2,486	None	Nil
Ringed Plover	403		363	None	Nil
<b>Other</b>					
Pink footed goose	1,083		2,686	None	Nil
Whimbrel	113		0	None	Nil

None of the key species recorded during the winter of 2006/07 exceeded 1% of the Estuary population.

### **Request No. 2 Phasing of Mitigation Areas**

I refer to your draft appropriate assessment dated 27<sup>th</sup> January 2010 and would suggest that Table 2, read with Table 1 therein, would help to illustrate the proposed sequence of development. Drawing KI-02004 B of Appendix 4.1 attached the Environmental Statement shows the proposed phasing. Section 3.2 of the Conservation Management Plan for Areas A, B and C sets out the timing for the development of each of the three wetland conservation areas.

Conservation Management Plan (CMP) No 2, which is for the parts of the site outside wetland areas A, B and C, sets out the programme of development. This ties in with the programmes defined in Section 4 of the ES and with CMP No 1.

However, in order to form the necessary flood defence wall at the north end of the site, top soil will be stripped from Phase 7 land, up to five years before development takes place in that final section. This is an area which has sometimes accommodated flocks of lapwing. In order to retain some value for wildlife in the intervening period, the land will be sown down to a temporary grass sward.

Wetland Area C will have to be constructed as soon as work on Phases 1 and 2 begins. This is because the feature is needed as a surface water balancing facility to prevent flooding where drainage water passes through a culvert under the railway. However, as the water essential for Area C wetland to function is the hard surface run off from Phases 1 and 2, there is no point in developing the wetland before there is a supply of water. For these reasons Area C wetland will be developed concurrently with Phases 1 and 2 and neither before nor after them. As soon as development begins in Phase 3, drainage water from this area, plus that from Phases 1 and 2, will need to pass through a balancing lake before discharge into the Estuary via a pumping/gravity flow discharge point. This will be provided at wetland conservation Area A. The flow rates off the hard surfaces in Phase 1, 2 and 3 could be sufficient to flood land adjoining the NELDB ditch and exacerbate flood risk in the East Halton Beck. In order not to exacerbate risks of flooding by the East Halton Beck, the outfall into the Beck will be terminated and an alternative, more controllable flow and discharge to the Humber, will be provided at Wetland A. Again, development of this wetland area is tied to progress in developed specific phases of the site. Area A cannot function until there is adequate inflow of drainage water but neither can its construction be delayed.

Development of wetland conservation Area B will not be tied to drainage considerations, as is the case for Areas A and C, but there is already an existing pond in this location and surrounding SINC site. The proposals will enhance these features.

In this explanation I have described development of two of the three wetland areas, as essential drainage features. It is this aspect which will drive forward the development of these conservation areas. Their existence is essential to the phased industrial development on the site.

Able UK Ltd is still of the view that it is very difficult to find evidence that if the 59.5ha of wetland roosting area is not provided, that the integrity of the Humber SPA would be put at risk. As discussed previously, these three wetland areas are to be provided not because there is overriding evidence for the need for them but are offered as in recognition of PPS9 obligations to provide managed land for stepping stones along the Estuary shoreline, and to provide breeding areas for waders and wildfowl.

### **Request No 3 Public Rights of Way**

For the reasons I explained during our telephone conversation yesterday, I can at the moment confirm only those arrangements for rights of way in the vicinity of Wetland Areas A, B and C. This however was the focus of your enquiry.

#### **Footpath No 50 Adjacent to South Bank of the Skitter**

Part of a relic sea wall still exist 100m south of the present flood defence wall along the south bank of the mouth of the Skitter. The registered public footpath is shown crossing 100m of arable field to reach the old sea wall then turning eastwards for 200m before obliquely climbing the south west face of the present flood defence wall to continue south eastwards on its registered route towards the Humber Sea Terminal. No one uses this 400m section which is unmarked and virtually impassable. Instead, pedestrians use the existing flood defence wall which accommodates the remainder of Footpath No 50, to the Humber Sea Terminal. The formal diversion of 400m of Footpath No 50 will create no new situation. It is the route pedestrians currently use and as such will introduce no new impacts on the SPA/Ramsar area in the mouth of the Skitter.

#### **Footpath No 74 Diversion Close to Wetland Area C**

For a distance of 300m, diverted footpath No 74 runs closed to the northern boundary of Wetland Area C. This is illustrated on attached Drawing No. KI-08020 G. However, the derelict railway line separates the proposed diversion route from Area A. The railway line is a SINC site, colonized by bushes and trees, allowing very little intervisibility from Area A to the proposed footpath. This is illustrated on attached Drawing KI-08022 E.

Both the northern and southern boundaries of the former railway line are fenced so that pedestrians and dogs using the diverted footpath will have no impact on wildlife in Area A. Able UK has no proposals to develop within this section of the railway line so the screening effect of existing vegetation should remain for the foreseeable future.

#### **Footpath No 74 Diversion in vicinity of Wetland Area B**

Section West of NELDB Ditch.

A section of footpath No 74 is shown as a dashed red line on Drawing No. KI 08020 G passing for a distance of 420m through Wetland Area A. A 2m high grassed bund will be created on the north and west sides of the footpath route, as illustrated in Section N-N on Drawing KI-08055 A, attached. This will provide a visual screen preventing sight of pedestrians on the footpath, by birds on Area B. Pedestrians, and their dogs will be confined to the footpath corridor by

stockpiling fencing. (Woodland Trust Specification No 3.14 attached, using amendment 5.1.)

The same fencing and bund arrangements will be erected for a distance of 230m where Footpath 74 runs eastwards after crossing the NELDB ditch. This is illustrated as Section PP on Drawing KI-08055, attached.

I will respond to you regarding water voles in the next 10 days or so, but need to consult on this topic first. I hope the information offered here will be of assistance but if there are points on which you need further clarification please do not hesitate to contact me.

Kind regards

*Dr GARY DOUBLEDAY*

Group Environmental Manager

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## Able UK Ltd

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North Lincolnshire Council  
Highways & Planning,  
Church Square House,  
PO Box 42,  
Scunthorpe,  
North Lincolnshire  
DN5 6XB

Your Ref: PA/2009/0600  
Our Ref: EH/514  
GD.JD.AHP.A.L10/0005

Date: 12<sup>th</sup> May 2010

For the attention of Mr William Hill

Dear William

### **PLANNING APPLICATION PA/2009/0600**

### **PROPOSAL: DEVELOPMENT OF LAND FOR PORT RELATED INDUSTRY, LANDSCAPING AND FOR WILDLIFE CONSERVATION.**

### **LOCATION: EAST HALTON**

Thank you for forwarding the letter dated 23<sup>rd</sup> April 2010 from Natural England (NE), which is a response to the conservation management plans (CMP's) prepared by Alab Environmental Services Ltd. The first conservation management plan (CMP1), issued on 19<sup>th</sup> August 2009 related to the proposed wetland areas A, B and C. The second, CMP2, issued on 19<sup>th</sup> March 2010 referred to wildlife management elsewhere on the site. NE provide comments on both submissions.

CMP1 relates to the potential implications of the Habitat Regulations and therefore we considered that you should have it prior to undertaking the Appropriate Assessment (AA). Where habitat management relates to non-SPA/Ramsar species, and other PPS9 considerations, you have normally conditioned provision of a conservation management plan. Nevertheless, we have provided CMP2 as a statement of our intention with respect to all aspects of wildlife.

Returning to CMP1, we note with some disappointment that Natural England has taken eight months to respond in writing. Our detailed responses to NE's comments are set out below.

### **CMP1: CONSERVATION MANAGEMENT PLAN FOR AREAS A, B AND C**

In the first instance we would reiterate that the development site is not part of a European protected site. Accordingly, the Habitat Regulations would only apply if a case were made for the application site being functionally linked to the adjacent Humber Estuary SPA/Ramsar site.

Secondly, it is transparent from CMP1, Figure 6 (Drawing KI-02002 J), that mitigation Areas A, B and C are co-joined, except for the width of a derelict railway which is, itself a SINC site. The three areas will be formed at different times so they are described on a phased basis, but geographically they are linked. When our consultant, who at this time was Chief Advisor for Lincolnshire FWAG, assessed the likely bird occupation density, he did so in the full knowledge of edge effects and the proposals for development in the vicinity. He based his independent advice on his uniquely wide experience of developing successful wetland sites in Lincolnshire. We have exercised due diligence in obtaining advice of this calibre, and it is disappointing that it is seemingly dismissed without supporting evidence on the matter.

Cont./...



North Lincolnshire Council  
Highways & Planning,  
Church Square House,  
PO Box 42,  
Scunthorpe,  
North Lincolnshire  
DN5 6XB

Your Ref: PA/2009/0600

Our Ref: EH/515-516  
GD.JD.AHP.A.L10/0005

Date: 12<sup>th</sup> May 2010

- 2 -

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The main objective for the wetland areas is to provide managed land for SPA/Ramsar birds to roost, feed and breed. Those birds which feed on the Intertidal mudflats would continue to do so. Those which seek a food supply from farmland will continue to have access to **tens of thousands of hectares** of feeding areas along the Lincolnshire Coast and around the application site.

The fact that managed wetland will be provided, is a locally unique advantage for SPA/Ramsar birds seeking roosting areas in winter, and for birds wishing to breed in the summer. The existing farmland is not subject to a management agreement and its benefit to SPA species is not therefore guaranteed.

When arriving at a view on whether any proposed mitigation is adequate or not, reference might be made to the '*Guidance document on Article 6 (4) of the "Habitats Directive" 92/43/EEC - Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission*', (2007). Although addressing compensation, parts of the guidance appear to be equally applicable to mitigation.

In its Section 1.5.2, "*Effective compensation*" the guidance states; "*Measures for which there is no reasonable guarantee of success should not be considered...*" Accordingly, it seems sensible that the efficacy of our mitigation proposals should be judged against the same standard, viz. that it should have a '*reasonable guarantee of success*'; any expectation of an absolute guarantee would be an unreasonable requirement.

### **Section 2.8.8**

NE is concerned about flooding of the development site and the consequential impact on SPA species. Much of the present site lies within Flood Zone 3 as illustrated in the Flood Risk Assessment contained within the Environmental Statement (ES). In this zone, flooding is likely to occur more frequently than once every one hundred years.

The drainage design for the development site is based on providing a system that caters for rainfall events of a specified return period. This is standard engineering practice and is the scientific basis of all new drainage works. In accordance with British Standards, and as further agreed with the Environment Agency, the drainage system for the application site will safely accommodate all rainfall events with a return period of 1:100 years or less without flooding. In effect, this means that in any year there is a less than 1% probability that the site would suffer a flood of some magnitude, depending on the rainfall event.

A significant flood is therefore unlikely on the application site as it will have an engineered drainage system. If a rainfall event did occur that caused flooding on the application site, the whole of the Humber estuary flood plain, some 90,000ha would probably be transformed into a landscape of open water, ponds and waterlogged soils. Currently a lesser event would also inundate the application site.

Waterlogging in soils occurs when water within the soil profile rises to ground level, in such conditions mobile invertebrates also come to the surface providing good feeding conditions for SPA/Ramsar birds. Short term saturation or shallow flooding of land is not likely to be harmful for SPA/Ramsar birds; prolonged flooding will deplete invertebrate populations. On the developed site, in the proposed wetland areas, water levels will be controlled by the pumped discharge. This represents an improvement over the existing situation where fields on Halton Marshes, adjacent to the flood defence wall, drain only by gravity flow in a single

almost level ditch. Hence any flooding which does occur, can last for long periods as the East Halton Beck catchment gradually drains.

The prolonged flooding, which concerns Natural England, is far more likely to occur in the present landscape, than within the managed wetland areas.

NE's reference to Section 2.8.8 concerns me as the final sentence in that paragraph is clearly incomplete. It should have continued "... *in the short term, but reduce roosting habitat, while in the long term deplete food resources in the soil.*" You will appreciate that the pumped outfall enables the hydrology of the wetland areas to be maintained at optimal condition with greater certainty that can be achieved with the present drainage regime.

NE is concerned that Able UK cannot find any cattle to graze the wetland areas. We do not envisage such difficulty. If necessary, Able UK will purchase a 'flying herd' of cattle to graze grass within the wetland areas, during each summer, and then sell the cattle on in the autumn. Slightly submerged, stone surfaced causeways will provide cattle and tractor access to areas cut off by clear water within the wetland zones. Marker fencing will delineate these causeways.

NE has commented on the range of species on our site. CMP1 concentrates on four species only; golden plover, curlew, lapwing and ruff. The other species which are present at more than 1% of the Estuary total are:

Species	5 year mean peak 1999/00 – 2003/04 (No. of Birds)	1% Threshold (No. of Birds)	% of 34 counts when present at more than the 1% threshold. (No. of counts)
Black-tailed godwit	1,116	11	9 (3)
Widgeon	3,728	37	6 (2)
Teal	2,535	25	3 (1)
Mallard	2,486	25	3 (1)
Whimbrel	113	1	6 (2)

It is our view that the application of a '1% rule' in isolation is too crude a means of assessing the importance of a land outside the SPA; for example, it takes no account of the frequency with which individual species visit the site. Ducks and waders are attracted to the application site only rarely unless there are exceptionally wet conditions; it is quite clear that the site is not important for such species. Similarly, if a single Whimbrel was ever counted on a field adjacent to the SPA, that field would be considered 'important' under a 1% rule. Alternatively, a flock of a few hundred lapwing or golden plover could render large swathes of the hinterland 'important', by hopping from field to field. The concept of 'importance' is transparently more complex.

We have therefore taken what seems to be the reasonable and justified strategy of focussing mitigation on curlew, golden plover, lapwing and ruff. When other species visit the site in small (absolute) numbers and/or infrequently, it is difficult to avoid concluding that normally those populations are, and can be, accommodated elsewhere in the Estuary hinterland.

It is not clear what inferences NE are drawing from the presence of more than 1% of the Estuary population on the application site. However, for the reasons explained above, it would seem unreasonable for them to conclude that the presence of such numbers of birds is, per se, evidence of adverse effect on integrity.

Natural England has advised that *"provision should be made for roosting and feeding birds."* We understood that the feeding grounds offered by the intertidal mudflats were key to attracting birds to the Estuary. Their importance as winter feeding grounds partly results from the UK's mild climate and the estuary's high tidal range which combine to ensure that the mudflats rarely freeze. **None** of the extensive farmland adjacent to the estuary was included within the SPA. In general SPA/Ramsar species feed on the mudflats, but when they are covered by the tide, the birds require roosting areas where they can await access to the intertidal zone as the tide retreats. Golden plover is an exception in that it is more likely to roost, loaf and preen on the mudflats and feed on land. Lapwing, which is one of 28 species classified as a farmland bird by Gibbons et al (2003), also feed predominantly on land. For these reasons lapwing and golden plover will be found feeding some distance inland. English Nature Research Report No. 339 (2000) records that, *"golden plover and lapwing are the two species which show least fidelity to the Estuary. Both are prone to moving well inland to feed under suitable conditions and at various times of day in relation to a variety of environmental factors..."* (page 41). The same document on page 59 notes that curlew *"...may fly considerable distances to favoured inland feeding areas, up to five miles from the estuary, and only return to roost sites in the late afternoon, sometimes after dark."*

The information contained in the above Research Reports is further supplemented by Mott MacDonald's report (2009) which included a statistical assessment of the use of fields by lapwing, curlew and golden plover and the distance of those fields from the estuary over a distance of 4km. The IECS section of the report (Page 20) states:

*"Visual inspection of the scatter plots shows most counts of Eurasian Curlew and Northern Lapwing to occur within 1km of the estuary. There was a weak significant linear relationship between the distance of fields from the estuary and the total number of Eurasian Curlew ( $r=-0.160$ ;  $p<0.001$ ) and Northern Lapwing ( $r=-0.126$ ;  $p<0.001$ ) meaning that numbers of Eurasian Curlew and Northern Lapwing declined with distance from the estuary. However, the result of the correlation was not significant for European Golden Plover ( $r=0.011$ ;  $p>0.05$ )."*

The weak significant, or non significant relationships between the numbers of birds and their distance from the foreshore provides no scientific justification for the apparent conclusion that birds cannot roost outside the proposed development site. Certainly it provides no support for the view that mitigation areas must be within 500m of the foreshore.

Taken overall, Natural England's advice that *"(m)any of the species for which mitigation must be provided require open short vegetation or bare ground..."* would appear to be contradictory to their criticism that the mitigation may provide an insufficient food resource. CMP1 proposed to provide an open sward, and would do so by the removal or burial of topsoil so that a new wetland sward is developed on a nutrient poor surface. In such habitats the populations of soil invertebrates would be depleted, and at least in winter, such areas would not be expected to provide abundant feeding. In summer, populations of invertebrates including molluscs, crustaceans, mayflies, dragonflies, water bugs, caddies, moths and water beetles would provide a food supply for breeding birds. This pattern of seasonally limited food supply seems not to collate with NE's requirement that this same habitat should provide for the needs of *"roosting and feeding birds."*

If it is assumed, for a moment, that terrestrial feeding birds e.g. lapwing and golden plover, cannot feed on the farmland adjacent to the development site, sections of the mitigation areas could retain their topsoil or be topsoiled at a later stage in order to have a more abundant supply of soil invertebrates. However, as noted above. This could conflict with NE's

advice to develop thin open swards on the wetland areas. Clearly there must be a balance to be struck.

### **SPECIFIC COMMENTS**

#### **SPA Citation/Assemblage Birds**

Some species within the assemblage are specifically named in the citation, others are not.

#### **Section 1.2.3**

Able UK has adopted the design proposed by an independent expert in the creation of wetland habitat, who at the time of his involvement was the Chief Advisor for Lincolnshire FWAG. The design provides for the requirements of four SPA/Ramsar species: lapwing, golden plover, curlew and ruff. It is difficult to conceive that the habitat proposed for these species would not also provide for the other five birds species, black tailed godwit, widgeon, mallard, teal and Whimbrel. Visits by all of these five species in numbers exceeding 1% of the Estuary population are described as "rarely".

We have discussed the strict application of the 1% rule above.

#### **Section 1.3.2**

In the first instance, Regulation 61(1) of the Habitats Regulations (amended 2010) requires an assessment of the likely significant effect on a European site of a plan or project. If a significant effect cannot be excluded on the basis of objective information, then an appropriate assessment is required. Regulation 61(5) permits a plan or project to be consented only after it has been ascertained that the plan or project will not adversely affect the integrity of the European site. Given the threshold in Regulation 61(1) the Courts deemed it appropriate to understand 'adversely' in Regulation 61(5) as something which had a significant effect on a European Site's integrity. (*ADT Auctions Ltd v SoS for Environment Transport and Regions and Hart District Council [2000]*). From their comments, it is not clear whether NE recognises this judgement, but they cannot choose to ignore it.

In previous discussions with NE, they were concerned that the hinterland was incapable of supporting any more SPA/Ramsar birds and that; accordingly, any loss of roosting land anywhere would inevitably cause a significant reduction in the number of birds able to use the SPA which would be an adverse effect.

At the South Humber Ecology Group, Natural England was specifically asked:

*"Is there any evidence that the adjacent fields and hinterland in general, around the designated Humber SPA are at capacity such that mitigation areas are needed if development were to take place bordering the SPA?"*

In its written response, Natural England stated:

*"There is no direct evidence as it is very difficult to establish if a population or community of birds has reached the capacity of its supporting habitat. The recent decline in some SPA populations indicates that resources (within and/or outside the SPA) are limiting. In the face of such uncertainty Natural England would argue that it is precautionary to assume that habitat availability is limiting. In any case, it is the consenting authority's responsibility under the Habitat Regulations to show no adverse effect (and thus show that offsite habitats are not currently 'at capacity')."*

Able UK Ltd has tried to ascertain which of the SPA/Ramsar species visiting and making use of the proposed development site are in decline. Of the nine species which do visit the site in numbers exceeding 1% of their estuarine total, five are examined below.

Species	Source: ENNR 547 1996/7-2000/1	Source: WeBS Counts 1999/00-2003/4	Peak Monthly Count 1999-2004
Golden Plover	Wintering 5 year peak mean 30,709	Wintering 5 year peak mean: 37,674 Change: (+22.7%)	50,662
Lapwing	Wintering 5 year peak mean 22,765	Wintering 5 year peak mean: 27,297 Change: (+19.9%)	39,865
Curlew	Wintering 5 year peak mean 3,253	Wintering 5 year peak mean: 3,714 Change: (+14.2%)	4,277
Ruff	Wintering 5 year peak mean 14	Wintering 5 year peak mean: 16 Change: (+14.3%)	25
	Passage 5 year peak mean 128	Passage 5 year peak mean: 136 Change: (+6.3%)	187
Whimbrel	Autumn 5 year peak mean 113	Autumn 5 year peak mean: 123 Change: (+8.9%)	275

Historic counts further show that in 1994/95, 90,288 lapwing and over 60,000 golden plover were supported by the estuary. The only reasonable conclusion of the body of evidence is that a surfeit of roosting and feeding areas exists for these species on the hinterland.

### **Section 2.1.5**

Able UK Ltd was unaware that this AA had gone beyond draft stage. Natural England appears to have misread CMP1 Section 2.1.5. It actually says "*The proposed development...could (if not adequately mitigated) have an effect on birds...*" Natural England misquotes this as "*...the development will have an effect on birds.*"

Able UK Ltd accepts the point that some bird species are common to both SPA and Ramsar citations.

### **Section 2.1.7**

The less than unique value of feeding areas on the development site has already been discussed. In that SPA/Ramsar birds feed, roost, preen and loaf in the same areas, this wording in section 2.1.7 covers Natural England's requirements.

### **Section 2.1.11**

We do not describe the foreshore as having '*virtually no biota*'. The Halton Marshes foreshore is eroding and has been eroding for many decades. Trial pits undertaken on behalf of the Environment Agency show that adjacent to the flood defence wall, a veneer of mud overlies boulder clay. The wording in Section 2.1.11 in CMP1 is, "*In places the foreshore is historic estuarine sediment or boulder clay with virtually no biota*". Boulder clay is a consolidated glacial deposit with a density in excess of 2.0Mg/m<sup>3</sup>, laid down at least 10,000 years ago. Benthic counts have not been carried out in this material but by inspection, boulder clay will not have high biomass.

### **Section 2.1.14**

We have set out above the relevant case law relating to the Habitat Regulations. So far as we can see, PPS9 does not give definitions of either significant effects or adverse effects.

### **Section 2.3.2**

Section 2.3.2 can be deleted.

### **Table 2.4**

Able UK notes that there are two errors and one omission in the table, all relate to lapwing. The maximum number was omitted, it should be 3892. The percentage reads 11.79 but should be 17%. The mean percentage reads 1.73 but should read 2.03%. The frequency of visits in numbers exceeding 1% of the estuarine population are correct.

### **Section 2.3.6**

Able UK notes that there are errors within the quotes extracted from the ES. In Section 2.3.6 for Curlew the 5 year mean peak should read 3,714 (as stated in Table 2.4).

In Section 2.3.10, Lapwing, the quote should read "...the 5 year mean was 27,297 with peak of 39,865."

### **Section 3.2.4**

The information has been supplied to North Lincolnshire Council by email dated 22<sup>nd</sup> April 2010.

### **Section 5.2.2**

Weekly bird counts across the development site were recorded on a field by field basis from January - March 2007 and from July 2007 - March 2008. They give little credence to Natural England's view that SPA/Ramsar birds prefer large open fields. Fields with the highest density of birds were:

<b>Field No.</b>	<b>Field Size (ha)</b>	<b>Minimum Dimension (m)</b>	<b>Maximum Density birds/ha<sup>1</sup></b>
17	6.91	231	324.9
6	5.7	103	186.3
11	6.38	232	147.2
12	5.31	190	147.1

Maximum bird densities for the largest fields were:

<b>Field No.</b>	<b>Field Size (ha)</b>	<b>Minimum Dimension (m)</b>	<b>Maximum Density birds/ha<sup>1</sup></b>
1	38.6	496	37.2
4	69.7	294	30.0

All fields with the highest bird densities had at least one boundary with a hedge. This obviously did not reduce the attractiveness of the fields to birds. Hedges were normally 3m high, though some were 4m. Bunds have been designed not to exceed the height of the hedges to which the birds are habituated. The fields around the brick pits were also frequently used by SPA birds evidencing that existing features are not a deterrent. Birds were often recorded in fields adjacent to the flood defence wall, which is a 3m high bund.

The site will be managed by the Site Manager, a post to be filled after the hoped for planning consent is obtained. The Site Manager will be responsible ultimately to the Chairman and Chief Executive Officer of Able UK Ltd. He will be advised by the Design Manager and Group Environmental Manager of Able UK Ltd. Advice and guidance on management of the Wetland

<sup>1</sup> The monthly maxima quoted are the sum totals of maximum numbers of each species obtained at any count in the month. The data appears in the Balance Sheet (updated) shown in the Environmental Statement Appendix 10.3.2.

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Areas will be sought from Humber INCA and Mr Roger Wardle. On compliance matters Able UK Ltd will liaise with the Ecologist at North Lincolnshire Council who would consult with Natural England and any other parties as appropriate.

Bird counts would be undertaken in compliance with Section 7.2.4. All monitoring data would be collated and submitted to the Planning Authority for review in June of each monitoring year with the opportunity to reassess the monitoring and management strategies quinquennially.

### **NATURAL ENGLAND'S ADVICE ON MITIGATION AREAS**

#### **Bullet Point 1:**

We have obtained the advice of an independent expert in habitat creation and have relied on his advice in developing the conservation areas. On that basis we are satisfied that the development does cater for the current bird population on the site. This is a precautionary approach which ignores the habitats and food supplies available across tens of thousands of hectares of farmland that can support birds should any be displaced from the site.

#### **Bullet Point 2:**

See response to NE comments on Section 5.2.2. Landscaping around the boundaries of the wetland areas will be limited to 3m height which is the height of hedges bordering the existing fields with highest bird densities.

#### **Bullet Point 3:**

Able UK Ltd recognises the wish by North Lincolnshire Council for the development site to accommodate existing and extended rights of way. Nevertheless, disturbance of wildlife within some wetland areas is a potential risk. Measures to mitigate this were set out in the email dated 22<sup>nd</sup> April 2010 to Andrew Taylor of North Lincolnshire Council.

#### **Bullet Point 4:**

Both NE research Reports and the more recent Mott MacDonald report (2009) indicate that there is little correlation between the location of roosting birds and proximity to the flood defence wall for birds using the site in significant numbers. *Ref: Mott MacDonald (2009) South Humber Bank Zone, Final Report: Field Usage by Bird Species. Pages 20-22.*

#### **Bullet Point 5:**

Accepted.

#### **Bullet Point 6:**

If the number of birds occupying a field on the development site, in its present condition, is a measure of the attractiveness of that field to SPA/Ramsar birds, maximum field sizes are no advantage. This is discussed in Section 5.2.2 above. The conclusion shown here, from the site monitoring data is supported by the Mott MacDonald report (2009), page 22 thereof which states, in respect to Northern Lapwing and European Golden Plover "...both species showed an overall preference for the smaller fields across the SHBZ which is somewhat contrary to perceived knowledge".

Able UK notes that Natural England had at one stage advised that the mitigation area should comprise a 50ha block of land (Natural England letter of 23<sup>rd</sup> April 2010), though no explanation of how this figure was calculated has been offered. Able UK has designed

mitigation wetland areas amounting to 59.5ha. These are in one single block, other than for an intervening derelict railway line which is now a SINC site. New habitats for non SPA/Ramsar protected species, such as badgers and farmland birds along the Skitter Road landscape zone as set out in CMP2. It will not be possible to exclude badgers and farmland birds from the proposed wetland SPA/Ramsar mitigation areas, but the protected species will not be dependant solely upon those habitats.

So far as we can see, NE's advice to you is without obvious scientific substantiation – certainly none is apparent in their letter. Able cannot be expected to provide 80ha of land within 500m of the flood defences simply because an unsupported demand is put forward.

### **CONCLUSION**

Ecological mitigation can only be based on a reasonable understanding of the site's current value. The proposals we have put forward for the conservation areas respond to the body of scientific evidence available to us with regard to usage of the SPA/Ramsar site and the ecology of the birds using the application site. Given the experience of the consultant we have employed to design the mitigation areas we believe that, at the very least, the proposed mitigation has "*a reasonable guarantee of success*". We believe that this can be concluded even ignoring the obvious potential for the hinterland to absorb displaced birds, a phenomena that is evidenced year on year as crops rotate and farmland management changes.

NE still, however, seems unable to exclude the inevitability of some adverse effect on the integrity of the adjacent European site. The basis for their doubt appears to amount to the following:

1. **Edge effects around the perimeter of Conservation areas A, B and C limit the bird carrying capacity of the Areas.** – Edge effects are discussed in CMP1 and have been taken into account in the assessment of potential carrying capacity. We have been able to find only one paper on edge effects.
2. **Insufficient Feeding Potential of Conservation Area A, B and C** –To the extent that SPA/Ramsar birds feed on the intertidal zone, nothing Able UK Ltd proposes will affect their feeding grounds. To the extent that SPA/Ramsar birds occupying the development site need to feed on land, provision is made in the proposed wetland. Should this be insufficient there are vast areas of similar farmland around the site and it is a fact that terrestrial feeders do go inland to feed. None of this farmland can change to other uses without planning consent. However, farmers do change crops from year to year which means that roosting and feeding patterns adapt accordingly. Able UK Ltd can not find evidence that this alone can jeopardise the integrity of the Humber Estuary SPA/Ramsar site.
3. **Flooding will significantly reduce the efficacy of the proposals** – The probability of a flooding event occurring in any year that will exceed the capacity of the drainage system will be less than 1%. Much of the site is at greater risk now.

As we have noted before, in other correspondence, a decision maker must expect any party that expresses doubt to substantiate the scientific basis of those doubts, and must himself undertake an objective assessment of the reasonableness of such doubts. We would hope that if the decision maker does have any residual concerns, that they could be addressed with a suitable monitoring programme that included provision for the mitigation to be reviewed before the final phases of construction were completed.

North Lincolnshire Council  
Highways & Planning,  
Church Square House,  
PO Box 42,  
Scunthorpe,  
North Lincolnshire  
DN5 6XB

Your Ref: PA/2009/0600

Our Ref: EH/515-516  
GD.JD.AHP.A.L10/0005

Date: 12<sup>th</sup> May 2010

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Able UK Ltd would welcome a meeting with North Lincolnshire Council and Natural England in order to find a way to resolving the outstanding issues.

Yours sincerely

*G.P. Doubleday*

Group Environmental Manager

**From:** "Steve Boland" <sboland@ableuk.com>  
**To:** "Kite, Nick" <nick.kite@environment-agency.gov.uk>  
**cc:** "Andrew Taylor" <Andrew.Taylor@northlincs.gov.uk>, "Richard Cram" <rcram@ableuk.com>

**Date:** Friday, August 06, 2010 12:52PM  
**Subject:** RE: East Halton Flood Defences, Intertidal Habitat Creation

---

Nick

The area of land that is within the European Site that will be enhanced is : 1177m2

The area of land outside the European Site that will be improved is : 1273m2

Kind regards

*STEVE BOLAND*  
Engineer

-----  
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**From:** Kite, Nick [mailto:[nick.kite@environment-agency.gov.uk](mailto:nick.kite@environment-agency.gov.uk)]  
**Sent:** 06 August 2010 11:35

**To:** sboland@ableuk.com  
**Subject:** RE:

Thanks Steve. Can you tell me the area of land that is within the European Site that will be enhanced, and the amount to land outside the European Site that will also be improved?

Regards

Nick

Technical Specialist

Fisheries, Recreation and Biodiversity

01522 785907



---

**From:** Steve Boland [mailto:sboland@ableuk.com]  
**Sent:** 06 August 2010 10:38  
**To:** Kite, Nick  
**Cc:** 'Andrew Taylor'; 'Richard Cram'  
**Subject:**

Click [here](#) to report this email as spam.

Nick

Following your conversation with Richard Cram please find attached the drawings showing the amended areas of intertidal habitat creation for the 1:4 slope option.



## Able UK Ltd

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Mr William Hill  
North Lincolnshire Council  
Church Square House  
PO Box 42  
Scunthorpe  
North Lincolnshire  
DN15 6XQ

Your Ref: PA/2009/0600

Our Ref:  
RC.EA.AHP.A.L10/7

Date: 9<sup>th</sup> August 2010

For the attention of William Hill

Dear Sirs

**PA/2009/0600**  
**RESPONSE TO OBJECTIONS BY ABP AND RSPB**

We refer firstly to Osborne Clark's (OC's) letter dated 13 July, which has been published on the Council's planning website and which was submitted to you on behalf of Associated British Ports (ABP). That letter reiterates points made by OC in their correspondence to you dated 7 May. We note that, inter alia, OC have repeated their unsubstantiated assertion that, *'(i)n law you are no longer in a position to approve the current Able application'*.

Whilst we have responded to the previous points raised by OC in our letter to you dated 15 June, we would reinforce some of our earlier comments and make the following supplementary observation.

1. Paragraph 13 of OC's letter dated 7 May states that,

*'It is clear from the accompanying Environmental Statement that the application currently before your authority does not anticipate the development of any port infrastructure at the site'.*

There are other repeated claims in the same letter that Able have emerging plans for port development, *'on the site'*. OC's letter dated 13 July then states that, *'Able's current application was merely a forerunner to the port proposals that have now been announced for the site'*. OC's use of the term *'site'* is, deliberately or otherwise, confusing to any reader of their two letters.

As you are aware, and as OC should be aware, the application site and the consultation site for a deep water quay are distinct and have no geographical overlap. The recent consultation document shows the possible location of a new deep water quay facility to the south of the application site. We reiterate that the planning application site is not dependent on the development of a Marine Energy Park to the south and is not *'inextricably'* linked to it; this is evident from the application documents before you. Furthermore, since any future application for a new deep water quay will be determined by the Infrastructure Planning Commission (IPC), or its successor body, the Council cannot possibly be *'fettering its ability to determine impartially.....any future application'*; the assertion is preposterous.



Mr William Hill  
North Lincolnshire Council  
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Date: 9<sup>th</sup> August 2010

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In essence, OC's argument is based on a series of false premises. Their consequential conclusion, that there is a requirement, in law, for you to refuse the application is, as a result, unsound.

In other correspondence dated 29 July 2010, RSPB has argued that the appropriate assessment must be revised to include an in-combination assessment of the potential project described in the informal consultation document issued by Able on 8 July 2010. We have largely responded to this issue in our response to you dated 15 June. Unhelpfully, RSPB alludes to '*other new plans and projects*' that should also be considered in the appropriate assessment but do not name them. On this basis, it might be concluded that RSPB is less interested in assisting the planning process than in causing it delay and disruption. When, for example, did RSPB become aware of these '*other new plans and projects*' and why did it not simply identify them to you at that time instead of merely suggesting their existence now? We further note that RSPB has also chosen to paraphrase the EU Guidance selectively.

Since the Habitat Regulations do not define 'plan or project', it is for you alone, as the competent authority, to determine which schemes to consider in the appropriate assessment.

To reinforce those points made in our previous response to you, we record that, in **World Wildlife Fund UK Limited v Secretary of State for Scotland** [1999] Env LR 632, Lord Nimmo Smith, having noted that "plan or project" was not defined in the Regulations, said at page 699: "*Regulation 49(1) and (2) speak of it as something for which 'consent, permission or other authorisation' is applied, and in my opinion this means that the plan or project is that which is the subject-matter of an application and can thus be identified by reference to the application*", (Able underline). This opinion is consistent with Article 6(3), and only reinforces the common sense position that has always been the custom and practice of competent authorities in this country: that an in-combination assessment considers those plans and projects that have either been approved or which have been proposed and submitted for approval but are not yet determined. To extend the definition of 'plan or project' to include an informal consultation document, as RSPB propose you do, would widen the concept to the point of implausible vagueness and expose the appropriate assessment process to the most flagrant abuse.

As you are aware, OC have made similar arguments to RSPB and in this regard you may also wish to review ABP's own interpretation of the requirements for in-combination assessment which they set out in Chapter 15 of their Environmental Statement for a new RO-RO berth at Grimsby in September 2009. To quote ABP Mer:

*'For this assessment (cumulative and in-combination effects) it is necessary to evaluate the cumulative and 'in-combination' effects that the Grimsby RO-RO Berth proposal has with other plan or projects that are approved or in the planning domain.*

...

*Further guidance on in-combination and cumulative effects can be found in English Nature Habitats Regulations Guidance Note 4 (English Nature 2001).'* (Able underline).

Mr William Hill  
North Lincolnshire Council  
Church Square House  
PO Box 42  
Scunthorpe  
North Lincolnshire  
DN15 6XQ

Your Ref: PA/2009/0600

Our Ref:  
RC.EA.AHP.A.L10/7

Date: 9<sup>th</sup> August 2010

~ 3 ~

Of course, should Able submit an application in the future for a deep water quay, then the current application, if consented (or still to be determined), would be considered in combination with that future application by the relevant competent authority that would be asked to agree to it. The continued integrity of the European site is therefore always assured.

We trust the above is helpful to your consideration of our application and its appropriate assessment.

Yours faithfully

R M Cram  
*Design Manager*



**Meeting with Natural England and the Environment Agency**

**By: R Cram**

**Present:** Richard Cram (RC) - Able UK  
Andrew Mozley (AM) - Environment Agency  
Philip Winn (PW) - Environment Agency  
Nick Kite (NK) - Environment Agency  
Laura Richardson (LR) - Environment Agency  
Greg Smith (GS) - Environment Agency  
Paul Duncan (PD) - Natural England  
Emma Hawthorne (EH) - Natural England  
Bernie Flemming (BF) - Natural England  
Marcus Walker (MW) - North Lincolnshire Council  
Tim Allen (TA) - North Lincolnshire Council  
Andrew Taylor (AT) - North Lincolnshire Council

**Date & Time:** 14<sup>th</sup> September 2010, 14.00hrs

**Location:** Natural England Offices, Leeds

**Subject:** Planning Application PA/2009/0600 with North Lincolnshire Council

**Distribution:** All Attendees + PMS, N Etherington, W Hill, M Welton, G Kell

<p><b>1. Introduction</b></p> <p>PD briefly outlined the agenda for the meeting which would generally follow the items covered in the meeting held on the 20th August 2010. PD agreed to forward his comments on the previous minutes by email to RC (not received to date 16/09/2010)</p> <p>EA stated that they had not received a copy of the previous minutes. RC replied that they had been issued by email to PW for onward transmission to his EA colleagues (<i>Post Meeting Note; Email to PW sent to incorrect email address and re-sent on 15/09/2010</i>)</p>	<p><u><b>ACTION</b></u></p>
<p><b>2. Legal Agreement</b></p> <p>AM stated that the list of issues that were to be covered by the legal agreement would be distributed by close of play on the 15<sup>th</sup> September. EA would then begin drafting the legal agreement based on that list of issues (subject to any comments received from any other named parties) and issue a draft legal agreement no later than 24<sup>th</sup> September. It was agreed that the draft document would be issued to Andrew Taylor to enable correlation with proposed planning conditions.</p>	<p>AM</p>
<p><b>3. Land Drainage Consent</b></p> <p>NK stated that the appropriate assessment had not progressed since the last meeting as matters that were unresolved at the last meeting, namely coastal squeeze, remained unresolved.</p> <p>GS stated that he was drafting the drainage consent for the pumping station and works to the flood defence wall. GS stated that he had sufficient information to complete the drafting; the only unresolved issue being coastal squeeze.</p>	

#### 4. Coastal Squeeze

PD stated that following the David Tyldesley and Associates (DTA) report to NE regarding, inter alia, the Habitat Regulations assessment for the Able planning application, NE and EA had been working closely to resolve how coastal squeeze should be treated within the appropriate assessment.

PW stated that whilst the flood risk management strategy had identified certain lengths of wall where maintenance at public expense was justified, the length along Halton Marshes had been excluded from that list. PW noted that the EA case for no alternatives/IROPI did not necessarily cover the works proposed by Able. PW stated that a very constructive meeting had taken place that morning which had addressed fundamental questions in relation to coastal squeeze losses.

RC did not see the relevance of this latter point. The works proposed by Able had to be assessed alone and then in-combination with other plans and projects. It was the impact of Able's project on the integrity of the SPA that needed to be considered. When considering Able's project alone, maintaining the sea wall had no impact whatsoever on the intertidal habitat loss at the low water mark. Such habitat loss would occur whether or not Able's proposals were consented and the habitat loss was not therefore an effect of Able's project and was not relevant to the appropriate assessment. NE did not disagree.

When considering the impact of Able's project at the high water mark, there were direct impacts that Able had quantified within the footprint of the rock armour, which were negative, but there were also benefits where Able proposed to retreat part of the existing flood defences within the Skitter. RC did not have the exact quantum's available at the meeting but he believed that there was a net gain in Annex 1 Habitat as a consequence of Able's proposals. RC asked NE how, therefore, Able's proposal adversely affected the integrity of the site on its own, bearing in mind that an adverse effect was one that undermined the conservation objectives of the site. NE were unable to identify the specific adverse effect or its quantum.

Accordingly RC enquired which specific conservation objective was undermined. NE was unable to identify the relevant conservation objective.

With regard to the DTA advice, RC noted that it suggested that preventing the flood defence from failing was in itself an adverse effect on integrity as the potential benefit that might arise from its collapse (mudflat creation) was prevented (DTA report paragraph 50). RC asked if NE agreed and if they included in the definition of an adverse effect on integrity, the prevention of a potential benefit from arising. NE were unable to comment.

RC made it clear that in repairing the sea wall Able were not destroying any Annex 1 Habitat other than the very limited quantum of mud within the footprint of the rock armour which was to all intent and purposes inconsequential.

Insofar as the in-combination assessment was concerned it was clear that the approved plan that should be considered was "Planning for the Rising Tides: The Humber Flood Risk Management Strategy", March 2008, published by EA and approved by DeFRA. The plan specifically referenced the CHaMP. The CHaMP was also clear in recording the areas which were being provided both for coastal squeeze and for direct losses and Able's proposals were included in the assessment of coastal squeeze losses set out in the CHaMP.

PD stated that Able's proposals were causing coastal squeeze. RC disagreed completely. RC stressed that it was the impact of Able's project alone and in-combination that was relevant to the appropriate assessment. Global statements about coastal squeeze were unhelpful to the appropriate assessment processes. The competent authority needed to dissect the impact of Able's proposals into its components parts, quantify them and so determine if they undermined the conservation objectives for the site. RC criticised the DTA review in also making bald statements that the project 'caused' coastal squeeze. The DTA report did not provide any substantiation for their views or any discussion of the competing arguments or their merits. Indeed, RC had not seen any lucid written argument from EA, NE or DTA that Able's project alone or in-combination caused an adverse effect on integrity on the SPA/SAC. Able would not table any amendments to their plans because there was no completed appropriate assessment requiring them to do so.

MW criticised NE for obtaining a peer review of their actions in responding to this planning application earlier in the process. MW noted that DTA's advice was controversial, as evidenced by the extensive discussions now taking place with EA, and was now causing delay and disruption to the planning process well beyond the statutory determination period. PD stated that while DTA's scope of works was to review NE's advice it necessarily followed the provision of the advice.

RC recorded that when the issue of coastal squeeze was first raised and the difficulties that this may introduce with regard to a test of alternative solutions and IROPI, Able suspended work on their project for around 12 months whilst the quantum of habit loss was assessed by consultants and legal opinions obtained. Able had then presented their case to a joint meeting with NE and EA in early 2009 and subsequent to that meeting had assurances from EA that habitat loss due to rising sea levels was compensated for within EA's strategy. Since the beginning of 2009 Able had expended considerable sums of money on consultants and paid a statutory fee of £250,000 in order to lodge the planning application. Able had done this in the legitimate belief (and they consequently had a legitimate expectation) that the coastal squeeze issue had been resolved. If the statutory agencies position changes then Able would suffer a significant financial loss.

PW stated that the matter was planned to be resolved by the 22<sup>nd</sup> of September.

## 5. Environment Agency Objections

AM stated that the foul drainage objection could be removed with immediate effect and that the flood risk objection could be removed once the legal agreement had been completed by all relevant parties.

## 6. Appropriate Assessment

AT updated the meeting on the current progress of the appropriate assessment following the consultation responses received in February and made the following points:

- Potential pollution issues were resolved with the revised foul drainage proposal.
- The direct loss of habitat was mitigated by the realignment of the flood defence wall within the Skitter.
- Disturbance/timing restrictions would be included in conditions and based on evidence obtained from previous projects
- Timing of works on the flood defences was likely to be restricted to the period March to September inclusive but only within 500 meters of the Skitter.
- Conditions were also likely to be required to give further certainty to timescales for the phasing of the works.

With regard to the mitigation habitat for SPA species, there was a difference of opinion between Able and the statutory authorities as to the quantum of area required in order to avoid an adverse effect on the integrity of the adjacent European site. AT's view is that the Able proposal is sufficient for roosting mitigation but not necessarily for feeding birds. As a precautionary approach AT intended to take forward Able's proposal to hold back 20 hectares of development unless monitoring demonstrated that the additional area was not required. AT noted the importance of monitoring the SPA rather than simply monitoring the mitigation areas themselves as it was the impact on the SPA, and not the land adjacent to the SPA, that was determinative. AT had concluded that with the additional 20 hectares there would be no adverse effect on integrity.

BF noted that whilst NE would look at the appropriate assessment and review the evidence base provided they believed that a single 80 hectare block was necessary to avoid an adverse affect on integrity. BF asked how it was planned to make certain that the mitigation was created in accordance with the details submitted at planning. BF believed that a legal agreement was required to provide greater certainty. RC enquired as to how a legal agreement gave greater certainty than a legally enforceable planning condition. MW stated the choice between condition and a legal agreement was purely a matter for the Local Planning Authority (LPA). AT and LR noted that their was guidance of the use of conditions and legal agreements which the LPA would need to take into account.

LPA

BF stated that NLC had failed to enforce planning conditions against Able in the past. MW was not aware of any such cases but would investigate the allegation.

MW

MW considered that NE's request for a single 80 hectare block for SPA bird mitigation was communicated to the Planning Authority very late in the planning process. Furthermore it was not consistent with other NE advice the Council had received that 4no 50 hectare blocks were required within the South Humber Bank industrial zone. BF stated that the 50 hectare parcels were minimum requirements.

RC noted for the record that the application site was not part of the European site and that habitat loss within the application site could not be treated per se as an adverse effect on integrity, nor could displacement of birds from the application site. BF stated that whilst he was not a specialist ornithologist NE had taken appropriate advice. RC noted that in his opinion there was a credibility gap in NE's argument. Whereas 80 hectares was being asked for on the application site to avoid an adverse effect on integrity, literally thousands of hectares of equivalent farm land was available for the continued sustenance of SPA species immediately adjacent to the site. NE asked why it was not possible to provide the 80 hectare block now. AT stated that changing the development proposal to the extent that NE proposed would change the nature of the development to such an extent that the application would have to be resubmitted.

AT stated that whilst NLC had always accepted NE's advice in the past the situation might arise with the current application that they would not agree with NE but acknowledged that their reasons would need to be stated clearly. NE noted that if that situation arose then they would write to Government Office recommending "call in" of the application. BF noted that RSPB has already done this. MW recorded that NLC had responded to that letter.

**7. Legal Opinion on In-Combination Effect**

MW stated that NLC had obtained legal opinion that the Marine Energy Park was not a plan or project as the term was to be construed within the Habitat Regulations. NE/EA asked if the legal opinion could be circulated. MW said that he would consider issuing a brief summary to the other parties.

**8. Date of Next Meeting**

It was agreed that the next meeting would be held on the 28<sup>th</sup> September at NE's Offices in Leeds commencing at 1.30pm.

**From:** "Richard Cram" <rcram@ableuk.com>  
**To:** "'Duncan, Paul \ (NE\)' " <Paul.Duncan@naturalengland.org.uk>  
**cc:** "'Andrew Taylor'" <Andrew.Taylor@northlincs.gov.uk>

---

**Date:** Wednesday, September 22, 2010 10:51AM  
**Subject:** PA/2009/0600 Effects of Development on coastal squeeze

History:       ✉ This message has been replied to.

---

Paul,

Following our brief discussion yesterday, I attach a drawing showing the effects of our development on the SPA.

The drawing illustrates the fact that the habitat loss that occurs due to 'coastal squeeze', and that is calculated in the CHaMP, occurs at the low water mark. This loss is attributable to natural change not to maintaining the flood defences.

The difference between our development proceeding and 'do-nothing' is the relevant effect that needs to be considered in the appropriate assessment. The only difference is that our proposals prevent potential habitat from being created that MIGHT be a benefit for the site. The principle at issue is whether a competent authority is entitled to ascertain that preventing a POTENTIAL benefit arising can be construed as causing harm and therefore be considered an adverse effect on integrity. Preventing a POTENTIAL benefit from arising (however probable or improbable that benefit MIGHT be) is not equivalent to destroying habitat and cannot be deemed an adverse effect on integrity. If the principle, that preventing a POTENTIAL benefit from arising was equivalent to an adverse effect on integrity (no matter how probable or improbable that benefit MIGHT be), was accepted, then many rather ludicrous scenarios could be imagined that would be an adverse effect on integrity

A further nuance is that if our proposal were to proceed 'alone' then there is plenty of other sea wall that will collapse and provide the potential benefit in any event.

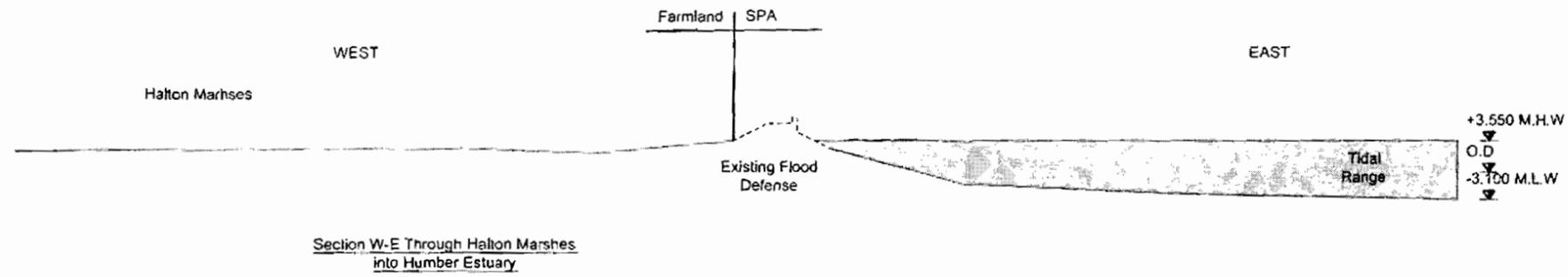
As I have said, the DTA advice provides no proper discussion of the issue and simply jumps to an impromptu, unsubstantiated, conclusion in paragraph 53.

Kind regards

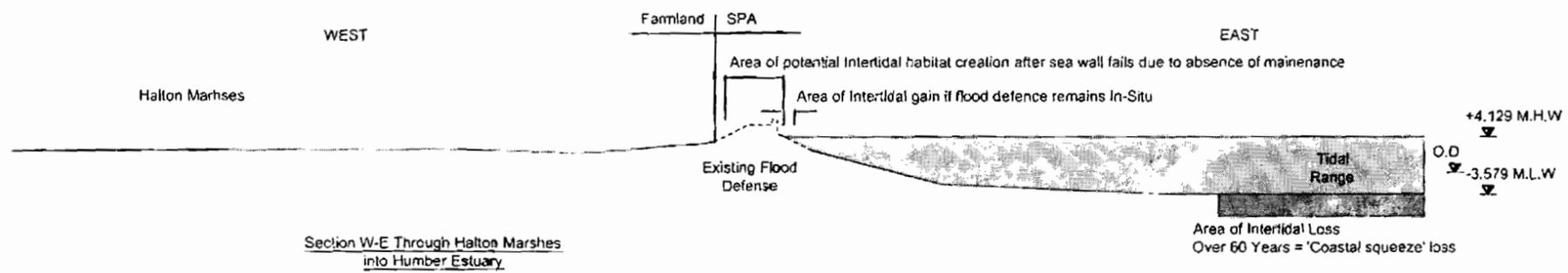
*RICHARD CRAM*  
Design Manager

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Able UK Ltd

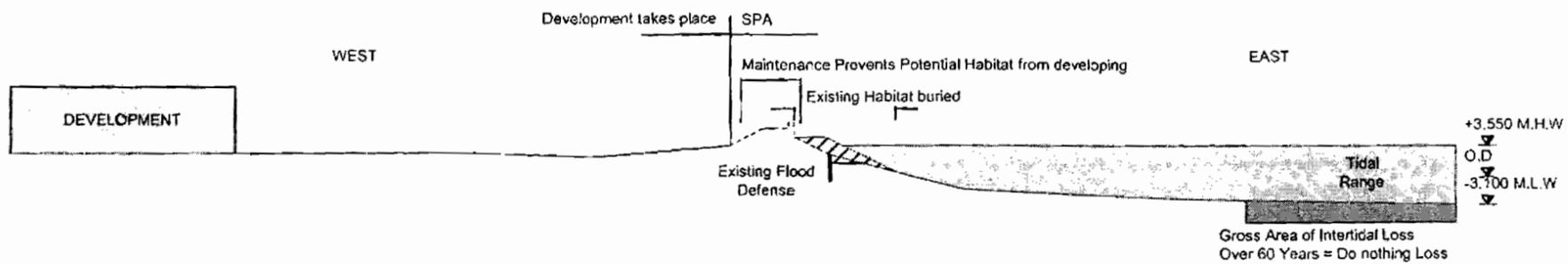
EXISTING



SCENARIO 1 - DO NOTHING



SCENARIO 2 - DEVELOPMENT INCLUDING MAINTENANCE OF EXISTING FLOOD DEFENSE WALL



KEY

Rev	Date	Description	By	Crn
A	22/09/10	Preliminary Issue	RK	RC

**able** ABE UK Ltd  
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 1625 1PK

Project: ABLE Logistics Park  
 Client: ABLE UK Ltd  
 Title: Effects of Development on Coastal Squeeze

**PRELIMINARY**

Scale	Drawn By	Checked By	Approved
1:500 @ A2	R.Kent	R.Cram	R.Cram
Date:	22/09/2010	22/09/2010	22/09/2010
Drawing No:	ALP - 06000	Revision:	A

## **Appendix 5b. Applicant correspondence on the revised proposals.**

**E-mail from Richard Cram dated 06 April 2011**

**The stuff you have asked for is going to take time to put together, however, regarding coastal squeeze.**

1. You know my view on this – we are not causing sea levels to rise so we cannot be causing coastal squeeze. If we let the wall collapse it will make no difference to the low water level in the estuary and so cannot change the inter-tidal losses that are going to occur in an case (with or without our scheme).

2. The AA for the EA FRMS is attached. Since that project has an adverse effect alone EA are compensating for their scheme so the in-combination assessment is pretty rudimentary since they are not compensating for anyone else's scheme. As you know we have argued, and I hope we are all now agreed, that the rock we place on the foreshore will not imperil the ecological integrity of the site alone. Since EA are compensating for their scheme we cannot have death by a thousand cuts and we do not need to consider their scheme in combination.

Kind regards  
RICHARD CRAM

Design Manager

-----  
Able UK Ltd  
Able House  
Billingham Reach Industrial Estate  
Billingham  
Teesside TS23 1PX

**E-mail from Richard Cram dated 06 May 2011**

**Andrew,**

The application still includes works to maintain and improve the flood defences. The reference to '1.1ha of foreshore would be occupied temporarily to facilitate' therefore needs to be

clarified; this is the area of rock foreshore over which we are placing a rock toe. There is an inconsistency between the RSPB/NE/Able Agreement Plans and the planning application drawings in the labeling of Options 1 and 2. This has been rectified and the document re-issued today.

Kind regards  
RICHARD CRAM

Design Manager

-----  
Able UK Ltd  
Able House  
Billingham Reach Industrial Estate  
Billingham  
Teesside TS23 1PX

E-mail from Jonathan Monk dated 19 May 2011

**Andrew,**

Thank you for your response. In assessing noise transmission and attenuation, many different parameters can be used, most of which are expressed in dB(A); because these parameters are based on different statistics, they measure different things, and they are not all directly comparable. It is necessary to be sure that like is compared with like.

The apparent disparity in the noise calculations you raise is caused by the use of different noise parameters to describe different things. The calculation of transmission of the train noise is based on its Sound Power Level (LWA), which is a statistical parameter describing the emission of noise from a specified source such as an item of plant. The calculations used to create the contours are based on LAeq, which is a statistical parameter describing the

equivalent continuous sound pressure level, a kind of 'average' sound level existing at a

location in an environment. Different formulae for attenuation are used for each type of calculation, as set out in BS 5228-1 (2009).

In this case, it was calculated that the LWA of the train would be attenuated down to a level of

32-54 dB(A) at the margin of the core area. The contours state that LAeq's in the contour

band 85-95 dB(A), which contains the railway, will result in LAeq's at the margin of the core

**Appendix 6a. Consultee responses on the original proposals.**

From: "Kite, Nick" <nick.kite@environment-agency.gov.uk>  
To: "Andrew Taylor" <Andrew.Taylor@northlincs.gov.uk>  
cc: "Morris, Debbie" <debbie.morris@environment-agency.gov.uk>  
Date: Tuesday, February 02, 2010 10:25AM  
Subject: RE: 2009.0600 Able UK Public consultation on Appropriate Assessment under Reg 48(4)  
History: This message has been replied to.

Hi Andrew

Thanks for sending me a copy of your appropriate assessment. I think it's a well structured and

comprehensive document. I can't give a response on all your questions, but here's my response to some:

Q1. Agree, although 5.5 might more accurately refer to habitat loss also being from placement of rock armour beyond the toe beam.

Q3. Agree, but on point 7.5.1 I believe it should be assessed in combination with all schemes and processes leading to habitat loss. The schemes at East Halton and Stallingborough are the most obvious nearby ones, but there are many more within the Humber Flood Risk Strategy.

Q5. Agree, seems similar to the methods the EA would propose

Q11. Agree with the conclusion that there is adverse affect in combination

Q12. Agree

Q13. Always more docs and sources of info that could be used, (e.g. inspectors findings from other cases, EA Review of Consents documents, Humber Strategy documents), but I believe that you have referenced enough for the assessment to be "appropriate" at this time.

Q14. Possibly. May be worth contacting our Asset Systems Management team to determine what plans they have along the coastline.

Q15. For information, we have drawn the applicants attention to our concerns regarding the strategy they propose for the displacement of wolveroles. The applicant is proposing extensive use of the strimming method to dissuade them from remaining in stretches that are due to be reprofiled. We informed them via email on 11th January 2010 that the method lacks scientific support and may, contrary to earlier ideas of best practice, be harmful to water voles and warned them that it may even be regarded as reckless. We recommended that they consider alternative techniques.

Regards

Nick

Technical Specialist  
Fisheries, Recreation and Biodiversity  
01522 785907

07775 827407

From:

"Brackenbury, James" <james.brackenbury@environment-agency.gov.uk> To:

"Andrew Taylor" <Andrew.Taylor@northlincs.gov.uk> cc:

"Richardson, Laura" <LauraM.richardson@environment-agency.gov.uk> bcc:

---

Date:

Friday, July 02, 2010 04:04PM Subject:

RE: Re: Fw: Able UK application

Andrew,

In response to you query I can confirm that the current objection from the Environment Agency on foul drainage grounds (for which I am the lead consultee on water quality) is based upon our National Policy which guides away from supporting planning applications which do not discharge to foul sewer within a sewered area.

In this case there is a sewerage network in place close to the proposed site although it has been identified that improvement works are required before it can take the proposed amount of effluent from this site. The initial proposal included plans to install 17 package treatment plants at the site to treat effluent without any evidence that other options had been explored.

At present we are liaising with the developer (Able UK) and Anglian Water to help them find an acceptable way forward.

Although our objection is based initially on our national policy its aim is to protect the environment and find a sustainable way forward . The presumption against package treatment plants is due to the fact that in order to operate properly and reduce the risk of pollution, nuisance or harm to human health package treatment plants need to be operated properly and maintained regularly.

Experience (and evidence) suggests that this does not always happen and in this case could lead to localised pollution of surface and/or ground water. Details concerning how the package treatment plants will operate, their volumes or the sensitivity of the receiving watercourse has yet to be provided. Without this information we can not determine the impact they will have on the quality of water in this particular location. We do not anticipate that there will be an impact on the Humber Estuary due to the volumes and potential for dilution however we have concerns that smaller tributaries could be adversely effected.

There is also the potential to set a precedent with wider implications which could relieve the sewerage undertaker of its statutory duty to improve and extend the provision of public sewers.

I hope this has answered you question. If you have any further queries please feel free to come back to me.

Regards

James

**James Brackenbury**

Senior Environment Officer (EM Lincoln)

' **Internal** 750 5913

' **External** 01522 785913

' **Fax** 01522 785030

Environment Agency, Waterside House, Waterside North, Lincoln, LN2 5NL



nature's voice

FAO Andrew Taylor  
North Lincolnshire Council  
Church Square House  
PO Box 42  
Scunthorpe  
North Lincolnshire  
DN15 6XQ

19 February 2010

Dear Mr Taylor

**RE: PA/2009/0600 Able UK Public consultation on Appropriate Assessment under Regulation 48(4)**

The RSPB welcomes the opportunity to comment on the draft Appropriate Assessment (AA) pursuant to Regulation 48 of the Habitats Regulations 1994 (as amended)<sup>4</sup> (the Habitat Regulations) for planning application PA/2009/0600.

The RSPB currently has an outstanding objection lodged with North Lincolnshire Council to the above application due to concerns regarding the potential detrimental impacts of the proposal on the Humber Estuary Site of Special Scientific Interest, Special Area of Conservation<sup>5</sup>, Special Protection Area and Ramsar site.

Please find responses from the RSPB to the Likely Significant Effect (LSE) determination document and 16 Questions posed as part of the draft AA consultation detailed below.

### ***Likely significant effect determination***

The RSPB supports the determination of LSE as presented in the consultation document. However, we submit that in addition to the potential impacts identified in the determination document there is potential for anthropogenic related disturbance to waterbirds within the proposed mitigation wetland habitat areas from recreational access. The recently proposed footpath extensions<sup>6</sup> would in our view, exacerbate the already significant potential to disturb any waterbirds utilising the proposed mitigation wetland habitat areas.

## **Comments relating to the Draft AA**

### ***Section 5, Question 1***

<sup>4</sup> The Conservation (Natural Habitats & c.) 1994 (as amended)

<sup>5</sup> Included in the site Register of European Sites in Great Britain under Regulation 13 of Habitats Regulations on 10 December 2009

<sup>6</sup> Drawing KI-08020D submitted within the original Environmental Statement accompanying the planning application PA/2009/0600 as amended to include additional proposed routes from North Lincolnshire Council.

The RSPB agrees with the list of LSE's identified in Section 5, page 12 of the Draft AA (detailed in 5.4-5.11). We submit an additional LSE should be included relating to potential disturbance of wintering and passage waterbirds as a result of increased public access.

### **Section 5, Question 1**

The RSPB agrees with the list of LSE's identified in Section 5, page 12 of the Draft AA (detailed in 5.4-5.11). We submit two additional LSEs should be included:

One relating to potential disturbance of wintering and passage waterbirds as a result of increased public access. And a further LSE relating to the temporary loss of functioning SPA and Ramsar habitat during construction based on the current phased approach. As outlined in Table 1 of the Determination of LSE document, prior to Phase 4, only 4.8 ha of potential mitigation wetland are included in the proposed works, but over 200ha of the proposal site will be developed in Phases 1-3 (between 2010-2013) so there will be loss of functionally linked habitat before the creation of the mitigation. Any mitigation must, in our view be implemented and functioning before loss to avoid adverse effects.

### **Section 6, Question 2**

*Do you agree that the Environment Agency's existing commitment to habitat creation will remove any Adverse Effect on Integrity due to coastal squeeze in the East Halton area?*

The RSPB understands that the Environment Agency (EA) are currently committed to delivering 700ha of intertidal compensation within the estuary as a result of the adopted Humber Flood Risk Management Strategy (FRMS), March 2008 pursuant to the Habitats Regulations. The RSPB understands that the Shadow AA for the Humber FRMS assumed a line of flood defence would be in place along the entire estuary frontage for the lifetime of the Strategy and the necessary compensatory intertidal habitat as a result of coastal squeeze was calculated on this basis.

Subsequent to the Shadow AA, a full AA is now in draft and further calculations for coastal squeeze have been adopted in light of the revised Coastal Habitat Management Plan<sup>7</sup>. We understand that the revised figures show a deficit of 17.2ha of intertidal habitat in the middle estuary over the period 2007-2011 within the Humber FRMS (also noted in paragraph 6.5.1, page 13). Therefore, we conclude that the current EA proposals for compensatory habitat delivery within the middle estuary do not currently meet the requirements of the estuary to avoid Adverse Effect. By default, any proposals to maintain a flood defence bank in this part of the Estuary are not yet adequately compensated under the current provisions which the EA has formally committed to. We understand the EA is working towards reconciling the deficit in the middle estuary but the necessary compensatory habitat is not secured nor in place and functioning. Therefore, we can only conclude that the EA's existing commitment to habitat creation does not remove any Adverse Effect on Integrity (AEOI) due to predicted coastal squeeze within the Humber Estuary.

We understand EA are continuing to work on calculations and we would welcome clarification on the current predictions for coastal squeeze losses and gains in the middle estuary to fully understand the most up to date situation with respect to a potential deficit in intertidal habitat for the middle estuary.

We submit that it would be necessary to secure the necessary area of compensation in relation to the proposed flood defence works along the frontage affected by this application before no AEOI can be concluded. This calculation would also need to identify any *direct* losses in-combination arising from maintaining the current line of flood defence within the Estuary. Any proposals which seek to advance the current line of defence would require an additional calculation of losses associated with this in relation to direct habitat loss of the designated site and the associated coastal squeeze.

We accept that a broad commitment has been made by the Environment Agency to compensate for coastal squeeze across the whole estuary. However, in order to satisfy the Habitats

<sup>7</sup> CHaMP review 2009

Regulations this compensation should be in place and functioning before loss. In order to satisfy the AA for this proposal we submit it is necessary to secure the delivery of the relevant portion of the coastal squeeze attributable to maintaining the Proposal frontage.

If this habitat delivery is not in the direct control of the proponent a commitment of it's implementation in the appropriate timescale would need to be secured and legally binding as a condition of any consent for maintaining the flood defence line along the East Halton frontage. Should this not be delivered as currently suggested by the EA then the obligation must fall back to the Proponent or those legally responsible for the ongoing flood defence maintenance in the event of the site changing ownership or management.

Paragraph 6.6.2 identifies that the Agency has "assumed responsibility" for delivering coastal squeeze around the Humber Estuary due to maintaining the current line of flood defence. The RSPB has challenged this policy position with the EA with respect to a public body bearing the costs of a private proposal. We submit that any costs which arise as a result of avoiding environmental damage are part of the necessary cost of the proposed development and should be borne by the Proponent.

### **Section 7, Question 3**

Due to the uncertainty in surrounding the detailed proposal for the flood defence works in particular associated with habitat loss, the RSPB feels unable to provide a definitive view in relation to potential AEOL at this point.

We support the conclusion of LSE and have concerns regarding the potential footprint of the proposed works within the Humber Estuary SSSI, SAC, SPA and Ramsar.

### **Section 8, Question 4**

The RSPB agrees with the conclusion that as proposed the pollution from surface water drainage could result in an AEOL.

### **Section 9, Question 5**

The RSPB disagrees with the conclusion that "provided that the proposed mitigation measures are implemented in full, there will be no AEOL of the Humber Estuary SPA and Ramsar site due to noise and visual disturbance in the construction phase of development" (draft AA, paragraph 9.8.4, page 21).

We strongly disagree that the proposed mitigation will remove the potential disturbance to SPA and Ramsar birds during the construction phase of the proposal. The construction period is estimated to be a total of seven years. The RSPB has serious concerns regarding the adequacy of the overall proposed mitigation package and the phased approach being adopted.

We submit that the proposed overall mitigation areas are insufficient in size, scale, location and design to adequately support the numbers and species of SPA and Ramsar birds which will be displaced by the proposal. Table 1 (Proposed phasing of works) shows that in Phases 1-3 around 200 ha of works will be commenced, of which only 4.8ha includes wetland mitigation habitat, so as well as disturbance during the construction phase there will also be a temporary loss of high tide feeding and roosting habitats given the main areas of habitat creation do not take place until phase 4, with further incremental areas in phases 5 and 6. Given the proposed timing of the habitat mitigation creation, it is unlikely there will be any or very little functioning high tide feeding and roosting habitat within the site during the first four years at least of the construction works

We submit that the mitigation areas themselves will be subject to high levels of noise and visual disturbance during construction and therefore are unlikely to function as required for SPA and Ramsar birds during the estimated 7 year period. We therefore conclude that the phased approach proposed will not be sufficient to mitigate for impacts during construction and therefore question the mitigation proposals efficacy. We would like clarity that the phasing of works will deliver enough habitat at each stage of the proposal to adequately mitigate during construction period.

Although we do not believe, based on the current proposal, that this is possible as the overall mitigation package is, in our view insufficient. We propose that the necessary mitigation should be in place and functioning (i.e. optimum habitat established and free from disturbance) before loss to meet the requirements of the displaced SPA and Ramsar birds.

See Annex 1 for further detail.

### **Section 10, Question 6**

The RSPB **strongly disagrees** with the conclusion that “ provided that the proposed mitigation measures are implemented in full, there will be no adverse effect on the integrity of the Humber Estuary SPA and Ramsar site due to permanent loss of habitat used by wintering and passage waterbirds for feeding, loafing and roosting”.

The RSPB disagrees with the overall conclusions of no AEOL relating to ruff, curlew, golden plover and lapwing. In addition to the species identified in the draft AA there is significant but less frequent use of the fields affected by the proposal by black-tailed godwit<sup>8</sup> as highlighted in our original objection letter (dated 30 June 2009, page 9). In addition to this, recent data suggests there is usage by other non-breeding SPA and Ramsar birds most notably snipe, dunlin, redshank and whimbrel, and occasional use by other geese and wildfowl. A review of wader and wildfowl roost sites along this stretch of the Humber Estuary<sup>9</sup> based on 35 years worth of direct observations of the author highlights the importance of this area for SPA and Ramsar birds. This document references the main fields covered by the proposal closest to the estuary as the most important for golden plover, lapwing and curlew with secondary importance for a number of other waders in particular black-tailed godwit, dunlin, snipe and redshank.

We submit that in addition to assessing impacts on individual species covered by the Ramsar and SPA waterbirds designation, the AA should cover all impacts on the assemblage of SPA and Ramsar waterbirds as a designated feature.

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<sup>8</sup> Data source: Catley, G. Overwintering Bird Data for the South Humber Bank Development Zone, January 2007 – March 2008. Nyctea Ltd.

<sup>9</sup> Catley, G. (undated) Wader and wildfowl roosts on the South side of the Humber estuary between East Halton Skitter and Immingham Docks.

### ***In-combination assessment***

The RSPB disagrees with the current approach to the in-combination AA.

The RSPB disagrees that there are no other plans or projects which could result in the loss of habitats used by wintering or passage ruff (Section 10.2.2.1, page 22) and other SPA and Ramsar waterbirds.

We submit the following plans and projects, among others, should be considered in-combination for all potentially displaced SPA and Ramsar species including those identified in Section 10 of the draft AA and the “assemblage” of waterbirds as a designated feature:

- Planning Application PA/2009/1269 Form B application to construct and operate a 290 megawatt (MW) biomass fuelled electricity generating station on land north of Humber Road, South Killingholme. Drax Biomass Immingham Ltd. Section 36 Electricity Act 1989. Section 90(2) Town and Country Planning Act
- North Lincolnshire Local Plan
- North East Lincolnshire Local Plan
- North Lincolnshire Council Local Development Framework (LDF) in draft
- North East Lincolnshire Council LDF in draft
- South Humber Bank Draft Masterplan (2004)

Please note this list is not exhaustive, there may additional plans and projects which require consideration in-combination with this proposal.

The most relevant policies in the relevant spatial plans are likely to include, but are not restricted to, Allocations of the South Humber Bank Zone for estuary related development. We submit that the full delivery of this allocation in this area would result in AEIOI of the Humber Estuary SPA and Ramsar site alone and in-combination with other plans and projects. The proposal forms a significant part of this allocation. Mitigation for any development must be adequate to address all impacts both alone and in-combination.

The South Humber Bank Draft Masterplan has not, to our knowledge, been subject to and Appropriate Assessment pursuant to Regulation 48 of the Habitats Regulations. Therefore, any proposed mitigation has not, to our knowledge, been subject to the rigorous scrutiny required by the Habitats Regulations AA process. We also understand that any strategic mitigation proposals identified in this Masterplan have not been secured or implemented since its adoption in 2004. Therefore, this mitigation **can not** be assumed to be delivered or deliverable and any potential impacts remain unmitigated for the purposes of the in-combination assessment.

The draft LDF's and adopted Local Plans include policies which directly relate to the footprint of the proposal and the wider area which is allocated for estuary related development. This allocation and associated adopted and draft policies, are in our view, likely to have a significant effect on birds of the Humber Estuary SPA and Ramsar for among other reasons the direct displacement of waterbirds using the Allocation area for foraging, loafing and roosting. We understand that there are currently discussions regarding the potential to strategically mitigate for this Allocation. However, this mitigation and any potential mechanisms for delivery have not been secured and therefore it is not guaranteed at present that this mitigation will be implemented. The Habitats Regulations process dictates that that the plan or project must be considered alone and in-combination with other plans and projects. In our view, any speculative mitigation associated with these plans and projects can-not be taken into account in this AA since the competent authority needs to be satisfied as to their efficacy and that they have been secured and implemented.

The RSPB maintains its original objection to the proposed wetland mitigation areas. We do not agree that the wetland areas as proposed are sufficient to mitigate the permanent displacement of SPA and Ramsar waterbirds from the area affected by the proposal either alone or in-combination with other plans and projects. Please refer to the detailed points raised in our original objection letter (dated 30 June 2009, pages 12-16 inclusive).

We support the principles of the comments regarding the need for conditions relating to the grazing and hydrological management of any proposed mitigation areas (Section 10.6.1, page 30) which we submit should form part of a formally agreed<sup>10</sup> and adopted management plan. We support the need for monitoring and mechanisms for review and adaptation to allow any necessary remedial measures or additional mitigation measures to be implemented.

We submit that of the displaced SPA and Ramsar species the proposed mitigation is not adequate to support the needs of golden plover and lapwing in the numbers and for the range of functions necessary. We maintain that the proposed Area C (Able Humber Port Facility Northern Area, Conservation Management Plan, August 2009, Alab, Appendix 1, drawing number KI-08023 D) will be too physically isolated from the estuary and subject to disturbance to be of value to displaced SPA and Ramsar wading birds. A significant proportion of Area B is already in permanent pasture management (7.4ha, Field 29, Able Humber Port Facility Northern Area, Conservation Management Plan, August 2009, Alab, Appendix 1, drawing number KI-08018 B) which currently supports SPA and Ramsar birds. We do not accept that this portion of this area, already of value to SPA and Ramsar birds, can be utilised as mitigation as it does not provide the necessary additional habitat resource. The remainder of Area B forms a long narrow strip which is likely to be subject to disturbance from industrial activity as part of the Proposal and human disturbance associated with the public access routes around the perimeter. The narrowness of the proposed area (c. 100m wide along the majority of its length) results in the area being totally compromised as a potential roost site and unsuitable as a foraging area for most wading species such as golden plover and lapwing which require much more open habitat with sightlines a minimum of several hundred metres.

The calculations relating to the ability of the overall mitigation area (reported in the draft AA to be 59ha in total) and densities of specific species and peak counts as detailed in Section 10 of the draft AA in relation to ruff, lapwing, golden plover and curlew, become rather academic in our view once consideration is given the exact scale, location and shape of each proposed mitigation area in relation to the basic ecology and behaviour of the species most notably affected. The group of waders most impacted upon by the large scale habitat loss arising from the footprint of the proposed development such as golden plover, lapwing, curlew, ruff and black-tailed godwit generally require larger open fields with long sight lines (several hundred metres) in foraging, loafing and roosting areas. Area B and most of Area C will, in our view, be too heavily constrained by edge effects including physical boundary features such as earth bunds. This reduces any confidence Areas B and C can support wading SPA and Ramsar birds across much of their area as a result the actual "functioning" area will be a smaller proportion of the total area.

The conclusion of no AEOI of the Humber Estuary SPA and Ramsar site as a result of permanent loss of habitat used by wintering and passage waterbirds for feeding, loafing and roosting (Section 10.4.1, page 30) appears to assume that all the proposed mitigation is in place and functioning before loss and is able to function optimally across the entire proposed area (accepted in the draft AA as 59ha) at all times. The RSPB understands that the proposed mitigation will be phased, not in place and functioning before loss and is not likely to function across much of the proposed area which may be due to many reasons such as a combination of needs for flood relief, edge effects, disturbance, lack of security of optimal habitat creation and management and other environmental factors beyond the control of the Proponent. Notwithstanding this point, the RSPB, as stated above does not accept that the proposed mitigation is sufficient to adequately mitigate all the necessary

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<sup>10</sup> Detail agreed and signed of by Natural England, North Lincolnshire Council and those responsible for implementation and monitoring.

impacts on SPA and Ramsar birds in relation to habitat loss and subsequent displacement and therefore there will be a residual AEOI of the Humber Estuary SPA and Ramsar site.

### **Section 11, Question 7 (page 33)**

The RSPB disagrees with the conclusion that there will be no AEOI of the Humber Estuary SPA and Ramsar site due to ongoing noise and visual disturbance (paragraph 11.5.4, page33).

### **Operational disturbance**

#### ***Disturbance to birds using the created wetland habitats (11.1.2)***

The RSPB strongly disagrees with the assertion in Section 11.1.2.1 (page 31, detailed in Section 13.3.2, page 37) that the proposed rail terminal will not cause noise disturbance to the wetland mitigation areas. The proposed rail terminal cuts through part of the proposed mitigation Area B and runs parallel to the main length of the remainder of this proposed wetland area, which is only 100m in width. The potential for noise disturbance is, in our view significant. We submit that until clarification on the residual noise impacts from the rail terminal within the proposed mitigation areas is quantified it can not be ascertained that this will not have an adverse effect on the SPA and Ramsar birds which are asserted to be supported by this proposed mitigation area.

The RSPB strongly disagrees with the assertion in paragraph 11.1.2.2 (page 31) that birds using one area can be assumed to behave in the same way as birds in another completely different area in character. This judgement is also based on an observation as opposed to being based on robust scientific analysis which is required to have certainty.

#### ***New paths and hides - walkers and dogs (11.1.3)***

The RSPB has considerable experience of developing and managing accessible wetland habitats, 13,035ha in lowland Britain, which involves careful consideration to reconcile the potential conflicts between recreational impacts including disturbance and the needs of potentially sensitive bird species. As a general rule a minimum area within the overall reserve design is allocated as a refuge wetland area, which is thought essential to support species of high sensitivity such as wintering and passage waterbirds. Public access will not generally be designed into open areas but is typically screened, ideally by natural features where possible. Dogs are not generally permitted within RSPB nature reserves and are requested to be kept under control or on leads along any Public Rights of Way within RSPB reserves. There is a plethora of scientific research to support the need to manage potential recreational and anthropogenic related disturbance carefully to avoid negative impacts on waterbirds. Typical disturbance distances range from 200m to 600m for non-breeding waders, a precautionary distance should, in our view be adopted.

The RSPB submits that the proposed footpaths routes are not designed to minimise impacts on the proposed mitigation wetland areas. We submit that in addition to screening (which in itself is likely to adversely affect the suitability of mitigation areas for SPA and Ramsar birds) additional measures should be adopted as conditions on consent or as part of an agreed and adopted management plan for the mitigation areas should include:

- Measures to exclude the general public and dogs from accessing any proposed mitigation areas, although additional physical barriers which form anything greater than a 1m in height as a boundary feature might in themselves adversely affect the ability for SPA and Ramsar birds to utilise the mitigation area
- Sufficient and appropriate screening is in place for any potential wetland mitigation areas for SPA and Ramsar birds.

### **Section 12, Question 8 (page 36)**

We agree with the conclusions of no AEOI due to lighting if conditions are attached but we do think that the conditions are not all enforceable

### **Section 13 Question 9 (page 38)**

**Increase in train traffic, leading to sporadic disturbance of waterbirds using North Killingholme Haven Pits SSSI (part of the SPA and Ramsar) and all three proposed wetland areas.**

The RSPB strongly disagrees with the conclusion presented in the draft AA that there will be no AEOL on the Humber Estuary SPA and Ramsar site due to an increase in train traffic (13.5.4, page 38). As previously submitted (RSPB Objection letter 30 June 2010) the ES recognises this potential *moderate adverse impact* and states that it is not possible to fully mitigate it (ES paragraph 10.137).

The RSPB seeks clarification that the expected train movements associated with the Proposal are limited to just two trains movements a day as stated in Section 13.1.2 (page 36). The submitted ES states that once operational it is expected that freight trains will pass through the North Killingholme Haven Pits SSSI, SPA and Ramsar site daily. However, it does not clarify how regularly this is anticipated to be over the lifetime of the development. The RSPB submits that even an initial single train per day movement represents a significant increase on the current usage of the railway line in this area, which is restricted mainly to annual maintenance usage at present recorded in the ES.

The RSPB welcomes reference to scientific literature which highlights the impacts associated with disturbance from transport including railway operations on non-breeding waterbirds (Section 13.1.2, page 36). It is understood that at present North Killingholme Haven Pits SSSI, SPA and Ramsar site is subject to disturbance along the estuary side and western boundary. We submit additional disturbance from the proposed increase in rail movements, to the landward side of the pit will result in further disturbance impacts on the SPA and Ramsar site. The exact impact of which is difficult to quantify as responses to additional disturbance pressures can vary enormously between sites. We strongly disagree that the assumption can be made that birds observed on a single occasion, resettling quickly after a noise related disturbance event suggests long term effects on bird survival are unlikely (13.1.2). We submit that the train movements will result in both visual and noise related disturbance. The impact of this is difficult to quantify without clarity on the level of movements per day throughout the most sensitive periods of the year, spring and autumn passage and the winter months.

There is recognised uncertainty in predicting the exact nature of the impact but there is scientific evidence which suggests there could be a negative impact on waterbirds which currently use the Pits which means the precautionary principle applies and mitigation should be sought. Potential mitigation options that could be explored could include for example additional habitat enhancements within the Pits to create additional suitable refuge areas which are furthest from the sources of disturbance, screening may be appropriate for sections of the railway corridor adjacent to the Pits which are currently devoid of vegetation. Alternative routes or methods of transport for the rail freight could also be explored. Any proposed mitigation must be secured and implemented as a condition of consent.

Given the uncertainty in impacts appropriate monitoring should be secured as a condition of consent with the ability to implement remedial measures if an adverse impact is identified. The nature of the monitoring needs to be carefully designed to ensure that it provides the necessary information to identify and understand any disturbance related impacts arising from the train movements on SPA and Ramsar waterbirds at North Killingholme Haven Pits SSSI, SPA and Ramsar site.

**Section 14, Question 10 (page 41)**

The RSPB strongly supports the need for restrictions or conditions to be placed on consent to avoid AEOL of the Humber Estuary SAC, SPA and Ramsar site, should the Council be minded to approve this application. However, the conditions as set out in Section 14 do not in our view adequately address the impacts of the proposal to enable no AEOL of the Humber Estuary SAC, SPA and Ramsar site to be ascertained. This is principally due to the fact that in our view the proposed mitigation for the effects on the SPA and Ramsar features is in-adequate therefore the

we believe the draft conditions associated with this impact are also inadequate.

In addition, we are concerned that a number of the proposed conditions are unenforceable and inadequate to enable reactive adaptive management and remedial measures to be implemented if a remaining adverse effect on the Humber Estuary SAC, SPA and Ramsar site is identified through monitoring during construction or operation.

#### **Section 15, Question 11 (page 45)**

**The RSPB assumes that there is an error in the wording of Question 11 which does not concur with the conclusions of the previous statement. We would welcome clarification.**

**The RSPB does agree** that the current proposal **would have an AEIO** on the Humber Estuary SAC, SPA and Ramsar site. We concur with the overall conclusions put forward in Section 15.7 and the current recommendation to refuse this application PA/2009/0600 unless the AEIO can be removed. Notwithstanding this we **do not agree** with the conclusion regarding the impact of permanent loss of habitat used by SPA and Ramsar birds stated in paragraph 10.4.1 (page 30) detailed in Section 10 (pages 21-30 inclusive). As stated above we submit the currently proposed mitigation is inadequate to address impacts on SPA and Ramsar birds. However, as previously stated in our original objection letter and in pre-application consultation with the Proponent and others was maintain that although the current pre-proposed mitigation is inadequate we believe it is possible to mitigate this proposal adequately with provision of suitable habitat of sufficient scale, size, location and management.

#### **Section 16, Question 12 (page 46)**

The RSPB is not currently aware of any issues relating to the SSSI which have not already been covered by the draft AA as features of the Humber Estuary SAC, SPA and Ramsar. Where we have raised issues in relation to inadequate mitigation of the SPA and Ramsar features we would like to highlight that these are also features of the SSSI and this section must be amended to reflect changes to the content of the draft AA.

#### **Question 13 (page 46)**

Suggested additional references:

1. South Humber Bank Principles to underpin a strategic approach (2008) RSPB in reference to understanding the mitigation needs for this proposal in the context of this development alone and in-combination with delivering the wider South Humber Bank zone Allocation adopted in the relevant Local Plans and emerging LDFs.
2. SHBZ Functional Capacity Study (2009) Mott MacDonald

#### **Question 14 (page 46)**

Please see responses to Section 6, Question 10 and Question 13

#### **Question 15 (page 46)**

- The consultation documents (determination of LSE and draft AA) both reference a 1.1ha temporary loss of foreshore. We understand this was originally part of the proposal related to the flood defence works. We now understand that this impact has effectively been removed through an alternative approach to undertaking the flood defence works which avoids the need to occupy any of the intertidal area. However, we can-not remove our concerns relating this matter until this has been confirmed in writing as part of the planning application information. Any mitigation and methods which are necessary to avoid adverse impacts on the Humber Estuary SAC, SPA and Ramsar site must in our view be secured as condition of consent. On this basis, if the temporary occupation of the foreshore is not removed from this application mitigation measures must be sought and secured against

consent. If mitigation can not be identified and it is not possible to conclude the temporary occupation of the foreshore will not have an AEOI of the Humber Estuary SAC, SPA and Ramsar site then Regulations 49 and 53 of the Habitats Regulations will need to be satisfied for this element of the Proposal to be granted consent.

- The RSPB understands the AA must be undertaken in the light of the conservation objectives **but** is not restricted to these. The overall assessment must enable the competent authority in this case NLC, to ascertain that there will be no AEOI of the Humber Estuary SAC, SPA and Ramsar.
- The Humber Estuary candidate SAC is now fully designated as a SAC as of 10 December 2009
- English Nature references should be updated to read Natural England
- We are committed to working constructively with the Council, the developer Able UK and other stakeholders to address the nature conservation impacts of the proposal. We would be happy to resume a constructive dialogue to identify a potential resolution to the outstanding concerns regarding the inadequacy of the proposed wetland mitigation areas.

#### **Question 16**

Would the provision of additional public footpaths adjacent to wetland mitigation areas lead to an AEOI of the Humber Estuary SPA/Ramsar site in relation to the waterbird assemblage? Please support your response with reference to Habitats Regulations Guidance Note 1 and the Humber Estuary Conservation Objectives (Email from Andrew Taylor received Wednesday 10.02.2010 with attachment Drawing No. KI-08020D).

This should be combined with previous section 11 (see detail above in relation to 11.1.3, page 10 of this response) but in the interests of moving discussion forward our view is that the additional proposed areas would further impact on the proposed mitigation dramatically, increasing uncertainty that the mitigation will provide any function for SPA and Ramsar birds and therefore be unsuitable mitigation for displace SPA and Ramsar birds.

#### **Summary**

The RSPB **maintains our objection** to the above application (PA/2009/0600)

We submit that the proposed **mitigation is not adequate to ascertain no AEOI** on the Humber Estuary SAC, SPA and Ramsar.

We **disagree** with the conclusion of no AEOI in relation to impacts on Humber Estuary SPA and Ramsar waterbirds

We **support** the current recommendation of the draft AA to recommend **refusal unless the AEOI can be removed**

We would welcome further discussion regarding potential resolutions to the outstanding objections raised

Yours sincerely



Harriet Dennison  
Conservation Officer – Yorkshire and Humber

## **Annex 1**

### **Detailed response to the draft AA consultation Questions**

#### **Detailed section by section response to the draft AA for section 9 Question 5**

##### ***Potential disturbance to SPA and Ramsar waterbirds on the intertidal habitats***

The RSPB submits that the relevant data relating to intertidal usage must be made clearer to understand the scale of this potential impact.

Disagree with statements in 9.6.1.4, these are not, as far as we are aware, supported by any scientific references therefore we submit that in order to “ascertain” no AEOL further mitigation measures must be secured and implemented as a condition of consent this is in accordance with the precautionary approach enshrined in the Habitats Regulations.

##### ***Potential disturbance of birds using existing farmland and wetland areas during construction***

Data from a recent report<sup>11</sup> suggests that the whole application site is subject to usage by SPA and Ramsar birds for a range of functions and at different times of the year and day and tidal state. The usage of each part of the site is complex and species specific, land use in particular cropping patterns heavily influence use but there are a number of general trends which can be identified. For example the permanent pasture fields are regularly used by foraging curlew, the largest most open fields closest to the estuary are subject to the most significant use by waders principally golden plover and lapwing. The smaller pasture fields are typically limited to use by wildfowl.

The RSPB strongly disagrees with the assertion that managed re-alignment sites around the estuary will support SPA and Ramsar birds displaced by the proposal (draft AA, Section 9.6.3.2, page 20). There is currently a deficit of available intertidal habitats in the middle estuary (draft CHaMP review 2009). Any managed re-alignment proposals which may or may not be progressed by the Environment Agency, or other party, are not likely to be in place and functioning in the next few years given they are not being progressed currently (as far as we are aware) and they take several years to establish intertidal habitats. Therefore, we disagree that the timescales of any potential re-alignment are in line with the proposed phased construction of the proposal. Furthermore, any such re-alignment proposals are outside the scope of this proposal they can not, in our view, be directly controlled or secured through this proposal and therefore are not suitable as mitigation. In addition to this the proposal impact being assessed in this section is upon SPA and Ramsar birds using the supratidal habitats of the estuary hinterland i.e. mixed farmland adjacent to the estuary. The function of this habitat is to provide feeding, loafing and roosting opportunities not available within the estuary itself, the two areas are ecologically linked by the waterbird

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<sup>11</sup> *Catley G, report (undated observations over 35 yr period) wader and wildfowl roosts on the South side of the Humber Estuary between East Halton Skitter and Immingham Docks*

requirements. Farmland habitat would not be created by any proposed managed re-alignment, indeed this critical resource would be subject to additional loss. Therefore, we submit that proposed managed re-alignment sites are not suitable for mitigating this particular impact.

***Potential disturbance of birds using created wetland habitats (Section 9.6.3, page 20)***

The proposed mitigation includes phasing of wetland creation areas. In the early phase of the proposal construction these areas are anticipated to be subject to high levels of disturbance which dramatically reduces any confidence they will function. In addition to this issue, the phased period of creation does not, in our view provide sufficient time for the wetland areas to become established and functioning. In the RSPBs experience as a wetland manager for over 13,035ha of freshwater habitats it can take several years to establish a wetland habitat and a suitable hydrological regime which is capable of supporting significant numbers of waterbirds. Close monitoring and adaptive management particularly in relation to water control structures and sward *development* are an essential part of this process. The proposed mitigation areas are in our view inadequate to support the disturbed and displaced SPA and Ramsar birds which will be impacted by this development during the construction phase.

The assertion that screening embankments may attenuate noise (draft AA, Section 9.6.3.1, page 20) raises concerns. Irrespective of any noise attenuation potential the proposed embankments themselves will form significant boundary features which are likely to deter waterbirds within several hundred metres. The proposed wetland mitigation areas are all relatively small in size (all less than 20ha) combined with the irregular and relatively linear shape of each area this, in our view, greatly reduces the likely area of overall wetland habitat which will adequately function to support the impacted SPA and Ramsar waterbirds.

***Disturbance due to the hydrogen pipeline (Section 9.6.4, page 20)***

The RSPB is unaware of the detailed working methods proposed and secured as part of the previous consent for the pipeline construction (PA/2006/1133). In the event of likely significant effect being determined and the absence of the relevant information to Appropriately Assess this impact the precautionary principle is invoked and the RSPB must conclude AEOI until such time as the additional information can be examined.



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19 February 2010

Dear Mr Taylor

RE: PA/2009/0600, ABLE UK, LAND BETWEEN EAST HALTON SKITTER AND CHASE HILL ROAD, NORTH KILLINGHOLME

APPROPRIATE ASSESSMENT UNDER THE CONSERVATION (NATURAL HABITATS &C) REGULATIONS 1994- CONSULTATION DRAFT

Thank you for consulting the Lincolnshire Wildlife Trust on the draft Appropriate Assessment for planning application number PA/2009/0600. Our responses to a number of the questions posed in the consultation document are as follows.

**Section 5- Q1**

The Lincolnshire Wildlife Trust agrees with the list of Likely Significant Effects.

**Section 6- Q2**

It is not clear to the Trust whether or not the Environment Agency's existing commitment to habitat creation will remove any adverse effect on integrity due to coastal squeeze in the East Halton area. If Natural England estimates that there is a 17.2ha deficit in provision of intertidal habitat for the Middle Estuary then holding the line of the floodbank in the East Halton area will lead to coastal squeeze of intertidal habitats which otherwise would be able to migrate inland.

Since the Environment Agency's preferred option for this area would be for managed realignment of the floodbank then development of the site would result in the need to identify an alternative site in the Middle Estuary for managed realignment. Without a suitable alternative site identified there will be a deficit in provision of intertidal habitat for the Middle Estuary which would lead to an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar site.

**Section 7- Q3**

The Lincolnshire Wildlife Trust agrees with the conclusion that the project would have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar site arising from the loss of intertidal habitat due to construction of the floodbank toe beam and rock armour within the current intertidal area. We would also agree that it may be possible to determine no AEOI if the effect can be addressed so that there is no loss of intertidal habitat.

#### **Section 8- Q4**

The Lincolnshire Wildlife Trust agrees with this conclusion.

#### **Section 9- Q5**

The Lincolnshire Wildlife Trust does not agree with this conclusion. Even if the proposed mitigation measures are implemented in full the Trust considers that there could be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site due to noise and visual disturbance in the construction phase of development. We base this conclusion on the fact that some bird species have been recorded on the site and adjacent intertidal area between April and September when the construction works would be scheduled to take place. We are particularly concerned about black-tailed godwit which have been recorded in significant numbers on the adjacent intertidal habitat in the July to September period (paragraph 9.6.1.1 and Determination of LSE, Taylor 2009). Disturbance of these birds could lead to a reduction in bird numbers in that area which would mean that the project would not meet the Humber Estuary Final Draft Conservation Objectives which require “No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors”.

The Trust disagrees with the reasoning in paragraph 9.8.2 that because other projects will require mitigation to ensure that alone they will not have an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site then in-combination effects will not be significant. This is not correct unless mitigation is such that the individual projects will have no adverse impacts whatsoever. However, if individual projects are mitigated so that alone they do not have significant adverse impacts and therefore no adverse effect on integrity it could be the case that in-combination the impact of the developments may become significant leading to an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site.

#### **Section 10- Q6**

The Lincolnshire Wildlife Trust does not agree with the conclusion that there will be no adverse effect on the integrity of the Humber Estuary SPA and Ramsar site due to permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing. There appears to be a large amount of uncertainty that the mitigation areas will be utilised by the four bird species in the densities predicted in the Conservation Management Plan due to “the enclosed nature of the sites, visual and noise disturbance, light overspill and potential sub-optimal land management” (paragraphs 10.2.3.5 and 10.3.3.3).

We are particularly concerned about potential impacts on golden plover and lapwing. With regard to golden plover it states in paragraph 10.4.4.2 that “It is not clear whether the submitted Conservation Management Plan would provide habitat for this number of birds”. We are therefore seriously concerned that there is this uncertainty and that it is concluded that “the loss of the occasional roost will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site”. If significant numbers of golden plover are displaced permanently from the project site then the project would not meet the Humber Estuary Final Draft Conservation Objectives which require “No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors”. Therefore, it can not be concluded that there will not be an adverse effect on integrity.

With regard to lapwing it states in paragraph 10.5.3.5 that “If Areas A and B achieve target numbers, but Area C is too enclosed to support high numbers, then nearly 2,900 birds could be supported. The residual effect would be that the site held around 1,000 fewer birds than the highest recorded peak count”. We are seriously concerned therefore that it is concluded that “the loss of habitat for lapwing will not be an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site” (paragraph 10.5.4.5). The displacement of 1,000 lapwing from the project site would mean that the project would not meet the Humber Estuary Final Draft Conservation Objectives which require “No significant reduction in bird numbers either on the site, or from one part of the site to another attributable to anthropogenic factors”. Therefore, it can not be concluded that there will not be an adverse effect on integrity.

We believe that the proposed mitigation areas do not provide the certainty that is required by the Conservation (Natural Habitats &c) Regulations 1994 to ascertain that the proposal will not have an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site due to permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing. Where there is uncertainty over the significance of effects on integrity Circular 06/2005 clearly states that “the decision-taker should not grant permission”.

The Lincolnshire Wildlife Trust is concerned how development at this site and the proposed mitigation areas will fit into the developing strategy for the South Humber Bank to establish strategic mitigation areas which will safeguard the ornithological interest of the Humber Estuary SPA and Ramsar site, whilst allowing development throughout the South Humber Bank. The Trust would not wish for this development to prejudice the overall strategy and believes that the planning application should not be determined until an agreement has been reached between the relevant parties as to the location of the strategic mitigation areas and how these will be taken into account through the planning process.

#### **Section 11- Q7**

The Lincolnshire Wildlife Trust disagrees with this conclusion as the recently proposed footpaths adjacent to the wetland mitigation areas need to be considered as they could potentially lead to an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site through disturbance to waterbirds from pedestrians and dogs.

Similar to our comments above relating to paragraph 9.8.2, we disagree with the statement in paragraph 11.5.3 that “in-combination effects will not be significant” because other projects will also require mitigation to ensure that they alone will not have an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site. Just because the effects from individual projects are mitigated and are not significant it does not necessarily mean that the in-combination effects will not be significant.

#### **Section 12- Q8**

The Lincolnshire Wildlife Trust disagrees with this conclusion because there appears to be uncertainty about how the light levels will impact on bird usage of the mitigation areas. Until there is certainty that the light levels will not significantly impact on birds using the mitigation areas then it can not be concluded that there will be no adverse effect on the integrity of the Humber Estuary SPA and Ramsar site due to increased light levels and the lighting columns.

#### **Section 13- Q9**

The Lincolnshire Wildlife Trust disagrees with the conclusion that there will be no AEOI on the Humber Estuary SPA and Ramsar site due to an increase in train traffic. It is not clear what impact the train movements will have on waterbirds currently using Killingholme Haven Pits SSSI. Reference is made in paragraph 13.1.2 to studies that have shown that numbers of waders such as

dunlin and black-tailed godwit are reduced near railways. With this uncertainty over the impacts of train movements on birds using Killingholme Haven Pits SSSI the precautionary principle should be applied and mitigation should be sought. Appropriate monitoring should also be secured as a condition of consent to identify any impacts that arise from the train movements on waterbirds using the pits. If any adverse impacts are identified then remedial measures would need to be implemented.

#### **Section 15- Q11**

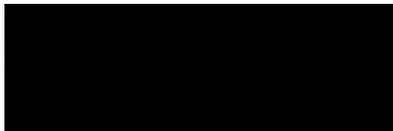
The Lincolnshire Wildlife Trust agrees that overall the project as proposed would have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar site. However, in addition to the loss of intertidal habitat and potential pollution we believe that this will be due to noise and visual disturbance to birds in the construction phase of development, to permanent loss of habitat used by wintering and passage waterbirds for feeding, roosting and loafing and also possibly due to disturbance to birds from increased train movements, pedestrians and lighting (see responses to Q5, Q6, Q7, Q8 and Q9).

#### **Q16**

The provision of additional public footpaths adjacent to the wetland mitigation areas could potentially lead to an adverse effect on the integrity of the Humber Estuary SPA and Ramsar site through disturbance to waterbirds from pedestrians and dogs. The additional public footpaths as proposed should therefore be assessed in the updated appropriate assessment.

Thank you again for the opportunity to comment. If you have any queries regarding the above please do not hesitate to contact me.

Yours sincerely



Elizabeth Biott  
Conservation Officer

cc. Emma Hawthorne, Natural England,  
Harriet Dennison, RSPB

## **Appendix 6b . Consultee responses on the revised proposals.**

E-mail Harriet Dennison, RSPB dated 07 January 2011

**Dear All, Happy New Year. Please find comments below and in the attached** in response to the documents emailed just before Christmas. We realise the timescales again are posing a real challenge to finalising a mitigation agreement, we will endeavour to assist in achieving a positive outcome before the current GOYH deadline of the 17<sup>th</sup> January.

### **The revised in-combination AA**

The RSPB welcomes the revised AA to include an in-combination assessment of PA/2009/0600 and the proposed Marine Energy Park. We consider that the proposed Marine Energy Park (MEP) is considered a plan or project in respect of Regulation 61 of the Habitats Regulations.

We consider that in order to conclude no adverse effect from the two proposals when assessed in-combination, that PA/2009/0600 must fully mitigate for all potential impacts to avoid residual effects acting in combination with the MEP proposal, which will have an adverse effect on integrity of the Humber Estuary SPA, SAC and Ramsar site.

We consider it is necessary to alter paragraph 14.13.3.3 to read:

"The alternative possibility is that the project does go ahead after the considerations of alternatives and IROPI. In this case, the Secretary of State "must secure that any necessary compensatory measures are taken to ensure that the overall coherence of Natura 2000 is protected". Furthermore, there will need to be a package of mitigation and avoidance measures to ensure that the Marine Energy Park proposal does not have an AEOL on the **Humber Estuary SPA, SAC and Ramsar sites alone and/or in combination with** other plans and projects, including PA/2009/0600. However, there could still be residual effects from the MEP (despite adequate compensation and mitigation being secured for this development) that could act in combination with residual effects from PA2009/0600 and result in an adverse effect on integrity. However, we are satisfied, based on the information currently available, that if the impacts of PA2009/0600 are adequately mitigated, there will not be any residual effects such that an adverse affect in combination with the MEP could result."

### **Mitigation Options Maps**

The RSPB is concerned that the two new drawings ALP-08018 and ALP-08017 show only area A (albeit modified) of the originally proposed mitigation Areas A, B and C and show the originally proposed mitigation areas B and C as developed land. We discussed the need for area B and C to deliver other nature conservation functions (i.e. other than as replacement habitat as part of the proposed SPA mitigation). Area B must be retained as it is due to its intrinsic value. Please refer to the attached email dated 17<sup>th</sup> November 2010 to Peter Barham to provide clarification on this point following our meeting on 15 November 2010.

For avoidance of doubt, the RSPB's view is that the part of area B that lies within the SINC, supports significant numbers of SPA and Ramsar waterbirds should be retained as it is already of high nature conservation value. As maintained in our original objection letter, a considerable portion of the

proposed mitigation area B is within the SINC and already support significant numbers of waterbirds and therefore is not suitable as new habitat which provides SPA mitigation as it is not clear it has the potential to support additional waterbirds. As it is already part of designated Local Wildlife Site it should not be developed as a matter of principle. Furthermore, development of a designated local wildlife site would be contrary to Local Plan Policy. Although the area of B which forms a narrow strip of land c.100m wide along the edge of the railway siding, would not in our view provide optimal habitat for many of the waterbirds affected by the development it would provide a degree of "buffering" and some function along the edge of the SINC site if managed as grassland for non-breeding waterbirds i.e. providing mitigation for impacts on the SINC from the proposed development. The section of this strip of B which is not adjacent to the SINC site would not in our view deliver any significant mitigation potential for waterbirds and therefore could be returned to development as discussed in previous meetings or may be used as part of mitigation for other protected species if it is suitable.

### **Revised planning conditions**

There is clearly some additional information and clarification required on many of the points raised in the Table set out by Andrew Taylor, circulated on the 20th December 2010. As part of the additional information requested at the end of the document, Andrew states that it would be almost impossible to devise and enforce a condition, which can implement two options for mitigation (i.e. the 20ha plus buffers on and 20ha plus buffers offsite and the option for 32ha plus buffers). We consider that the only option that can be pursued in the first instance is a condition, which secures the 32ha plus buffers (and other mitigation areas and areas of importance for nature conservation e.g. the SINC) - i.e. Option A. The applicant can then apply to vary the condition at such a time as and when they are in a position to deliver the alternative option of 20ha plus buffers on site and 20ha plus buffers offsite (Option B), as agreed in principle at the meeting on the 15th November and described within the Draft Option C agreement..

### **Draft Option C agreement**

Subject to few minor comments on the attached, we are happy with this Version 3 draft but the area of the overall mitigation provision is not specified, this needs the hectareage inserted. A couple of additional points are in the attached as tracked changes.

### **Section 106**

As has been discussed and agreed in the meetings in November and December 2010, a Section 106 agreement is required to secure the delivery of the proposed mitigation including setting out the financial mechanisms to support the ongoing maintenance of the mitigation areas in perpetuity. This is common practice for all Habitats Regulations mitigation packages. We would welcome an update on progress with this agreement.

### **Coastal squeeze**

With respect to coastal squeeze, the issue of Habitats Regulations assessment remains un-addressed and unclear. We understand that the AA of the Humber

Flood Risk Management Strategy is underway by the Environment Agency. We understand that NE and EA are in proactive discussion on this matter. We look forward to hearing of progress in the near future.

**Other matters**

We understand that a Land Drainage Consent is required for the application to be implemented. We would welcome an update from Able UK on progress with the application for this and likely timescales for an application if one has not already been submitted.

**Procedural matters**

We welcome the progress made on finding an agreeable resolution to the outstanding issues raised by NE and the RSPB. We are still however concerned that a clear process has not been identified by NLC on how the agreed mitigation package can be attached to the current permission. We have sought legal advice on this matter and understand that the views expressed by Geoff Dibb are accurate in that the SoS has no authority to direct NLC to attach conditions unless the application has been formally called in. We consider that clarification on how NLC intend to progress this is now a matter of urgency.

Regards,

Harriet  
Harriet Dennison AIEEM  
RSPB Humber Programme Manager  
The RSPB  
c/o 15 Priory Street  
York  
YO1 6ET  
Tel: 01904 613121  


Simon Driver Chief Executive  
North Lincolnshire Council  
Pittwood House  
Ashby Road  
Scunthorpe  
North Lincolnshire  
DN6 1AB

[Letter from RSPB]

**BY EMAIL**

06 April 2011  
Dear Mr Driver

**RE: Determination of planning application PA/2009/0600**

The RSPB notes the decision made by the Secretary of State to not call-in the above application, but to return it to North Lincolnshire Council (the Council) for determination. The RSPB considers that, subject to the steps set out in correspondence earlier this year (letters from the RSPB to yourself dated 11 February 2011 and from the RSPB to Geoff Dibb dated 07 March 2011) and the adoption of revised planning conditions and legal agreements to secure the agreed mitigation for waterbirds, this application could be robustly determined by the Council in accordance with the Habitats Regulations.

We recognise that there are a series of outstanding pieces of work which are required of the Council, the applicant, the Environment Agency and others in order to complete the agreed steps and mitigation measures. We understand some of these may take some time and will potentially be subject to activity beyond the Council and applicants control. The RSPB is keen to support the Council in discharging the agreed steps and measures to address our (and Natural England's) outstanding objections to the above application in a robust and timely manner. To this end we suggest that a meeting is convened, as soon as is practicable, which includes the Council planning officer for this case, the Council ecologist, and representatives from the RSPB and Natural England (NE) to draft and agree appropriate planning conditions and associated material for a revised planning committee report.

It will also be essential that the Council and Able UK agree what matters are required to be addressed in any legal agreements necessary to retain and maintain the agreed waterbird mitigation and the contents for a revised Conservation Management and Monitoring Plan. These will need to be approved by Natural England and, the RSPB will also be happy to provide advice on these matters as appropriate.

In parallel to the consideration of the above application we understand that an Appropriate Assessment (AA) of the Humber Flood Risk Management Strategy (FRMS), on which this application relies to satisfy the Habitats Regulations in respect of the coastal squeeze impacts arising from the flood defence works, has recently been submitted to Defra for approval. The RSPB strongly suggests the Council seek an indicative timescale for approval of this AA from Defra and EA, if the Council and applicant continue to rely on it for the purposes of the AA of this planning application, as this is likely to have a bearing on the timescale for returning this application with revised mitigation and AA back to the planning committee. We are currently considering this matter in more detail to understand the implications of the Humber FRMS AA as drafted for the above application.

We would welcome the opportunity to meet with you in advance of this application being put before a second planning committee to consider any outstanding issues relating to this application and to consider lessons learned and best practice for our future joint working. Perhaps we can find a mutually agreeable date in early May?

Yours sincerely,

Peter Robertson  
Regional Director

# nature's voice [letter from RSPB]

FAO Mr William Hill  
North Lincolnshire Council  
Pittwood House Ashby Road Scunthorpe North Lincolnshire DN16 1AB  
**BY EMAIL**

21 June 2011

Dear Bill,

## **RE: Planning application PA/2009/0600**

I refer to the above application which is due to be considered by your planning Committee at a special meeting on Friday 24 June 2011.

### **PURPOSE OF THIS LETTER**

The purpose of this letter is to ensure that the RSPB's current view of the application is clearly understood. Accordingly I would be very grateful if you would report the contents of this letter to the Planning Committee, as part of the scheduled updates referred to in the planning meeting papers (page 4, section headed: Consultation).

The RSPB welcomes the significant progress made towards an agreed SPA and Ramsar waterbird mitigation package, as envisaged in the Memorandum of Understanding (MoU) between the applicant, Natural England and the RSPB (Appended to North Lincolnshire Councils Appropriate Assessment). We consider that either of the two mitigation packages set out in this MoU could provide adequate mitigation for the potential impacts of the proposal as detailed in application PA/2009/0600 on waterbirds *IF* they are appropriately and legally secured, implemented in full and sufficient financial provisions are also secured for their delivery and ongoing management. However, there remain a number of issues which we consider unresolved and which jeopardise the ability of North Lincolnshire Council to effectively secure and implement the agreed mitigation packages.

### **RSPB's OUTSTANDING OBJECTIONS**

In sum the RSPB has remaining **objections** to the application on three separate grounds:

#### **In combination effects and flood defence works**

1. The Appropriate Assessment (pursuant to the Habitats Regulations<sup>1</sup>) does not fully address the potential in-combination issues with other plans and projects, including the Able UK Marine Energy Park application which is in the early stages of the planning process with the IPC. However, we understand the Council is taking Natural England's advice in this regard; therefore this objection is likely to remain unresolved.

1 The Conservation of Habitats and Species Regulations 2010  
2 As set out in the MoU between Able UK, Natural England and the RSPB, dated February 2011  
3 As stipulated in the MoU between Able UK, Natural England and the RSPB, dated February 2011

2. The current inadequacy of the NLC's Appropriate Assessment (AA) of this application with regard to the impacts arising from flood defence works, specifically related to coastal squeeze. The current AA relies on the Habitats Regulations Assessment (HRA) of the Humber Flood Risk Management Strategy (HFRMS), which is not yet signed off. Therefore, the necessary compensation required to meet the Habitats Regulations is not secured. We consider that this fails to meet the legal requirements of the Habitats Regulations. We understand that the Council intends to continue to rely on the HFRMS HRA and therefore this objection is likely to remain

unresolved at the time of the special planning committee.

North Lincolnshire Council are familiar with issues 1 and 2 above. Full details of these are set out in our previous correspondence. Our position on these points has not changed therefore we do not see any need to repeat these here.

### **Planning conditions**

3. We have no objection in principle to the use of Grampian conditions in this case. However the planning conditions as currently drafted are unacceptable because they fail legally to secure the necessary delivery and management of mitigation<sup>2</sup> for the Humber Estuary SPA and Ramsar waterbirds. There are two reasons for this:

.1 3.1 they are not sufficiently detailed, clear or precise ; and

3.2 they fail to secure the necessary financial arrangements for ongoing management<sup>3</sup> of the waterbird mitigation.

The consequences of 3.1 and 3.2 are that:

a. The conditions do not meet the requirements of UK Government planning policy on planning conditions as set out in the Department of Environment Circular 11/95 and in one case (condition 50) the condition is **unlawful**; and

**3 b. Any decision to grant planning permission based on the present conditions would be unlawful** since:

such a decision would breach the Habitats Regulations: because NLC could not, at the time of grant of permission, be "certain" (note that certainty is the legal requirement under the well known European Court of Justice *Waddenzee* case on the Habitats Directive) that there will be no adverse effect on the integrity of the SPA from the development; and

such a decision is also likely to breach the Town and Country Planning (EIA) Regulations 1999: because there is caselaw that non-compliance with the Regulations can arise through use of imprecise Grampian planning conditions which allow deviation from the proposals, leading to a significant adverse impact on the environment which has not been assessed (as is required) prior to grant of permission.

The Annex to this letter sets out in detail and by reference to the specific ecology conditions 41-51 the justification for the conclusions at a. and b. above.

This issue 3 is our current principal concern in the light of the forthcoming planning committee meeting on 24 June 2011. Whilst we provided some initial views to NLC on the proposed conditions and received a short response in relation to some of the queries raised (Email from Mr WJ Hill dated 14 June 2011), this letter should now be regarded as containing our position as we have since then given this matter further careful thought and have also taken legal advice.

### **Next steps...**

The proposed resolution as set out in the committee papers for the Friday 24 June needs to be amended to allow for revision of the planning conditions 41-51 inclusive in accordance with the detail of this letter prior to planning permission being granted.

This is imperative to ensure that the requirements of the relevant legal framework are met.

We would very much like to continue working with NLC to assist NLC in revising the wording of the current draft planning conditions to ensure they are sufficiently clear and precise to secure

legally the necessary mitigation for SPA and Ramsar waterbirds, prior to permission being granted.

Yours sincerely,

Harriet Dennison AIEEM

Humber Programme Manager

Cc.

Emma Hawthorne, Natural England

## **Annex 1 Detailed comments regarding the draft planning conditions 41-51**

### **Summary of general concerns regarding the currently drafted planning conditions**

The letter above has explained that there are two consequences of the imprecise and confused manner in which the planning conditions are presently drafted:

a. The conditions do not meet the requirements of UK Government planning policy on planning conditions as set out in the Department of Environment Circular 11/95 and in one case (condition 50) the condition is **unlawful**; and

b. Any decision to grant planning permission based on the present conditions would be **unlawful** since:

such a decision would breach the Habitats Regulations: because NLC could not, at the time of grant of permission, be "certain" (note that certainty is the legal requirement under the well known *Waddenzee* case on the Habitats Directive) that there will be no adverse effect on the integrity of the SPA from the development; and

such a decision is also likely to breach the Town and Country Planning (EIA) Regulations 1999: because there is caselaw that non-compliance with the Regulations can arise through use of imprecise Grampian planning conditions which allow deviation from the proposals, leading to a significant adverse impact on the environment which has not been assessed (as is required) prior to grant of permission.

The following sets out in full our justification for our conclusions at a. and b.

#### **a. Failure of the current conditions to meet the requirements of UK Planning Policy on planning conditions (Circular 11/95)**

The proposed conditions regarding ecology do not meet the test of precision of Circular 11/95. Department of Environment Circular 11/95 ("**Circular**") sets out 6 tests that planning conditions should be:

- ⊗ necessary,
- ⊗ relevant to planning,
- ⊗ relevant to the development to be permitted,
- ⊗ enforceable,
- ⊗ precise, and
- ⊗ reasonable in all other respects.

Paragraph 31 of the Circular states that "a condition which is not sufficiently precise for the applicant to be able to ascertain what must be done to comply with it is ultra vires and cannot be imposed". Paragraph 33 of the Circular states that "conditions should not only be precise but clear."

The proposed conditions read either alone or together are, in our view, neither precise nor clear. For example:

⊙ One of the key provisions is for a conservation management plan for the

waterbird mitigation areas (condition 46). This focuses on the creation and management of the waterbird mitigation areas only. However, aspects of the waterbird protection plan (condition 49) also deal with protection of the waterbird mitigation areas. The waterbird mitigation areas are therefore subject to two sets of rules (in the conservation management plan (46) and in the waterbird protection plan (49)) and it is not at all clear how they are intended to interrelate in practice.

⊙ Bird monitoring is the focus of condition 48. However both the waterbird

construction method statement (condition 45) and the waterbird protection plan (condition 49) also refer to monitoring and setting of thresholds which would give rise to triggers for changes. Again it is unclear how the monitoring requirements of 48 on the one hand and those of conditions 45 and 49 on the other are expected to interrelate or how the changes would be subsequently enforced.

⊙ The bird monitoring condition (48) is unclear in itself. It currently omits a key requirement which, is needed to make it effective i.e. that where certain triggers are met then remedial measures shall be taken. Without this requirement the condition has no practical effect.

⊙ The waterbird construction method statement (45) deals with protection of birds during construction; but the waterbird protection plan (49) has to be read (based on current drafting) as applying to the entire period i.e. from construction onwards. Both deal with issues such as noise, lighting and visual disturbance. Again it is unclear how the provisions relate to one another.

⊙ There is provision for a steering group (condition 50). However there is no clear link between the steering group and the other ecology conditions and so the role of the steering group in relation to those conditions is not addressed. The terms of reference, constitution of the steering group and mechanism for resolving disputes is not set out in the condition; it should be, in our view.

⊙ Condition 50 contains reference to payment of monies which is unlawful (in the absence of statutory authority) and directly contrary to para 83 of Circular 11/95.

There are a large number of other smaller drafting points which should be addressed before the conditions are finalised in order to ensure that the conditions are clear and enforceable. We can provide these in detail in further discussions.

## **b. The Habitats Regulations and EIA Regulations**

### *Issues relating to the Habitats Regulations 2010*

Regulation 61(5) Habitats Regulations require that the LPA (North Lincolnshire Council in this case) may, in the light of their Appropriate Assessment, only agree to the project if they have first ascertained (with certainty and no reasonable scientific doubt according to the leading Court of Justice case of *Waddenzee*) that it will not adversely affect the integrity of the European site.

4 Para 21 Circular 06/2005: "In the Waddenzee judgment, the European Court of Justice ruled that a plan or project may be authorised only if a competent authority has made **certain** that the plan or project will not adversely affect the integrity of the site. "That is the case where no reasonable scientific doubt remains as to the absence of such effects". Competent national authorities must be "**convinced**" that there will not be an adverse affect and where doubt remains as to the absence of adverse affects, the plan or project must not be authorised, subject to the procedure outlined in Article 6(4) of the EC Habitats Directive regarding imperative

reasons of overriding public interest".

It is clear from regulation 62(6) Habitats Regulations that the LPA (North Lincolnshire Council in this case) may, in this process, have regard to any proposed conditions or restrictions to which the permission may be made subject. So planning conditions or indeed Section 106 obligations which, for example, secure measures to avoid or mitigate against any risk of adverse effects on the European site can be relevant to the LPA's consideration of the effect on the integrity of the site. However to allow a LPA to be certain or convinced that there will be no adverse effect on the integrity of the European site at the time they grant permission, it must be certain that the required mitigation will be provided. Conditions securing the mitigation must therefore be sufficiently specific to give the required level of certainty.

In this case there are a large number of proposed conditions on ecological matters. The fact that many of them are Grampian conditions, having the effect of preventing the development from proceeding until certain requirements have been met, is not in itself a problem so long as those conditions allow the LPA to be certain of the absence of adverse effects on integrity at the time they grant the permission. This means that the conditions must contain the detail of the key parameters of the required mitigation. The basic purpose, function scope of the required mitigation must be set out and legally secured so that it can be clear that, whatever the detail that emerges, no adverse effect will arise.

The apparent problem with the planning conditions as currently proposed here is that the conditions are in many cases imprecisely drafted so that the scope of the proposed mitigation to be secured by them is not sufficiently clear and the LPA (North Lincolnshire Council in this case) cannot therefore have the requisite certainty.

It is not sufficient to rely on information contained within supporting documents to the application nor the Appropriate Assessment. The LPA (North Lincolnshire Council in this case) must ensure that the future mitigation is in fact legally secured.

#### ***Issues relating to the Town and Country Planning (EIA) Regulations 1999***

There is legal authority in *Smith v Secretary of State for the Environment, Transport and the Regions* [2003] EWCA Civ 262 that the Town and Country Planning (EIA) Regulations 1999 would not be met if the LPA attempted to "leave over" questions which related to the significance of the impact on the environment and the effectiveness of any mitigation, essentially because the public would not have been allowed to debate the relevant environmental issues. In relation to planning conditions (and in the *Smith* case some of the conditions in issue were in fact also Grampian conditions) the key was to consider if the operation of those conditions could lead to a situation where there could be possible impacts on the environment which had not been properly considered. As Waller LJ put it "do the conditions allow the LPA a deviation from the plans which might have a significant adverse impact on the environment"?

In this case, the imprecise nature of the conditions (see comments on conditions 46 and 47 below) mean that the mitigation to be provided is unclear and could potentially give rise to a variety of outcomes such that significant impacts on waterbirds could potentially arise.

#### ***Analysis of the conditions in the light of the Habitats Regulations and the Town and Country Planning (EIA) Regulations 1999***

The three key problems in the conditions which expose will expose NCL under the Habitats Regulations and the Town and Country Planning (EIA) Regulations 1999 if they are not addressed prior to grant of planning permission are as follows:

**Condition 46:** This requires a conservation management plan for the mitigation areas (the "waterbird mitigation areas") but leaves all content including the plan's purpose and scope to be agreed following grant of permission. This is unacceptable. Condition 46 must include the clear aims and objectives for the proposed Conservation Management Plan, the specifics of the target habitats, their extent and location, and the target species and numbers of birds within each of those species which these habitats will be required to support (i.e. the species displaced by the development). In the absence of such detail neither the purpose nor the scope of the required mitigation is legally secured and consequently there can be no certainty either for NLC at the time it grants permission or anybody else that the mitigation provided will meet the needs of the birds displaced / that the mitigation areas will be designed and managed so as to secure "no adverse effect".

**Condition 46:** This condition makes no mention of funding for management of the water mitigation areas. This is perhaps as expected since planning conditions cannot require payment of money. However a condition could be drafted so as to require that "no development shall take place until an appropriate scheme has been agreed with the LPA (North Lincolnshire Council in this case) to provide adequate security for the future cost of managing the waterbird mitigation areas in perpetuity". In the absence of such a condition there can be no certainty that the proper mitigation will be secured into the future. It is not acceptable to rely on enforcement of the condition in this case against the applicant (or successor in title) because if the applicant is in default then enforcement will have no practical effect. In order to be "*certain*" at the time of grant that the mitigation will be secured the LPA (North Lincolnshire Council in this case) needs comfort that adequate financial provision will be made before development commences and the potentially harmful activities arise.

5 This may take the form of a bond or other means such as a Section 106 but allows flexibility to agree and adopt an appropriate mechanism to secure financial arrangements.

**Condition 47:** This requires the wetland mitigation areas to be provided, including the possibility of a minimum 50ha of mitigation but with no indication of where that habitat should be provided, what quality it should be, or what its ecological function should be. There is a cross reference in 47(ii) to the conservation management plan (set out in condition 46) but this does not rectify the issue since that gives none of the relevant details either. In the absence of these details there can be no certainty at the time that the permission is granted that the mitigation provided will secure "no adverse effect on the integrity of the European site".

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## Annex C

### HMWGS Planning Clarification Note



hendeca

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HALTON MARSHES WET  
GRASSLAND SCHEME

PLANNING CLARIFICATION

November 2016





## 1. Planning Clarification

### 1.1 Introduction

- 1.1.1 During recent conversations with both Andrew Taylor (North Lincolnshire Council) and Emma Hawthorn (Natural England) it has become clear that there remains some confusion in regard to the aims of the development proposed as the Halton Marshes Wet Grassland Scheme (HMWGS, reference PA/2016/649).
- 1.1.2 This planning clarification has been prepared to address any remaining misunderstanding.

### 1.2 The proposed development

- 1.2.1 The description of the proposal, as set out in the planning application form, is 'creation of habitat, primarily wet grassland'. This is, fundamentally the purpose of the proposed development, to create new habitat of primarily managed wet grassland.
- 1.2.2 The purposes for creating that wet grassland are set out in both the Planning Statement and the Planning Addendum. They are to provide suitable habitat for:
- mitigation for development of the Able Logistics Park (Phase 1, south of the railway only);
  - overcompensation for the Able Marine Energy Park (AMEP); and
  - the **future** relocation of AMEP Mitigation Area A.
- 1.2.3 The misunderstanding appears to be in regard to the future relocation of Mitigation Area A from within the AMEP. This purpose is included, and addressed in some detail within the current application, so as to be open about Able's full, long-term intentions for the HMWGS. However, this HMWGS application does not seek to gain, and will not in fact give (which is required under a separate process) consent for the relocation of Mitigation Area A.
- 1.2.4 The HMWGS planning application simply seeks consent to create a habitat suitable to provide the functionality of Mitigation Area A, so that at a future date, and having gained the relevant, separate and discrete, planning permission it would be possible to relocate that element of mitigation for the AMEP.
- 1.2.5 In that respect, the application might best be considered a stepping stone toward the relocation of Mitigation Area A, but not one that constitutes an application to do so. Consent for the HMWGS enables ABLE to be confident that, upon application to relocate Mitigation Area A, the HMWGS has been assessed as providing suitable habitat.

# hendeca

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**hendeca ltd**

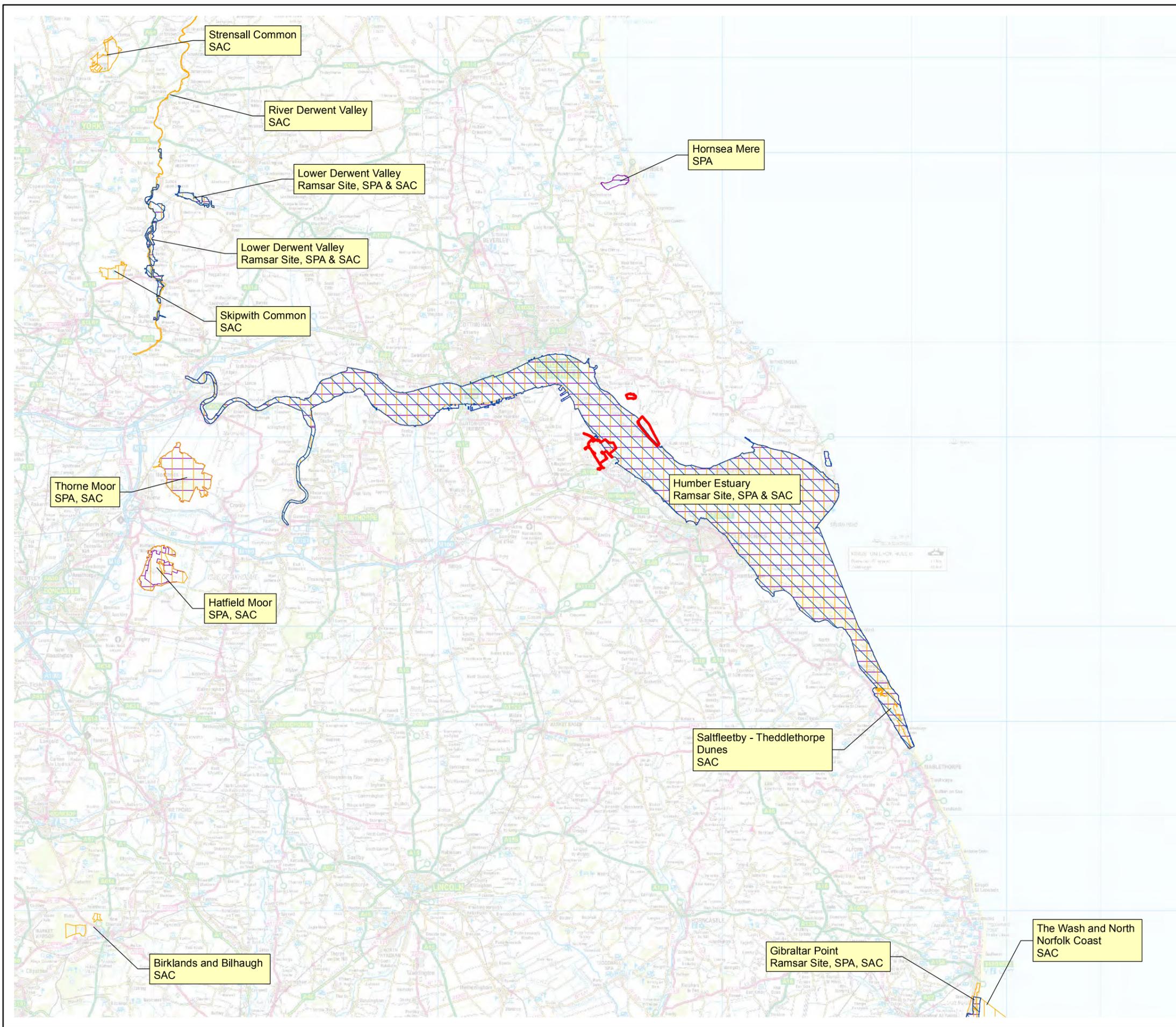
9601610 **company number**

Harvestway House, 28 High Street, Witney, Oxon, OX28 6RA **regd address**



## Annex D

Plan of the Humber Estuary European sites



Key

- Application Boundaries
- RAMSAR
- SAC
- SPA

SOURCE: Reproduced from Ordnance Survey digital map data. © Crown copyright. All rights reserved. 2011 License number 0100031673.  
 PROJECTION: British National Grid

Rev	Date	Comments	Drw	Chk	App
A	01/12/2011	Preliminary Issue	MTC	WB	SP



Project: ABLE Marine Energy Park  
 Client: ABLE UK Ltd  
 Title: Figure 3.1  
 Location and Extent of European Designated Sites in Relation to the Development Site Boundary

PRELIMINARY

Scale:	Drawn	Checked	Approved
1:400,000@A3	MTC	WB	SP
Date	01/12/2011	01/12/2011	01/12/2011
Drawing No.	Revision:		A
ABLE_HabitatRegulationAssessmentLarge.mxd			

## **Annex E**

Humber Estuary SAC Citation, dated 10 December 2009

# EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

## Citation for Special Area of Conservation (SAC)

<b>Name:</b>	Humber Estuary
<b>Unitary Authority/County:</b>	City of Kingston upon Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire
<b>SAC status:</b>	Designated on 10 December 2009
<b>Grid reference:</b>	TA345110
<b>SAC EU code:</b>	UK0030170
<b>Area (ha):</b>	36657.15
<b>Component SSSI:</b>	Humber Estuary

### Site description:

The Humber is the second largest coastal plain **Estuary** in the UK, and the largest coastal plain estuary on the east coast of Britain. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. The range of salinity, substrate and exposure to wave action influences the estuarine habitats and the range of species that utilise them; these include a breeding bird assemblage, winter and passage waterfowl, river and sea lamprey, grey seals, vascular plants and invertebrates.

The Humber is a muddy, macro-tidal estuary, fed by a number of rivers including the Rivers Ouse, Trent and Hull. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. This is the northernmost of the English east coast estuaries whose structure and function is intimately linked with soft eroding shorelines. The extensive mud and sand flats support a range of benthic communities, which in turn are an important feeding resource for birds and fish. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers.

Habitats within the Humber Estuary include **Atlantic salt meadows** and a range of sand dune types in the outer estuary, together with **Sandbanks which are slightly covered by sea water all the time**, extensive intertidal mudflats, **Salicornia and other annuals colonising mud and sand**, and **Coastal lagoons**. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary. These are best-represented at the confluence of the Rivers Ouse and Trent at Blacktoft Sands.

Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks, for reasons that have yet to be fully explained. This section of the estuary is also noteworthy for extensive mud and sand bars, which in places form semi-permanent islands. The sand dunes are features of the outer estuary on both the north and south banks particularly on Spurn peninsula and along the Lincolnshire coast south of Cleethorpes. Examples of both **Fixed dunes with herbaceous vegetation** (**grey dunes**) and **Shifting dunes along the shoreline with *Ammophila arenaria*** (**white dunes**) occur on both banks of the estuary and along the coast. Native sea buckthorn **Dunes with *Hippophae rhamnoides*** also occurs on both sides of the estuary.

Significant fish species include **river lamprey *Lampetra fluviatilis*** and **sea lamprey *Petromyzon marinus*** which breed in the River Derwent, a tributary of the River Ouse. **Grey seals *Halichoerus grypus*** come ashore in autumn to form breeding colonies on the sandy shores of the south bank at Donna Nook.

**Qualifying habitats:** The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Coastal lagoons\*
- Dunes with *Hippophae rhamnoides*
- Embryonic shifting dunes
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Fixed dunes with herbaceous vegetation ('grey dunes')\*
- *Salicornia* and other annuals colonising mud and sand
- Sandbanks which are slightly covered by sea water all the time
- Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')

**Qualifying species:** The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Grey seal *Halichoerus grypus*
- River lamprey *Lampetra fluviatilis*
- Sea lamprey *Petromyzon marinus*

Annex I priority habitats are denoted by an asterisk (\*)

This citation relates to a site entered in the Register of European Sites for Great Britain.  
Register reference number: UK0030170  
Date of registration: 10 December 2009

Signed:   
On behalf of the Secretary of State for  
Environment, Food and Rural Affairs



## **Annex F**

Humber Estuary SPA Citation, dated 31 August 2007

## EC Directive 79/409 on the Conservation of Wild Birds Special Protection Area (SPA)

**Name:** Humber Estuary

**Unitary Authorities/Counties:** City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire

**Component SSSIs:** The SPA encompasses all or parts of the following Sites of Special Scientific Interest (SSSIs): Humber Estuary SSSI, North Killingholme Haven Pits SSSI, Saltfleetby-Theddlethorpe Dunes SSSI, and The Lagoons SSSI.

**Site description:** The Humber Estuary is located on the east coast of England, and comprises extensive wetland and coastal habitats. The inner estuary supports extensive areas of reedbed, with areas of mature and developing saltmarsh backed by grazing marsh in the middle and outer estuary. On the north Lincolnshire coast, the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools. Parts of the estuary are owned and managed by conservation organisations. The estuary supports important numbers of waterbirds (especially geese, ducks and waders) during the migration periods and in winter. In summer, it supports important breeding populations of bittern *Botaurus stellaris*, marsh harrier *Circus aeruginosus*, avocet *Recurvirostra avosetta* and little tern *Sterna albifrons*.

**Size of SPA:** The SPA covers an area of 37,630.24 ha.

### Qualifying species:

The site qualifies under **article 4.1** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

Annex I species	Count and season	Period	% of GB population
Avocet <i>Recurvirostra avosetta</i>	59 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.7%
Bittern <i>Botaurus stellaris</i>	4 individuals – wintering	5 year peak mean 1998/99 – 2002/03	4.0%
Hen harrier <i>Circus cyaneus</i>	8 individuals – wintering	5 year peak mean 1997/98 – 2001/02	1.1%
Golden plover <i>Pluvialis apricaria</i>	30,709 individuals – wintering	5 year peak mean 1996/97 – 2000/01	12.3%
Bar-tailed godwit <i>Limosa lapponica</i>	2,752 individuals – wintering	5 year peak mean 1996/97 – 2000/01	4.4%
Ruff <i>Philomachus pugnax</i>	128 individuals – passage	5 year peak mean 1996-2000	1.4%
Bittern <i>Botaurus stellaris</i>	2 booming males – breeding	3 year mean 2000-2002	10.5%
Marsh harrier <i>Circus aeruginosus</i>	10 females – breeding	5 year mean 1998-2002	6.3%
Avocet <i>Recurvirostra avosetta</i>	64 pairs – breeding	5 year mean 1998 – 2002	8.6%
Little tern <i>Sterna albifrons</i>	51 pairs – breeding	5 year mean 1998-2002	2.1%

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

Migratory species	Count and season	Period	% of subspecies/ population
Shelduck <i>Tadorna tadorna</i>	4,464 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.5% Northwestern Europe (breeding)
Knot <i>Calidris canutus</i>	28,165 individuals – wintering	5 year peak mean 1996/97 – 2000/01	6.3% <i>islandica</i>
Dunlin <i>Calidris alpina</i>	22,222 individuals – wintering	5 year peak mean 1996/97 – 2000/01	1.7% <i>alpina</i> , Western Europe (non-breeding)
Black-tailed godwit <i>Limosa limosa</i>	1,113 individuals – wintering	5 year peak mean 1996/97 – 2000/01	3.2% <i>islandica</i>
Redshank <i>Tringa totanus</i>	4,632 individuals – wintering	5 year peak mean 1996/97 – 2000/01	3.6% <i>britannica</i>
Knot <i>Calidris canutus</i>	18,500 individuals – passage	5 year peak mean 1996 – 2000	4.1% <i>islandica</i>
Dunlin <i>Calidris alpina</i>	20,269 individuals – passage	5 year peak mean 1996 – 2000	1.5% <i>alpina</i> , Western Europe (non-breeding)
Black-tailed godwit <i>Limosa limosa</i>	915 individuals – passage	5 year peak mean 1996 – 2000	2.6% <i>islandica</i>
Redshank <i>Tringa totanus</i>	7,462 individuals – passage	5 year peak mean 1996 – 2000	5.7% <i>britannica</i>

Bird counts from: Wetland Bird Survey (WeBS) database and *The Humber Estuary: A comprehensive review of its nature conservation interest* (Allen et al. 2003).

#### Assemblage qualification:

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season:

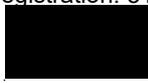
In the non-breeding season, the area regularly supports 153,934 individual waterbirds (five year peak mean 1996/97 – 2000/01), including dark-bellied brent goose *Branta bernicla bernicla*, shelduck *Tadorna tadorna*, wigeon *Anas penelope*, teal *Anas crecca*, mallard *Anas platyrhynchos*, pochard *Aythya ferina*, scaup *Aythya marila*, goldeneye *Bucephala clangula*, bittern *Botaurus stellaris*, oystercatcher *Haematopus ostralegus*, avocet *Recurvirostra avosetta*, ringed plover *Charadrius hiaticula*, golden plover *Pluvialis apricaria*, grey plover *P. squatarola*, lapwing *Vanellus vanellus*, knot *Calidris canutus*, sanderling *C. alba*, dunlin *C. alpina*, ruff *Philomachus pugnax*, black-tailed godwit *Limosa limosa*, bar-tailed godwit *L. lapponica*, whimbrel *Numenius phaeopus*, curlew *N. arquata*, redshank *Tringa totanus*, greenshank *T. nebularia* and turnstone *Arenaria interpres*.

**Non-qualifying species of interest:** The SPA is used by non-breeding merlin *Falco columbarius*, peregrine *F. peregrinus* and short-eared owl *Asio flammeus*, and breeding common tern *Sterna hirundo* and kingfisher *Alcedo atthis* (all species listed in Annex I to the EC Birds Directive) in numbers of less than European importance (less than 1% of the GB population).

#### Status of SPA:

- 1) Humber Flats, Marshes and Coast (Phase 1) SPA was classified on 28 July 1994.
- 2) The extended and renamed Humber Estuary SPA was classified on 31 August 2007.

This citation relates to a site entered in the Register of European Sites for Great Britain.  
Register reference number: UK9006111  
Date of registration: 31 August 2007

Signed:   
On behalf of the Secretary of State for  
Environment, Food and Rural Affairs



## **Annex G**

Humber Estuary Ramsar Site, Site Information Sheet, dated 31 August 2007

# Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).

## Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

## 1. Name and address of the compiler of this form:

**Joint Nature Conservation Committee**  
 Monkstone House  
 City Road  
 Peterborough  
 Cambridgeshire PE1 1JY  
 UK  
 Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948  
 Email: [RIS@JNCC.gov.uk](mailto:RIS@JNCC.gov.uk)

FOR OFFICE USE ONLY.

DD MM YY

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Designation date

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Site Reference Number

## 2. Date this sheet was completed/updated:

Designated: 31 August 2007

## 3. Country:

UK (England)

## 4. Name of the Ramsar site:

Humber Estuary

## 5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

## 6. For RIS updates only, changes to the site since its designation or earlier update:

### a) Site boundary and area:

The boundary has been extended

\*\* Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

### b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

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**Secretariat comment: The RIS provides information requiring the application of Criterion 4. This needs to be included in the next update.**

#### 14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

##### Ramsar criterion 1

The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.

It is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Examples of both strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland occur on both banks of the estuary and along the coast. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers. The lower saltmarsh of the Humber is dominated by common cordgrass *Spartina anglica* and annual glasswort *Salicornia* communities. Low to mid marsh communities are mostly represented by sea aster *Aster tripolium*, common saltmarsh grass *Puccinellia maritima* and sea purslane *Atriplex portulacoides* communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch *Elytrigia atherica* (*Elymus pycnanthus*) saltmarsh community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed *Phragmites australis* fen and sea club rush *Bolboschoenus maritimus* swamp with the couch grass *Elytrigia repens* (*Elymus repens*) saltmarsh community. Within the Humber Estuary Ramsar site there are good examples of four of the five physiographic types of saline lagoon.

##### Ramsar criterion 3

The Humber Estuary Ramsar site supports a breeding colony of grey seals *Halichoerus grypus* at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad *Bufo calamita*.

##### Ramsar criterion 5

###### Assemblages of international importance:

153,934 waterfowl, non-breeding season  
(5 year peak mean 1996/97-2000/2001)

##### Ramsar criterion 6 – species/populations occurring at levels of international importance.

Common shelduck, *Tadorna tadorna*

Northwestern Europe (breeding) population

4,464 individuals, wintering, representing an average of 1.5% of the population  
(5 year peak mean 1996/7-2000/1)

Eurasian golden plover, *Pluvialis apricaria*

*altifrons* subspecies – NW Europe, W Continental Europe, NW Africa population

30,709 individuals, wintering, representing an average of 3.3% of the population  
(5 year peak mean 1996/7-2000/1)

Red knot, *Calidris canutus*

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*islandica* subspecies

28,165 individuals, wintering, representing an average of 6.3% of the population  
(5 year peak mean 1996/7-2000/1)

Dunlin, *Calidris alpina*

*alpina* subspecies – Western Europe (non-breeding) population

22,222 individuals, wintering, representing an average of 1.7% of the population  
(5 year peak mean 1996/7-2000/1)

Black-tailed godwit, *Limosa limosa*

*islandica* subspecies

1,113 individuals, wintering, representing an average of 3.2% of the population  
(5 year peak mean 1996/7-2000/1)

Bar-tailed godwit, *Limosa lapponica*

*lapponica* subspecies

2,752 individuals, wintering, representing an average of 2.3% of the population  
(5 year peak mean 1996/7-2000/1)

Common redshank, *Tringa totanus*

*britannica* subspecies

4,632 individuals, wintering, representing an average of 3.6% of the population  
(5 year peak mean 1996/7-2000/1)

**Ramsar criterion 8**

The Humber Estuary acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.

**15. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Atlantic

**b) biogeographic regionalisation scheme** (include reference citation):

Council Directive 92/43/EEC

**16. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	neutral, shingle, sand, mud, clay, alluvium, sedimentary, sandstone, sandstone/mudstone, limestone/chalk, gravel, nutrient-rich
Geomorphology and landscape	lowland, coastal, floodplain, shingle bar, intertidal sediments (including sandflat/mudflat), estuary, islands, cliffs
Nutrient status	eutrophic

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pH	circumneutral
Salinity	brackish / mixosaline, fresh, saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Cleethorpes, 1971–2000) ( <a href="http://www.metoffice.com/climate/uk/averages/19712000/sites/cleethorpes.html">www.metoffice.com/climate/uk/averages/19712000/sites/cleethorpes.html</a> ) Max. daily temperature: 13.1° C Min. daily temperature: 6.4° C Days of air frost: 29.0 Rainfall: 565.4 mm Hrs. of sunshine: 1521.9

**General description of the Physical Features:**

The Humber estuary is approximately 70 km long from the limit of saline intrusion on the River Ouse at Boothferry to the estuary mouth at Spurn Head, where it enters the North Sea. The area of the estuary is approx. 365 km<sup>2</sup>, and it has a width of 6.6 km at the mouth.

The Humber is a macro-tidal estuary with a tidal range of 7.4 m, the second-largest range in the UK and comparable to other macro-tidal estuaries worldwide. It is a shallow and well mixed estuary, with an average depth of 6.5m rising to 13.2 m at the mouth.

The Humber is the second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. This is the northernmost of the English east coast estuaries whose structure and function is intimately linked with soft eroding shorelines.

Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks. This section of the estuary is noteworthy for extensive mud and sand bars, which in places form semi-permanent islands.

The estuary covers the full salinity range from fully marine at the mouth of the estuary (Spurn Head) to the limit of saline intrusion on the Rivers Ouse and Trent). A salinity gradient from north to south bank is observed in the outer estuary, due to the incoming tide flowing along the north bank, while the fresh water keeps to the south bank as it discharges to the sea. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary..

**17. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Humber catchment covers an area of ca. 24,240 km<sup>2</sup>, more than 20% of the land area of England. Average annual precipitation in the upland areas of the catchment is as much as 1000 mm. Average freshwater flow into the Humber estuary from the rivers is 250 m<sup>3</sup>s<sup>-1</sup>, ranging from 60 m<sup>3</sup>s<sup>-1</sup> in drier periods to 450 m<sup>3</sup>s<sup>-1</sup> in wet periods. Peak flows of up to 1500 m<sup>3</sup>s<sup>-1</sup> have been recorded during floods. The rivers Trent and Ouse, which provide the main fresh water flow into the Humber, drain large industrial and urban areas to the south and west (River Trent), and less densely populated agricultural areas to the north and west (River Ouse). The Trent/Ouse confluence is known as Trent Falls.

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On the north bank of the Humber estuary the principal river is the river Hull, which flows through the city of Kingston-upon-Hull, and has a tidal length of 32 km, up to the Hempholme Weir. The Hull provides only about 1% of the freshwater input to the estuary. On the south bank, the River Ancholme enters the Humber at South Ferriby, but the tide is excluded by a sluice and a tidal lock. Altogether, the total tidal length of rivers and estuary is 313 km.

There are several major urban centres within the river catchments. Nottingham, Leicester, and the West Midlands/Birmingham conurbation are drained by the Trent, the Leeds-Bradford area in West Yorkshire is drained by the Aire/Calder and the Sheffield/Rotherham/Doncaster area in South Yorkshire is drained by the Don. There are also large rural regions, whose populations are currently experiencing high population growth, while the urban areas are showing a small decline. The 1992 population for the Ouse catchment was 4.1 million, and for the Trent catchment was 7.1 million. The population of Humberside, which comprises North and North-east Lincolnshire, the East Riding of Yorkshire, and Kingston-upon-Hull (Hull), was just under 0.9 million. Land use around the estuary itself is 50-98% agricultural, within only two areas of high population/ industry – the major conurbation around Kingston-upon-Hull (Hull) on the north bank, and several large industrial areas around Grimsby/ Immingham/ Cleesthorpes on the south bank.

The area around the Humber estuary is low-lying, and much land-claim of wetlands and supratidal zones, as well as parts of the intertidal zone, was carried out in the past two centuries. The mid to outer estuary (Humber Bridge to Spurn Point) changed from a region of low water erosion in the 19th century to one of accretion in the 20th century, nonetheless a net loss of intertidal zone of some 3000 ha has taken place since the mid-19th century. Around the estuary some 894 km<sup>2</sup> of land are below the 5 m contour, protected by extensive coastal defences. Most of the sediment entering the estuary comes from the North Sea, and a large part of it is believed to come from the continuing erosion of the Holderness Cliffs, which form the coastline to the north of the estuary mouth at Spurn Head. The estuary currently has approximately 1,775 ha of saltmarsh

**18. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Sediment trapping

**19. Wetland types:**

Marine/coastal wetland

Code	Name	% Area
F	Estuarine waters	66.8
G	Tidal flats	26.4
H	Salt marshes	4.7
E	Sand / shingle shores (including dune systems)	0.8
7	Gravel / brick / clay pits	0.5
Q	Saline / brackish lakes: permanent	0.3
J	Coastal brackish / saline lagoons	0.3
Other	Other	0.1
9	Canals and drainage channels	0.01
Y	Freshwater springs	0.01

**20. General ecological features:**

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Description

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Much of the intertidal area of the Humber Estuary consists of mudflats with fringing saltmarsh. There are smaller areas of intertidal sand flats, and sand dunes. The saltmarsh is both eroding and accreting; although coastal squeeze is resulting in net losses, and cord grass *Spartina anglica* is a major colonising species. In areas of reduced salinity such as the Upper Humber there are extensive areas of common reed *Phragmites australis* with some sea club-rush *Bolboschoenus maritimus*. Mid-level saltmarsh tends to be much more floristically diverse, and in the higher level marsh with its dendritic network of drainage channels, salt pans and borrow pits grasses dominate with thrift *Armeria maritima* where the marsh is grazed by cattle and sheep. Extensive areas of eel grass *Zostera marina* and *Z. nolti* have been known to occur at Spurn Bight, although in recent years records are limited. Behind the sandflats of the Cleethorpes coast the mature sand-dune vegetation contains some locally and nationally rare species including chestnut flat sedge *Blysmus rufus*, bulbous meadow grass *Poa bulbosa* and dense silky-bent *Apera interrupta*. The sand dunes, which cap the shingle spit that forms Spurn Peninsula are dominated by marram grass *Ammophila arenaria* and patches of dense sea buckthorn *Hippophae rhamnoides*.

Ecosystem services

Aesthetic

Education

Food

Recreation

Storm/wave protection

---

## 21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

See point 14 –Criterion 1

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## 22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

### Species Information

Species Information

Birds

Species currently occurring at levels of national importance:

Great bittern, *Botaurus stellaris*

*stellaris* subspecies – W Europe, NW Africa (breeding) population

2 booming males, breeding, representing an average of 10.5% of the GB population  
(3 year mean 2000-2002)

Eurasian marsh harrier, *Circus aeruginosus*

Europe population

10 females, breeding, representing an average of 6.3% of the GB population  
(5 year mean 1998-2002)

Pied avocet, *Recurvirostra avosetta*

Western Europe (breeding) population

64 pairs, breeding, representing an average of 8.6% of the GB population

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(5 year mean 1998-2002)

Little tern, *Sterna albifrons*  
*albifrons* subspecies, Western Europe (breeding) population  
51 pairs, breeding, representing an average of 2.1% of the GB population  
(5 year mean 1998-2002)

Dark-bellied brent goose, *Branta bernicla*  
*bernicla* subspecies  
2,098 individuals, wintering, representing an average of 2.1% of the GB population  
(5 year peak mean 1996/7-2000/1)

Eurasian wigeon, *Anas penelope*  
Northwestern Europe (non-breeding) population  
5,044 individuals, wintering, representing an average of 1.2% of the GB population  
(5 year peak mean 1996/7-2000/1)

Common teal, *Anas crecca*  
*crecca* subspecies, Northwestern Europe (non-breeding population)  
2,322 individuals, wintering, representing an average of 1.2% of the GB population  
(5 year peak mean 1996/7-2000/1)

Common pochard, *Aythya ferina*  
Northeastern & Northwestern Europe (non-breeding) population  
719 individuals, wintering, representing an average of 1.2% of the GB population  
(5 year peak mean 1996/7-2000/1)

Greater scaup, *Aythya marila*  
*marila* subspecies, Western Europe (non-breeding) population  
127 individuals, wintering, representing an average of 1.7% of the GB population  
(5 year peak mean 1996/7-2000/1)

Common goldeneye, *Bucephala clangula*  
*clangula* subspecies, Northwestern & Central Europe (non-breeding) population  
467 individuals, wintering, representing an average of 1.9% of the GB population  
(5 year peak mean 1996/7-2000/1)

Great bittern, *Botaurus stellaris*  
*stellaris* subspecies – W Europe, NW Africa (breeding) population  
4 individuals, wintering, representing an average of 4.0% of the GB population  
(5 year peak mean 1998/9-2002/3)

Hen harrier, *Circus cyaneus*  
Europe population  
8 individuals, wintering, representing an average of 1.1% of the GB population  
(5 year peak mean 1997/8-2001/2)

Eurasian oystercatcher, *Haematopus ostralegus*  
*ostralegus* subspecies  
3,503 individuals, wintering, representing an average of 1.1% of the GB population  
(5 year peak mean 1996/7-2000/1)

Pied avocet, *Recurvirostra avosetta*  
Western Europe (breeding) population  
59 individuals, wintering, representing an average of 1.7% of the GB population

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(5 year peak mean 1996/7-2000/1)

Great ringed plover, *Charadrius hiaticula*  
*hiaticula* subspecies

403 individuals, wintering, representing an average of 1.2% of the GB population  
(5 year peak mean 1996/7-2000/1)

Grey plover, *Pluvialis squatarola*  
*squatarola* subspecies, Eastern Atlantic (non-breeding) population

1,704 individuals, wintering, representing an average of 3.2% of the GB population  
(5 year peak mean 1996/7-2000/1)

Northern lapwing, *Vanellus vanellus*  
Europe (breeding) population

22,765 individuals, wintering, representing an average of 1.1% of the GB population  
(5 year peak mean 1996/7-2000/1)

Sanderling, *Calidris alba*  
Eastern Atlantic (non-breeding) population

486 individuals, wintering, representing an average of 2.3% of the GB population  
(5 year peak mean 1996/7-2000/1)

Eurasian curlew, *Numenius arquata*  
*arquata* subspecies

3,253 individuals, wintering, representing an average of 2.2% of the GB population  
(5 year peak mean 1996/7-2000/1)

Ruddy turnstone, *Arenaria interpres*  
*interpres* subspecies, Northeastern Canada & Greenland (breeding) population

629 individuals, wintering, representing an average of 1.3% of the GB population  
(5 year peak mean 1996/7-2000/1)

Great ringed plover, *Charadrius hiaticula*  
*psammodytes* subspecies

1,766 individuals, passage, representing an average of 5.9% of the GB population  
(5 year peak mean 1996-2000)

Grey plover, *Pluvialis squatarola*  
*squatarola* subspecies, Eastern Atlantic (non-breeding) population

1,590 individuals, passage, representing an average of 2.3% of the GB population  
(5 year peak mean 1996-2000)

Sanderling, *Calidris alba*  
Eastern Atlantic (non-breeding) population

818 individuals, passage, representing an average of 2.7% of the GB population  
(5 year peak mean 1996-2000)

Ruff, *Philomachus pugnax*  
Western Africa (non-breeding) population

128 individuals, passage, representing an average of 1.4% of the GB population  
(5 year peak mean 1996-2000)

Whimbrel, *Numenius phaeopus*  
*islandicus* subspecies

113 individuals, passage, representing an average of 2.3% of the GB population

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(5 year peak mean 1996-2000)

Common greenshank, *Tringa nebularia*  
 Northwestern Europe (breeding) population  
 77 individuals, passage, representing an average of 5.5% of the GB population  
 (5 year peak mean 1996-2000)

**23. Social and cultural values:**

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

- Aesthetic
- Aquatic vegetation (e.g. reeds, willows, seaweed)
- Archaeological/historical site
- Environmental education/ interpretation
- Fisheries production
- Livestock grazing
- Non-consumptive recreation
- Sport fishing
- Sport hunting
- Tourism
- Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? **No**

If Yes, describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

**24. Land tenure/ownership:**

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+
Public/communal	+	+

**25. Current land (including water) use:**

Activity	On-site	Off-site

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Nature conservation	+	+
Tourism	+	+
Current scientific research	+	+
Recreation	+	+
Cutting of vegetation (small-scale/subsistence)	+	
Fishing: commercial	+	+
Fishing: recreational/sport	+	+
Gathering of shellfish	+	+
Bait collection	+	+
Permanent arable agriculture		+
Permanent pastoral agriculture	+	+
Hunting: recreational/sport	+	+
Industrial water supply	+	+
Industry	+	+
Sewage treatment/disposal	+	+
Harbour/port	+	+
Flood control	+	+
Irrigation (incl. agricultural water supply)		+
Mineral exploration (excl. hydrocarbons)		+
Oil/gas production	+	+
Transport route	+	+
Domestic water supply		+
Urban development		+
Non-urbanised settlements		+
Military activities	+	+
Horticulture (incl. market gardening)		+

**26. Factors (past, present or potential) adversely affecting the site’s ecological character, including changes in land (including water) use and development projects:**

*Explanation of reporting category:*

- Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
- Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

*NA = Not Applicable because no factors have been reported.*

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Disturbance to vegetation through cutting / clearing	1	Reedbeds being cut and cleared on margins of pits associated with angling. Management agreements and enforcement to address.	+		
Vegetation succession	1	Lack of reedbed management leading to scrub encroachment. Management agreement to address.	+		

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Water diversion for irrigation/domestic/industrial use	1	Abstraction causes reduced freshwater input. Review of consents well advanced but not yet implemented.	+	+	
Overfishing	2	Substantial lamprey by-catch in eel nets in River Ouse.		+	
Pollution – domestic sewage	1	Reduced dissolved oxygen in River Ouse is a barrier to fish migration. Review of consents well advanced but not yet implemented.	+	+	+
Pollution – agricultural fertilisers	1	Reduced dissolved oxygen in River Ouse is a barrier to fish migration. To be addressed through Catchment Sensitive Farming Initiatives and implementation of Water Framework Directive.	+	+	+
Recreational/tourism disturbance (unspecified)	1	Particularly illegal access by motorised recreational vehicles and craft. Control through management scheme.	+		
Other factor	1	Coastal squeeze causing loss of intertidal habitats and saltmarsh due to sea level rise and fixed defences. The Humber Flood Risk Management Strategy has been developed and is being implemented.	+		+

For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?  
Overfishing - Overfishing – to be considered through an ‘in-combination’ assessment of possible factors as part of the Review of Consents exercise.

Is the site subject to adverse ecological change? YES

### 27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	+
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	+
Site management statement/plan implemented	+	
Area of Outstanding National Beauty (AONB)		+
Special Area of Conservation (SAC)	+	
IUCN (1994) category IV	+	

b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

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**28. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

**29. Current scientific research and facilities:**

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

**Fauna.**

Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.

Seal populations are monitored by the Sea Mammal Research Unit

Humber Wader Ringing Group

Spurn Bird Observatory

National Nature Reserve monitoring

**Environment.**

Institute of Estuarine & Coastal Studies, Hull: various

Industrial Concerns: monitoring on behalf of companies such as Associated British Ports and BP

Environment Agency monitoring: various

Geomorphological studies associated with shoreline management planning

National Nature Reserve monitoring

**30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:**

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There are a four National Nature Reserves with associated facilities within the Ramsar site (Spurn, Far Ings, Donna Nook and Saltfleetby – Theddlethorpe Dunes) and a number of other visitor, information and/or education centres including the Spurn Bird Observatory, the Cleethorpes Discovery Centre, Water’s Edge and Far Ings. A wide range of Humber wide and area-specific information is available through a range of media (eg leaflets, displays, internet etc) including ‘Humber Estuary European Marine Site Codes of Conduct’ developed with a range of stakeholders to cover a range of recreational and educational activities and ‘Coastal Futures’ – a partnership project working with local communities affected by flood risk and associated issues including managed realignment includes proactive education work within schools.

**31. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

**Activities, Facilities provided and Seasonality.**

Sailing: marinas at Brough, Winteringham, Hull, Grimsby and South Ferriby.

Bathing etc: Cleethorpes (some 6m visitors/yr).

Walking/Horse riding: throughout

Beach fishing, match sea-fishing, non-commercial bait digging.

Non-commercial samphire collection

Wildfowling

Tourist amusements: Cleethorpes.

Bird watching: throughout but particularly at Blacktoft Sands RSPB reserve and the four National Nature Reserves.

**32. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, International Protected Areas, Wildlife Habitats and Biodiversity Division, Department for Environment, Food and Rural Affairs,

Zone 1/06c, Temple Quay House, 2 The Square, Temple Quay,

Bristol, BS1 1 6EB

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**33. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Project Manager - Designations, Natural England, Protected Areas Team, Northminster House,  
Northminster, Peterborough, PE1 1UA, UK

**34. Bibliographical references:**

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

**Site-relevant references**

Site-relevant references

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## **Annex H**

Natural England, Supplementary Advice on the Conservation Objectives (SACO) for the Humber Estuary SPA, dated 15 March 2019

# Humber Estuary SPA

**Last updated:** 15th March 2019

## Supplementary advice

The Supplementary Advice on Conservation Objectives (SACOs) present attributes which are ecological characteristics or requirements of the classified species within a site. The listed attributes are considered to be those which best describe the site's ecological integrity and which if safeguarded will enable achievement of the Conservation Objectives. These attributes have a target which is either quantified or qualified depending on the available evidence.

The target identifies as far as possible the desired state to be achieved for the attribute. In many cases, the attribute targets show if the current objective is to either 'maintain' or 'restore' the attribute. The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulation Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Where there is no evidence to determine a marine feature's condition, a vulnerability assessment, which includes sensitivity and exposure information for features and activities in a site, has been used as a proxy for condition. Evidence used in preparing the SACO has been cited with hyperlinks included where possible. Where references have not been provided, Natural England has applied ecological knowledge and expert judgement.

Some, but not all, of these attributes can also be used for regular monitoring of the condition of the classified features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England. As condition assessment information becomes available, the conservation advice package will be reviewed accordingly.

### When to use

You should use this information, along with the conservation objectives and case-specific advice issued by Natural England when developing, proposing or assessing an activity, plan or project that may affect the site.

Any proposals or operations which may affect the site or its features should be designed so they do not adversely affect any of the attributes in the SACO or achievement of the conservation objectives.

### Features:

*Choose one or more features and/or their sub-features below by selecting the applicable boxes in the tree. This will show the relevant targets. Where a feature has sub-features this will be indicated with a greyed out triangle below, which can be expanded.*

Avocet (*Recurvirostra avosetta*), Breeding

Avocet (*Recurvirostra avosetta*), Non-breeding

Bar-tailed godwit (*Limosa lapponica*), Non-breeding

Bittern (*Botaurus stellaris*), Breeding

Bittern (*Botaurus stellaris*), Non-breeding

Black-tailed godwit (*Limosa limosa islandica*), Non-breeding

Dunlin (*Calidris alpina alpina*), Non-breeding  
 Golden plover (*Pluvialis apricaria*), Non-breeding  
 Hen harrier (*Circus cyaneus*), Non-breeding  
 Knot (*Calidris canutus*), Non-breeding  
 Little tern (*Sternula albifrons*), Breeding  
 Marsh harrier (*Circus aeruginosus*), Breeding  
 Redshank (*Tringa totanus*), Non-breeding  
 Ruff (*Calidris pugnax*), Non-breeding  
 Shelduck (*Tadorna tadorna*), Non-breeding  
 Waterbird assemblage, Non-breeding

**Attributes:**

You can filter to show only targets for certain attributes by selecting one or more attributes from the list below (use ctrl click to select multiple). Note that only attributes for the features you have chosen are shown.

**Feature target**

'Maintain' targets do not preclude the need for management, now or in the future, to avoid a significant risk of damage or deterioration to the feature. The supporting and/or explanatory notes in the SACOs set out why the target was chosen and any relevant site based supporting information. This is based on the best available information, including that gathered during monitoring of the feature's current condition.

Feature/Subfeature name	Attribute	Target	Season	Supporting notes
<a href="#">Waterbird assemblage, Non-breeding</a>	Assemblage of species: abundance	Restore the overall abundance of the assemblage to a level which is above 153,934 whilst avoiding deterioration from its current level as indicated by the latest peak mean count or equivalent.	Non-breeding (winter and/or passage) season	<p>This will sustain the assemblage population and contribute to viable local, national and bio-geographic populations of the component species. Assemblage abundance is the annual sum of peak counts of each assemblage component species (at any time of year, though peaks tend to occur in the non-breeding season), unless otherwise stated. Five year peak means are the average of these annual peak sums for the relevant period. An assemblage component is any waterbird<sup>1</sup> using the site.</p> <p>Due to the dynamic nature of assemblage component populations this target may be subject to periodic review. However, the target assemblage abundance is considered to be the minimum standard for conservation or restoration measures and therefore where at any time the assemblage abundance is greater than the target value given, any measure or impact assessment should take account of the greater abundance. This meets with the obligation to avoid deterioration of a European site or significant disturbance of the species for</p>

which the site is classified, and seeks to avoid plans or projects giving rise to the risk of such deterioration or disturbance.

Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account. Whether to maintain or restore depends on the overall assemblage abundance (i.e. the peak mean derived from the summed peak counts of components), and should only change in response to this value, excepting natural change. Fluctuations of individual assemblage component species alone should not necessarily change the target.

Assemblage abundance is linked to the demographic rates of assemblage components, including survival (dependent on factors such as body condition which influences the ability to breed or make foraging and / or migration movements) and breeding productivity. Adverse anthropogenic impacts on either of these rates may precede changes in population abundance (e.g. by changing proportions of birds of different ages) but eventually may negatively affect abundance. These rates can be measured / estimated (particularly for the main or named components) to inform judgements of likely changes to the assemblage and associated impacts on abundance targets.

Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise whether the figures stated are the best available.<sup>1</sup> Many SPA citations omitted gulls and terns from their assemblage totals. Assessments of abundance should be consistent with the waterbirds included in citation calculations (often limited to waders and wildfowl).

#### Site-specifics:

The figure provided is based on the count period from 1996/97 - 2000/01. Since classification there has been an overall decline in the numbers of non-breeding waterbirds on the Humber Estuary, with a

				<p>recent 5 year mean peak for the assemblage of 119375 (2010/11 - 2014/15). Furthermore, the assemblage was as large as 175,768 in the mid-90s: the site's ability to host these higher numbers in the future should not be affected. This indicates that the site is currently supporting around 50,000 less waterbirds than previously. In addition, comparisons with national and regional trends indicate that site-specific factors may be affecting four species that make substantial numeric contributions to the waterbird assemblage: redshank, wigeon, ringed plover and lapwing (<a href="#">Cook et al., 2013</a>);(<a href="#">Austin et al., 2014</a>).</p> <p>N.B - Natural England are currently reviewing assemblages as features so this target may be subject to change.</p> <p>The 'numeric assemblage' has declined by 22.45% since the classification of the Humber Estuary SPA classification (34,559 individuals), with over 50,000 less waterbirds currently using the site compared to the mid-late 90's. Given the importance of the Humber at the UK and global scales for waterbirds, losing over a quarter of the waterbird assemblage since the mid-late 90's warrants a restore Conservation Objective. This is further justified by evidence suggesting that site-specific factors are influencing the declines in redshank, wigeon, ringed plover and lapwing, all of which contribute substantially to the assemblage total.</p>
<a href="#">Waterbird assemblage, Non-breeding</a>	Assemblage of species: diversity	Maintain the species diversity of the bird assemblage.	Non-breeding (winter and/or passage) season	<p>This target is required to ensure the bird assemblage reflects the diversity of species the SPA supports. Assemblage diversity is a product of species richness (the number of different species present), abundance (population size of each assemblage component species) and relative 'importance' (an assessment of the conservation status of each assemblage component, described below).</p> <p>Each component makes a different contribution to the diversity of the assemblage, and changes to some components may be considered to affect diversity more than others. Negative changes to small numbers of relatively important assemblage components may have a sim-</p>

ilar overall effect to negative changes in larger numbers of less important components. To meet the target, the populations of each of the 'main component' assemblage species to be maintained or restored are i) those present in nationally important numbers ( $\geq 1\%$  GB population); ii) migratory species present in internationally important numbers ( $\geq 1\%$  biogeographic population); iii) those species comprising  $\geq 2,000$  individuals ( $\geq 10\%$  of the minimum qualifying threshold for an internationally-important assemblage); and iv) 'named components' otherwise listed on the SPA citation. In addition to the main components, other components should be considered as these contribute collectively to the assemblage diversity, in particular proportionally abundant populations of species of conservation importance. Examples are those red-listed as Birds of Conservation Concern and / or those listed on Sections 41/42 of the NERC Act 2006 ([UK Government, 2006](#)). The species composition of an assemblage may change over time. However, to meet this target, the total number of all native waterbird species contributing to the assemblage diversity should not decline significantly.

([Eaton et al., 2009](#))

#### Site-specifics:

In addition to comprising an exceptionally large numbers of birds, an assemblage of species will often be of value for the overall variety or diversity of different species which are represented and which contribute to the size of the assemblage. This diversity is a product of both species richness (the overall number of different species represented in the assemblage) and the abundance of those species within the assemblage. Maintaining this overall diversity is considered an important element of achieving the SPA Conservation Objective.

Conservation priorities should focus on those species which make the greatest relative contribution to the non-breeding SPA assemblage i.e. those species present in either nationally important numbers or those comprising 2,000 or more individuals (i.e. 10% of the

			<p>minimum qualifying threshold for an internationally-important assemblage) where present in less than nationally important numbers. However, impact assessments should consider all elements of the assemblage, and take into account each species' site-specific contribution to the assemblage, and their status (including trends) on the site. Please seek guidance from a Natural England adviser regarding the assessment of impacts on the waterbird assemblage.</p> <p>In most instances, those species present in nationally important numbers or over 2000 individuals are listed on the citation . However, other species may also meet these criteria as waterbird populations change over time. The current status of the component species of an assemblage can be identified via BTO WeBS data.</p> <p>The target has been set using expert judgement based on knowledge of the sensitivity of the feature to activities that are occurring / have occurred on the site.</p>
<a href="#">Waterbird assemblage, Non-breeding</a>	Disturbance caused by human activity	Reduce the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed	<p>Non-breeding (winter and/or passage) season</p> <p>The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p>

			<p>'Significant' disturbance is defined by AEWA (<a href="#">The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), 2016</a>):</p> <p>“Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either</p> <ul style="list-style-type: none"> <li>I. changed local distribution on a continuing basis; and/or</li> <li>II. changed local abundance on a sustained basis; and/or</li> <li>III. the reduction of ability of any significant group of birds to survive, breed, or rear their young.”</li> </ul> <p>(<a href="#">Fox and Madsen, 1997</a>)</p> <hr/> <p>Site-specifics:</p> <p>A study of recreational disturbance in winter 2013/14 (<a href="#">Cruickshanks et al., 2010</a>); (<a href="#">Cutts and Allen, 1999</a>) indicates that in parts of the SPA recreational disturbance may be at levels which could significantly influence waterbird usage, including evidence that waterbirds are vacating some areas during periods of increased disturbance. A wide range of activities that caused disturbance were identified, with dog walking being the principal source of bird responses. The 'Humber Hounds' initiative has been set up by the Humber Nature Partnership to raise awareness and encourage sensitive dog walking. In addition, the Humber Nature Partnership is developing a Recreational Disturbance Strategy to address disturbance issues in parts of the site.</p> <p>This target has been set to reduce using expert judgement, primarily on the basis that site-specific research has indicated that recreational disturbance in some parts of the site is at a level that has the potential to substantially affect waterbirds.</p>
		Maintain concentrations and deposition of air pollutants at below the site-relevant	Year round – to ensure

<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: air quality	Critical Load or Level values given for this feature of the site on the Air Pollution Information System	the habitat remains suitable for when the feature is present	<p>This target has been included because the structure and function of habitats which support this SPA feature may be sensitive to changes in air quality. Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of feeding or roosting habitats.</p> <p>Critical Loads and Levels are thresholds below which such harmful effects on sensitive UK habitats will not occur to a noteworthy level, according to current levels of scientific understanding. There are critical levels for ammonia (NH<sub>3</sub>), oxides of nitrogen (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development.</p> <p>More information about site-relevant Critical Loads and Levels for this site is available by using the 'search by site' tool on the Air Pollution Information System (<a href="#">Centre for Ecology &amp; Hydrology (CEH), 2014</a>).</p> <p>It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic time-scales.</p> <p>Site-specifics:</p> <p>The target has been set using expert judgement based on knowledge of the sensitivity of the feature to activities that are occurring / have occurred on the site.</p>
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<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: conservation measures	Maintain the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.	Year round – to ensure the habitat remains suitable for when the feature is present	<p>This target has been included because active and ongoing conservation management is often needed to protect, maintain or restore this feature at this site. Other measures may also be required, and in some cases, these measures may apply to areas outside of the designated site boundary in order to achieve this target. Further details about the necessary conservation measures for this site can be provided by Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and / or management agreements.</p> <p>Site-specifics:</p> <p>Further details about the necessary conservation measures for this site and site-specific management plans can be provided by Natural England if required.</p> <p>The target has been set using expert judgement based on knowledge of the sensitivity of the feature to activities that are occurring / have occurred on the site.</p>
<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: extent and distribution of supporting habitat for the non-breeding season	Restore the extent, distribution and availability of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding) to an unknown extent, based on restoring natural estuarine functioning.	Year round – to ensure the habitat remains suitable for when the feature is present	<p>The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection. This target may apply to supporting habitat which also lies outside the site boundary. Inappropriate management and direct or indirect impacts which may affect the extent and distribution of habitats may adversely affect the population and alter the distribution of birds.</p> <p>Site-specifics:</p> <p>The site's ability to support and sustain an assemblage comprising a very large number of birds (in excess of 20,000) made up of a diverse mix of species will be reliant on the overall quality and diversity of the habitats that support them. The feeding and roosting</p>

habitats which support the assemblage will occur within, and in some cases outside, the site boundary. This target is applicable to both circumstances. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection. The principal habitats known or likely to support the assemblage feature at this SPA are:

- Intertidal sand and mudflats
- Coastal lagoons
- Saltmarsh
- Tidal reedbeds
- Freshwater wetlands
- Inland areas of wet grassland, rough grassland and agricultural land (both arable land and permanent pasture)
- Annual vegetation of driftlines (sand and shingle)
- Artificial structures such as derelict pier/jetty structures, flood defences

Further information on specific areas used by this feature can be found in the feature description.

References: ([Cutts, 2014 Pers Comm](#));([Baylis, 2013](#)); ([Calbrade, 2013](#)); ([Ross-Smith et al., 2013](#)); ([Holt et al., 2012](#)); ([Mander, 2012](#)); ([Shepherd, Various](#)); ([Shepherd, Various](#));([Coates, 2011](#)); ([Cruickshanks et al., 2010](#));([Catley, 2009](#))([McParland and Folland, 2009](#)); ();([Black & Veatch Ltd., 2008](#)); ([Mander et al., 2006](#)); ([Black & Veatch Ltd., 2005](#)); ([Mander and Cutts, 2005](#));([Stillman et al., 2005](#)) ([Allen et al., 2003](#)); ([Mander and Cutts, 2003](#));([Catley, 2000](#))

There is a loss of extent to the SAC mudflat and sand flat feature, as well as the Atlantic Saltmeadow feature. There is also predicted long-term loss to supporting habitats based on EA modelling of future coastal squeeze. For this reason a 'Maintain' target is inappropriate and a 'Restore' target has been selected. A specific target in ha has not been set due to the multiple habitats involved and the dynamic nature of the estuarine system.

<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: quality of supporting non-breeding habitat	Maintain the structure, function and availability of the following habitats which support the assemblage feature for all stages (moulting, roosting, loafing, feeding) of the non-breeding period; <p>The principal habitats known or likely to support the assemblage feature at this SPA are:</p> <ul style="list-style-type: none"> <li>Intertidal sand and mudflats</li> <li>Coastal lagoons</li> <li>Saltmarsh</li> <li>Tidal reedbeds</li> <li>Freshwater wetlands</li> <li>Inland areas of wet grassland, rough grassland and agricultural land (both arable land and permanent pasture)</li> <li>Annual vegetation of driftlines (sand and shingle)</li> <li>Artificial structures such as derelict pier/jetty structures, flood defences</li> </ul>	Year round – to ensure the habitat remains suitable for when the feature is present	<p>The site's ability to support and sustain an assemblage comprising a very large number of birds (in excess of 20,000) made up of a diverse mix of species will be reliant on the overall quality and diversity of the habitats that support them. The feeding and roosting habitats which support the assemblage will occur within, and in some cases outside, the site boundary. This target is applicable to both circumstances.</p> <p>Due to the large number of species and natural fluctuations in the overall composition of an assemblage, it is not practical to provide specific targets relating to each supporting habitat relevant to the assemblage. Generally speaking, the specific attributes of each supporting habitat may include vegetation characteristics and structure, water depth, food availability, connectivity between nesting, roosting and feeding areas both within and outside the SPA. Further advice will be provided by Natural England on a case by case basis. The main component-species of the assemblage at this SPA include:</p> <hr/> <p>Site-specifics:</p> <p>Components of the assemblage may have specific requirements and it is recommended that you seek further advice from a Natural England adviser.</p> <p>The principal habitats known or likely to support the assemblage feature at this SPA are:</p> <ul style="list-style-type: none"> <li>Intertidal sand and mudflats</li> <li>Coastal lagoons</li> <li>Saltmarsh</li> <li>Tidal reedbeds</li> <li>Freshwater wetlands</li> <li>Inland areas of wet grassland, rough grassland and agricultural land (both arable land and permanent pasture)</li> <li>Annual vegetation of driftlines (sand and shingle)</li> <li>Artificial structures such as derelict pier/jetty structures, flood defences</li> </ul>
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				<p>The target has been set using expert judgement based on knowledge of the sensitivity of the feature to activities that are occurring / have occurred on the site.</p>
<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: water quality - contaminants	Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels.	Year-round	<p>Contaminants may have a range of biological effects on different species within the supporting habitat, depending on the nature of the contaminant (<a href="#">Joint Nature Conservation Committee (JNCC), 2004</a>), (<a href="#">UK Technical Advisory Group on the Water Framework Directive (UKTAG), 2008</a>), (<a href="#">Environment Agency, 2014</a>). This in turn can adversely affect the availability of bird breeding, rearing, feeding and roosting habitats, and potentially bird survival.</p> <p>Site-specifics:</p> <p>This target has been set based on data provided by the EA, including their assessment of the Humber water bodies. (<a href="#">Environment Agency, 2014</a>)</p> <p>There is evidence from survey or monitoring that shows the feature to be in a good condition and/or currently un-impacted by anthropogenic activities.</p>
<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: water quality - dissolved oxygen	Maintain the dissolved oxygen (DO) concentration at levels equating to Good Ecological Status (specifically $\geq 5.7$ mg per litre (at 35 salinity) for 95 % of the year)], avoiding deterioration from existing levels.	Year-round	<p>Dissolved Oxygen (DO) levels affect the condition and health of supporting habitats. Excessive nutrients and/or high turbidity can lead to a drop in DO, especially in warmer months. Low DO can have sub-lethal and lethal impacts on fish and infauna and epifauna communities (<a href="#">Best et al., 2007</a>) and hence can adversely affect the availability and suitability of bird breeding, rearing, feeding and roosting habitats. However, there is a significant amount of natural variation that should be considered.</p> <p>Site-specifics:</p> <p>The Humber Estuary SAC sits within four WFD water bodies: Humber Lower, Humber Middle, Humber Upper, Lincolnshire.</p>

			<p>From 2009 to 2012 the dissolved oxygen levels within the SAC have been classified as achieving Good Ecological Potential. However, in 2013 and 2014 the Humber Upper water body failed for WFD due to a drop in DO levels. (<a href="#">Environment Agency, 2014</a>)</p> <p>There is a dissolved oxygen (DO) sag that occurs annually in the tidal Ouse during the summer months. The sag normally occurs in June and July and is not thought to have an impact on avian features; it is a natural result of an increase in temperature combined with reduced flow. N.B anthropogenic impacts could push the sag out of this natural range and bring the DO levels even lower or extend the period during which it occurs naturally. E.g. abstraction from rivers could reduce flow further. Although the sag is natural its tolerance limits are low if there is any additional impact.</p> <p>This target has been set based on data provided by the EA, including their assessment of the Humber water bodies.</p> <p>There is evidence from survey or monitoring that shows the feature to be in a good condition and/or currently un-impacted by anthropogenic activities.</p>
<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: water quality - nutrients	Maintain water quality and specifically mean winter dissolved inorganic nitrogen (DIN) at a concentration equating to High Ecological Status (specifically mean winter DIN is < 12 µM for coastal waters), avoiding deterioration from existing levels.	<p>Year-round High concentrations of nutrients in the water column can cause phytoplankton and opportunistic macroalgae blooms, leading to reduced dissolved oxygen availability. This can impact sensitive fish, epifauna and infauna communities (<a href="#">Devlin et al., 2007</a>), (<a href="#">Best, 2014</a>) and hence adversely affect the availability and suitability of bird breeding, rearing, feeding and roosting habitats. The aim is to seek no further deterioration or improve water quality.</p> <p>Site-specifics:</p> <p>This target has been set based on data provided by the EA, including their assessment of the Humber water bodies (<a href="#">Environment Agency, 2014</a>).</p>

				There is evidence from survey or monitoring that shows the feature to be in a good condition and/or currently un-impacted by anthropogenic activities.
<a href="#">Waterbird assemblage, Non-breeding</a>	Supporting habitat: water quality - turbidity	Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat.	Year-round	<p>Water turbidity is a result of material suspended in the water, including sediment, plankton, pollution or other matter from land sources. Turbidity levels can rise and fall rapidly as a result of biological (eg plankton blooms), physical (eg storm events) or human (eg development) factors. Prolonged changes in turbidity may influence the amount of light reaching supporting habitats, affecting the primary production and nutrient levels of the habitat's associated communities. Changes in turbidity may also have a range of biological effects on different species within the habitat, eg affecting their abilities to feed or breathe.</p> <p>A prolonged increase in turbidity is indicative of an increase in suspended particulates. This has a number of implications for the aquatic / marine environment, such as affecting fish health, clogging the filtering organs of suspension feeding animals and affecting sedimentation rates. This in turn can adversely affect the availability and suitability of bird breeding, rearing, feeding and roosting habitats.</p> <p>Site-specifics:</p> <p>The target has been set using expert judgement based on knowledge of the sensitivity of the feature to activities that are occurring / have occurred on the site.</p>

See further guidance on how to [undertake an HRA for a plan or project on a European site](#).

These tables bring together the findings of the best available scientific evidence which may be updated or supplemented in further publications from Natural England and other sources. You may decide to use other additional sources of information.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European site.

## **Annex I**

'Wintering Birds: Halton and Killingholme Marshes. Final Report to Able UK' January 2019, JBA Consulting Annex J

# Wintering Birds: Halton and Killingholme Marshes

## Final Report

January 2019

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## Revision history

Revision Ref/Date	Amendments	Issued to
24/12/2018	Draft Report	Laura Hill (ABLE)
30/01/2019	Revised in line with comments	Able UK
14/03/2019	Further revisions (graphs and wader day calculations)	Able UK
08/04/2019	Summary of Targets	Able UK

## Contract

This report describes work commissioned by Dave Sargent, on behalf of Able UK, by a letter dated 18<sup>th</sup> October 2017. Chris Toop, Rob Dalziel and Kieran Sheehan of JBA Consulting carried out this work.

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## Purpose

This document has been prepared as a Final Report for Able UK. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared. JBA Consulting has no liability regarding the use of this report except to Able UK.

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## **Carbon footprint**

JBA is aiming to reduce its per capita carbon emissions.

## Executive summary

The first year of Wintering bird surveys across the ALP and AMEP sites (Halton and Killingholme Marshes) highlighted several areas which are key to birds of conservation interest on the Humber Estuary. The sites recorded good numbers of Avocet, Black-tailed Godwit, Curlew, Dunlin, Lapwing, Mallard, Redshank and Shelduck. The surveys over Autumn and Winter showed that several sites were more heavily populated than others, with preferential foraging, roosting and loafing sites.

On the ALP site (Halton Marshes), most birds on the foreshore congregated around derelict jetties and groynes on either side of the boundary between FS4 and 5, or at East Halton Skitter. Both locations have areas above normal high tide suitable for roosting birds or afford access to other foraging sites. Winters Pond provides some refuge for some estuarine birds, especially Black-tailed Godwit and Curlew. The ponds here provide the best site for wildfowl within the study area, with large assemblages of ducks, swans, geese and grebes.

Away from the river, particular groups of fields provided extra foraging for certain species, or groups of species. Fields around the new wetland habitat site on Halton Marshes were particularly important for Golden Plover, Lapwing and Mallard. Unimproved grasslands near East Halton village hosted regular flocks of Curlew, while the archaeological investigation fields, which were not back-filled, also provided for an assemblage of waders and wildfowl, especially Lapwing and Shelduck.

In the AMEP (Killingholme) area, birds were seen to occupy Foreshore Section 2 in high densities, and fields inland also supporting good numbers of Curlew. The upper saltmarsh in FS2 remains above water on all but the highest of tides and this provides shelter in which to roost at high tide.

A freshwater drainage outfall in FS3 showed a distinct cluster of waders and wildfowl foraging or loafing on the mudflats. Birds from here, with birds from FS2, were also dependent on North Killingholme Claypits at high tide.

In the south of the area, fields excluded from development also hold locally important numbers of birds, especially Curlew.

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## Abbreviations

ALP	Able Logistics Park
AMEP	Able Marine Energy Park
EMS	European Marine Site
GIS	Geographical Information System
Lincs	Lincolnshire
LWT	Lincolnshire Wildlife Trust
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

# 1 Introduction

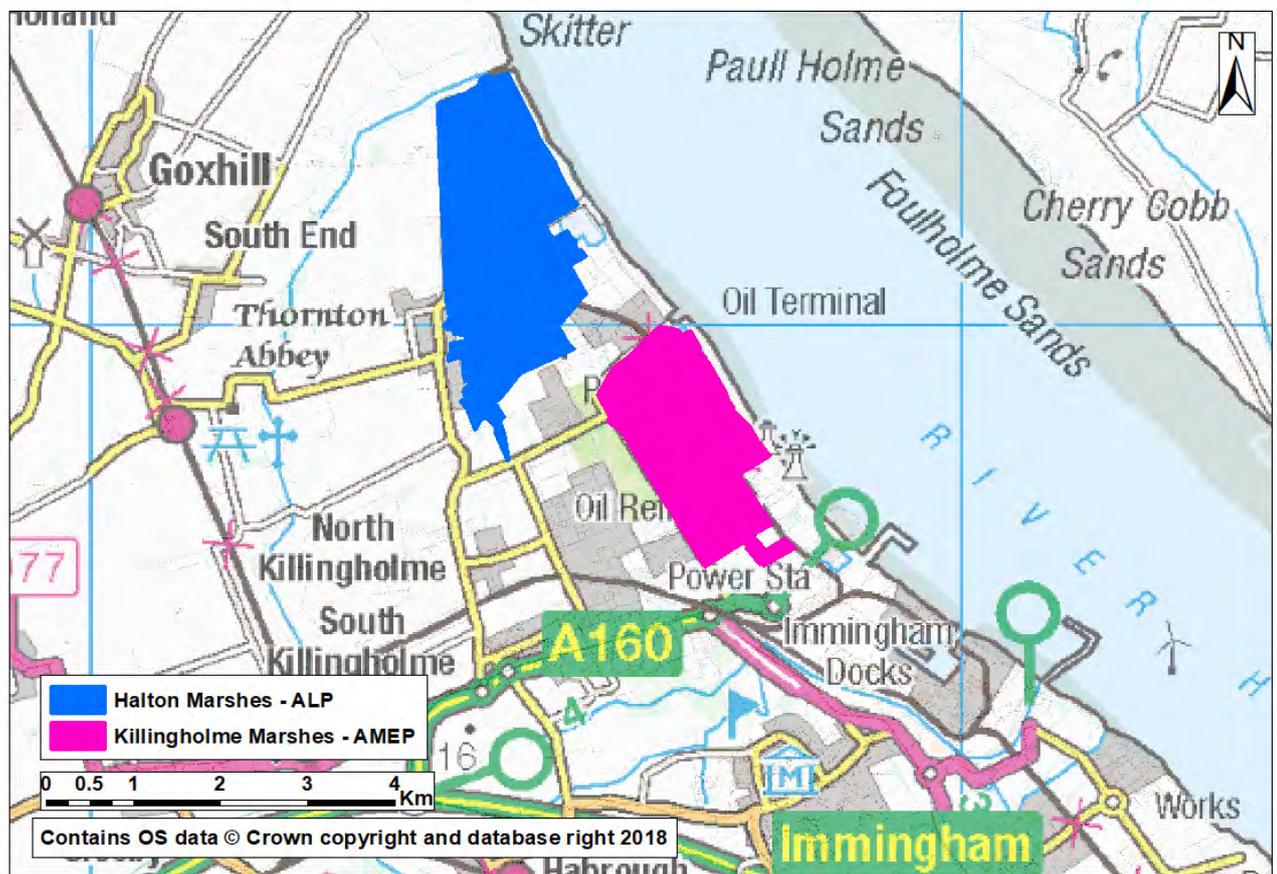
## 1.1 Background

Able UK propose to undertake two large developments along the Humber frontage in areas known as Halton Marshes and Killingholme Marshes. The northern area (Halton Marshes) is designated as the Able Logistics Park (ALP), while the southern area (Killingholme Marshes) is the proposed Able Marine Energy Park (AMEP).

As part of the planning permission it is required that monitoring takes place to determine the effect of development upon bird species designated as part of the Humber Estuary European Marine Site (EMS). This comprises the Humber Estuary SAC, SPA, SSSI and Ramsar designations.

JBA Consulting were appointed to undertake this bird monitoring work.

## 1.2 Location



**Figure 1-1: Location of ALP and AMEP sites**

## 1.3 Survey areas and naming

### 1.3.1 ALP – Halton Marshes

Previous studies of the whole site have resulted in a set of field identification numbers, and foreshore section numbers (these are shown in Appendix A). The field numbers were adopted from earlier Humber South Bank bird usage studies and use the Mott MacDonald numbering for consistency across both sites (2009), however the

same study did not cover the entire surveyed foreshore. Therefore, the foreshore section references are from baseline surveys undertaken by IECS.

The ALP area covers Fields 1 to 58, and foreshore Sections 4, 5 and 6. Also included within this area are the small mudflat area associated with the East Halton Beck outfall known as East Halton Skitter, or just 'the Skitter', Winters Pond, an area of flooded clay pits, mixed woodland and reedbeds situated in the south east of the area, and strongly associated with Field 29. Sightings associated with a pond within the current car storage area, immediately adjacent to the east end of Field 38 are also included here, this site is referred to as the Car Park Pond.

Fields 4 – 12 form the Halton Marsh Wet Grassland (HMWG) creation scheme which was designed as mitigation for the ALP proposals. Works on this area commenced during the survey period.

### 1.3.2 AMEP – Killingholme Marshes

Most of this area has already been developed and surveys concentrated on Fields 88 to 98, 103 and 109. Field 109 is included, despite it lying outside the formal development boundary, it is however, immediately adjacent. Foreshore Section 2 and 3 are included (foreshore Section 1 is around the ore terminal south of the oil terminal and not included in this survey).

In addition, this survey area included the Tank Field (oil storage caverns) at the south end, North Killingholme Haven Clay Pits; a Lincolnshire Wildlife Trust (LWT) reserve, and another storage pond adjacent to Field 109 and along the road from the nature reserve, we refer to this as Clough Lane Pond.

## 2 Methodology

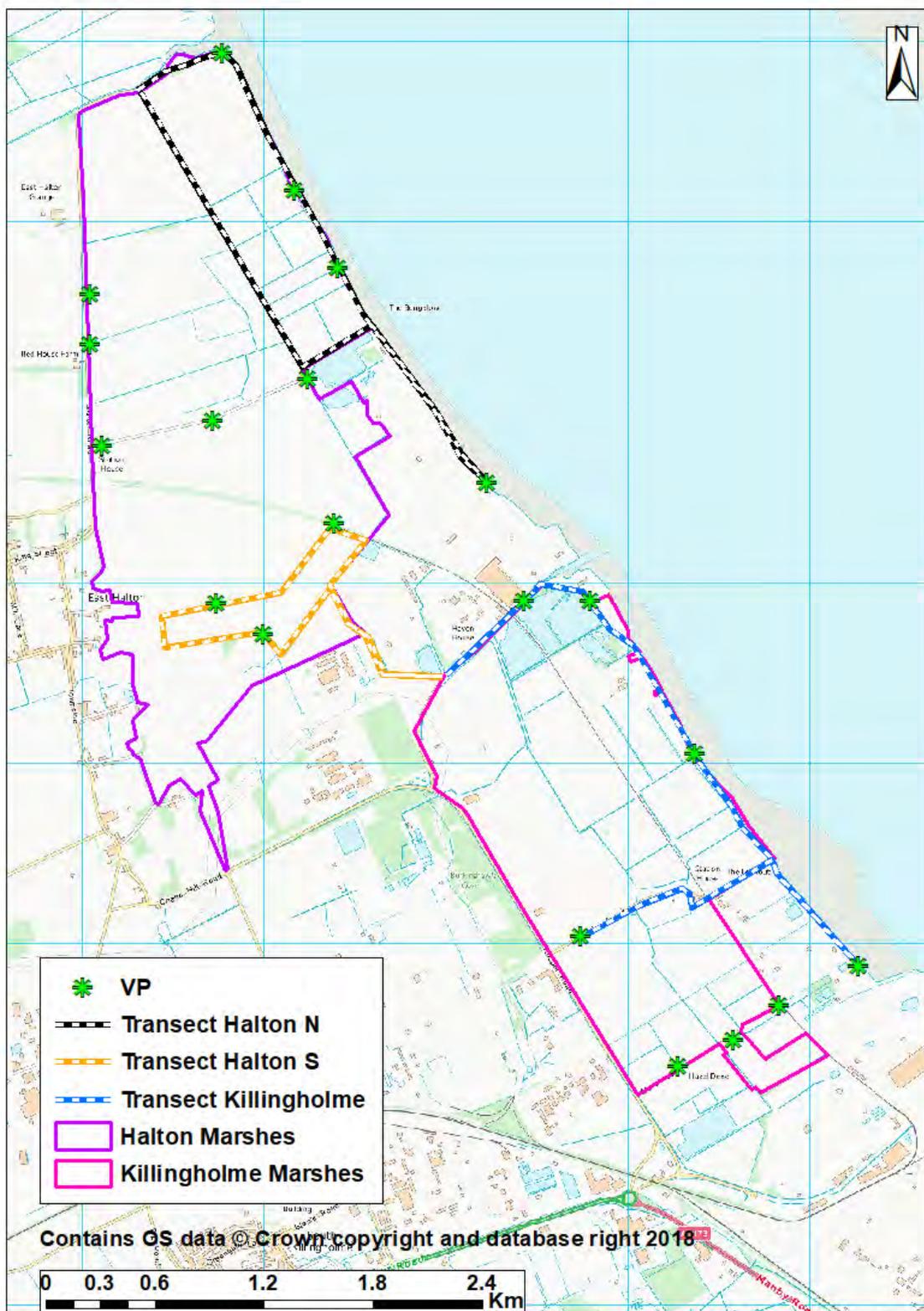
### 2.1 Transects and Vantage Points

Both sites are fairly large and often have intermediate features which prevent simply undertaking vantage point surveys. It was therefore decided to base the surveys on transects across both areas as this allows views into each parcel of land. The transect was to be walked at a steady pace, with frequent stops to scan areas where birds may be loafing inconspicuously. Some parcels of land remained difficult to observe on transects and, therefore, vantage points for these areas were also included.

Routes of the transects and specific vantage point locations are shown in figure 2.1 below. These routes explore areas proposed for development and also those areas which are earmarked as compensation areas for lost habitat.

Two surveyors were used for each visit and the main pair alternated routes to even out potential surveyor bias. The two principal surveyors were Chris Toop, JBA's Lead Ornithologist, and Rob Dalziel, an experienced bird surveyor. On occasions when staff were unavailable, Kieran Sheehan, JBA's Lead Ecologist and Richard Wilson, a sub-contracted ornithologist, were used.

Using two surveyors, it was possible to drop one off at the north end of the Killingholme transect. This surveyor then walked the Halton South route, before following the Killingholme transect to the south. During this period, the other surveyor drove to Halton North and walked the loop and visited the roadside vantage points, before driving to meet the Killingholme surveyor. Working as a team, the two surveyors then visited the Marsh Road vantage points to the south. When Killingholme was walked in the opposite direction, Marsh Road was visited first.



**Figure 2-1: Transect routes and vantage point locations**

## 2.2 Survey timetable

The initial frequency for the monitoring was provided by Natural England, who requested:

- Autumn Passage –autumn migration. Weekly visits between September to November inclusive are advised due to high turnover of birds during migration
- Winter - two surveys per month between October to March inclusive;
- Spring Passage – at least one spring migration. Weekly visits between March to Mid-May inclusive are advised due to high turnover of birds during migration.

Natural England suggested Autumn passage surveys covered September to November inclusive, however, due to contract management difficulties, surveys did not commence until the end of September 2017 (see Table 2-1).

Data from Autumn and Spring only visits, where these overlap with the Winter period, are included in species accounts, despite the change from weekly to fortnightly survey visits. As these fall within the Winter survey period, they provide additional information of site use. Some species were present for some time during the Autumn/Winter overlap and missing out the data from Autumn only visits would provide an incomplete picture. Surveys were proposed to be more regular throughout the whole survey period during 2018-2019, with surveys finishing earlier. April and May surveys tended to collect data on resident breeding birds, rather than passage species.

**Table 2-1 Dates of Surveys**

2017		2018	
		12/01/2018	Winter
		24/01/2018	Winter
		07/02/2018	Winter
28/09/2017	Autumn Passage	22/02/2018	Winter
02/10/2017	Autumn	07/03/2018	Spring Passage
11/10/2017	Autumn/Winter	15/03/2018	Winter/Spring
18/10/2017	Autumn	21/03/2018	Spring
23/10/2017	Autumn/Winter	28/03/2018	Winter/Spring
01/11/2017	Autumn	04/04/2018	Spring
08/11/2017	Autumn/Winter	10/04/2018	Spring
16/11/2017	Autumn	18/04/2018	Spring
22/11/2017	Autumn/Winter	26/04/2018	Spring
30/11/2017	Autumn	02/05/2018	Spring
05/12/2017	Winter	09/05/2018	Spring
21/12/2017	Winter	16/05/2018	Spring

### 2.3 Target Species List

A list of key survey species was drawn up using the citations for the Humber Estuary SPA, SAC, Ramsar and SSSI and based on previous assessments as to which species were most likely to be affected by the proposed works. This was largely based on those specifically listed in the SPA features of interest list, either individually (as internationally important populations), or as part of overall number of birds (internationally important assemblage). The agreed scheme-specific key species for both ALP and AMEP (10 waders and 4 ducks) are shown in bold in Table 2-1 (below).

**Table 2-2: Humber EMS Key Species List**

<b>Avocet</b>	<b><i>Recurvirostra avosetta</i></b>	<b>Wintering, breeding, assemblage &amp; SSSI</b>
<b>Bar-tailed Godwit</b>	<b><i>Limosa lapponica</i></b>	<b>Wintering, assemblage &amp; SSSI</b>
Bittern	<i>Botaurus stellaria</i>	Wintering, breeding & SSSI
<b>Black-tailed Godwit</b>	<b><i>Limosa limosa</i></b>	<b>Wintering, passage, assemblage &amp; SSSI</b>
<b>Curlew</b>	<b><i>Numenius arquata</i></b>	<b>Assemblage &amp; SSSI</b>
Dark-bellied Brent Goose	<i>Branta bernicla bernicla</i>	Assemblage & SSSI
<b>Dunlin</b>	<b><i>Calidris alpina</i></b>	<b>Wintering, passage, assemblage &amp; SSSI</b>
Goldeneye	<i>Bucephala clangula</i>	Assemblage & SSSI
<b>Golden Plover</b>	<b><i>Pluvialis apricaria</i></b>	<b>Wintering. Assemblage &amp; SSSI</b>
Greenshank	<i>Tringa nebularia</i>	Assemblage & SSSI
<b>Grey Plover</b>	<b><i>Pluvialis squatarola</i></b>	<b>Assemblage &amp; SSSI</b>
Hen Harrier	<i>Circus cyaneus</i>	Wintering
Knot	<i>Calidris canuta</i>	Wintering, passage, assemblage & SSSI
<b>Lapwing</b>	<b><i>Vanellus vanellus</i></b>	<b>Assemblage &amp; SSSI</b>
<b>Mallard</b>	<b><i>Anas platyrhynchos</i></b>	<b>Assemblage</b>
Marsh Harrier	<i>Circus aeruginosus</i>	Breeding
Oystercatcher	<i>Haematopus ostralegus</i>	Assemblage & SSSI
Pochard	<i>Aythya farina</i>	Assemblage & SSSI
<b>Redshank</b>	<b><i>Tringa totanus</i></b>	<b>Wintering, passage, assemblage &amp; SSSI</b>
Ringed Plover	<i>Charadrius hiaticula</i>	Assemblage & SSSI
<b>Ruff</b>	<b><i>Philomachus pugnax</i></b>	<b>Passage, assemblage &amp; SSSI</b>
Sanderling	<i>Calidris alba</i>	Assemblage & SSSI
Scaup	<i>Aythya marila</i>	Assemblage & SSSI
<b>Shelduck</b>	<b><i>Tadorna tadorna</i></b>	<b>Wintering. Assemblage &amp; SSSI</b>
<b>Teal</b>	<b><i>Anas crecca</i></b>	<b>Assemblage &amp; SSSI</b>
Turnstone	<i>Arenaria interpres</i>	Assemblage & SSSI
<b>Wigeon</b>	<b><i>Anas penelope</i></b>	<b>Assemblage &amp; SSSI</b>
Whimbrel	<i>Numenius phaeopus</i>	Assemblage & SSSI

Other wildfowl and wading birds observed were also recorded. This was to ensure full coverage of species presence in the event that other important wintering or passage populations were identified during site surveys, which may be added to the list in the future. Gulls were excluded from records, as were rails and their allies (e.g. Moorhen *Gallinula chloropus*).

Following commencement of the surveys, discussions were held between Able and NLC regarding the planning permission for ALP, with particular emphasis on species judged to be especially important for this site. The appropriate assessment undertaken as part of the planning process found that only **Curlew**, **Golden Plover**, **Lapwing** and **Ruff** were considered to be at risk. The HMWG scheme was also designed, in part, for **Black-tailed Godwit** and these are collectively known as the Target Species. These five target species are considered in additional detail in the Species Accounts section below.

For the ALP area only, these five species have also been subject to additional analysis to determine the number of 'wader days' these were recorded on. This method of

determining a mean site usage for certain species uses the survey data to calculate a mean number of birds per visit and is then multiplied by the number of days per survey season.

Whilst undertaking these calculations the number of days between the first and last surveys of each season were used. This means that the Autumn passage figures are based on 28<sup>th</sup> September to 30<sup>th</sup> November and not 1<sup>st</sup> September to 3<sup>rd</sup> November, likewise, the winter period was declared as commencing at the beginning of October, but visits were bi-monthly (for winter) so the first counting survey was the 11<sup>th</sup> October. Using the survey dates gives 63 days of Autumn passage coverage, 155 days for winter and 70 days for Spring passage. Using calendar dates would have given 90, 181 and 75 days for each season. Appendix C contains tables showing both sets of data for future comparisons.

## 2.4 Constraints

By undertaking predominantly transect surveys, some disturbance to foraging or loafing birds is inevitable, and this brings up some inherent issues with the methodology. Birds flushed by a figure moving along the elevated floodbank could move further along, or into the second surveyors transect and, therefore, be double-counted. Each surveyor was very aware of this risk and made strenuous efforts to not count the same birds over and over whilst progressing along the route.

All the elevated transects are widely used by members of the public, for dog-walking, sea-fishing, horse riding, jogging and birdwatching. Therefore, the additional disturbance caused by the survey was indicative of existing disturbance episodes. Birds flushed during surveys behaved as birds flushed by other users, or predators, would, and this provides valuable insight into how the wider land is utilised by the target bird species.

For a short period (22<sup>nd</sup> and 30<sup>th</sup> November and 5<sup>th</sup> December) transects were amended. Explosive demolition of the old Killingholme power station was taking place, leading to a footpath closure affecting the southern part of the Halton South transect. To mitigate this, the Killingholme surveyor continued from North Killingholme Haven, through the docks, to complete the southern 'tail' of the Halton North transect. Meanwhile the Halton North surveyor completed a loop from East Halton which returned via the northern leg of the original route. This route ensured that all areas of the site still received sufficient survey coverage.

Logistically, the surveys are resource-heavy, and it was not attempted to match surveys to particular tidal states. However, due to the large number of surveys over the 6.5 month period, a representative selection of tidal states was encountered and, as a result, we are confident that bird use, as affected by high and low tide, are adequately covered by these surveys.

The delay in commissioning the surveys curtailed the Autumn passage survey season, missing three weeks at the beginning of September. This could affect seasonal calculations of passage birds, and early migrants may have been missed.

### 3 Species Accounts

#### 3.1 Introduction

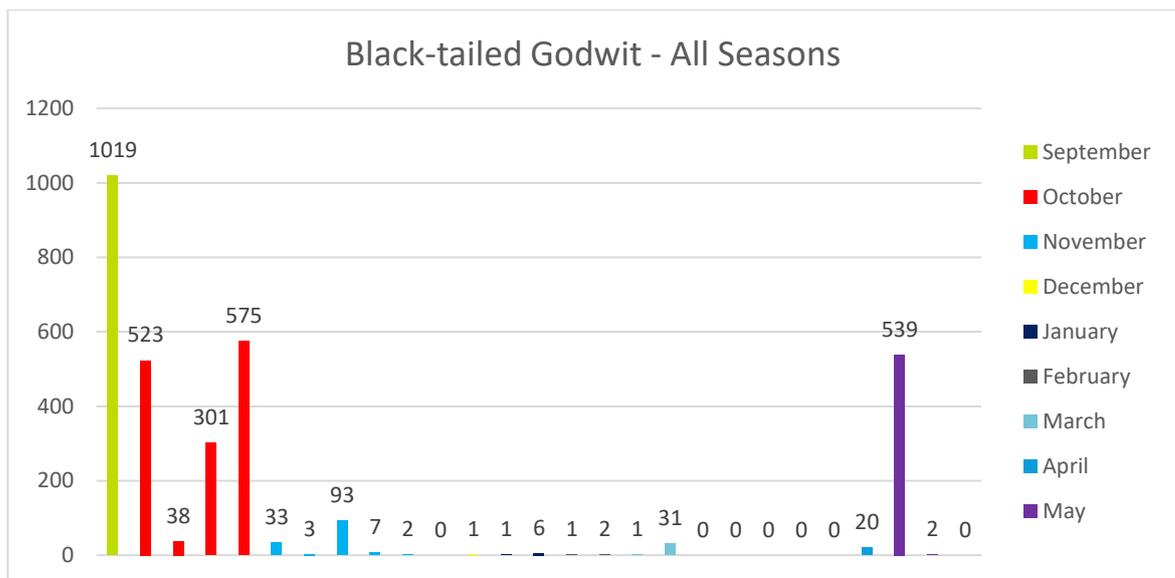
All key species were observed during the survey period, but only Curlew, Lapwing and Mallard were observed on every survey visit. Two of the wider key species listed were not observed at all on any of the 2017-2018 surveys: Dark-bellied Brent Goose and Hen Harrier. None of these species is therefore considered further in the species accounts.

#### 3.2 Target Species

##### 3.2.1 Black-tailed Godwit

The Humber is considered particularly important for its Autumn passage populations (Allen *et al*, 2003) and this trend was reflected during the 2017-2018 survey period. Peak counts were obtained from the September survey (1,019) and throughout October, when flocks roosting on North Killingholme claypits peaked at 655.

From November onwards, numbers reduced considerably and the peak in numbers on 16<sup>th</sup> November included 45 birds overflying the area at height from the direction of Barton Claypits, towards South Killingholme – Pyewipe – Grimsby.



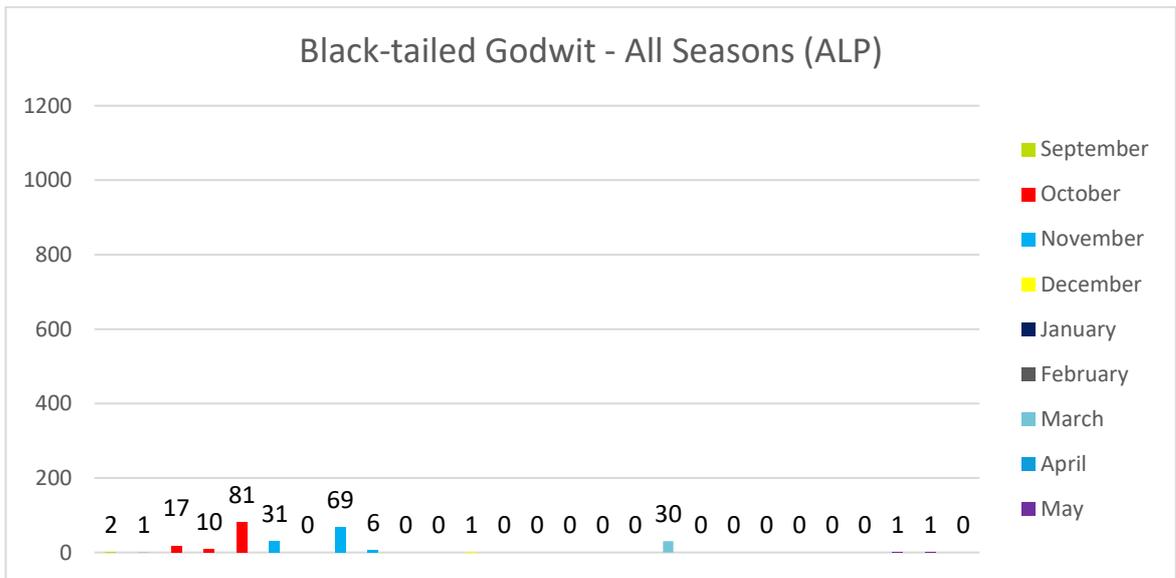
**Figure 3-1: Temporal distribution of Black-tailed Godwit**

The 539 birds seen in May were presumed to be returning non-breeding birds.

Black-tailed Godwit are an AMEP target species and the HMWG was designed in part as compensation for previously identified areas used by this species. As one of the five species listed as a target species in the scheme it is dealt with in more detail.

#### ALP – Halton Marshes

Within the ALP area, Black-tailed Godwit were recorded in small groups along the foreshore, but with clear concentrations around the jetties on the boundary of foreshore sections 4 and 5 and at East Halton Skitter. Groups of birds were largely more common in the Autumn, however a group of 25 birds was foraging on the grassland adjacent to Winters Pond on 15<sup>th</sup> March 2018. A small group of 7 were also on field 32 on the same date. The only other group of birds recorded away from the river were an overflying flock of 45 birds heading SE from above East Halton towards the Killingholme area.



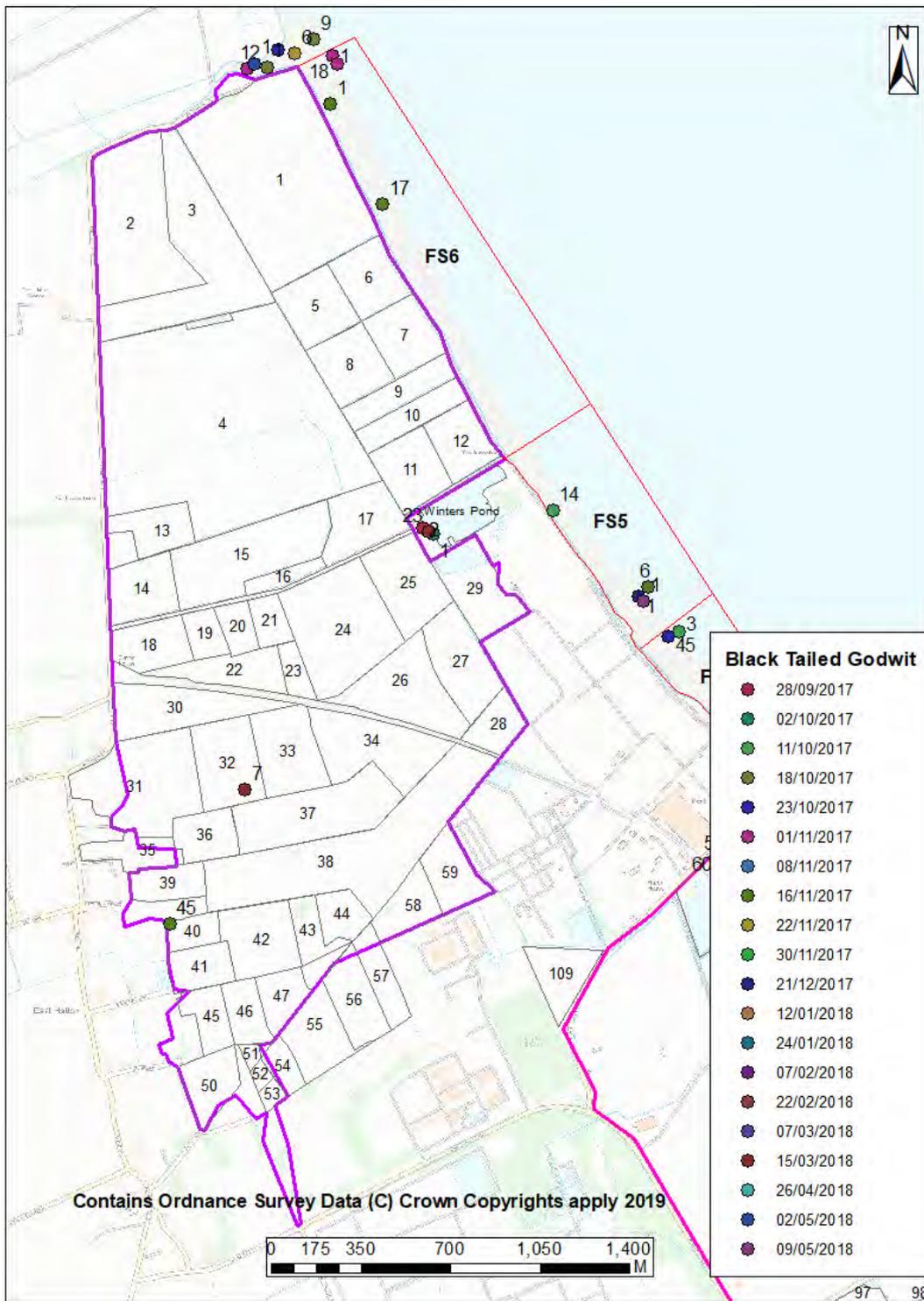
**Figure 3-2: Black-tailed Godwit monthly distribution (ALP)**

Detailed analysis of the seasonal findings has allowed a calculation of overall 'wader days' to be made. This covers the mean numbers of birds seen per visit multiplied by the number of days per survey season. These are 63 days from the first survey up to the last November survey (Autumn passage), 155 days between the 11<sup>th</sup> October and 15<sup>th</sup> March (Winter – allowing for bi-monthly visit requirement), and 70 days between the first March survey and the final mid-May survey (Spring passage).

Numbers for entire survey period (Autumn-Winter-Spring) are not fully representative of population dynamics across the site and therefore an overall figure is not given.

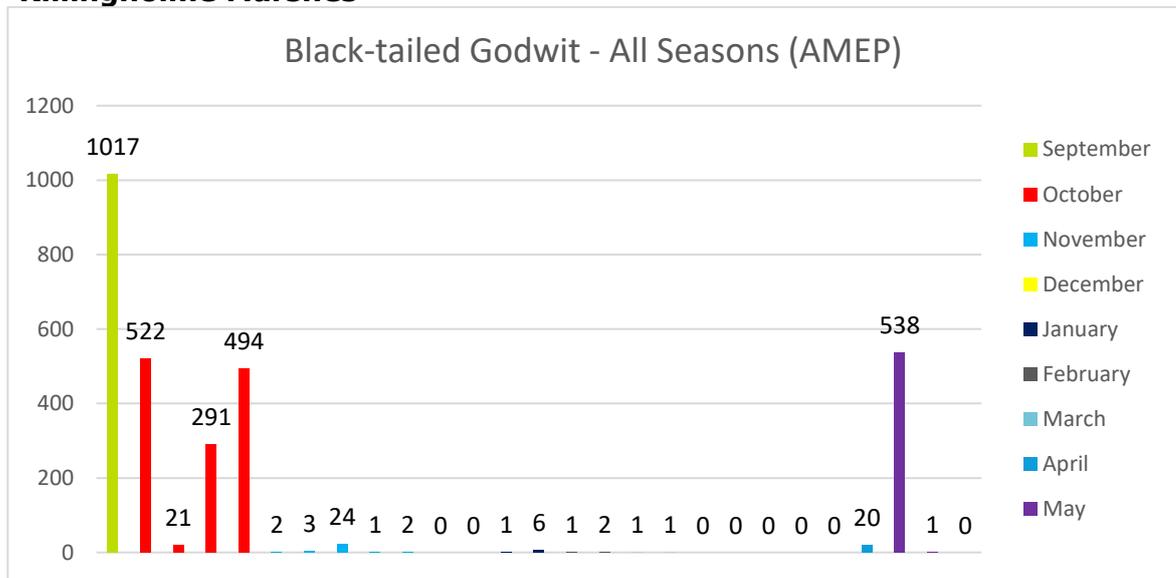
**Table 3-1: Black-tailed Godwit seasonal wader days**

<b>Black-tailed Godwit</b>	<b>Total</b>	<b>Autumn</b>	<b>Winter</b>	<b>Spring</b>
Total No. of birds	250	217	245	32
Mean per visit	9.26	21.7	15.31	2.91
<b>Wader Days</b>		<b>1367.1</b>	<b>2373.44</b>	<b>203.64</b>



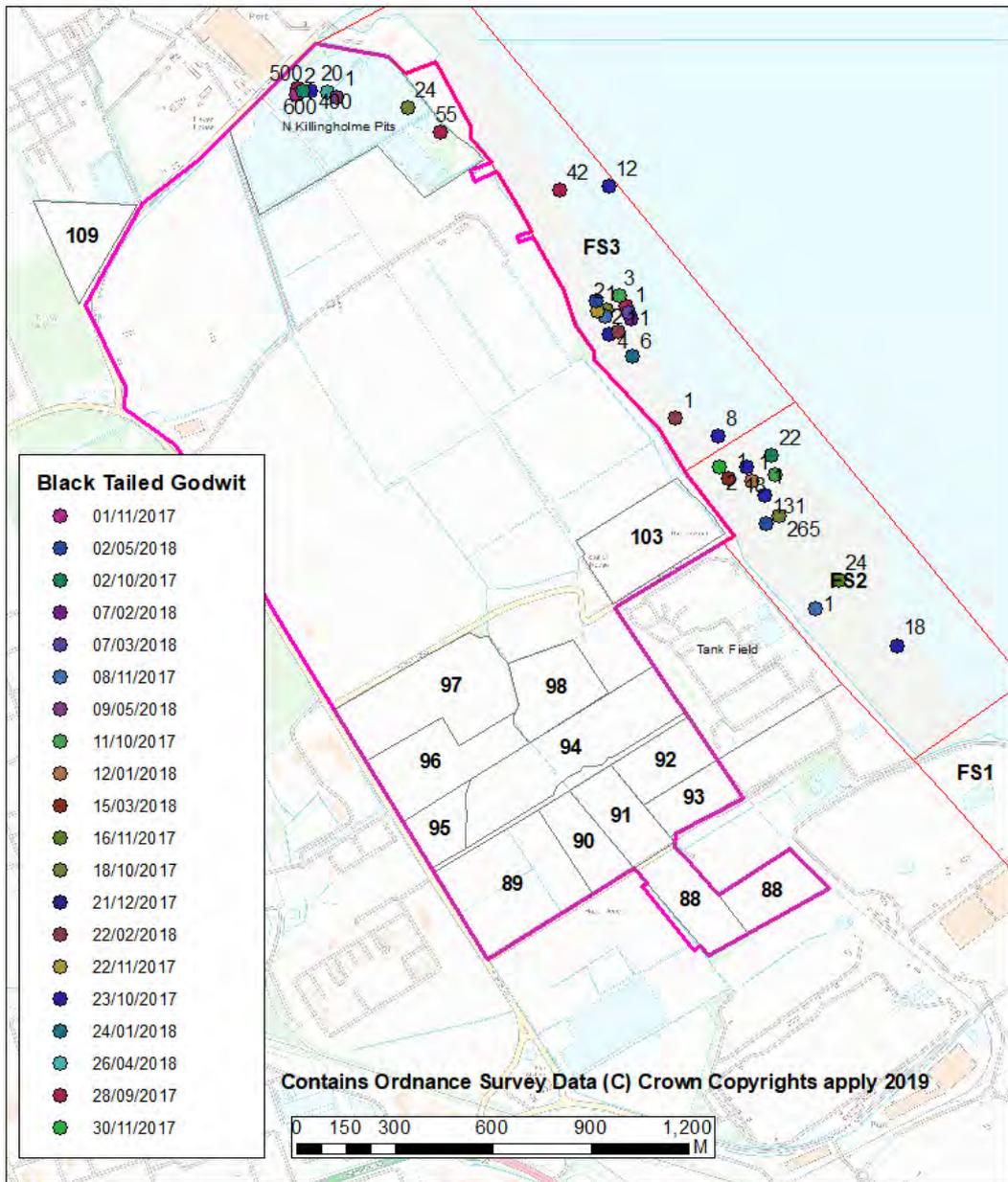
**Figure 3-3: Black-tailed Godwit (ALP only)**

**AMEP – Killingholme Marshes**



**Figure 3-4: Black-tailed Godwit monthly distribution (AMEP)**

Birds in the Killingholme (AMEP) area were strongly associated with the river and especially the LWT reserve. At high tide birds were concentrated at either FS2, where the beach is slightly raised, or at the Killingholme Clay Pits reserve. The reserve provides foraging when the river level covers even the upper saltmarsh. Birds were frequently recorded flying to the reserve on rising tides and returning to FS2 as levels receded. The scattering of small numbers of birds through FS3 represent foraging birds at low tide.

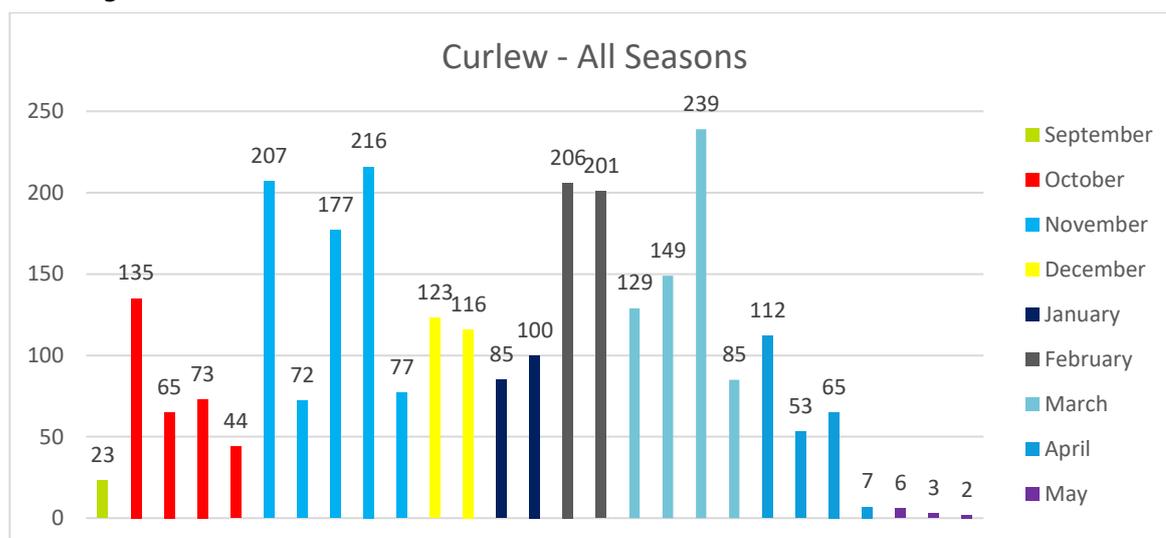


**Figure 3-5: Black-tailed Godwit (AMEP)**

### 3.2.2 Curlew

Curlew numbers rose steadily throughout the Autumn period, before stabilising through mid-Winter and then increasing again as Spring passage commenced.

Numbers were often highest on arable fields close to Winters Pond, with areas of permanent grassland, especially around East Halton village, also providing regular foraging sites. Permanent grassland, including F103 and the oil tank field also supported large numbers of foraging and roosting birds. Along the foreshore sections, Curlew were regularly distributed throughout the survey period except during the highest tides. In general, birds foraged on the foreshore in very small numbers, often individually and were only seen in flocks foraging in the fields or roosting.



**Figure 3-6: Temporal distribution of Curlew**

#### ALP- Halton Marshes

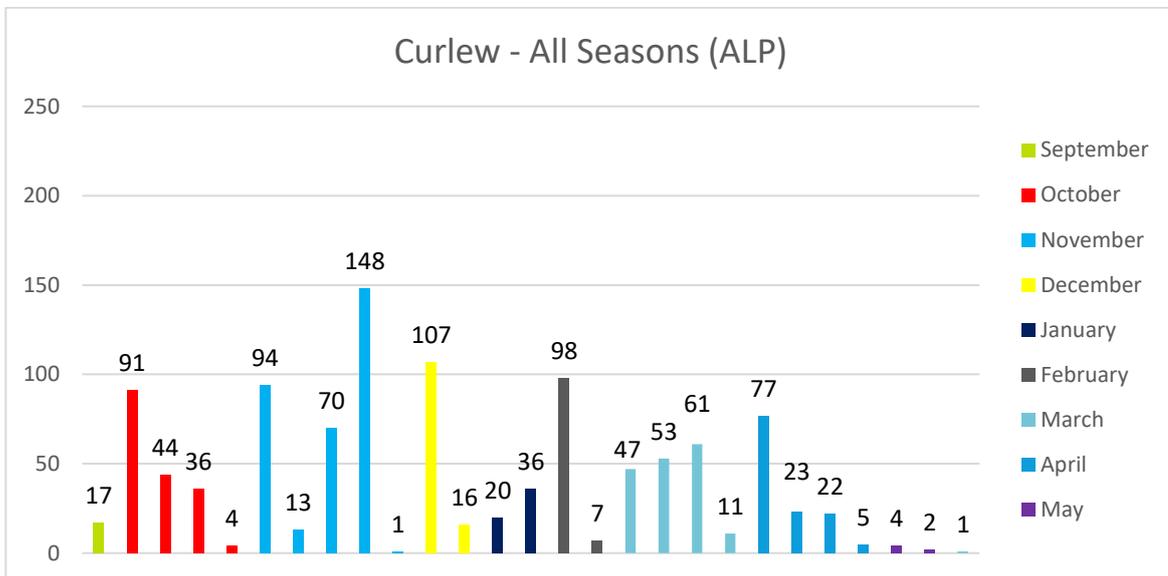
Curlew were thinly scattered along the foreshore in FS 4, 5 and 6, with birds found at regular intervals along the bottom of the seawall, or along the waterline, depending on tide, but were infrequently seen on the mud in between. Even at the Skitter birds were present only in small numbers, with often individuals foraging.

Away from the river Curlew gathered in larger flocks. Figure 3-8 (below) shows the wider distribution of records with birds along the East Halton Marsh Drain, Halton Marsh, around Winters Pond and in the unimproved fields near East Halton village. Many of these flocks exceeded double figures at high tide, with 58 from the Winters Pond grassland on the 21<sup>st</sup> March 2018, Halton Marsh held 50 birds on 2<sup>nd</sup> October 2017 and F34 had 63 on the 5<sup>th</sup> December.

**Table 3-2: Curlew seasonal and geographical wader days**

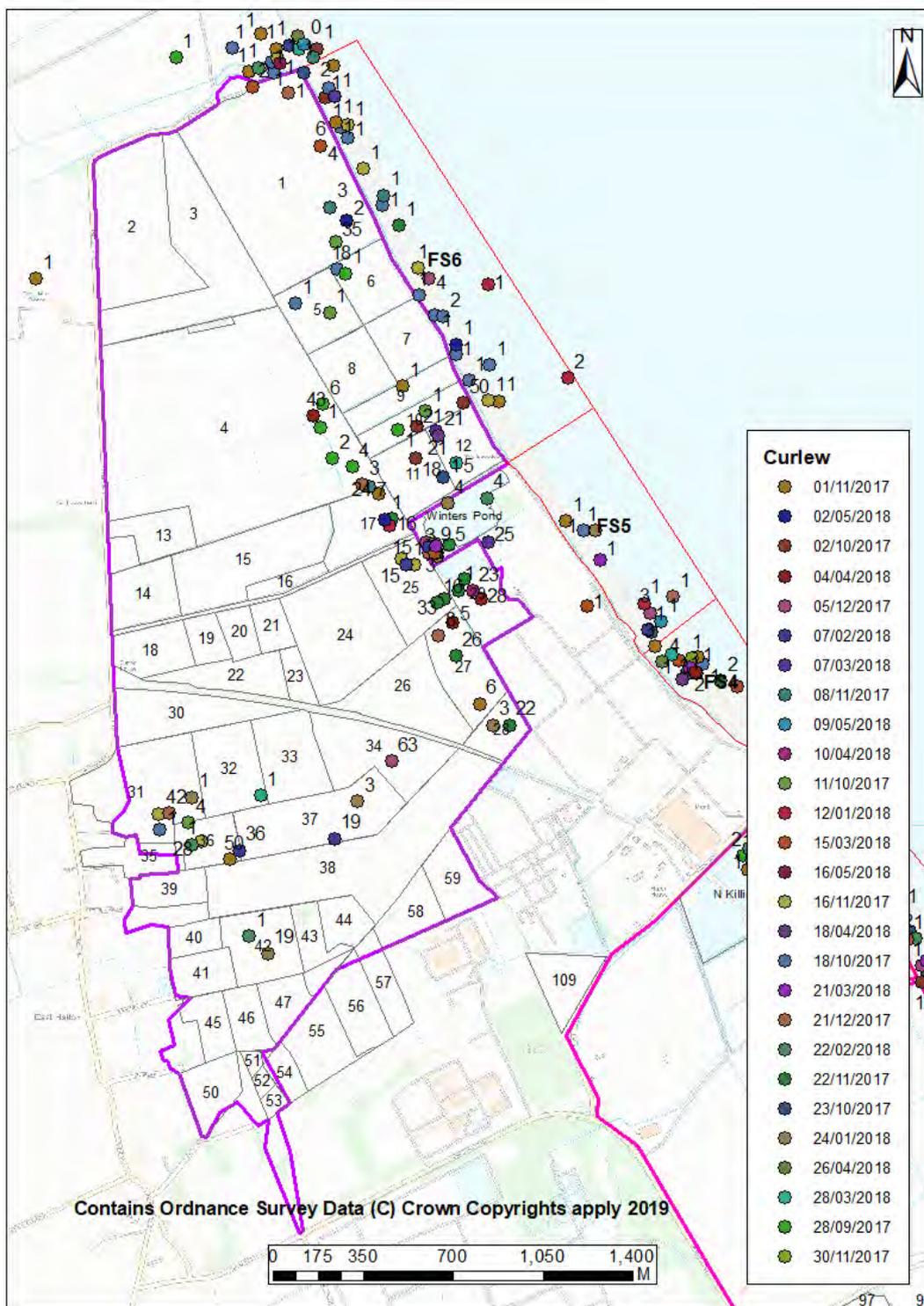
Curlew	Total	Autumn	Winter	Spring
Total No. of birds	1108	518	791	304
Mean per visit	41.04	51.8	49.44	27.82
<b>Wader Days</b>		<b>3263.4</b>	<b>7662.8</b>	<b>1947.27</b>
Total: River	92	50	69	28
Mean: River	3.41	5	4.31	2.55
<b>Wader Days: River</b>		<b>315</b>	<b>668.44</b>	<b>178.18</b>
Total: Fields	1016	468	725	281
Mean: Fields	37.63	46.8	45.31	25.55
<b>Wader Days: Fields</b>		<b>2948.4</b>	<b>7023.44</b>	<b>1788.5</b>

The wader day calculations are slightly complicated by the changes in use across the site and have therefore been given as overall and individual season numbers, plus are divided for records solely from the river and from the fields.



**Figure 3-7: Curlew monthly distribution (ALP)**

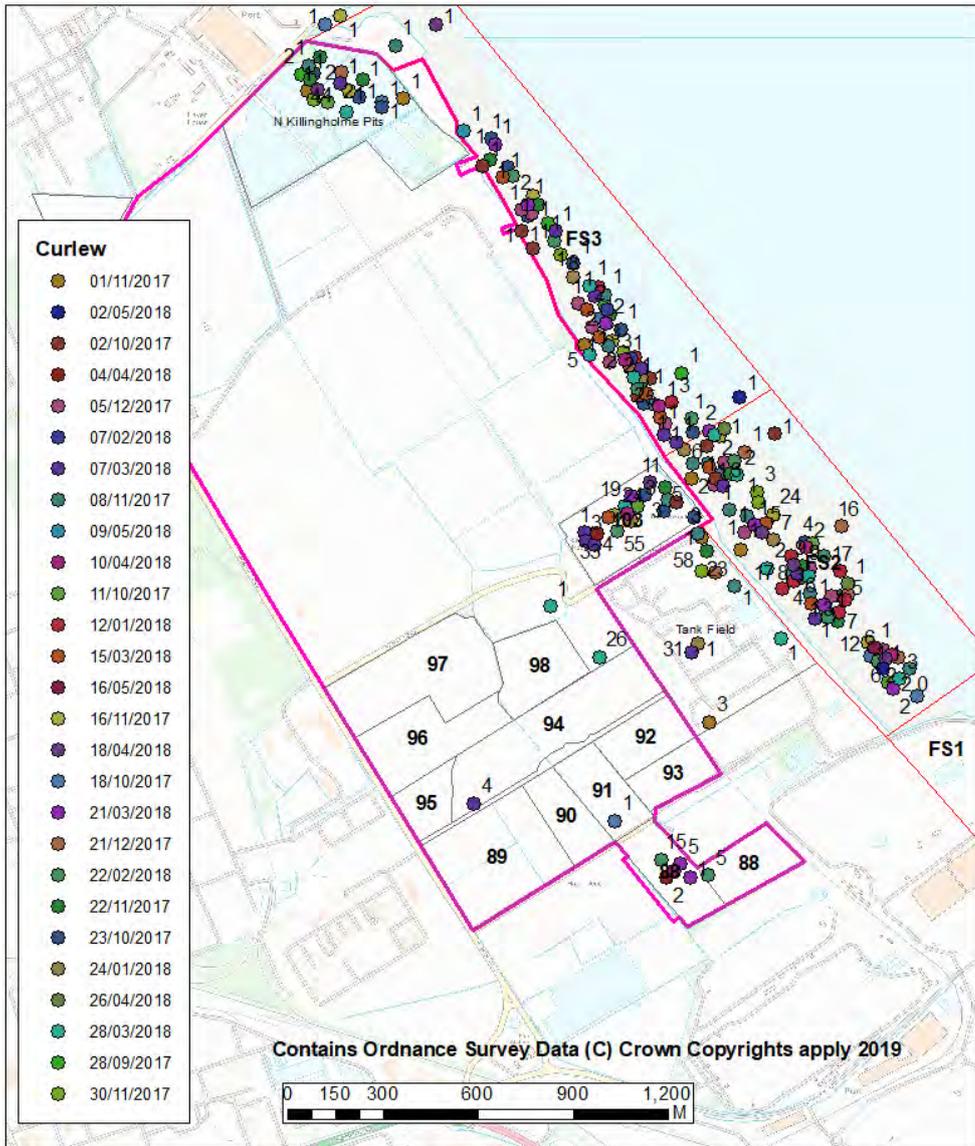
Numbers of Curlew at both ALP and AMEP follow the same general trend as shown in the overall site graph (Fig 3-6, above), although the AMEP graph (Fig 3-10, below) shows two greater peaks in late winter.



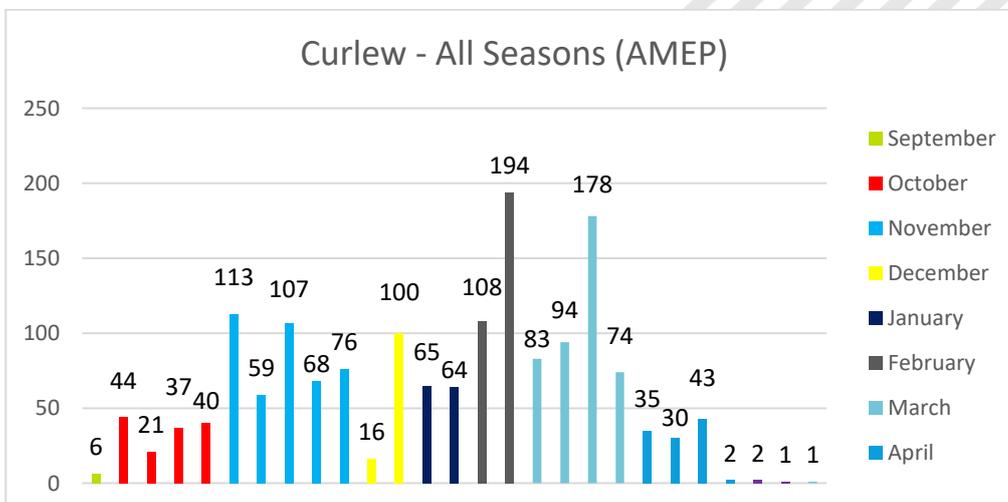
**Figure 3-8: Curlew distribution (ALP only)**

**AMEP – Killingholme Marshes**

The largest accumulations of Curlew were found on FS2, where flocks numbered three figures on three occasions: 104 on 7<sup>th</sup> February, with 105 on the 22<sup>nd</sup>, with 127 observed on the 21<sup>st</sup> March 2018. These flocks were associated with high tide, either at high tide or immediately post high tide and may represent birds roosting while foraging areas were inundated. The nearby field 103 held 84 Curlew on the 15<sup>th</sup> March, highlighting its importance for this species.



**Figure 3-9: Curlew distribution (AMEP only)**

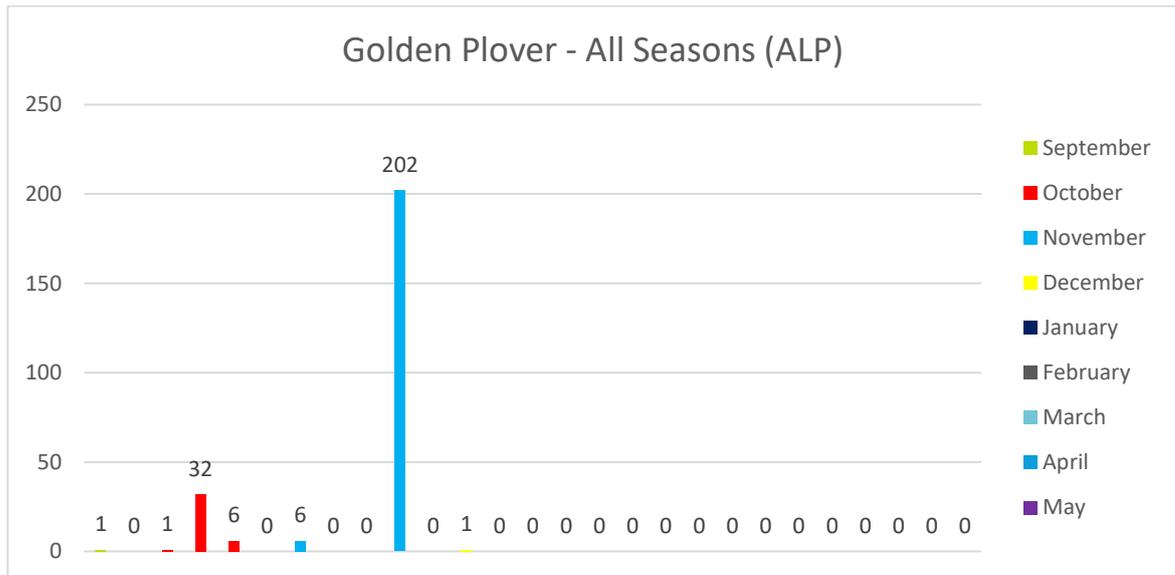


**Figure 3-10: Curlew monthly distribution (AMEP)**

### 3.2.3 Golden Plover

Golden Plover were mostly observed passing over the site on surveys, generally heading south eastwards, but small numbers were observed on Fields 1, 2 and 3 in Autumn. Fields to the north of the East Halton Beck were generally holding more birds than those within the study area. However, Field 24 held two flocks totalling 202 birds on the 30<sup>th</sup> November 2017. A single bird observed on the 21<sup>st</sup> December was the last sighting during the surveys; there were no Golden Plover records at all during the Spring.

No Golden Plover were recorded in the AMEP area in 2017-2018.



**Figure 3-11: Temporal distribution of Golden Plover**

#### ALP- Halton Marshes

As Golden Plover were infrequently recorded and distribution was restricted to discrete areas, wader days have been calculated only seasonally.

**Table 3-3: Golden Plover seasonal wader days**

Golden Plover	Total	Autumn	Winter	Spring
Total No. of birds	249	248	248	0
Mean per visit	9.22	24.8	15.5	0
<b>Wader Days</b>		<b>1562.6</b>	<b>2402.5</b>	<b>0</b>

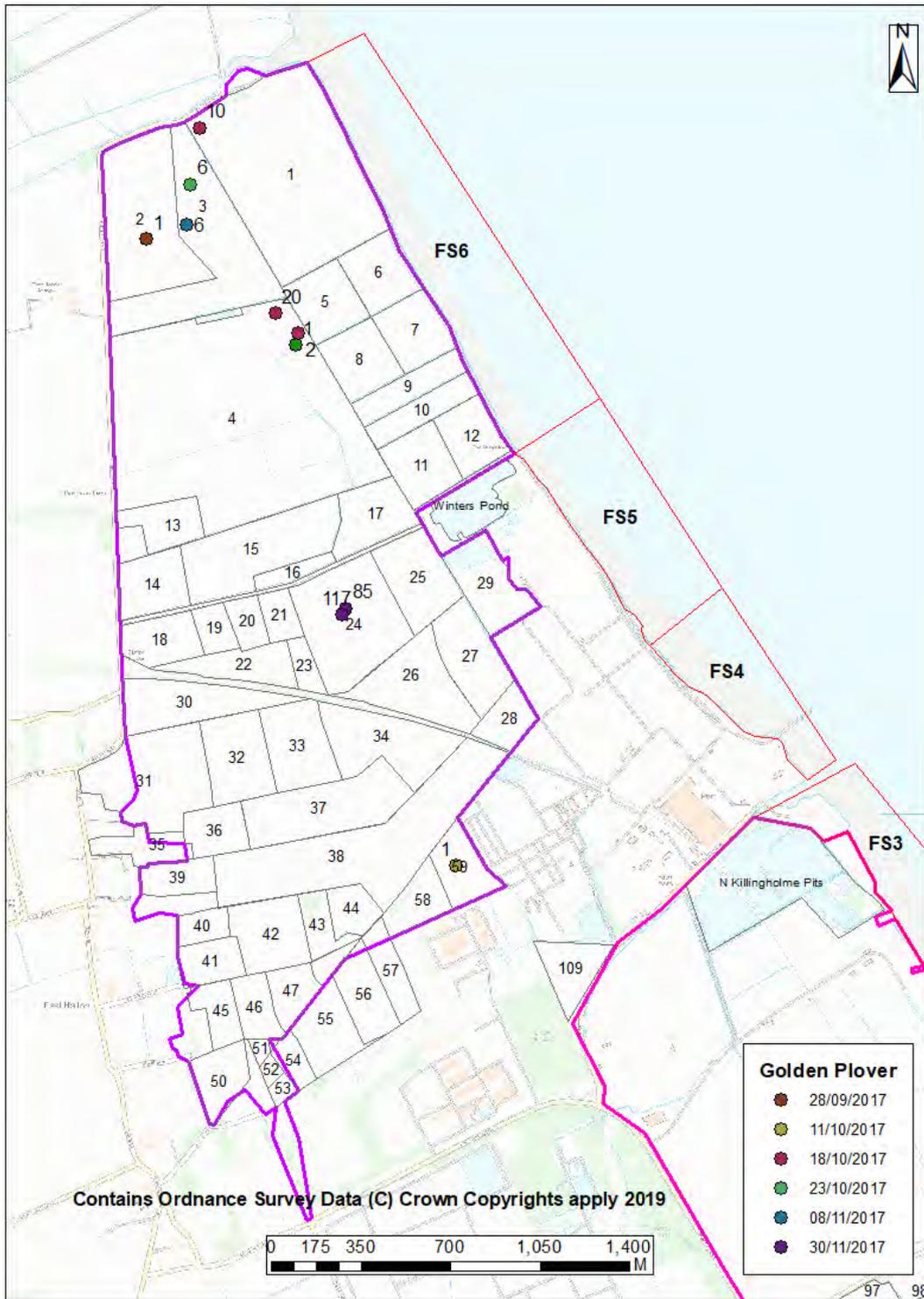
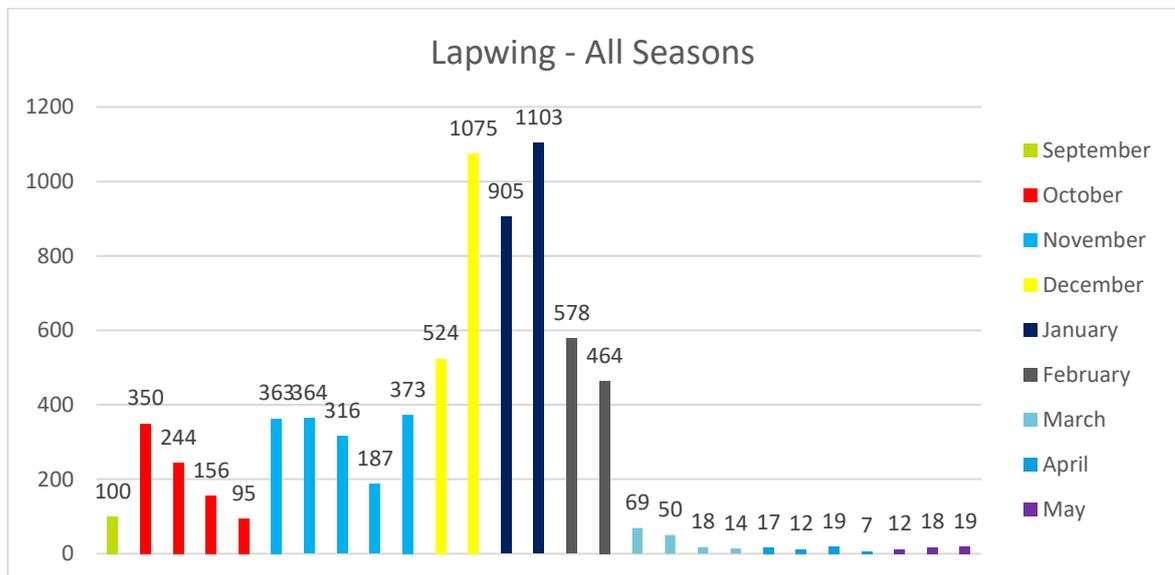


Figure 3-12: Golden Plover distribution

### 3.2.4 Lapwing

Lapwing numbers built through the Autumn and early Winter and peaked on 24<sup>th</sup> January with 1,103 birds recorded (although this included a foraging flock in a field immediately north of the study area as this had flown in from the site). The chief areas for Lapwing in Winter were the whole of Foreshore Section 2, the boundary of Section 4 and 5, and in and around Winters Pond (see Figure 3-15 below). North Killingholme Claypits were also important for gathering Lapwing in Autumn.

The surveys also picked up Lapwing beginning to disperse from the river in late Winter, with numbers dropping and birds becoming more reliant on the fields away from the river. There is a clear difference in distribution shown in maps from mid-Winter and late Winter/Spring. This was more indicative of pre-breeding and breeding behaviour with birds pairing up and displaying territorially. The most important fields were 3, 4, 17 and 25 (around Halton Marshes) and Fields 37 and 38. The former group run in a line to the west of the Halton Drain next to Halton Marshes and the latter were exploiting fields in and around the exposed archaeological investigation areas.



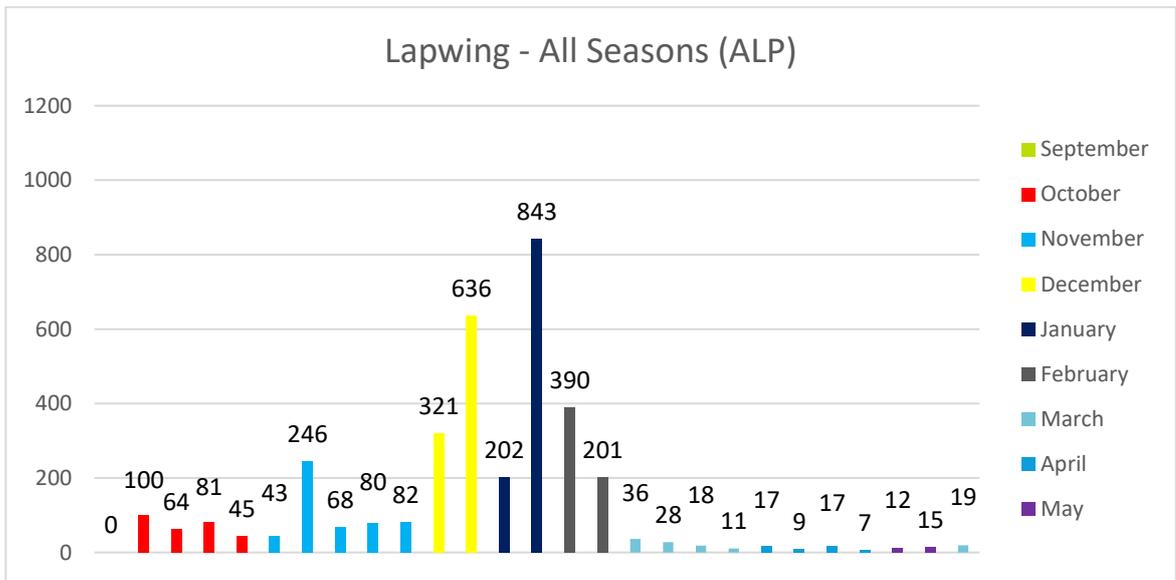
**Figure 3-13: Temporal distribution of Lapwing**

#### ALP – Halton Marshes

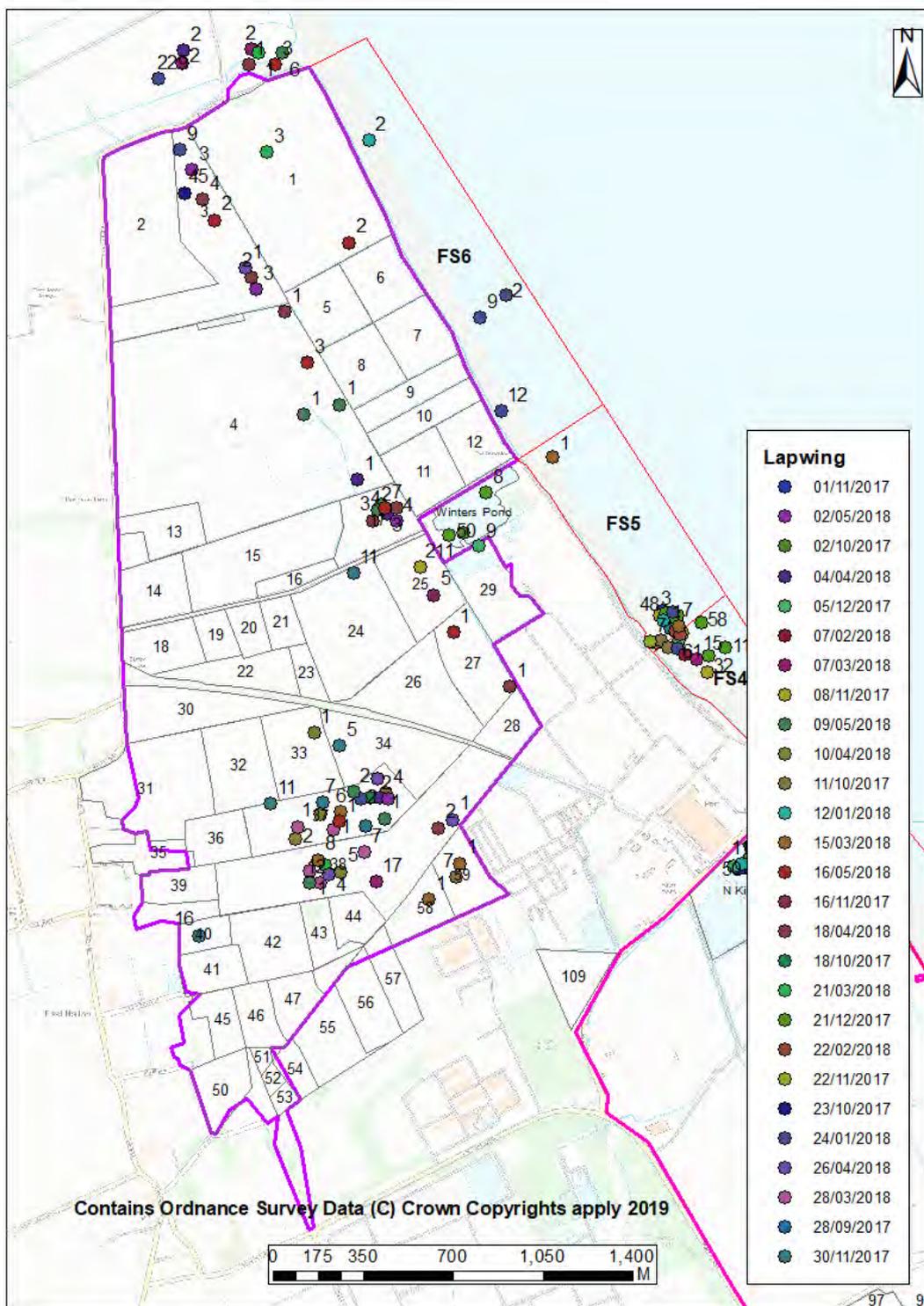
The largest numbers of Lapwing were observed roosting or foraging on the mudflats post-high tide, around the jetties at the boundary of FS4 and 5. These totalled 578 on the 21<sup>st</sup> December and 580 on the 24<sup>th</sup>. Away from this area numbers decreased sharply with 100 at Winters Pond on 2<sup>nd</sup> October 2017 and 111 in the field adjacent (F25) on the 28<sup>th</sup> November.

Foraging flocks of 81 and 31 were on F36 on the 18<sup>th</sup> October and 30<sup>th</sup> November respectively.

The wide distribution of lapwing across the wider ALP site is largely representative of birds recorded to be displaying breeding behaviour in the Spring passage period.

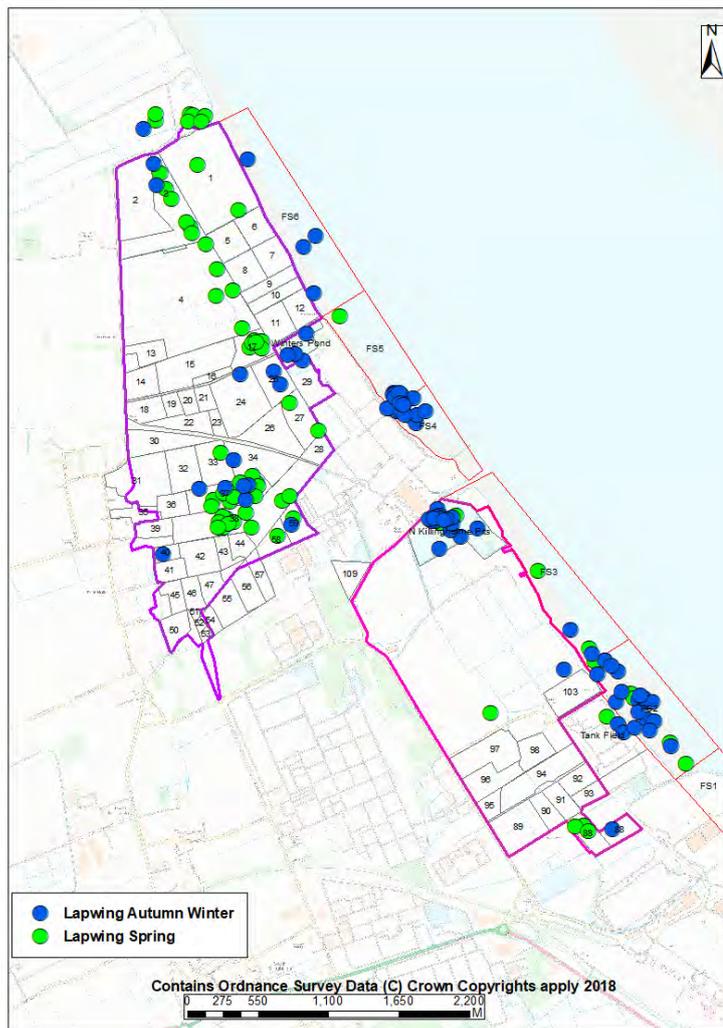


**Figure 3-14: Lapwing monthly distribution (ALP)**



**Figure 3-15: Lapwing distribution (ALP only)**

To demonstrate the seasonal movement from the river to the fields in Springtime, Figure 3-15 (below) shows the records from the winter period and then from March onwards. This clearly shows a movement away from the river after the Autumn and Winter period.



**Figure 3-16: Lapwing showing Autumn/Winter and Spring distributions**

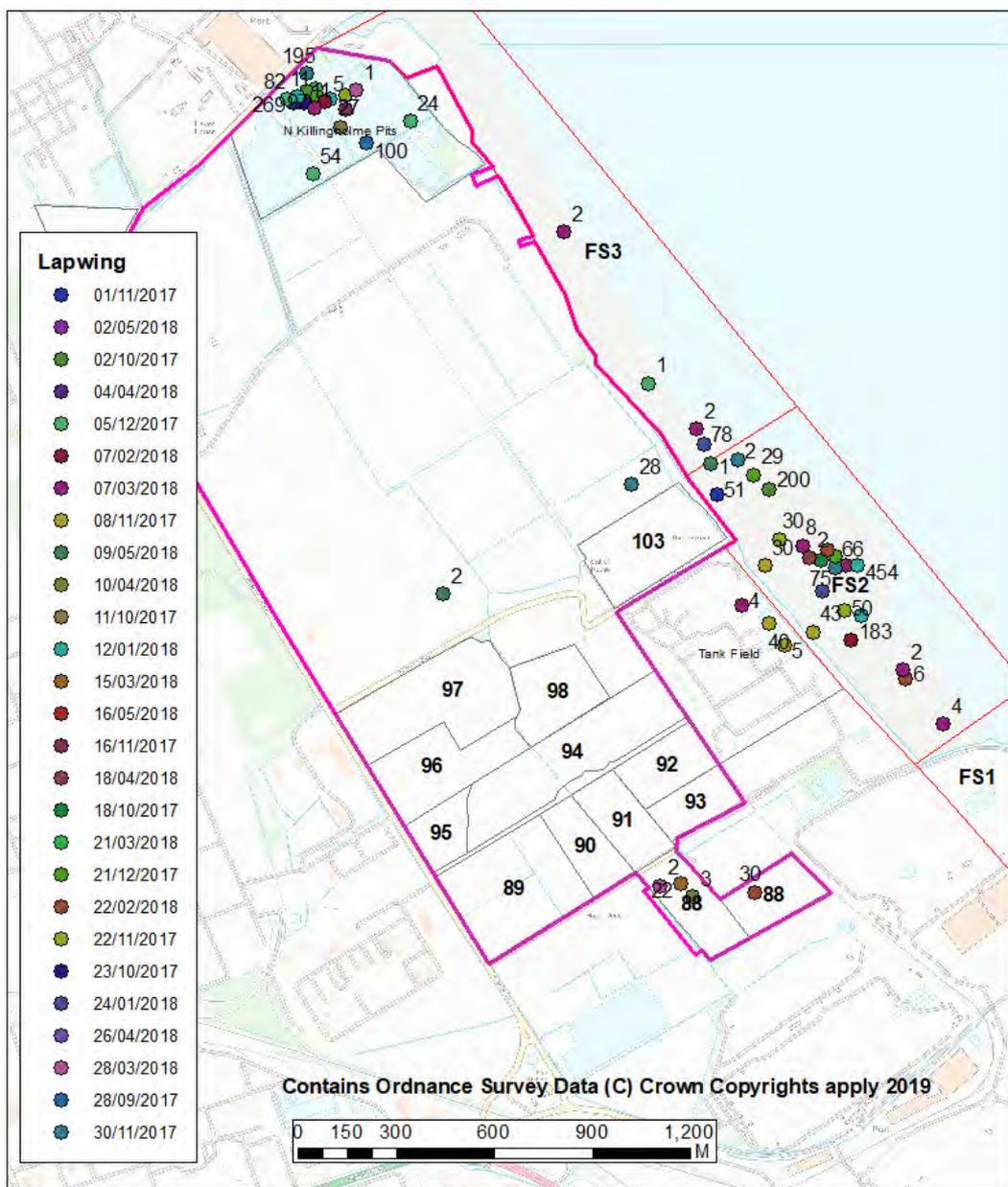
The 'wader-day' calculations also show a clear change of use between the river habitats and the fields. In both the Autumn and Spring passage periods birds were more commonly associated with the fields with ratios of approximately 1:2 and 1:4 (river to field) respectively, however, in the winter this ratio was reversed to a much greater 5:1. The below calculations are again split out both seasonally and geographically between riverine habitats and the fields. The seasonal discrepancy in numbers shows the inaccuracy of a 'whole survey season' calculation.

**Table 3-4: Lapwing seasonal and geographical wader days**

Lapwing	Total	Autumn	Winter	Spring
Total No. of birds	3591	809	3366	189
Mean per visit	133	80.9	210.38	17.18
<b>Wader Days</b>		<b>5096.7</b>	<b>32608.9</b>	<b>1202.6</b>
Total: River	2834	279	2821	40
Mean: River	104.96	27.9	176.31	3.64
<b>Wader Days: River</b>		<b>1757.7</b>	<b>27328.05</b>	<b>254.8</b>
Total: Fields	757	530	545	149
Mean: Fields	28.04	53	34.06	13.55
<b>Wader Days: Fields</b>		<b>3339</b>	<b>5279.3</b>	<b>948.5</b>

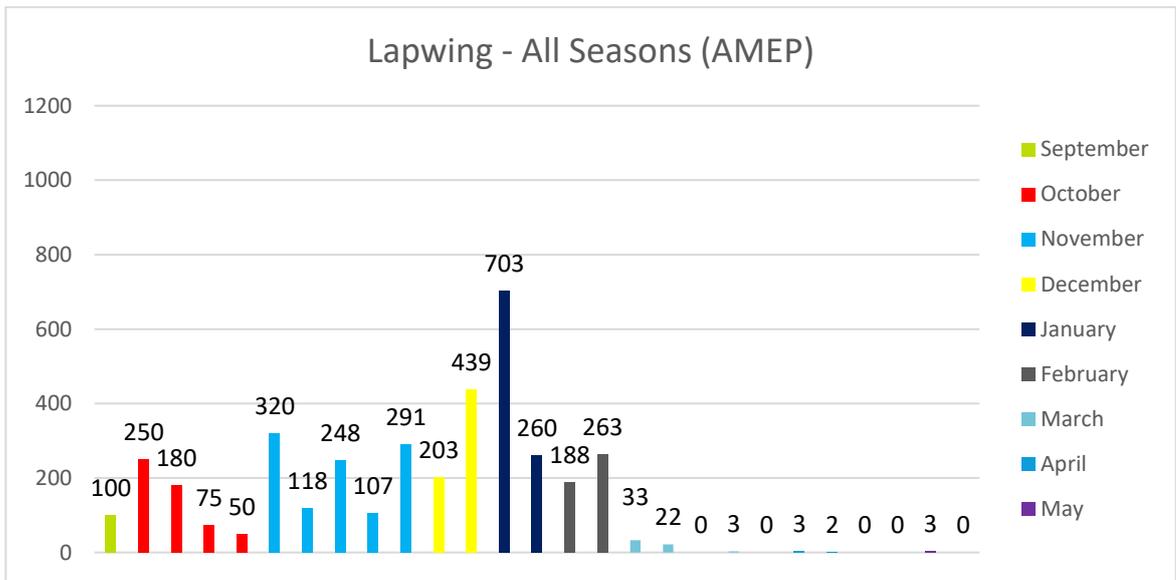
### AMEP – Killingholme Marshes

Distribution of Lapwing across the AMEP site followed the pattern shown by most of the target and key species. Large numbers accumulating at both North Killingholme Claypits nature reserve and within FS2. Most of these birds were recorded loafing, often in large flocks.



**Figure 3-17: Lapwing distribution (AMEP only)**

Seasonally, numbers were greatest in midwinter, mirroring the ALP site, with a clear drop off in numbers from March onwards.

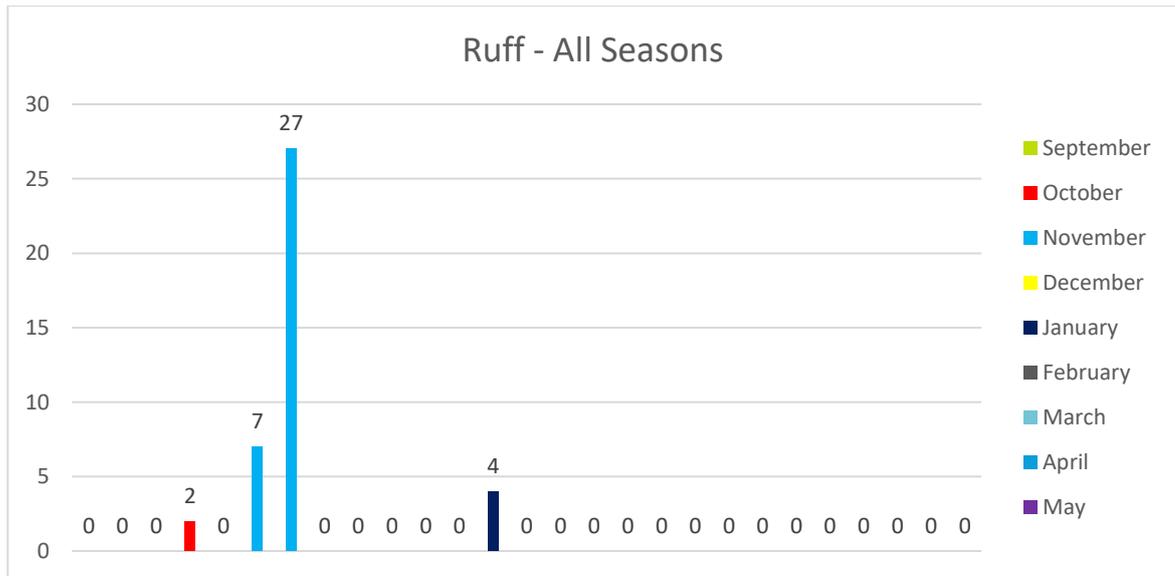


**Figure 3-18: Lapwing monthly distribution (AMEP)**

### 3.2.5 Ruff

Ruff were very infrequently recorded during 2017 – 2018 surveys. Only four small groups of Ruff were observed during the surveys, with flocks of 27 and seven recorded at the north end of foreshore Section 6 and at The Skitter in November. Four birds were also recorded in January on the foreshore at the boundary of sections 4 and 5.

Two on North Killingholme Claypits in October were the only birds recorded within the AMEP area. Therefore, no separate figures have been produced for ALP and AMEP.

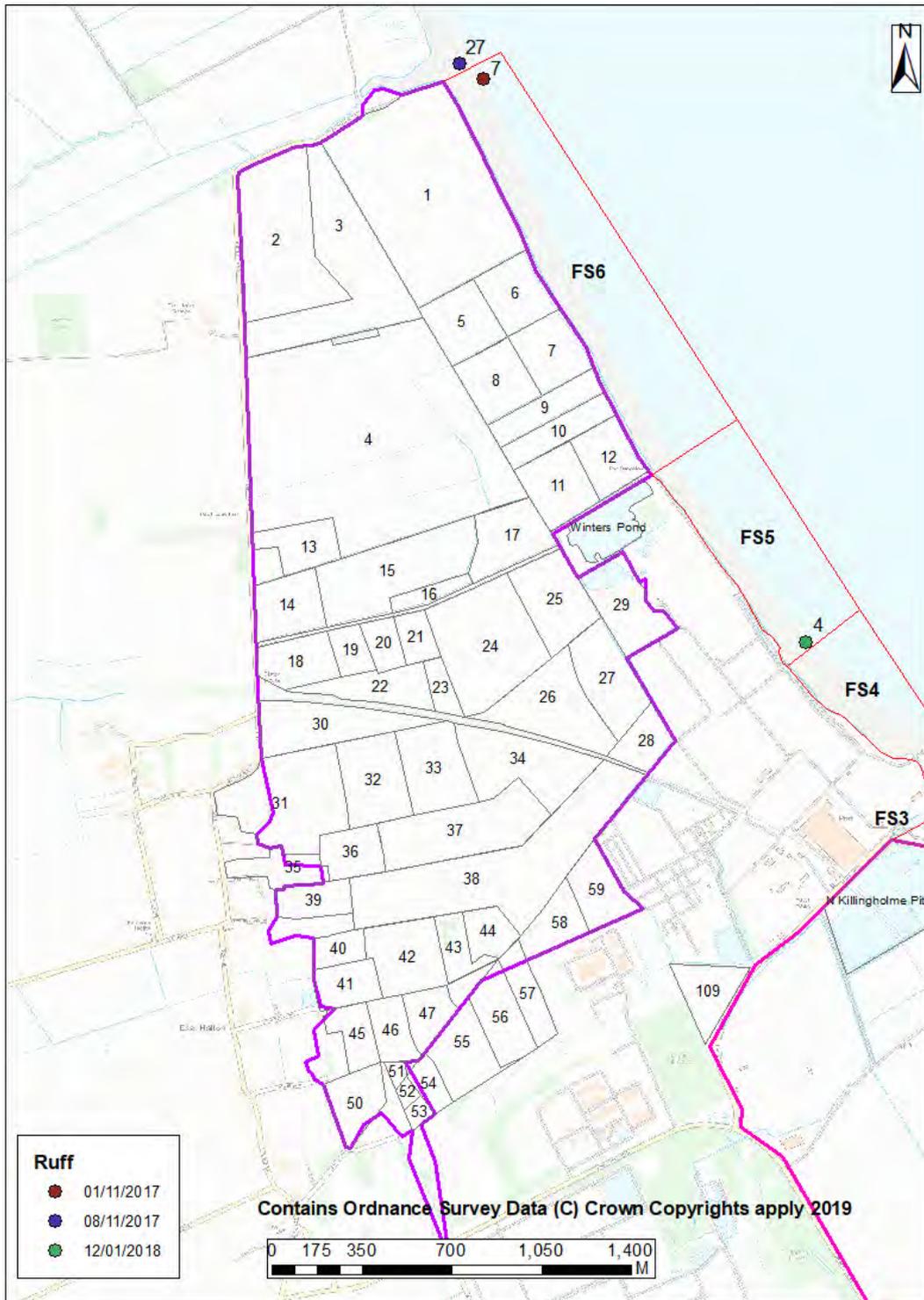


**Figure 3-19: Temporal distribution of Ruff**

With so few records for Ruff during the 2017-2018 survey period the calculations for wader days should be treated with some degree of caution. All records relate to the riverside.

**Table 3-5: Ruff seasonal wader days**

Ruff	Total	Autumn	Winter	Spring
Total No. of birds	38	34	38	0
Mean per visit	1.41	3.4	2.38	0
<b>Wader Days</b>		<b>214.2</b>	<b>368.9</b>	<b>0</b>



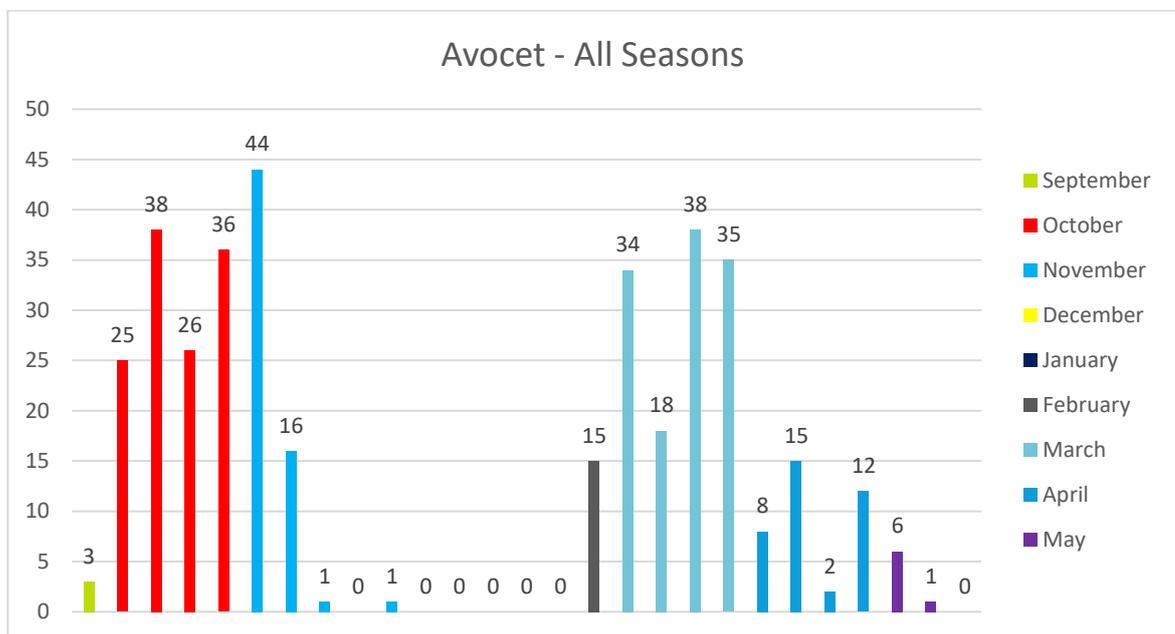
**Figure 3-20: Ruff distribution (ALP only)**

### 3.3 Key Species

The remaining species are those compiled from the citations of both the SPA and SSSI, but were not considered to be 'at risk' from the proposed scheme following the initial PEA assessments. These are presented as whole site (Halton and Killingholme Marshes) rather than being sub-divided into ALP and AMEP areas.

#### 3.3.1 Avocet

The UK breeding population of Avocet is now relatively widespread, but most of the population heads South for the main Wintering period. These birds can fly well south of the Wash, or to the near-continent [Austin *et al*, 2008], but the Humber population is largely absent in mid-Winter. This spread can clearly be shown in our survey records.



**Figure 3-21: Temporal distribution of Avocet**

Avocet were only found within the Killingholme Marshes survey area and were concentrated on both North Killingholme Haven Clay Pits nature reserve and on Foreshore Sections 2 and 3. Movement between these locations appeared to be tide dependent. The peak count is of 44 birds together on the nature reserve on the 1<sup>st</sup> November 2017. This represents up to 75% of the Humber Estuary Wintering population (Austin *et al*, 2008).

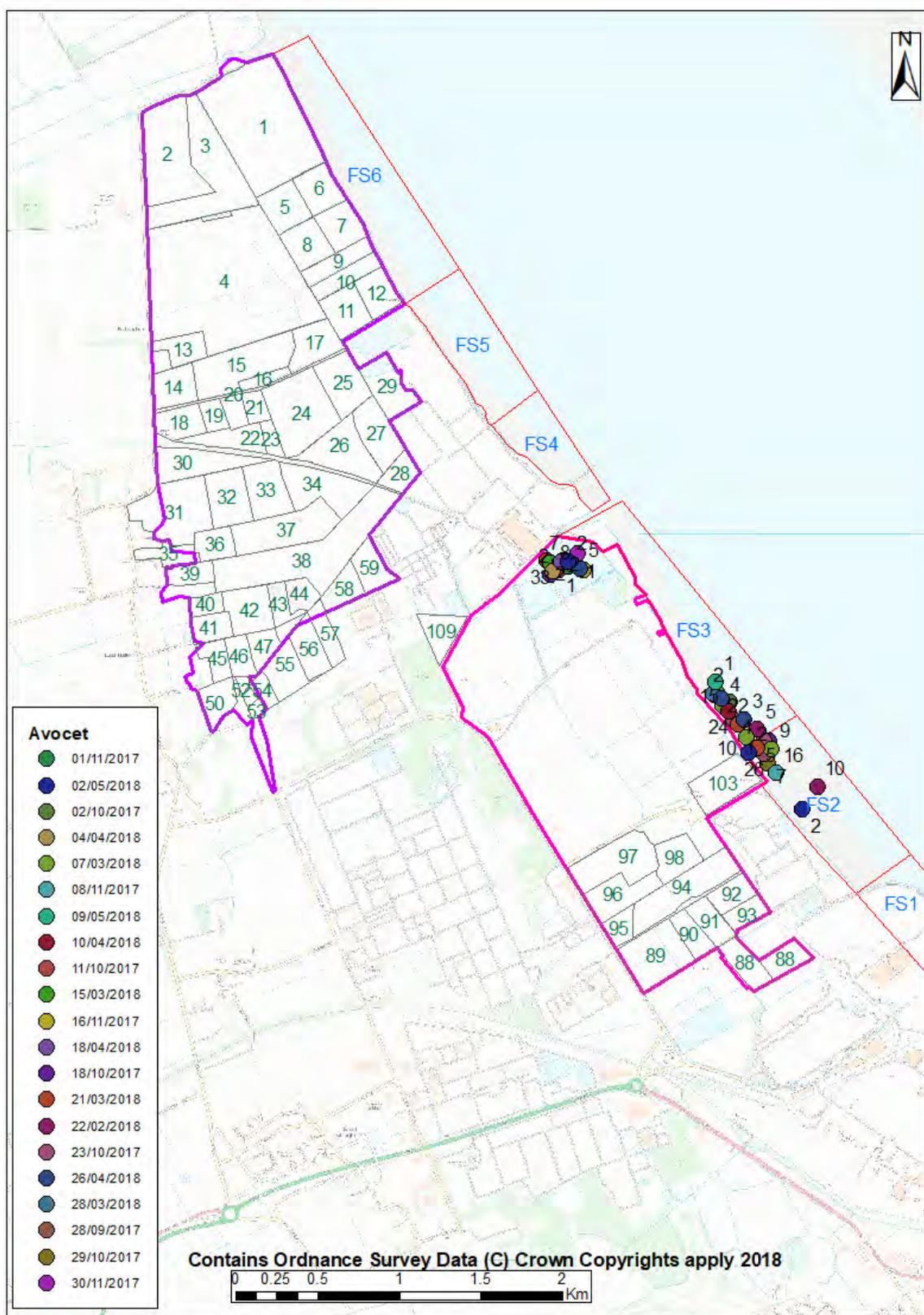
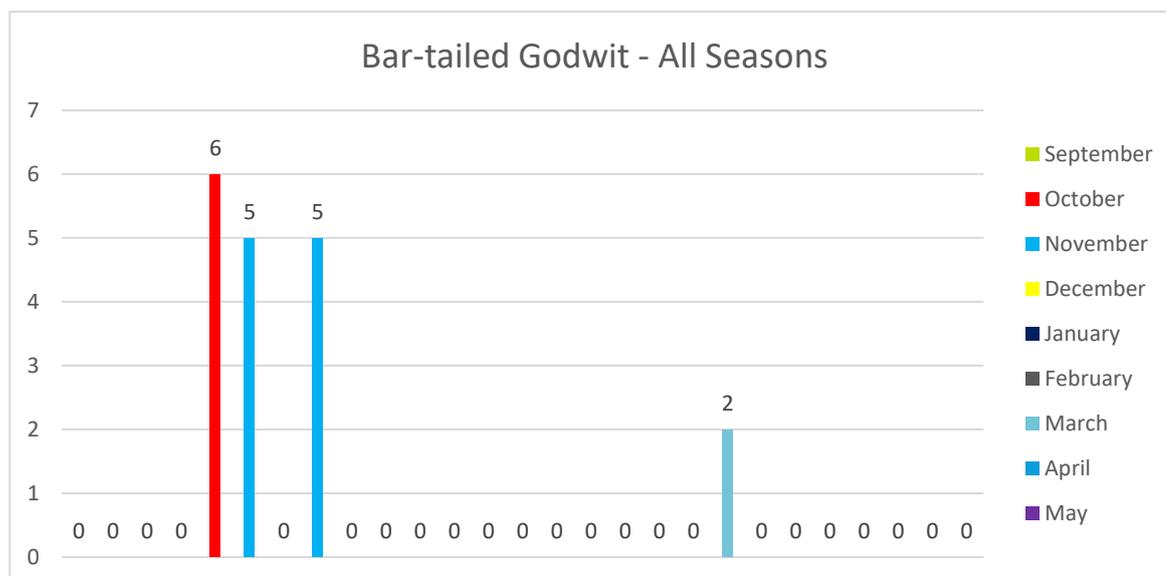


Figure 3-22: Avocet distribution

### 3.3.2 Bar-tailed Godwit

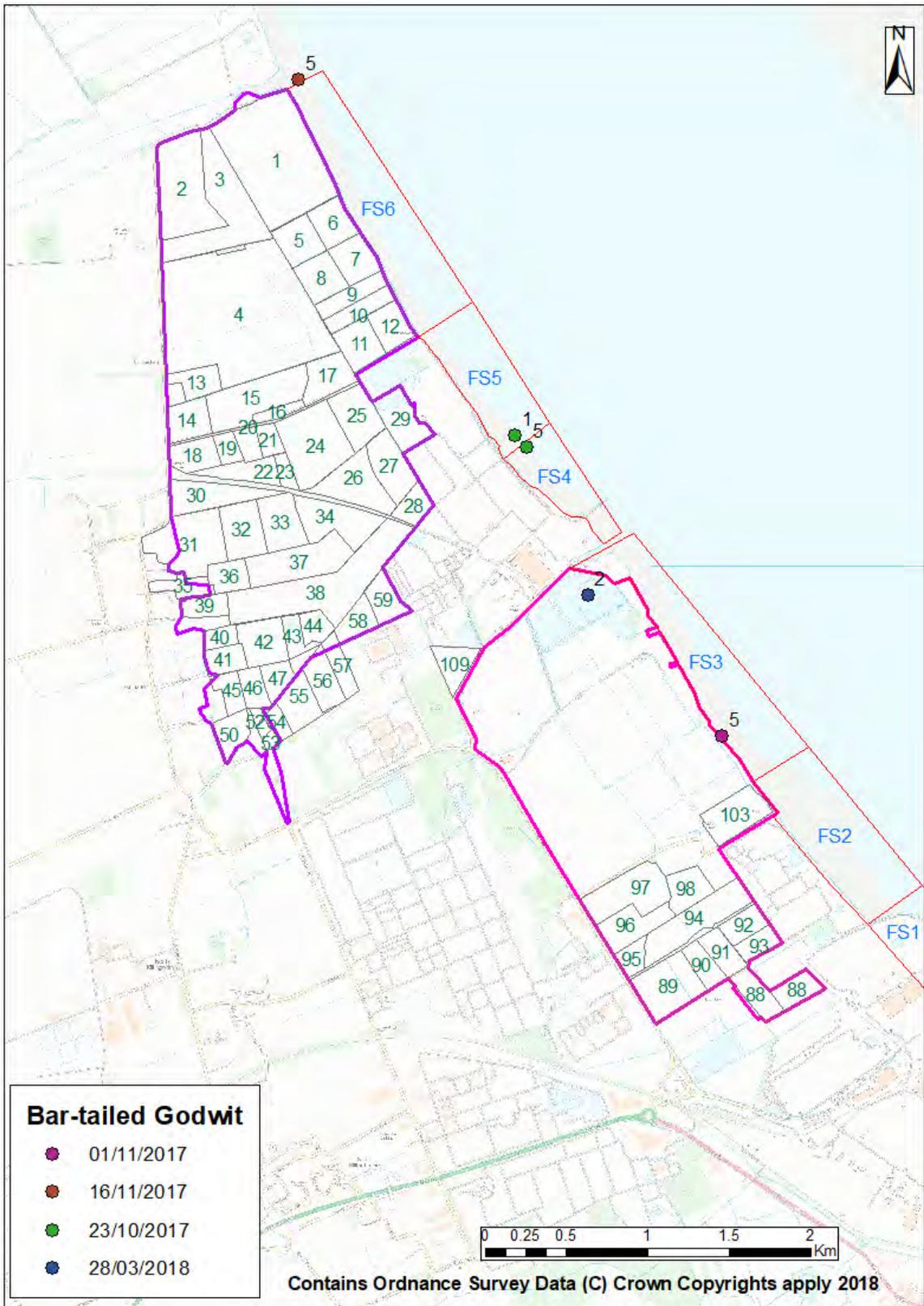
The Humber Estuary supports 4.4% of the UK Wintering population, however, the majority of these are found within the outer estuary, from Pyewipe downstream (Austin *et al*, 2008). Within the survey area, very few records of Bar-tailed Godwit were observed during the survey, on the foreshore (Sections 3, 4 and 5), East Halton Skitter and North Killingholme Claypits. Peak surveyed flocks were of 5 individuals in the Autumn.



**Figure 3-23: Temporal distribution of Bar-tailed Godwit**

Birds were recorded in late Autumn, but then were absent during the Winter with just two individuals seen in Spring on 23<sup>rd</sup> March at North Killingholme.

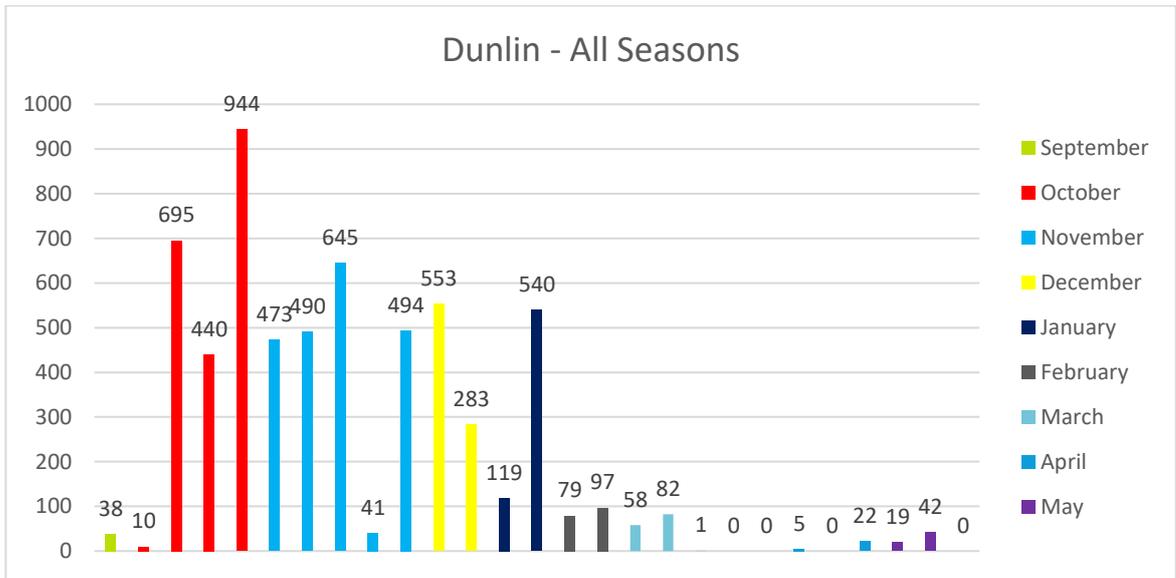
Even without a large number of records, the distribution map for Bar-tailed Godwit highlights most of those areas which are most used by wading birds along the foreshore.



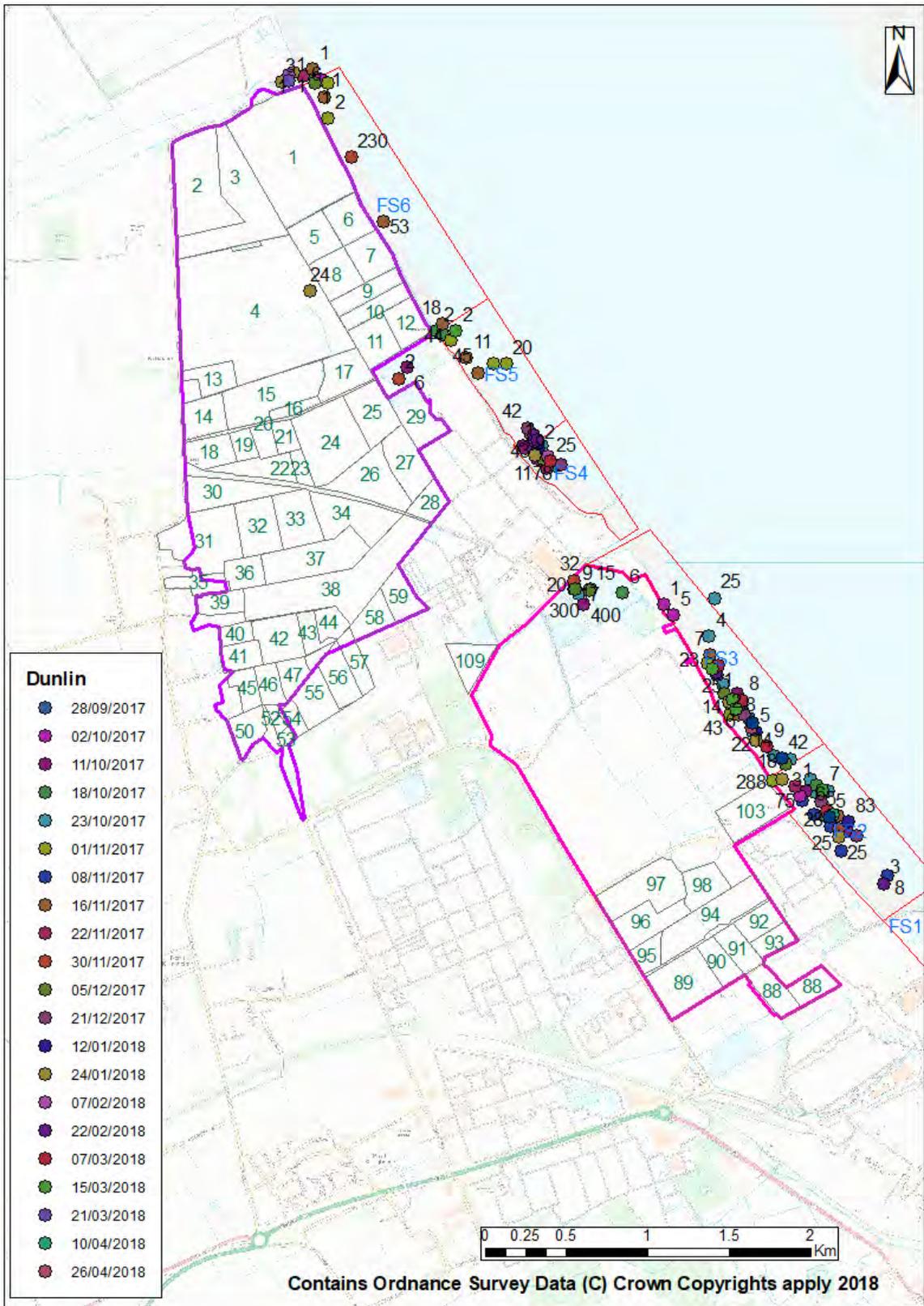
**Figure 3-24: Bar-tailed Godwit distribution**

### 3.3.3 Dunlin

By mid-Autumn Dunlin numbers increased to several hundred and averaged 458 throughout the Winter, with a peak of 944 on the 23<sup>rd</sup> October. Records were strongly associated with the foreshore, with large flocks concentrated in Section 2, around the outfall in Section 3 and around the piers in Sections 4 and 5. Over 450 birds were present within the North Killingholme Claypits nature reserve on the 23<sup>rd</sup>, this was associated with a very high tide on the estuary. The only record away from the river and ponds, was a group of 24 birds on a flood in Field 4 on the 24<sup>th</sup> January. At the beginning of February numbers declined significantly. Peaks were 43 on the 22<sup>nd</sup> February at the jetties between foreshore Sections 4 and 5 and then 42 on the 9<sup>th</sup> May: this may have reflected the initial return of non-breeding birds.



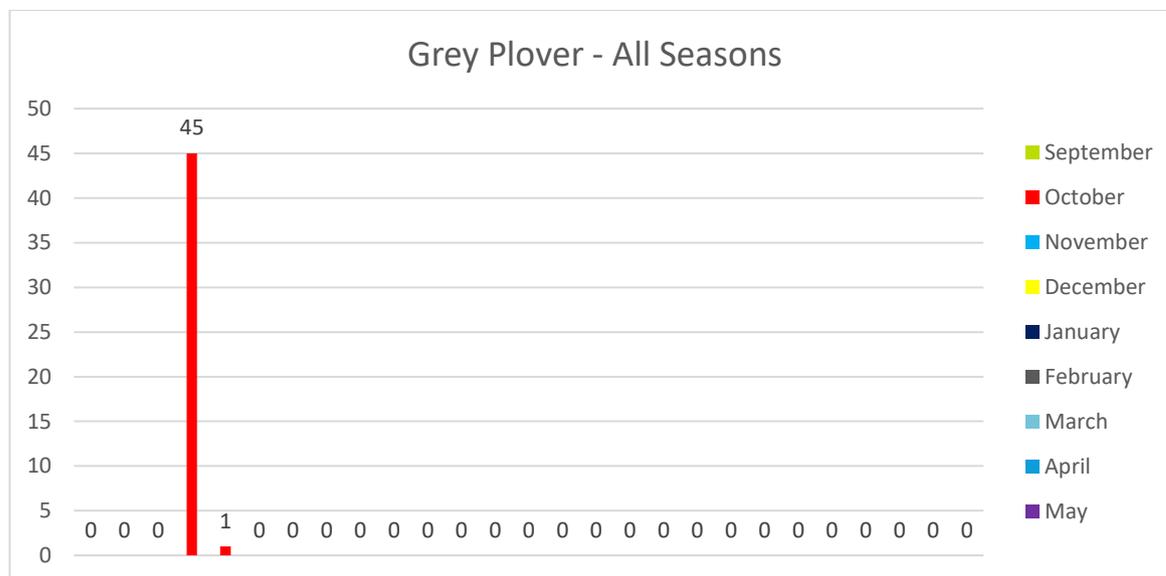
**Figure 3-25: Temporal distribution of Dunlin**



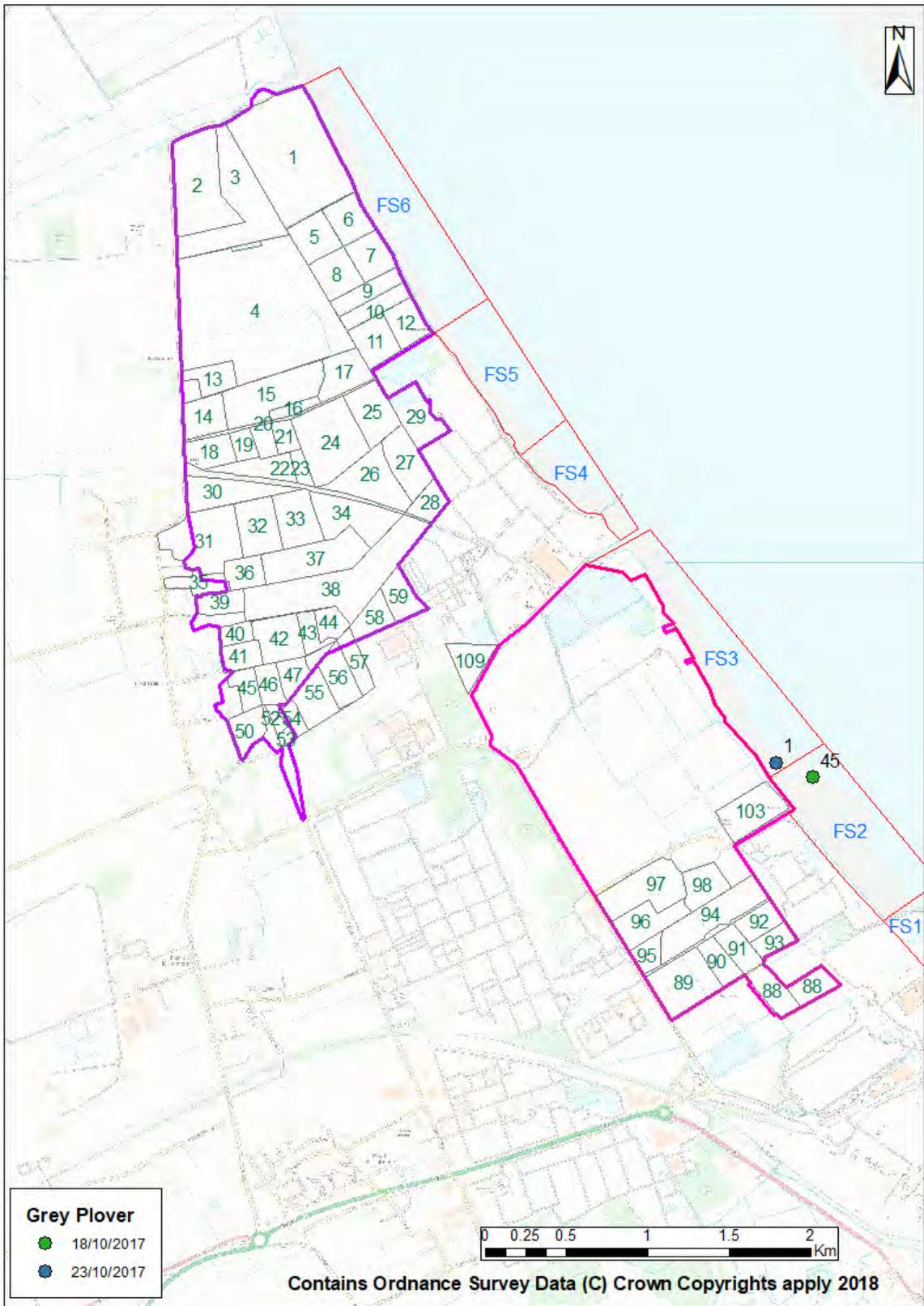
**Figure 3-26: Dunlin distribution**

### 3.3.4 Grey Plover

Grey Plover were recorded on only two occasions, with a flock of 45 on the north end of foreshore Section 2 on the 18<sup>th</sup> October and a single bird remaining at the southern end of Section 3 on the 23<sup>rd</sup>. These were both recorded around the FS2 and FS3 boundary area.



**Figure 3-27: Temporal distribution of Grey Plover**

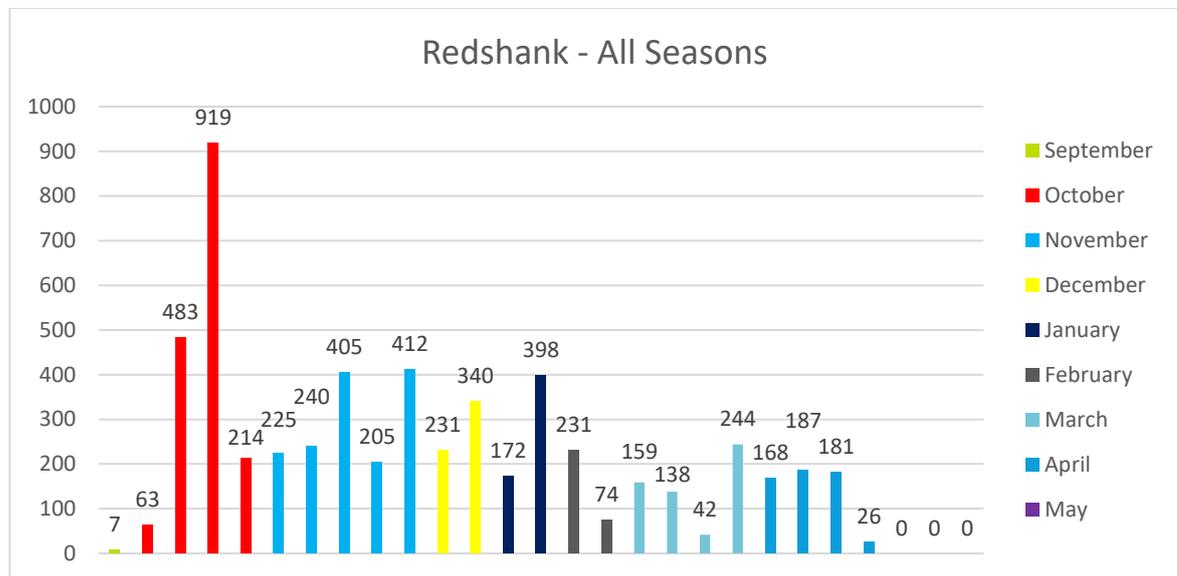


**Figure 3-28: Grey Plover distribution**

### 3.3.5 Redshank

A widespread species but generally restricted to the riverbank and the adjacent wetlands. Two birds were recorded on the exposed archaeological trenches in Field 38 on consecutive surveys in early Winter: but this was an exception. Numbers were high from October throughout the Winter. Areas from the outfall at Killingholme down to the south end of foreshore Section 2 held particularly high numbers, as did the Claypits during high tide events. 750 Redshank were estimated to be present in a large flock at the north end of FS2 on 18<sup>th</sup> October. This represented the peak count, however, 450 had been recorded at high tide the week before on the nature reserve.

Dispersal of flocks at low tide was noticeable with small groups, or individuals, being present on sections of foreshore where birds were seldom recorded otherwise. The FS6 frontage, in particular, often only had Redshank and Curlew, which would frequently be recorded individually with small groups of Redshank foraging in these areas.



**Figure 3-29: Temporal distribution of Redshank**

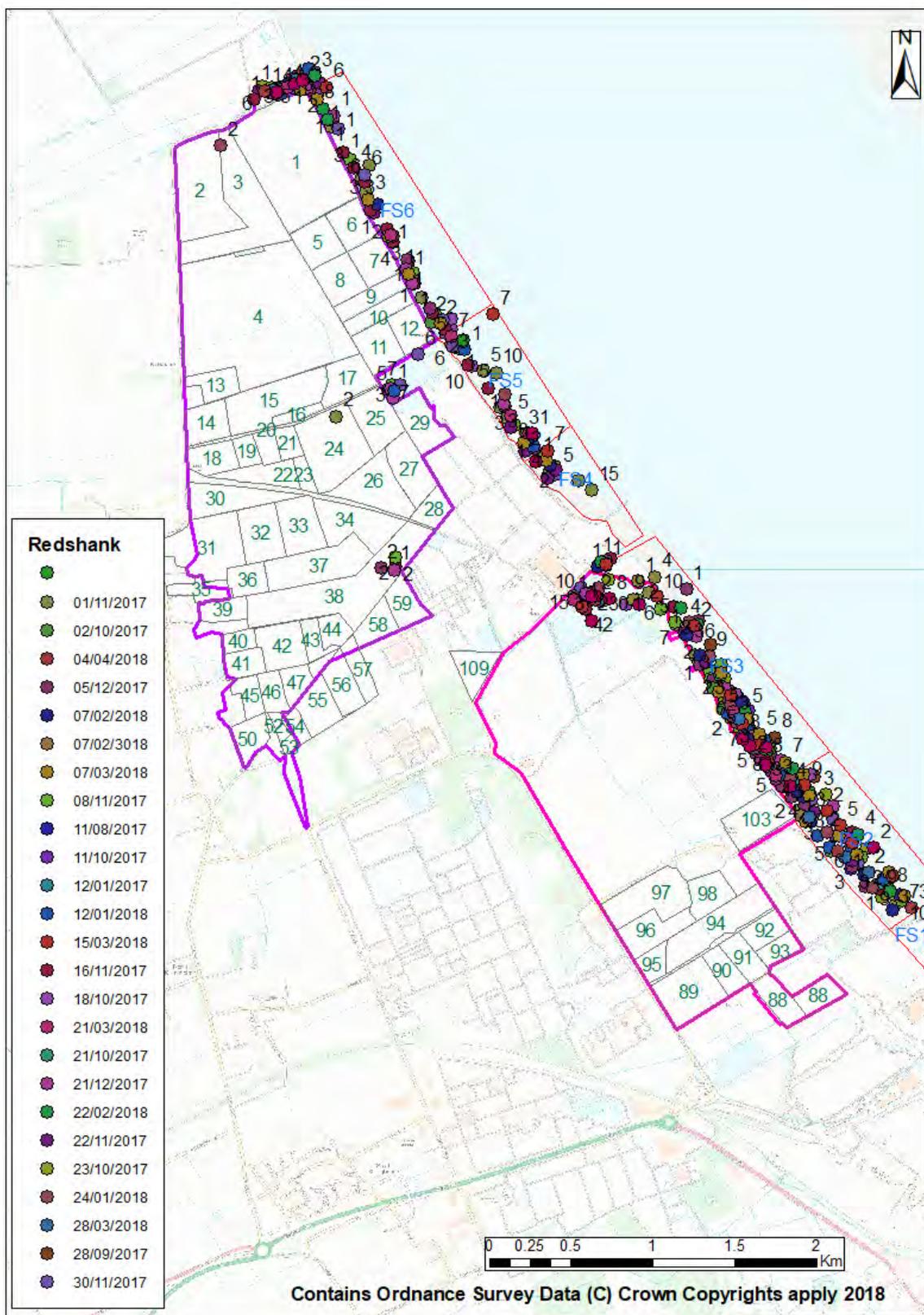
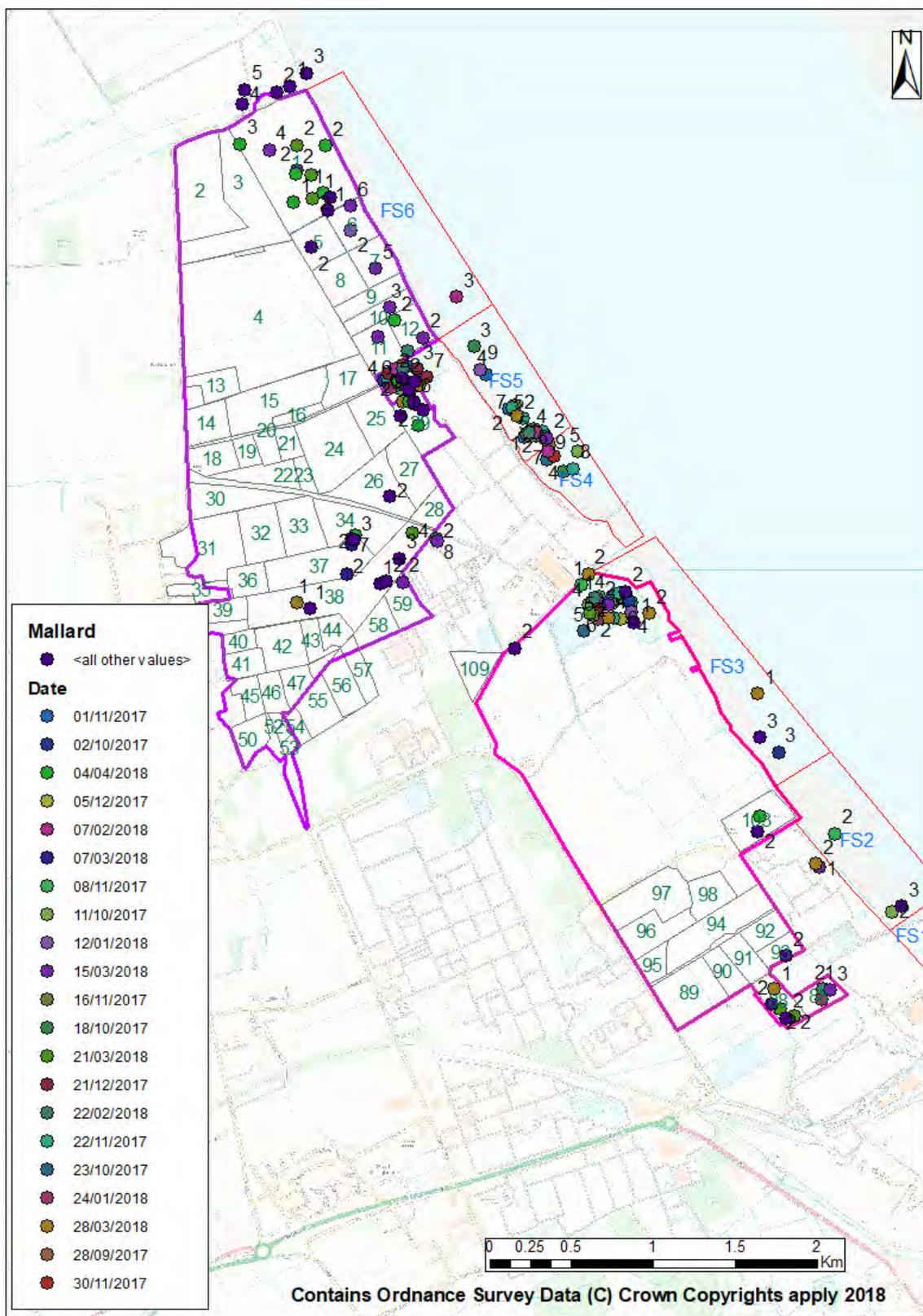


Figure 3-30: Redshank distribution

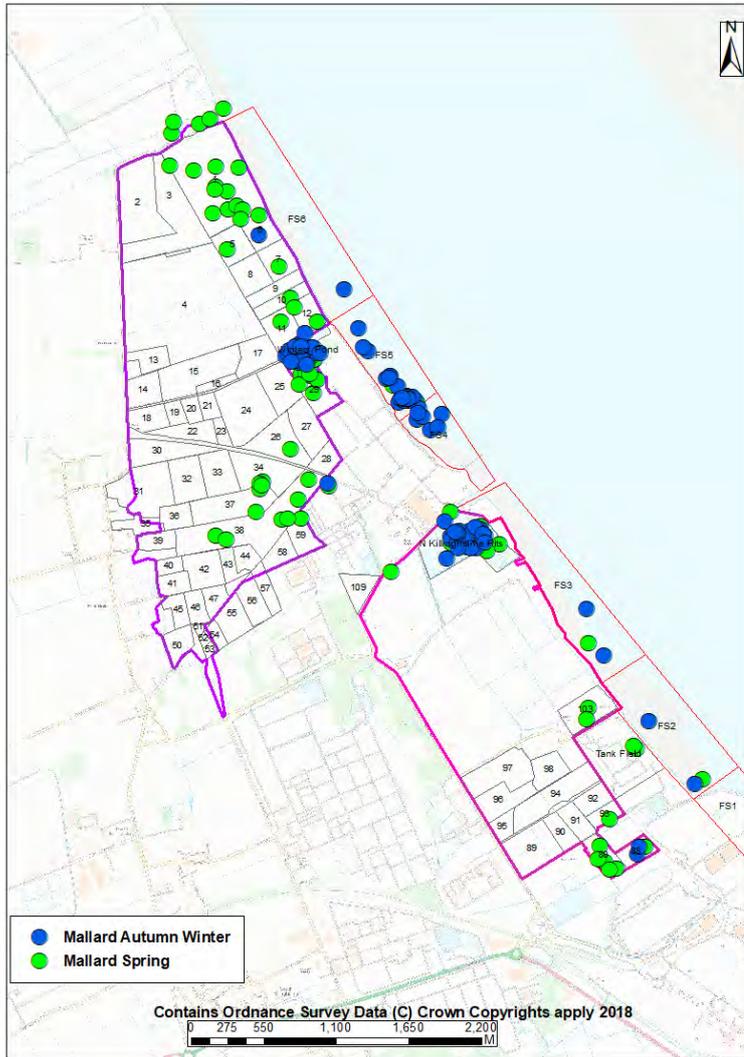




**Figure 3-32: Mallard distribution**

In addition to the concentrations around FS4 and 5, and the claypits at North Killingholme and Winters Pond, the above map shows a wider spread of records away from these locations and the river. These are records from Spring and are of birds

dispersing to breeding territories. Figure 3-13 (below) shows both the Autumn/Winter and Spring records, demonstrating the reliance on discrete areas during this time.

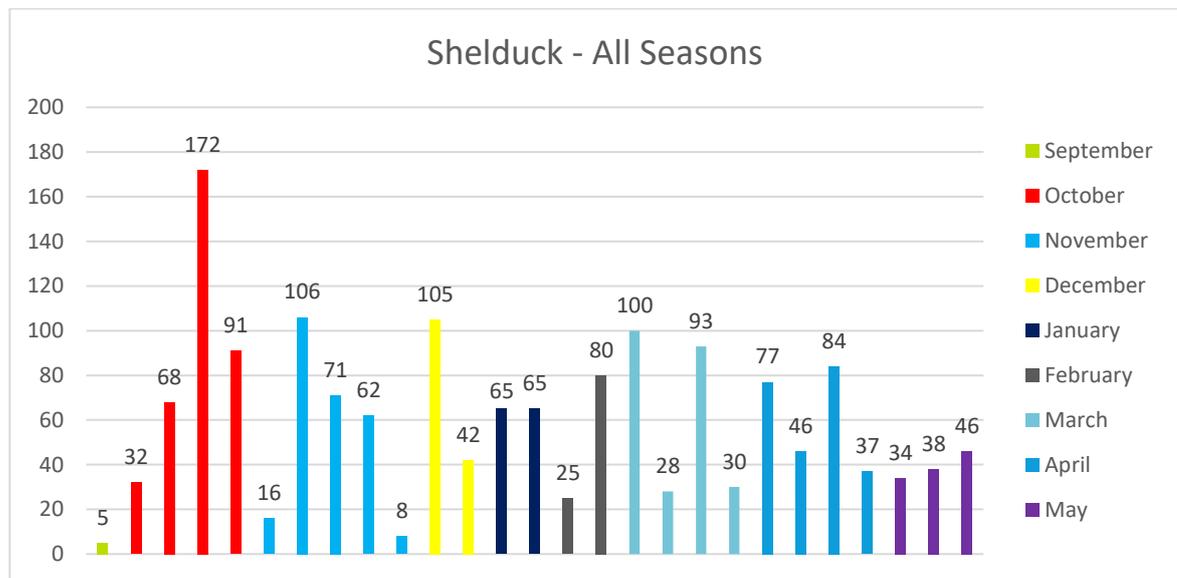


**Figure 3-33: Mallard showing Autumn/Winter and Spring distribution**

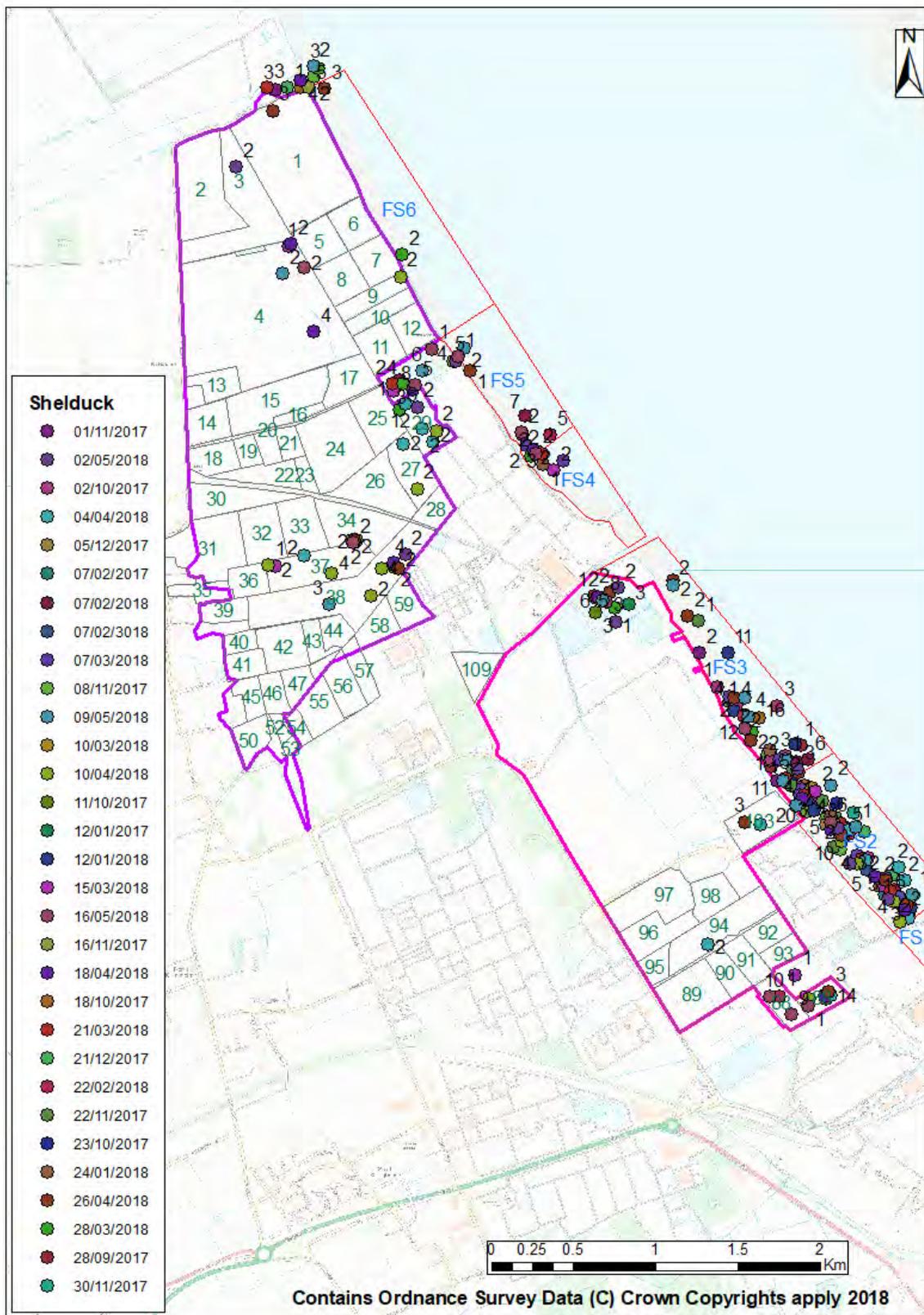
### 3.3.7 Shelduck

Throughout both the Autumn and Winter, Shelduck were largely restricted to the foreshore, with small numbers also visiting the clay pits at North Killingholme and Winters Pond. By the Spring, groups had reduced down to pairs (or multiples of two) and they had spread much further inland. These were displaying breeding behaviour in Fields 3, 4, 27 and 29 at Halton Marshes, Fields 37 and 38 (the archaeology fields) and Fields 88 and 103, at the south end of Killingholme.

Foreshore Section 2 was particularly important for Shelduck and numbers were high here on 18th October (153), 8th November (86), 5th December (93) and 7th March (90). These surveys corresponded to tidal states which left only the upper saltmarsh exposed.



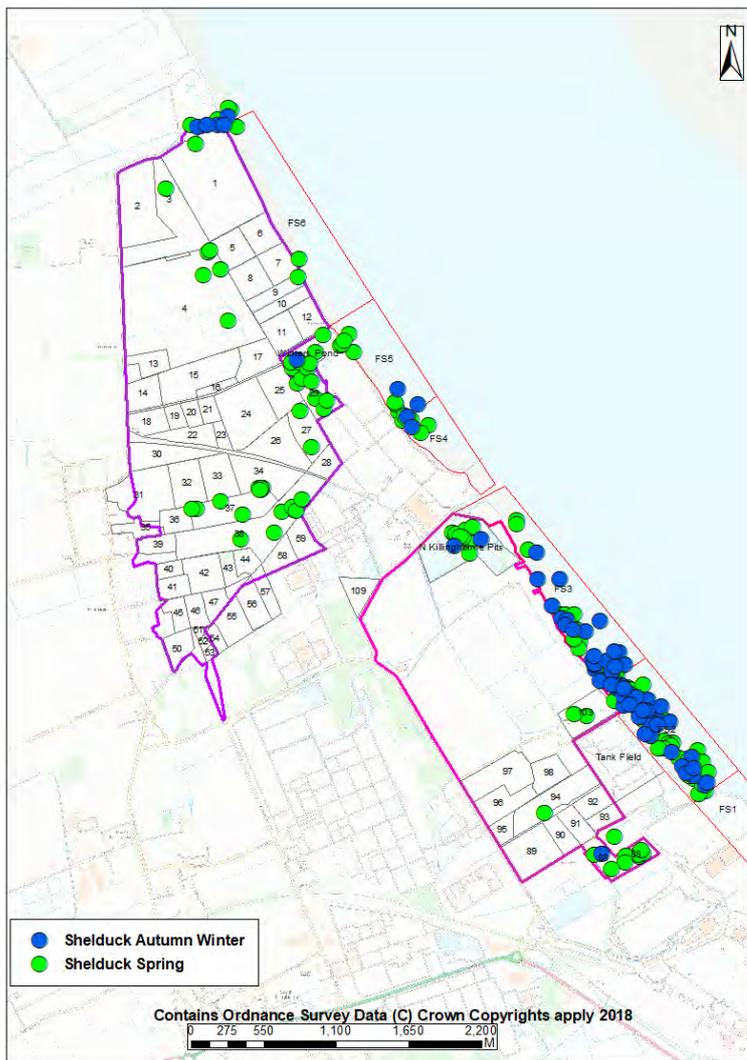
**Figure 3-34: Temporal distribution of Shelduck**



**Figure 3-35: Shelduck distribution**

The above map of overall distribution of Shelduck shows a wide spread of records from across the site, but many of the records shown inland of the river are from the

Spring and represent birds moving into breeding territories. Figure 3-36 (below) shows the clear separation between Autumn/Winter and Spring use of the area.

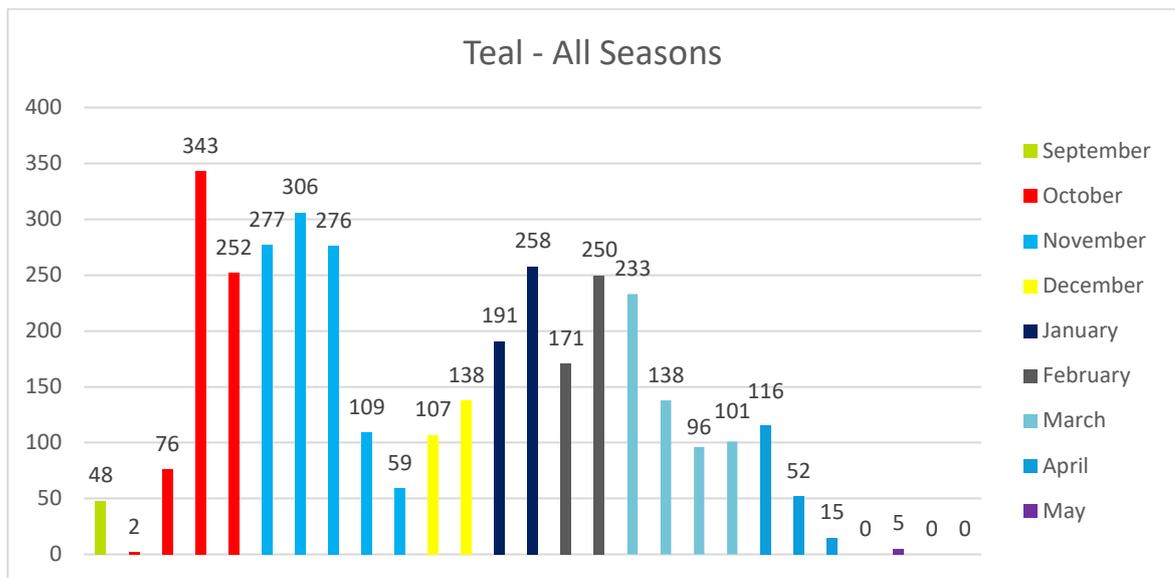


**Figure 3-36: Shelduck Autumn/Winter and Spring distributions**

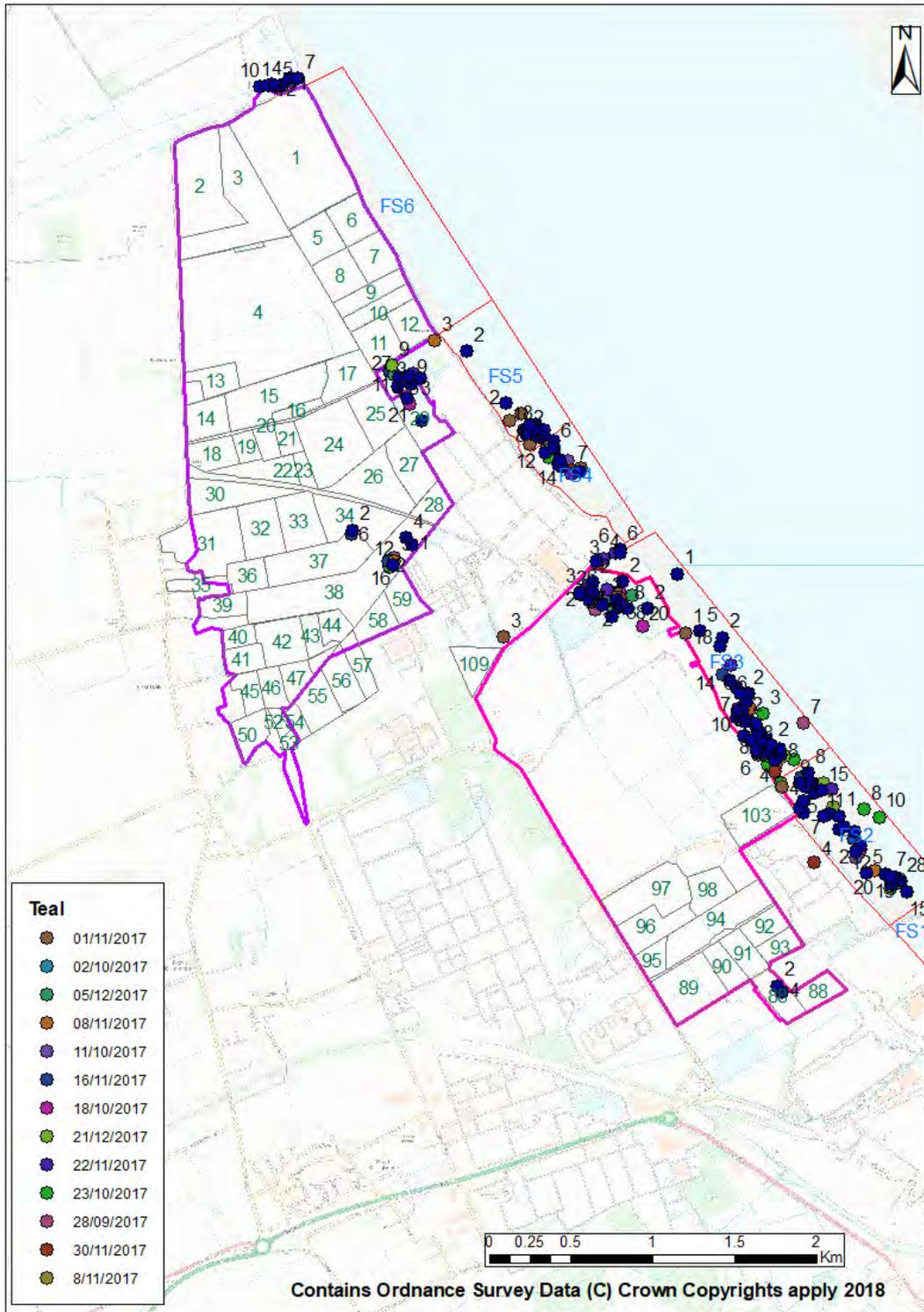
### 3.3.8 Teal

Teal were clustered in distinct areas, but were particularly concentrated around the outfall at Killingholme, North Killingholme Claypits and the jetties on the boundary of foreshore Sections 4 and 6. Outside of these locations, they could be found along the whole foreshore, Winters Pond and the Skitter. Numbers dropped off in April as birds dispersed to breed and became much more secretive.

Three figure flocks of Teal were mostly found at and around the outfall, with a flock of 104 in the nature reserve in midwinter and one of 162 in foreshore Section 2 in November.



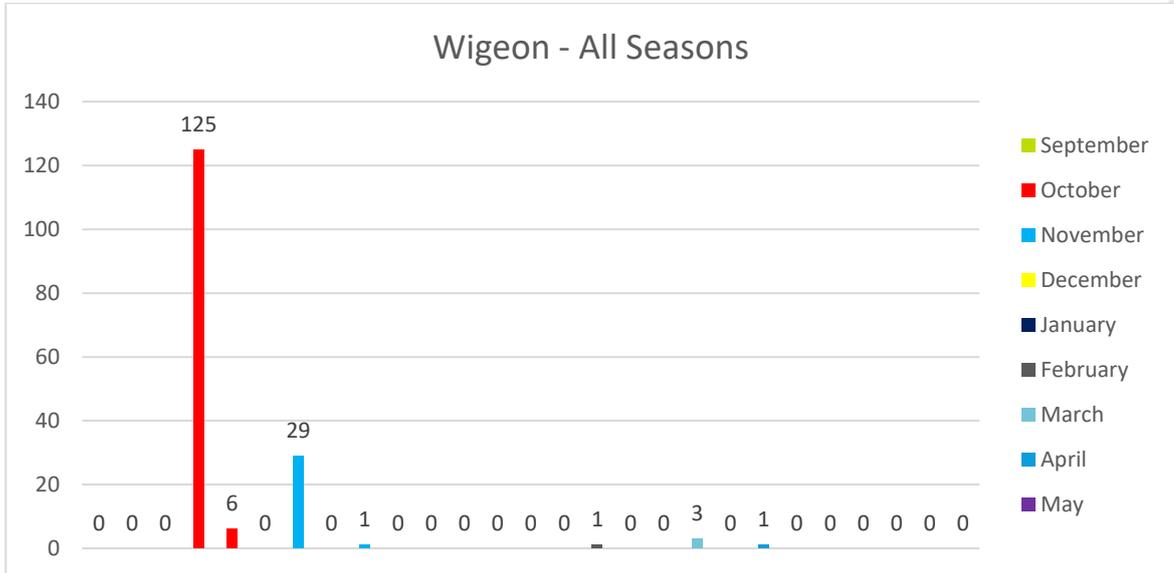
**Figure 3-37: Temporal distribution of Teal**



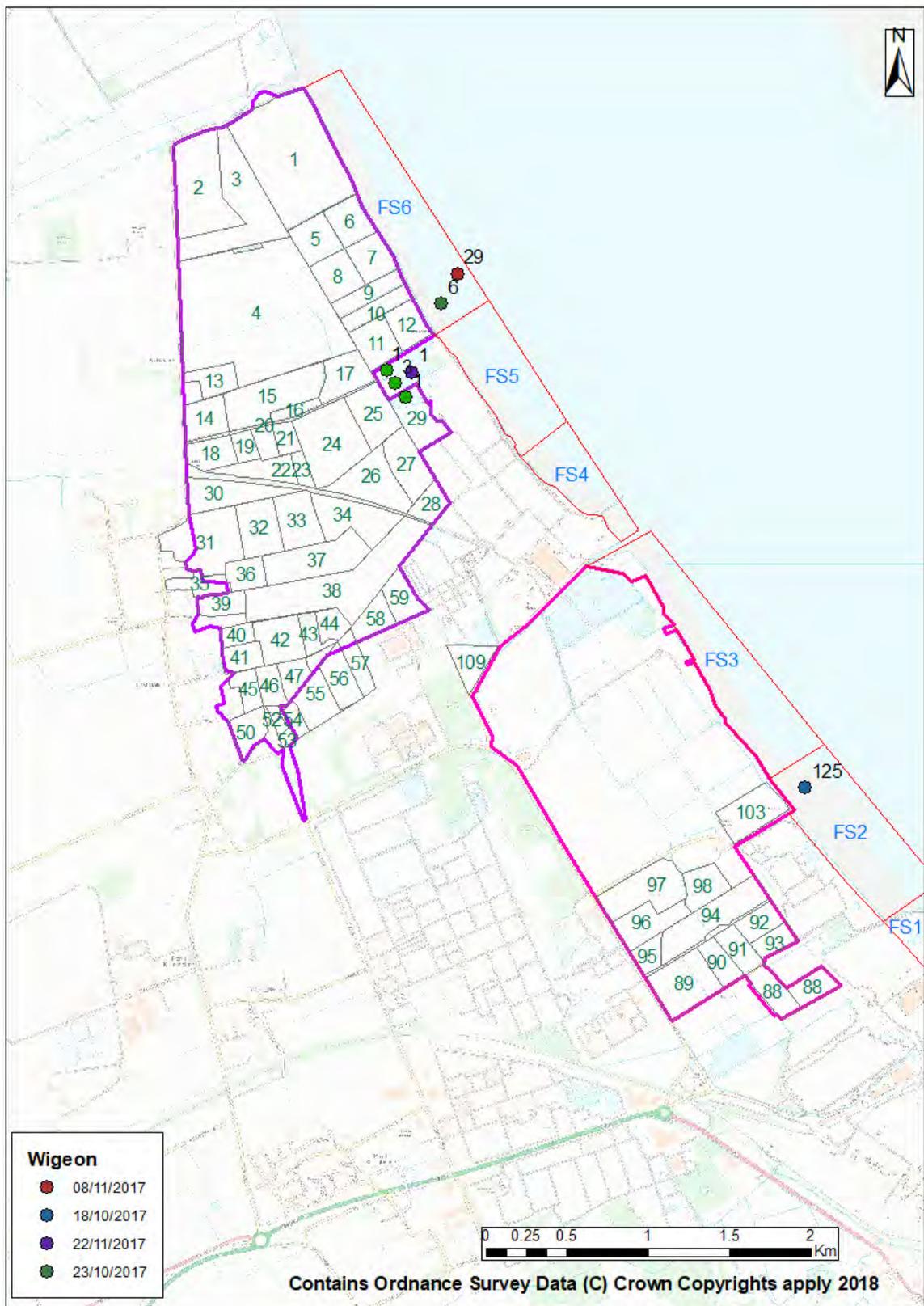
**Figure 3-38: Teal distribution**

### 3.3.9 Wigeon

Wigeon were largely restricted to small numbers of birds present at Winters Pond in Autumn and Winter, or nearby. However, a flock of 125 birds was present on the upper mudflats in foreshore Section 2 in October and, in November, 29 were seen flying down the river.



**Figure 3-39: Temporal distribution of Wigeon**



**Figure 3-40: Wigeon distribution**

## 4 Identification of important bird areas – ALP and AMEP

### 4.1 Species mapping

The locations of all bird sightings were mapped in GIS following each survey and analysis of this enables us to identify important areas, both per species, or for groups of species. The mapping also showed where birds moved to and from, both tidally and seasonally.

### 4.2 River Humber Habitats - ALP

The Humber foreshore is used by birds along the entire surveyed length. This extends from East Halton Skitter in the north, to the North Killingholme Terminal RoRo Jetty in the south and includes foreshore sections 4, 5 and 6. However, during the normal tidal range, much of this is submerged at high tide and is, therefore, inaccessible to foraging birds. At extremely high tides the river completely covers the mudflats and saltmarsh habitats throughout the reach and birds must leave to find other foraging opportunities. The sole exception to these are found at the southern end of the reach where there is an area of raised beach material adjacent to the new jetty. A derelict timber jetty at the boundary of FS4 and 5 also sits out of the water at high tide and forms an important roostsite for waders and wildfowl.

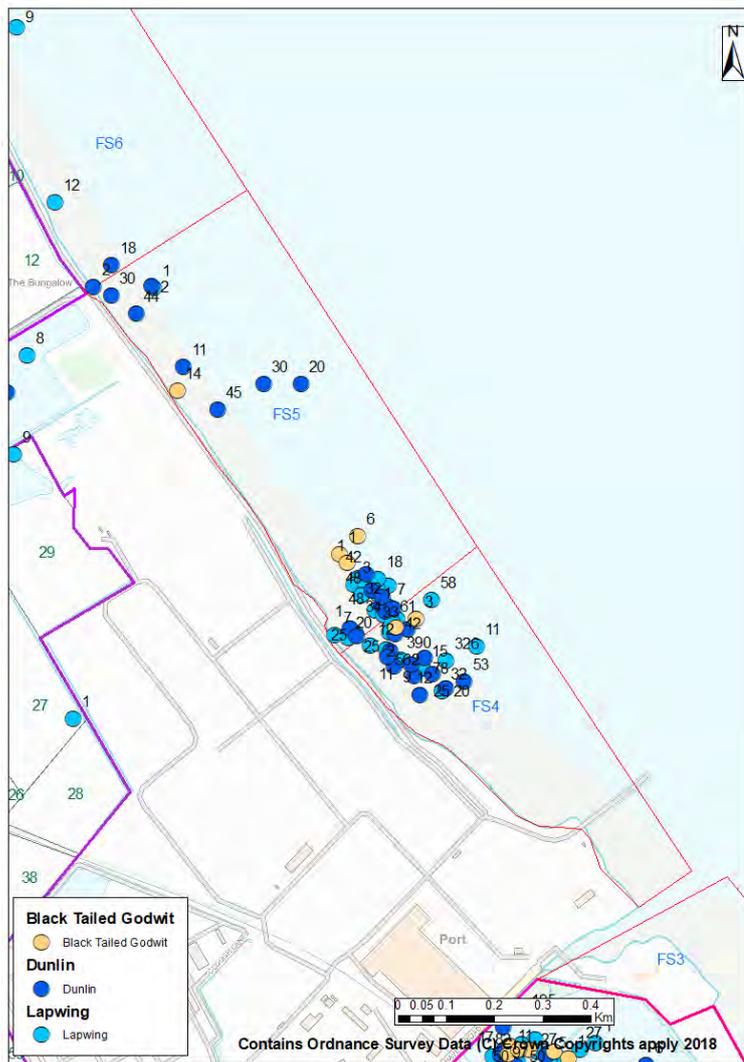
#### 4.2.1 Foreshore Sections 4 and 5

These two short sections are combined together here as they have a hotspot on their boundary and are therefore dealt with together. Section 4 is a short section which includes the busy North Killingholme port area (which has not been included in the surveys) but just to the north of this is another area of upper saltmarsh and a raised beach. This provides a haven for birds in all but the highest of tidal states. Upstream of this, Section 5 extends to Winters Farm and holds just a narrow strip of intertidal mud.

The raised beach area in Section 4 is home to another hotspot of bird activity as it seldom gets fully covered at high tide. There are derelict groynes within FS4 and a derelict jetty just over into FS5: this section often holds large numbers of birds, especially just after high tide as birds begin to disperse. The jetty also provides good roosting opportunities, with Mallard being frequently recorded here.

The assemblage here is often boosted by large numbers of Lapwing with six surveys recording three figure counts between December and February inclusive. The peak count for Lapwing was 562 on the 24<sup>th</sup> January. Dunlin numbers peaked here earlier in the season, with 480 estimated to be present on the 5<sup>th</sup> December, prior to being disturbed by a Peregrine Falcon *Falco peregrinus*.

Once upstream of the jetties, the mudflat area narrows considerably and is much less-used by birds. On a few occasions Teal and Mallard have been recorded here, with Mallard, in particular, being noted as arriving having been flushed from Winters Pond.



**Figure 4-1: Foreshore Sections 4 and 5 - general species distribution**

#### 4.2.2 Foreshore Section 6

This section extends from Winters Farm up to East Halton Skitter and is approximately 1.8km in length. The whole riverside frontage here consists of a narrow area of mudflat and provides very little foraging opportunities for target species of bird. Redshank and Curlew are sporadically encountered, with Turnstone often present on the rock armour toe, but no species is ever present in large numbers. The exception is at The Skitter, where high tide roosts often gather before dispersing across the wider mudflats at the north end of FS6. The Skitter supports regular Shelduck and Teal, both Godwit species, Curlew and other waders, but Redshank is by far the dominated species here.

Although the Skitter is technically outside of the survey area, it lies immediately adjacent to the scheme and birds here move into and across the survey area: it has, therefore, been included within the survey results as part of FS6.



**Figure 4-2: Foreshore Section 6 and Skitter - general species distribution**

### 4.3 Aquatic Habitats - ALP

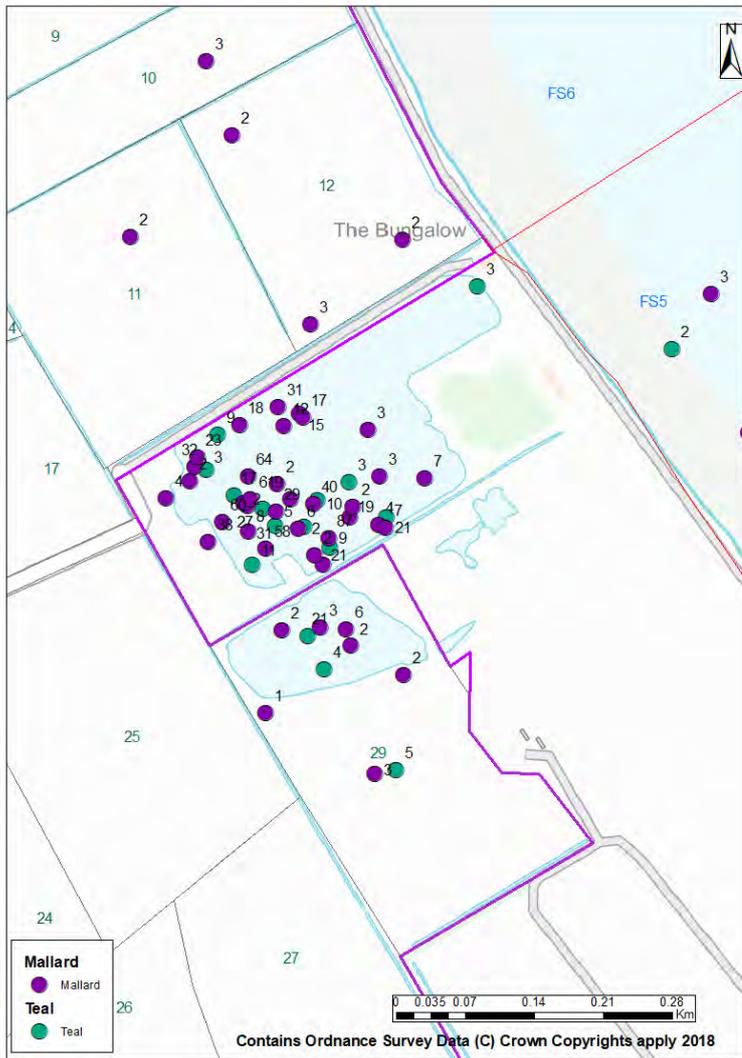
Set back from the river are two areas of clear importance to birds within the study area. These are both flooded clay pits. Only one is found immediately adjacent to the ALP area.

#### 4.3.1 Winters Pond

There are two large ponds at Winters, one of which falls within the development boundary in Field 29. These ponds were the chief location for wildfowl sightings with Common Scoter *Melanitta nigra*, Pintail *Anas acuta*, Shoveler *Anas clypeata*, Pochard, Goldeneye, Gadwall *Anas strepera* and Tufted Ducks *Aythya fuligula* all recorded together with both Little Grebe *Tachybaptis rufficollis* and Great Crested Grebe *Podiceps cristatus*, Mute Swans *Cygnus olor* and Whooper Swans *Cygnus cygnus*. The reedbed between the two ponds was the only location where Bittern (a solitary bird) was recorded during the surveys.

From the Target species list, Winters Pond supported the survey peak count of Mallard, with 87 on 28<sup>th</sup> September, making it an important refuge for this species, with 17% of the Humber population [Austin *et al*, 2008]. The ponds here also supported regular flocks of Teal and occasionally Shelduck. The grazed fields surrounding these ponds also supported flocks of Lapwing (peak 100), Black-tailed

Godwit (23) and Curlew (58). The adjacent fields also held good numbers of Lapwing and Curlew (see Fields 25 and 27).



**Figure 4-3: Winters Pond**

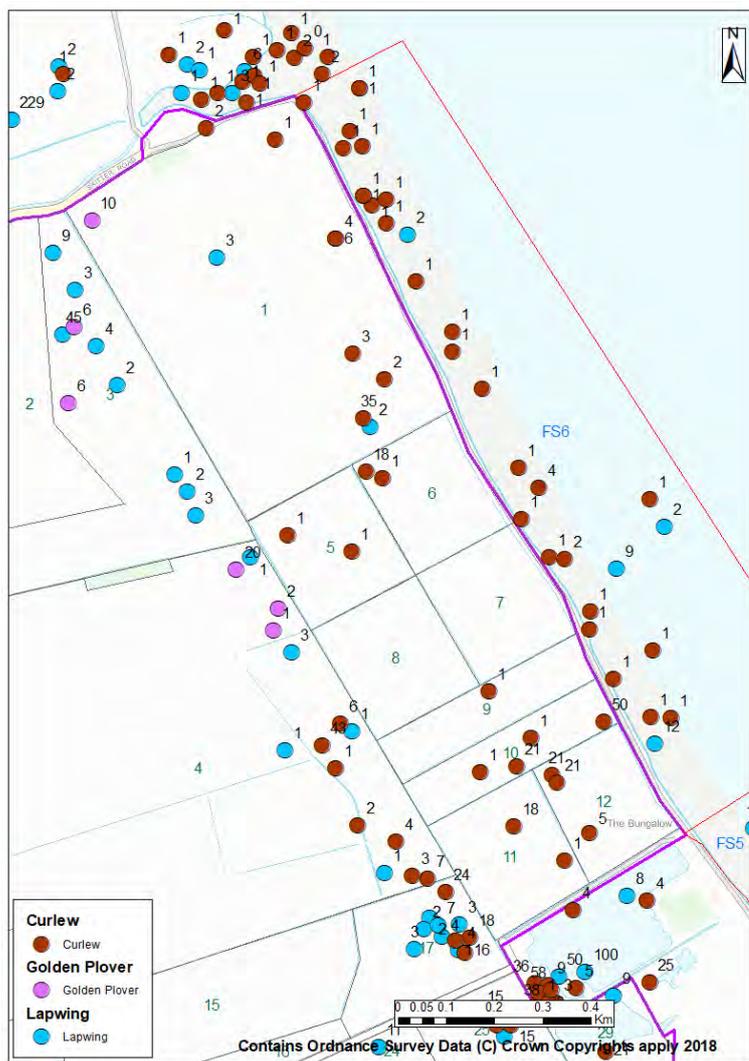
#### 4.4 Terrestrial Habitats - ALP

There are four individual, or groups of, fields which regularly held target species and the territory maps showed clear clusters for certain species, thus demonstrating their importance.

##### 4.4.1 Halton Marshes (Fields 1 to 12)

Although these were mostly abandoned arable fields which supported large numbers of farmland passerines, Fields 2, 3 and 4 were still in production. These fields held good numbers of Lapwing, occasional Golden Plover and Wintering geese. Midway through the survey period, the internal hedgerows were removed as part of the preparations for creation of the new wetland habitat.

In the Spring, Mallard began to be recorded in pairs across Fields 1, 5, 6, 7 and 8, and in late April/early May Whimbrel were recorded on these fields.

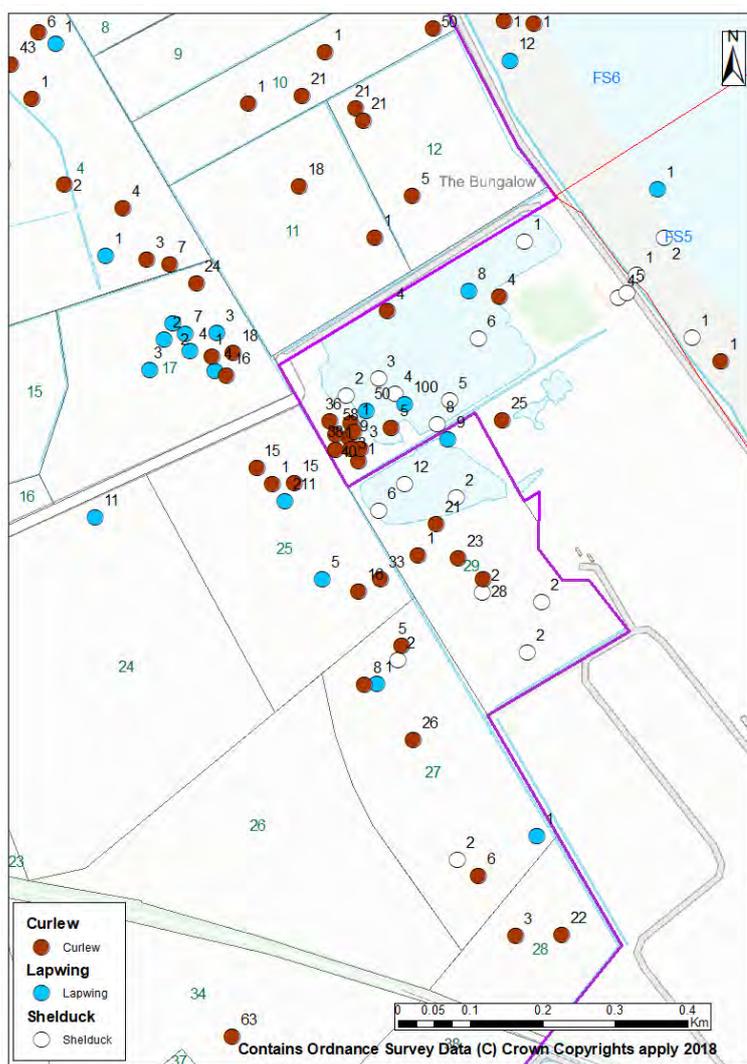


**Figure 4-4: Fields 1 to 12 (Halton Marshes - general Winter species distribution)**

4.4.2 Fields around Winters Pond (17, 25, 27, 28 and 29)

These fields were often used by foraging birds which may have spread from the waterbodies at Winters Pond. Lapwing, in particular, favoured some of these fields, but Curlew and both Greylag Geese *Anser anser* and Pink-footed Geese *Anser brachyrhynchus* were also recorded grazing here. These flocks included a peak count of 211 Lapwing on 8<sup>th</sup> November.

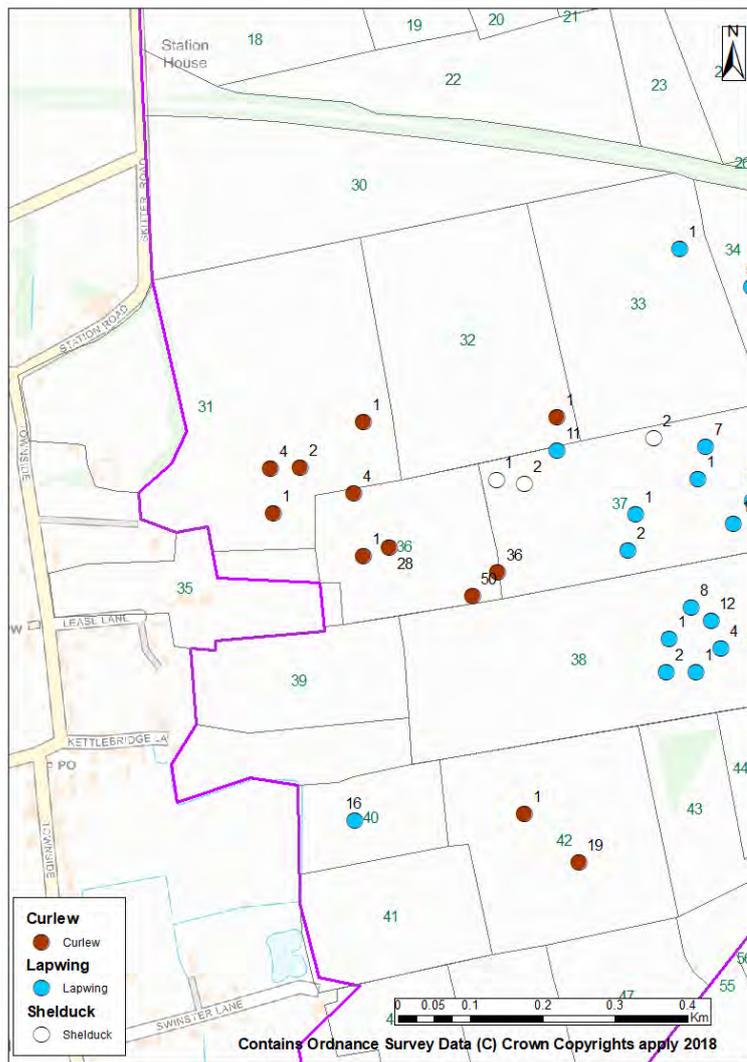
Field 29, which also contains one of the wildfowl ponds similarly regularly held large numbers of geese, with Lapwing and Shelduck also frequently recorded. Many of the records of Lapwing in Field 17 relate to records from late March until the end of the survey season in May, when at least 2 pairs had set up breeding territories.



**Figure 4-5: Fields around Winters Pond - general species distribution**

#### 4.4.3 East Halton Fields (31, 32 and 36)

Field 31 has several earthworks which are part of the Manor Farm Moated Site, a Scheduled Ancient Monument. As it is not subject to intensive cultivation it remains an area of unimproved grassland and likely holds a good soil invertebrate assemblage. The two adjacent fields had been used for a grass crop and Curlew were regularly recorded here. Numbers were often only in single figures, but flocks of 50, 36 and 28 were recorded in Field 36, on the 1<sup>st</sup> and 16<sup>th</sup> November, and 7<sup>th</sup> February respectively. No other target species was recorded using these fields during the survey, but they are considered important for Curlew.



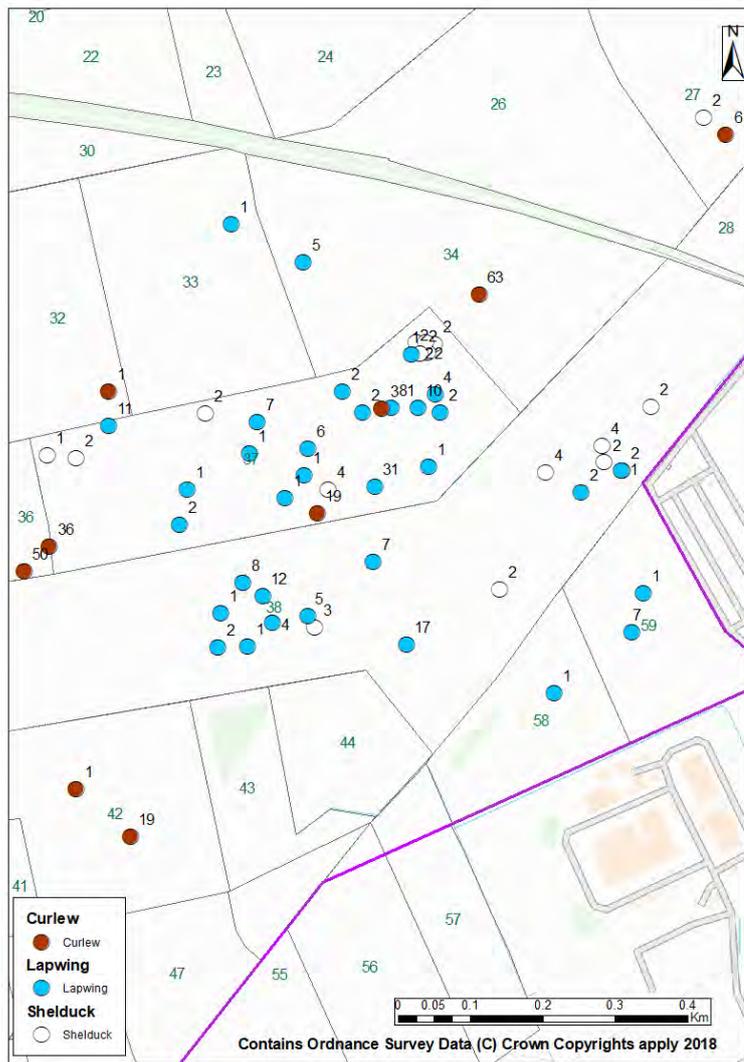
**Figure 4-6: East Halton Fields - Curlew distribution**

#### 4.4.4 Archaeology Investigation Fields (37 and 38)

These two large fields have been subject to large areas of archaeological investigations. This has resulted in several large areas where topsoil has been removed and stockpiled in large bunds around open areas of subsoil with the remains of trial pits, trenches and excavated features. These areas have not been back-filled and this has left a mosaic of nutrient-poor soils and ponds of differing depths and areas.

These features have been largely reclaimed by pioneer, ruderal vegetation which draws in a rich assemblage of birds. Some of the larger areas of open water draw in wading birds such as Ringed Plover and Redshank, which was seldom recorded away from the Humber during the survey, and wildfowl like Mallard, Shelduck and Teal.

Of particular note were the numbers of Lapwing present in Spring when between 10 and 14 pairs set up territories. Snipe were also commonly encountered on the shallow pools during midwinter.



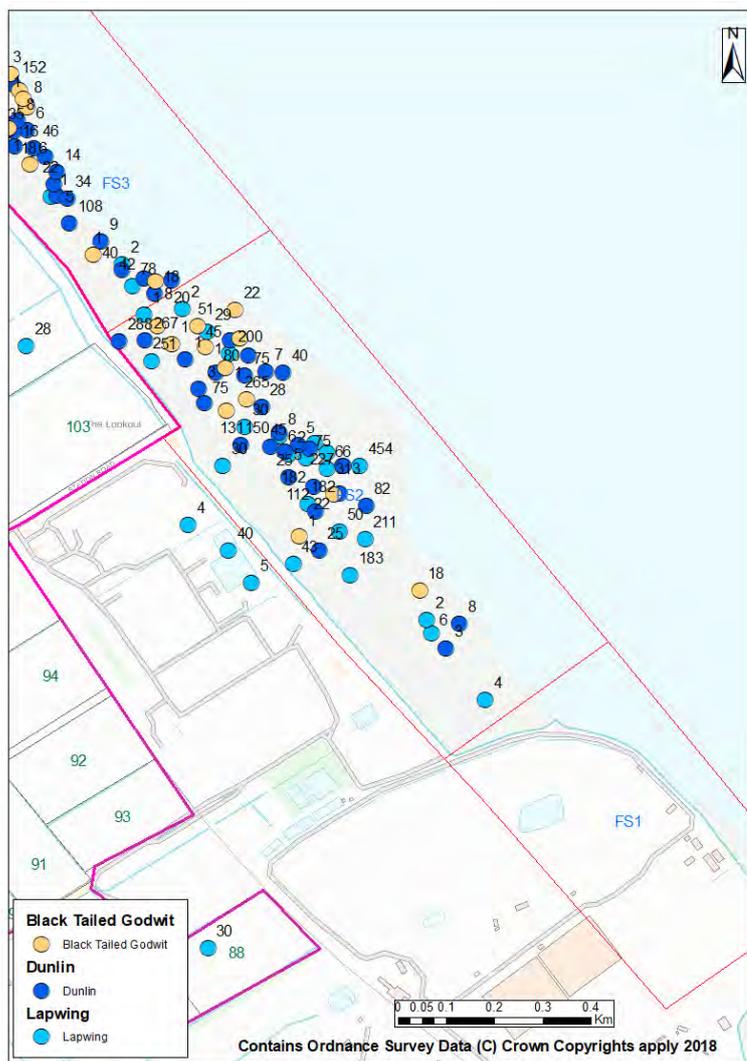
**Figure 4-7: Fields 37 and 38 - general species distribution**

#### 4.5 River Humber Habitats – AMEP

Foreshore Section 1 lies outside of the area we were commissioned to include in the survey.

##### 4.5.1 Foreshore Section 2

This section contains some of the most vegetated 'Upper Saltmarsh' habitat within the survey area. Except at the highest of tides, much of the area (especially between the oil jetty and the coal terminal) remains exposed. This provides some refuge for birds during high tide and occasionally very large accumulations of foraging and loafing birds can be found here. The section extends upstream beyond the lighthouses and becomes more typical as it transitions to Section 3. However, on a falling tide, birds which have found refuge in the upper saltmarshes begin to disperse onto these mudflats. On several occasions large numbers of birds were found around 'The Lookout' at the end of Station Road but, on the 18<sup>th</sup> October, there were particularly big flocks present on these mudflats: these included 265 Black-tailed Godwit, 325 Dunlin, 750 Redshank, 152 Shelduck, 275 Teal and 125 Wigeon.

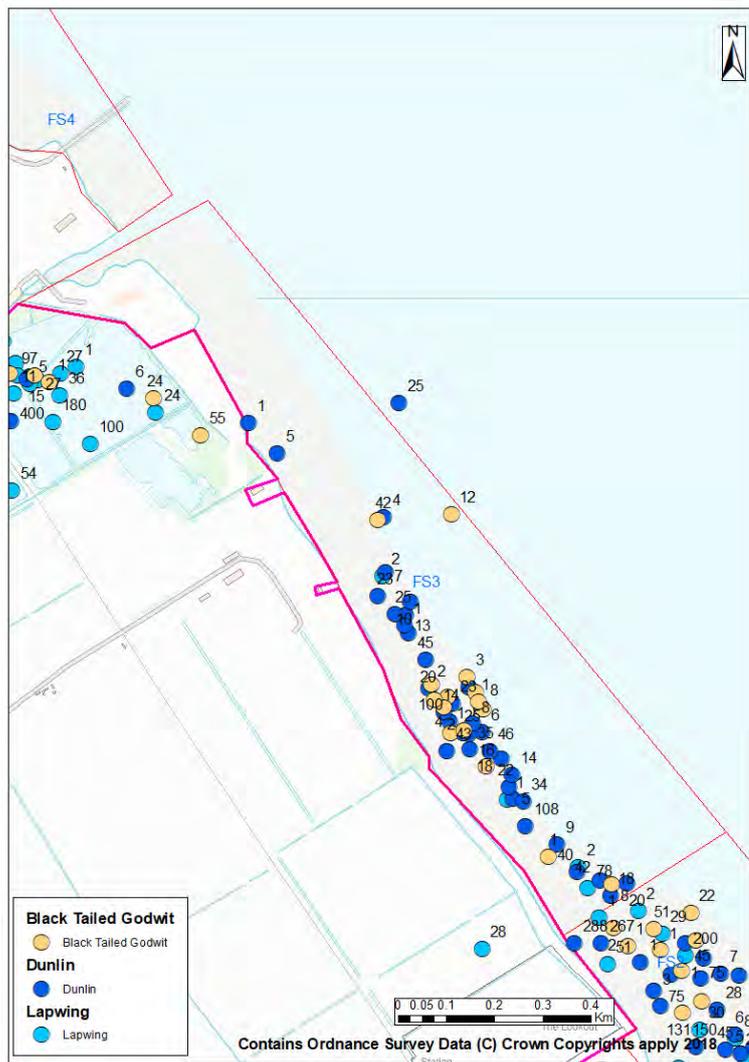


**Figure 4-8: Foreshore Section 2 - general species distribution**

#### 4.5.2 Foreshore Section 3

Extending upstream to North Killingholme Haven, results showed that the birds in this long reach strongly favour the southern half. This part of FS3 contains a gravity outfall carrying freshwater from within the Killingholme development area. This influx of apparently nutrient-rich water is speculated to support a dense invertebrate assemblage in the mud, which subsequently supports large numbers of waders and wildfowl. Although missing the larger numbers found in FS2, the outfall supports a wide range of wading birds, including Avocet, Oystercatcher and Ringed Plover. Large numbers of Teal are also regularly found here, with 202 recorded on 8<sup>th</sup> November, this representing a peak count.

Progressing upriver, the mudflats get progressively quieter and usually support only low numbers of Redshank and Curlew and occasionally Shelduck. The outfall alongside Haven Road is the boundary between this section and Section 4. As another source of freshwater, this channel can also support double-figure counts of Teal and Redshank.



**Figure 4-9: Foreshore Section 3 - general species distribution**

#### 4.6 Aquatic Habitats – AMEP

The second of the freshwater habitats within the wider survey area.

##### 4.6.1 North Killingholme Claypits

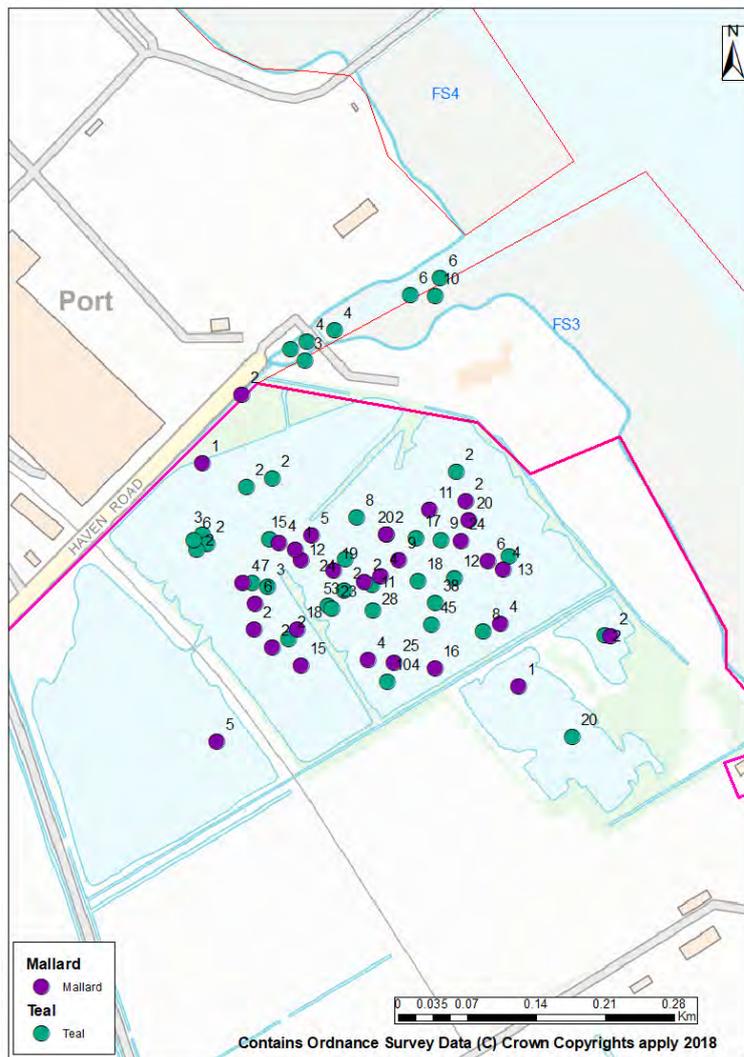
The North Killingholme Haven Claypits is an SSSI (north Killingholme Haven Pits) and Lincolnshire Wildlife Trust nature reserve (Killingholme Haven Pits) and consists of two large flooded claypits separated by a disused railway line, and two smaller, reed-fringed pools to the south. The survey covered the two smaller pools and the eastern large pool.

Bird use was very changeable and dependent on the time of year and state of the tide. Water levels within the main lagoon were also very changeable, and this also affects the species found on the site.

The North Killingholme Claypits hold larger numbers of birds during high tide periods when the shallow water provides foraging habitat which is otherwise not available elsewhere. Immediately following high tide, dispersal was evident by flocks of birds heading southeastwards towards FS3.

The clay pits here supported regular flocks of 400-600 Black-tailed Godwit, particularly in the Autumn, 300-400 Dunlin and had the peak Avocet count for the

whole survey period. Other species had peak counts here of 104 Teal, 227 Redshank and 269 Lapwing.



**Figure 4-10: North Killingholme Claypits**

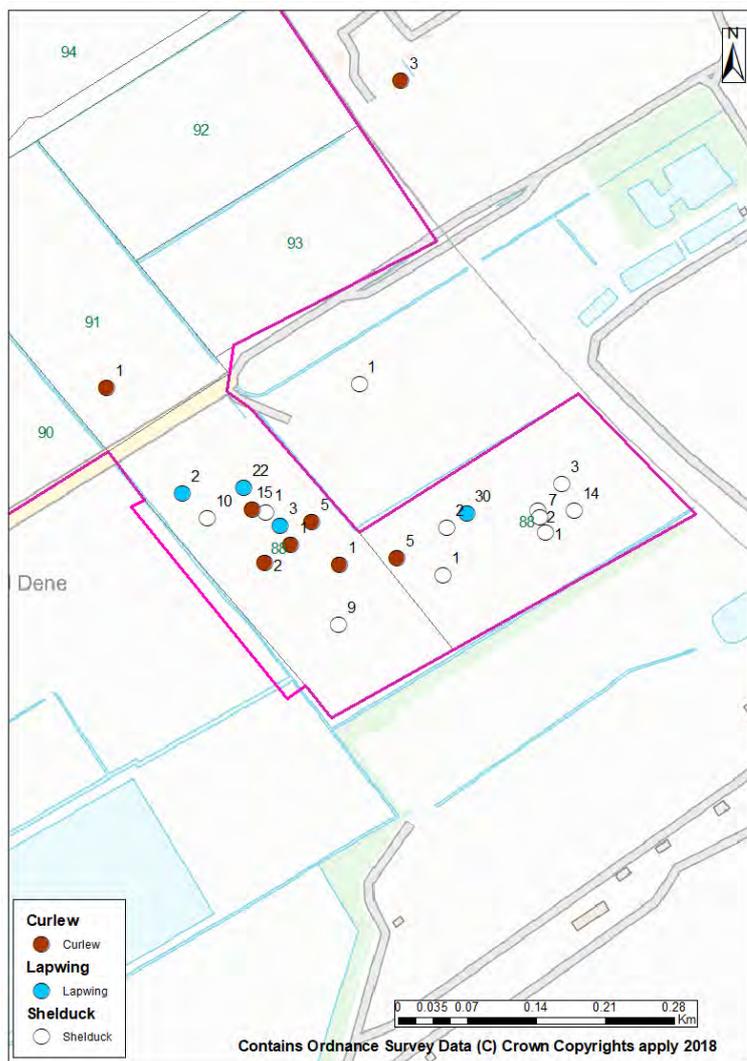
#### 4.7 Terrestrial Habitats – AMEP

Two areas were recorded as being important for birds within the AMEP area, with most of the fields here having already been surfaced.

##### 4.7.1 Marsh Lane Fields (88)

At the far south of the study area there are two fields within the survey area which are to the south of Marsh Lane. Marsh Lane provides the access to the gas terminal and is largely undisturbed. The fields to the north have been withdrawn from agricultural production and have developed a dense growth of tall ruderal vegetation, whereas the fields across the road are grazed by horses.

The closely-grazed turf provides foraging habitat for a range of species, but Curlew, Lapwing and Shelduck were regularly recorded taking advantage of this resource.

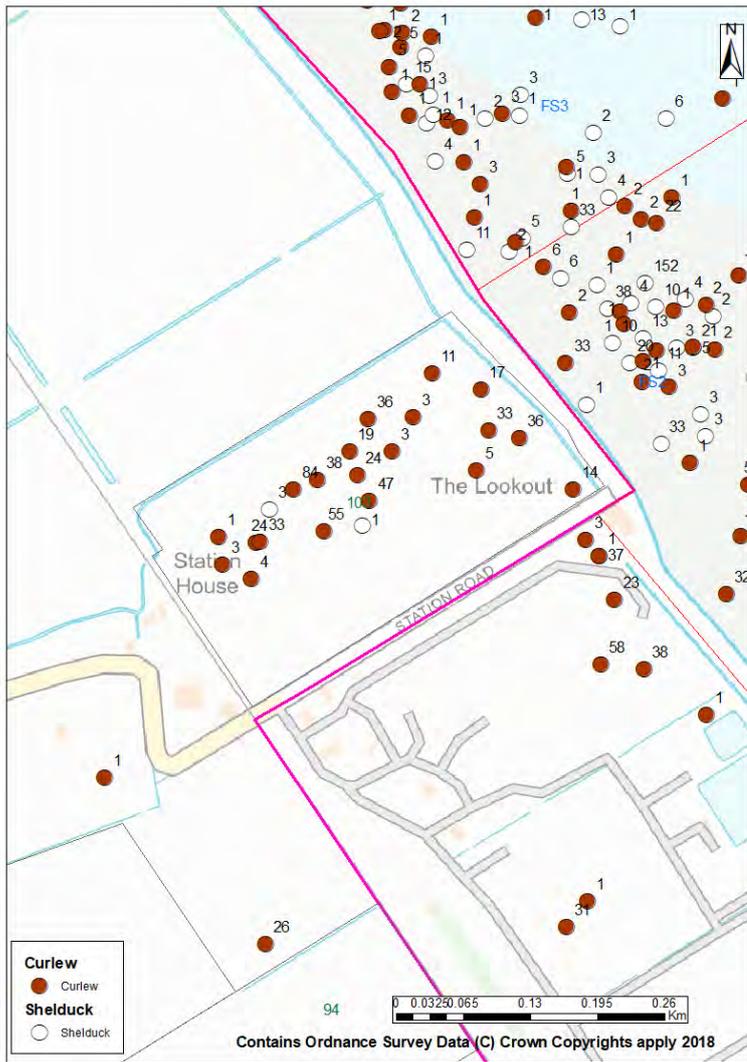


**Figure 4-11: Field 88 - general species distribution**

#### 4.7.2 Station Road (Field 103)

A single field surrounded by development on three sides, with the river on the fourth was a clear hotspot for Curlew and has become known by the surveyors as 'the Curlew field'. With the new Killingholme development extending down to the northern side of the field, and the Gas Caverns to the south, this grass field provides an opportunity for foraging birds which is present nowhere else in the area. As such it can sometimes hold large flocks of birds. Presence was noted on 15 surveys, and on only one of these was the count in single figures, with a peak of 84 birds on the 15<sup>th</sup> March, averaging 33 birds over the season.

Curlew were noted to regularly commute between this field and FS2, with occasional flocks also foraging in the gas caverns, generally when no birds were present in F103. This suggests that the same Winter flocks habitually used FS2, the cavern field and F103 throughout the Winter.



**Figure 4-12: Field 103 - Curlew distribution**

## 5 Summary

### 5.1 Summary of bird species

Several of the main species of interest listed in the SPA or SSSI citations were present in only small numbers during 2017-2018, and two were not recorded at all (Dark-bellied Brent Goose and Hen Harrier).

All of the key scheme targets were recorded, however, the numbers of these varied enormously. In part this was due to a delay in commissioning the surveys in Autumn 2017, which allowed only one survey in September. This may have resulted in missing passage waders, including Black-tailed Godwit, Golden Plover and Whimbrel. However, certain species, especially Bar-tailed Godwit, Grey Plover and Ruff are probably rare in this part of the estuary.

Of the other species listed in the citations, but specifically not included in the target species in this study, many were commonly recorded in the same areas. Goldeneye, Pochard and Scaup were all found at Winters Pond, with more Pochard at North Killingholme Claypits. Of the waders, Greenshank, Knot, Oystercatcher and Sanderling were seen in the same few hotspots along the foreshore with Turnstone, however the latter species was also regularly observed along FS6 and was the second most abundant bird in this section, after Redshank but ahead of Curlew.

### 5.2 Summary of important bird areas

The upper saltmarsh and raised beach in FS2 and FS4 provide roosting and foraging habitat for birds in all but the highest of tides, and in FS4, the mudflats are one of the first areas to emerge on a falling tide. The mudflats around the outfall in Section 3, the jetties in the boundary of Sections 4 and 5 and at the Skitter are used preferentially by foraging birds. This makes these the key areas within the designated parts of the Humber itself.

North Killingholme Claypits and Winters Pond provide safe refuge at high tide and especially additional foraging opportunity when the Humber is at flood tide. Winters Pond in particular, including Field 2, is particularly valuable for wildfowl and waders including Black-tailed Godwit, Curlew and Lapwing.

Most of the remaining agricultural fields are largely devoid of target species, supporting instead a wide range of passerines, however a few fields stood out for various species. The fields around Halton Marshes supported Lapwing and Golden Plover and the fields around Winters Pond supported Lapwing and Curlew. Curlew were also found in good numbers in fields close to East Halton and in the south, in Fields 88 and 103.

The exposed archaeological investigation fields provided ponds and wet ground of varying depth which supported a range of waders and wildfowl during 2017-2018. These were particularly responsible for the increasing numbers of birds noted from the end of February onwards, which were displaying breeding behaviour.

### 5.3 Summary of target populations

The 'wader-day' calculations for Curlew, Golden Plover, lapwing and Ruff have been compared with the target figures agreed with the Steering Group for the ALP Bird monitoring programme. These are set out below.

**Table 5-1: Wader day targets and results**

Target Species	Estimate (2007-2008)	Estimate (Jan-Mar 2007 & July-Dec 2007)	2017-2018 Results
Curlew	13,930	15,267	10,547
Golden Plover	18,634	17,584	2,369
Lapwing	56,707	72,821	34,181
Ruff	301	679	362

The original target figures were set out based on limited time data, and are set for the entire ALP development, including post-construction and include the north bank. Therefore, as the development has not yet commenced, and the current results reflect survey effort solely on the Halton Marshes area.

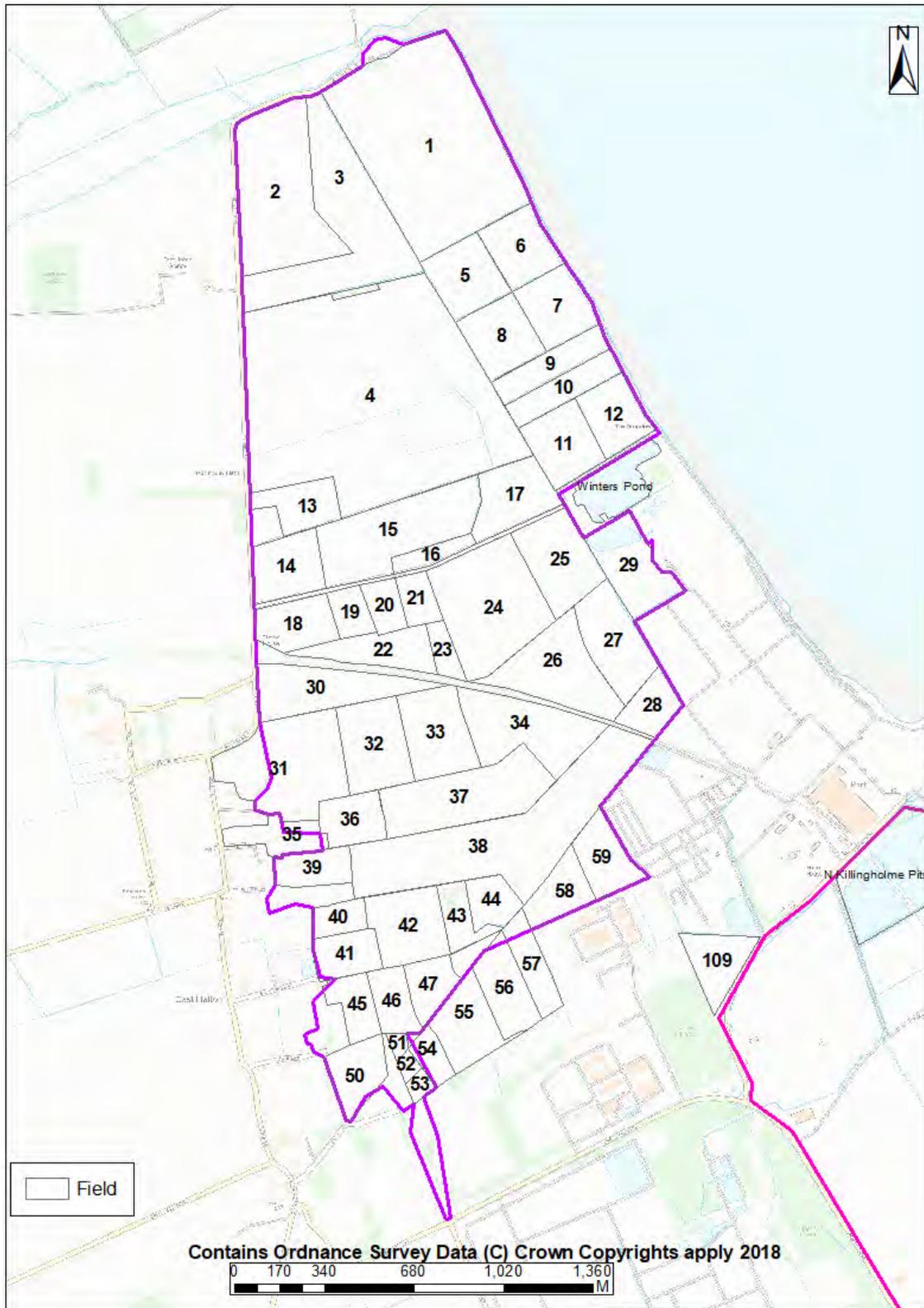
Numbers of Golden Plover in particular, are very low compared with the estimates. Consideration must be given to the mobile nature of this species. Golden Plover generally forage at night on arable fields and loaf during the day. Given the availability of foraging habitat in the wider area, it is unsurprising that birds may have been absent from the study site during the site visits in this particular year. There has been a widespread decline in Golden Plover numbers since 2007-2008, although in recent years these have started to recover (Frost et al, 2018), which may also help to explain the lower numbers.

Surveys of the north bank of the river are proposed to commence upon the start of the ALP construction phase and therefore the above figures should currently be treated with a degree of caution and the existing works cannot be determined to be detrimental at present.

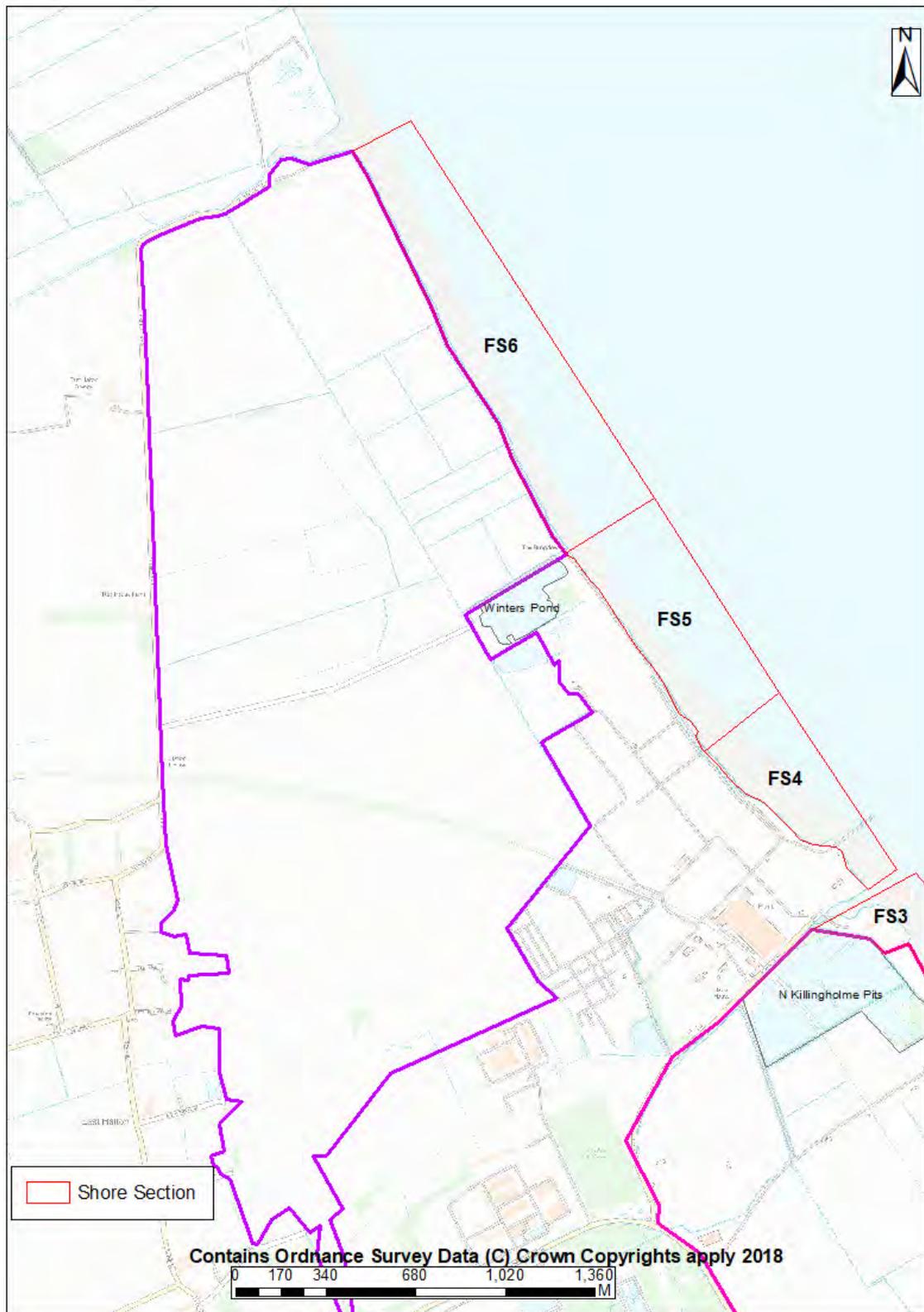
## **Appendices**

### **A Field and Foreshore numbers**

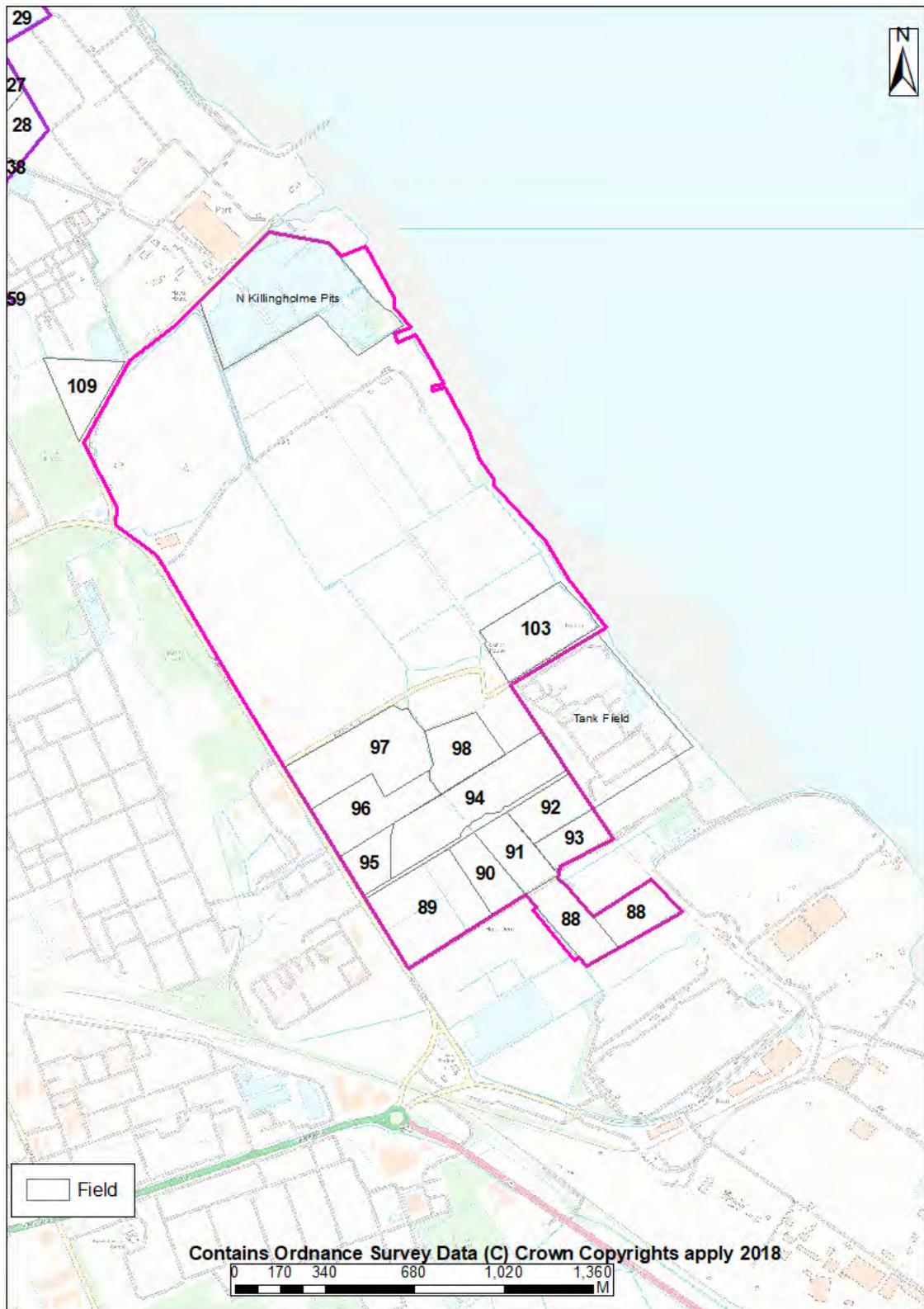
### A.1 ALP Fields



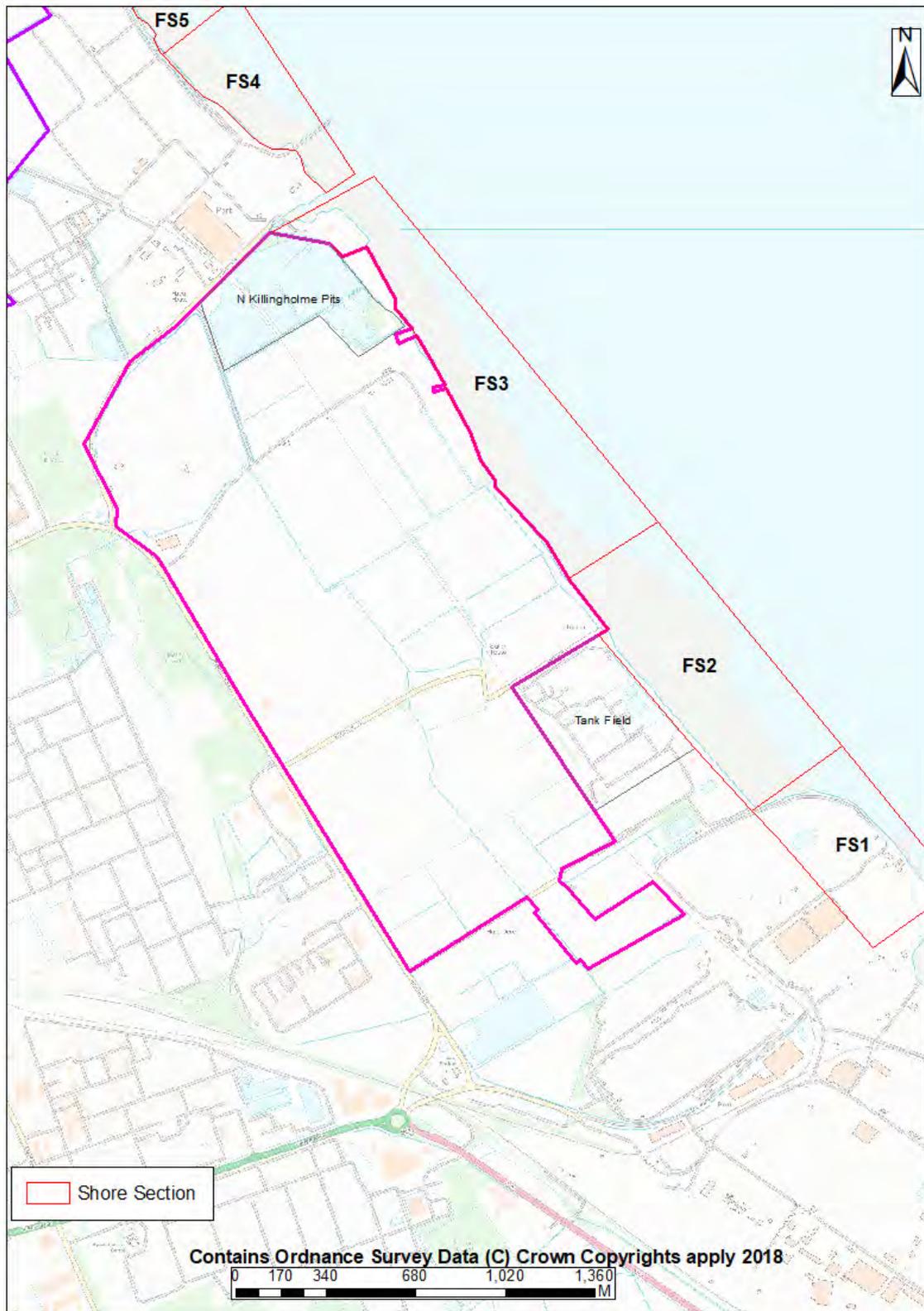
## A.2 ALP Foreshore



### A.3 AMEP Fields



### A.4 AMEP Foreshore



## **B Key Species – Layered PDFs**

### **B.1 Black-tailed Godwit**

### **B.2 Curlew**

### **B.3 Golden Plover**

### **B.4 Lapwing**

### **B.5 Ruff**

## Black Tailed Godwit Records

### September 2017

● 28/09/2017

### October 2017

● 02/10/2017

■ 11/10/2017

▲ 18/10/2017

◆ 23/10/2017

### November 2017

● 01/11/2017

■ 08/11/2017

▲ 16/11/2017

◆ 22/11/2017

◆ 30/11/2017

### December 2017

● 21/12/2017

### January 2018

● 12/01/2018

■ 24/01/2018

### February 2018

● 07/02/2018

■ 22/02/2018

### March 2018

● 07/03/2018

■ 15/03/2018

### April 2018

● 26/04/2018

### May 2018

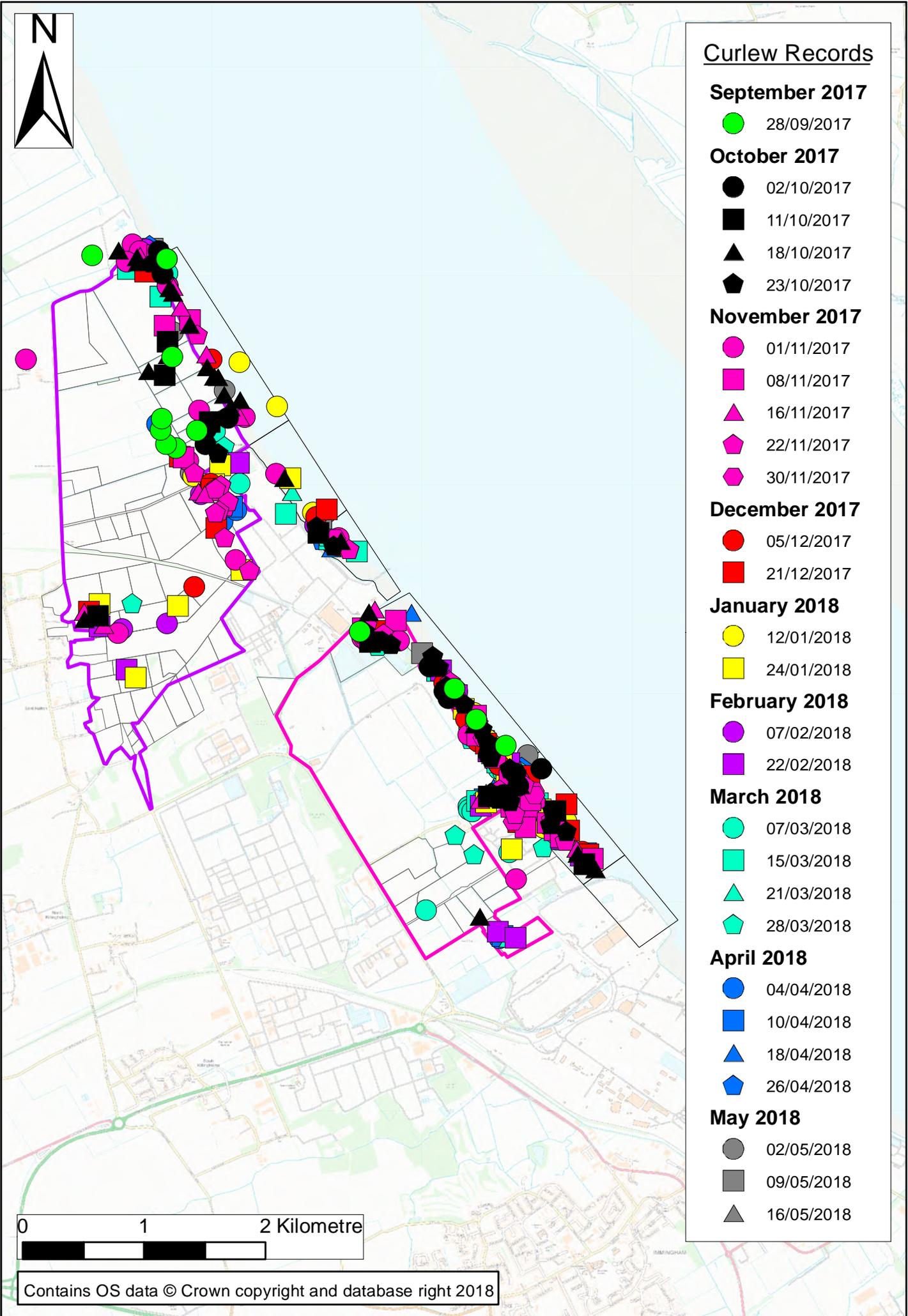
● 02/05/2018

■ 09/05/2018



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## Golden Plover Records

### September 2017

● 28/09/2017

### October 2017

● 11/10/2017

■ 18/10/2017

▲ 23/10/2017

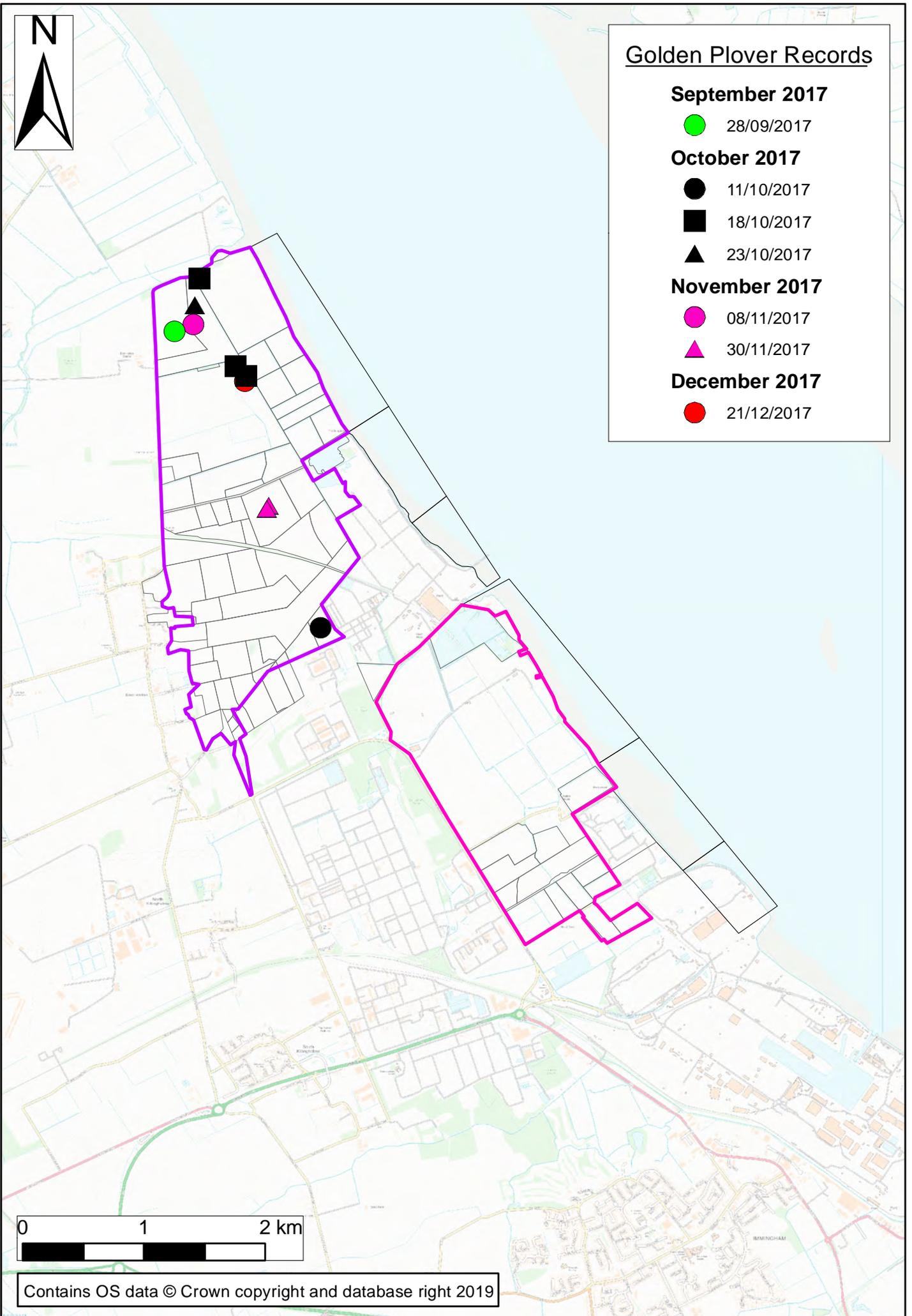
### November 2017

● 08/11/2017

▲ 30/11/2017

### December 2017

● 21/12/2017



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## Lapwing Records

### September 2017

● 28/09/2017

### October 2017

● 02/10/2017

■ 11/10/2017

▲ 18/10/2017

◆ 23/10/2017

### November 2017

● 01/11/2017

■ 08/11/2017

▲ 16/11/2017

◆ 22/11/2017

◆ 30/11/2017

### December 2017

● 05/12/2017

■ 21/12/2017

### January 2018

● 12/01/2018

■ 24/01/2018

### February 2018

● 07/02/2018

■ 22/02/2018

### March 2018

● 07/03/2018

■ 15/03/2018

▲ 21/03/2018

◆ 28/03/2018

### April 2018

● 04/04/2018

■ 10/04/2018

▲ 18/04/2018

◆ 26/04/2018

### May 2018

● 02/05/2018

■ 09/05/2018

▲ 16/05/2018

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### Ruff Records

#### October 2017

● 18/10/2017

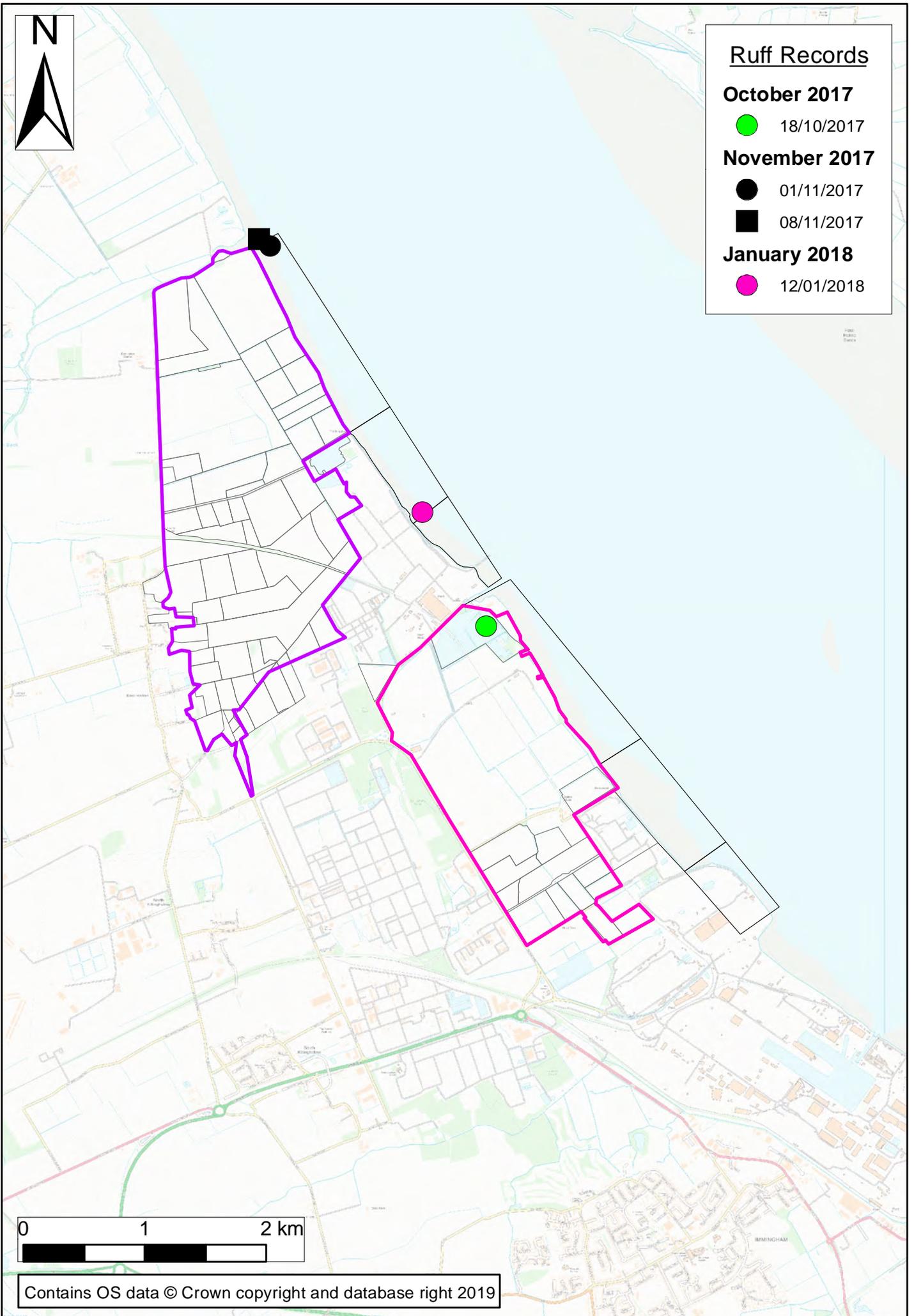
#### November 2017

● 01/11/2017

■ 08/11/2017

#### January 2018

● 12/01/2018



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## C Wader Day Calculations

Wader day calculations given in the Target Species descriptions were set out only showing calculations for actual survey periods. The tables below show additional detail, including the Wader Day calculations for the whole period and for the entire period of time defined as each season by Natural England at project outset.

The Autumn Passage season was September to November inclusive, but surveys only commenced on 28<sup>th</sup> September.

Winter surveys were to be fortnightly from the beginning of October to March inclusive.

Spring passage was March to mid-May inclusive.

Using survey dates, to give a more realistic dataset, Autumn is calculated as 28<sup>th</sup> September to 30<sup>th</sup> November. Winter (due to fortnightly surveying) commenced on 11<sup>th</sup> November and finished on 15<sup>th</sup> March and Spring commenced on 7<sup>th</sup> March and ended on 15<sup>th</sup> May. The number of days per season therefore varies according to which set of dates are used.

	Autumn	Winter	Spring
<b>Survey Dates</b>	63	155	70
<b>Calendar Dates</b>	90	181	75

The use of calendar dates may make more sense for future studies looking at data from 2018-2019 and possible 2019-2020. The number of days from the 1<sup>st</sup> September to 15<sup>th</sup> May is 257.

### C.1 Black-tailed Godwit

Black-tailed Godwit	Total	Autumn	Winter	Spring
Total No. of birds	250	217	245	32
Mean per visit	9.26	21.7	15.31	2.91
<b>Wader Days (survey dates)</b>	<b>2129.8</b>	<b>1367.1</b>	<b>2373.44</b>	<b>203.64</b>
<b>Wader Days (calendar dates)</b>	<b>2379.82</b>	<b>1953</b>	<b>2771.56</b>	<b>218.18</b>

### C.2 Curlew

Curlew	Total	Autumn	Winter	Spring
Total No. of birds	1108	518	791	304
Mean per visit	41.04	51.8	49.44	27.82
<b>Wader Days (surveys)</b>	<b>9439.2</b>	<b>3263.4</b>	<b>7662.8</b>	<b>1947.27</b>
<b>Wader Days (calendar dates)</b>	<b>10547.28</b>	<b>4662</b>	<b>8948.19</b>	<b>2086.36</b>
Total: River	92	50	69	28
Mean: River	3.41	5	4.31	2.55
<b>Wader Days: River</b>	<b>784.3</b>	<b>315</b>	<b>668.44</b>	<b>178.18</b>
<b>Wader Days (calendar dates)</b>	<b>876.37</b>	<b>450</b>	<b>780.56</b>	<b>190.9</b>
Total: Fields	1016	468	725	281
Mean: Fields	37.63	46.8	45.31	25.55
<b>Wader Days: Fields</b>	<b>8654.9</b>	<b>2948.4</b>	<b>7023.44</b>	<b>1788.18</b>
<b>Wader Days (calendar dates)</b>	<b>9670.91</b>	<b>4212</b>	<b>8201.56</b>	<b>1915.9</b>

### C.3 Golden Plover

<b>Golden Plover</b>	<b>Total</b>	<b>Autumn</b>	<b>Winter</b>	<b>Spring</b>
Total No. of birds	249	248	248	0
Mean per visit	9.22	24.8	15.5	0
<b>Wader Days (survey dates)</b>	<b>2120.6</b>	<b>1562.4</b>	<b>2402.5</b>	<b>0</b>
<b>Wader Days (calendar dates)</b>	<b>2369.54</b>	<b>2232</b>	<b>2805.5</b>	<b>0</b>

### C.4 Lapwing

<b>Lapwing</b>	<b>Total</b>	<b>Autumn</b>	<b>Winter</b>	<b>Spring</b>
Total No. of birds	3591	809	3366	189
Mean per visit	133	80.9	210.38	17.18
<b>Wader Days (survey dates)</b>	<b>30590</b>	<b>5096.7</b>	<b>32608.13</b>	<b>1202.73</b>
<b>Wader Days (calendar dates)</b>	<b>34181</b>	<b>7281</b>	<b>38077.88</b>	<b>1288.64</b>
Total: River	2834	279	2821	40
Mean: River	104.96	27.9	176.31	3.64
<b>Wader Days: River</b>	<b>24140.8</b>	<b>1757.7</b>	<b>27328.44</b>	<b>254.55</b>
<b>Wader Days (calendar dates)</b>	<b>26974.72</b>	<b>2511</b>	<b>31912.56</b>	<b>272.73</b>
Total: Fields	757	530	545	149
Mean: Fields	28.04	53	34.06	13.55
<b>Wader Days: Fields</b>	<b>6449.2</b>	<b>3339</b>	<b>5279.69</b>	<b>948.18</b>
<b>Wader Days (calendar dates)</b>	<b>7206.28</b>	<b>4770</b>	<b>6165.3</b>	<b>1015.9</b>

### C.5 Ruff

<b>Ruff</b>	<b>Total</b>	<b>Autumn</b>	<b>Winter</b>	<b>Spring</b>
Total No. of birds	38	34	38	0
Mean per visit	1.41	3.4	2.38	0
<b>Wader Days (survey dates)</b>	<b>324.3</b>	<b>214.2</b>	<b>368.9</b>	<b>0</b>
<b>Wader Days (calendar dates)</b>	<b>362.37</b>	<b>306</b>	<b>429.88</b>	<b>0</b>

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## **Annex J**

Able Marine Energy park and Habitat Compensation Scheme, Water Framework Directive Compliance Statement, HR Wallingford, November 2012



HR Wallingford  
*Working with water*

# Able Marine Energy Park and Habitat Compensation Scheme

## Water Framework Directive Assessment



TN DHM6835-02 R5

November 2012

## Document information

<b>Project</b>	Able Marine Energy Park and Habitat Compensation Scheme
<b>Technical subject</b>	Water Framework Directive Assessment
<b>Client</b>	Able UK
<b>Client Representative</b>	Richard Cram
<b>Project No.</b>	DHM6835
<b>Technical Note No.</b>	DHM6835-02
<b>Project Manager</b>	Samantha Dawson
<b>Project Director</b>	Katherine Harris

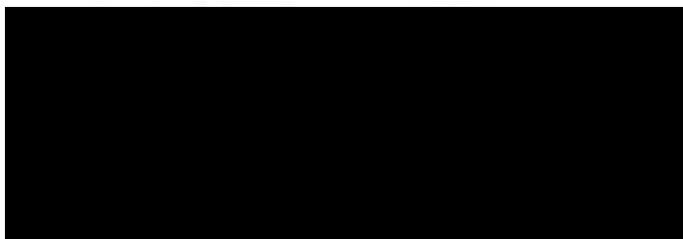
## Document history

Date	Release	Prepared	Approved	Authorised	Notes
28/06/12	1.0	NC	KLH	NC	
07/09/12	2.0	SDA	KLH	KLH	Revised following Environment Agency comments 31/07/12
12/10/12	3.0	KLH	MPD	MPD	Revised following further Environment Agency comments 04/10/12
19/11/12	4.0	KLH	MPD	MPD	Revised following further Environment Agency comments 09/11/12
21/11/12	5.0	KLH	MPD	MPD	Revised following further Environment Agency comments 20/11/12

**Prepared**

**Approved**

**Authorised**



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## *Acronyms and abbreviations*

AWB	Artificial Water Body
BWD	Bathing Waters Directive
EA	Environment Agency
EIA	Environmental Impact Assessment
ES	Environmental Statement
GCS	Good Chemical Status
GEP	Good Ecological Potential
HD	Habitats Directive
HMWB	Heavily Modified Water Body
HRA	Habitats Regulations Assessment
AMEP	Able Marine Energy Park
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SPA	Special Protection Area
SWD	Shellfish Waters Directive
UKTAG	United Kingdom Technical Advisory Group
WFD	Water Framework Directive
WWTW	Waste Water Treatment Works



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# 1. Introduction

Able UK Ltd. proposes to construct a Marine Energy Park (AMEP) near Immingham on the southern bank of the Humber estuary. The AMEP will provide a facility for the marine energy sector, initially for the construction of offshore wind turbines and other activities associated with renewable energy generation.

The key features of the development are:

- Reclamation
- Capital dredging
- Disposal of dredged material
- Habitat compensation scheme.

Environmental Impact Assessments (EIA) have been carried out and Environmental Statements (ES) prepared for both the AMEP and the habitat compensation scheme. Water Framework Directive (WFD) Assessments have also been prepared for the project. Able UK Ltd. has been asked by the Environment Agency to update the WFD Assessments to incorporate the results of the ESs and the other more recent studies (listed below) and to consider the combined effects of the AMEP and the habitat compensation scheme.

- EX7.7: Materials Management Plan
- EX8.7A: Supplementary Report – modelling of final quay design (supplement to Annex 8.1 of the ES) (JBA Consulting, 2012a)
- EX31.5: Factual report on geo-environmental ground investigation Cherry Cobb Sands (Delta-Simons, 2012)
- EX 28.3 Parts 3, 6 and 8 (Black & Veatch, 2012)
- Cherry Cobb Sands compensation site – second interim report on detailed modelling (Black & Veatch, 2012).
- Cherry Cobb Sands Wet Grassland Site: Wet Grassland Creation, Management and Monitoring Plan (Thomson Ecology, 2012)
- Able Marine Energy Park characterisation of disposal site and impact assessment of gravel disposal (GoBe Consultants, 2012)

**This overarching WFD Assessment (TN-DHM6835-02) replaces the existing separate WFD Assessments (TN-DER 4712-03 and TN-DHM6835-01).**

## 1.1 RECLAMATION

The reclamation area is located within the footprint of the quay and will affect both intertidal and sub-tidal estuary habitat. It is anticipated that the total dredge quantity for the reclamation area will be 294,500 m<sup>3</sup>.

## 1.2 CAPITAL DREDGING

Capital dredging will be carried out to create a berth pocket and manoeuvring area. Dredging will affect sub-tidal estuary habitat. The total capital dredge will be approximately 1,935,500 m<sup>3</sup> (Sections 4.4 and 8.6.3 of the ES).

## 1.3 MAINTENANCE DREDGING

An overview of anticipated maintenance dredging requirements and the implications for WFD compliance is presented in Section 3.4.7.

## 1.4 DISPOSAL OF DREDGED MATERIAL

Dredged material will be disposed of within the estuary in a number of disposal sites which will maintain the sediment supply. Sites are divided between erodible and non-erodible deposits. Approximately 954,350 m<sup>3</sup> of erodible material will be placed at HU080 and approximately 481,150 m<sup>3</sup> of non-erodible material will be placed at HU082 (Section 8.6.8 ES).

Approximately 500,000 m<sup>3</sup> of clean naturally occurring inerodible clay will be used to raise the site levels to meet the required flood levels on the adjacent foreshore and be used as fill material for the construction of the AMEP (Question 1 of EX7.7 - Materials Management Plan).

Table 1 presents the areas (in m<sup>2</sup>) that will be affected by each of the activities presented above. It should be noted that these figures represent the total areas affected during construction activities and do not represent a permanent loss of habitat in all cases; permanent habitat losses are described in Section 3.4.3: Reclamation, dredging and disposal.

**Table 1 Areas affected by AMEP activities (refer to Drawing No. AME – 01299 A: AMEP Quay Areas; and Drawing No. AME – 06027 B: Spoil Grounds A, B, C, & Middle Shoal Fill Quantities)**

Activity	Total area affected (m <sup>2</sup> )
Reclamation	450,000
Dredging of berthing pocket	87,883
Dredging of approach channel	329,177
Dredging of turning area	208,720
Disposal of dredged material at site HU082 *	454,350
Disposal of dredged material at site HU080 **	789,294
Dispersal of gravel from site HU080	200,000
<b>TOTAL</b>	<b>2,519,424</b>

\* The total area of site HU082 is 1,073,872 m<sup>2</sup>. However, the disposal of dredged material for the AMEP will not take place over the entire site. The figure provided in the table is the area over which material will be disposed (as reported in EX8.7A).

\*\* The total area of site HU080 is 1,973,234 m<sup>2</sup>. However, the disposal of dredged material for the AMEP will not take place over the entire site. The figure provided in the table is the area over which material will be disposed (as reported in EX8.7A).

## 1.5 HABITAT COMPENSATION SCHEME

The habitat compensation scheme comprises two parts: 1) managed realignment and regulated tidal exchange to create an intertidal area; and 2) wet grassland.

### 1.5.1 Cherry Cobb Sands

The intertidal compensation site, Cherry Cobb Sands (see Figure 1), will be developed in a 105 ha plot, located on the north bank of the Humber Estuary, opposite the AMEP, approximately 4 km south-west of Keyingham and north of Stone Creek. The site currently comprises Grade 2 arable fields bounded by drainage ditches and a flood defence embankment.

### 1.5.2 Cherry Cobb Sands wet grassland site

As partial compensation for the loss of Special Protection Area (SPA) bird habitat associated with the construction of the AMEP, it is proposed to create wet grassland immediately adjacent to the Cherry Cobb Sands managed realignment site (Black & Veatch, 2012b), as shown on

Figure 1. This would provide a foraging resource during the construction and development of the Cherry Cobb Sands compensation site. It is anticipated that this additional site will only be required for a few years while the main Cherry Cobb Sands compensation site and creek system is developing, although it will be maintained until monitoring of the new intertidal habitat at the Cherry Cobb Sands compensation site is providing effective compensation for the AMEP. This wet grassland site is approximately 38.5 ha and is known as the Cherry Cobb Sands Wet Grassland Site. The site currently comprises arable farmland on reclaimed saltmarsh or other intertidal habitat.

### 1.5.3 *East Halton overcompensation site*

The Cherry Cobb Sands compensation site is anticipated to take 2 – 4 years to achieve functionality (Section 1.1.4 of EX28.3, Part 8). Should the HRA deem it necessary to provide overcompensation to reduce the impacts of the time-lag, overcompensation may be required, in the form of the conversion of an arable field to pasture, with a range of different degrees of wetness providing a mosaic of different ecological functionalities.

It is proposed that a site in East Halton Marshes, North Lincolnshire, be developed as pasture/grassland site for use as feeding and roosting habitat for estuary birds, particularly the black-tailed godwit, thus providing a quantum of over-compensation for habitat loss to reduce the short-term effects of the issue of delay in compensatory habitat maturation. The site proposed comprises a field currently in arable use and 38.82 ha in extent.

## 1.6 WATER BODIES

Figure 1, adapted from the Figure 4.1 of the ES, shows the location of the various aspects associated with the development of the AMEP, the habitat compensation scheme and the proximal water bodies, which include the following:

- Humber Lower (transitional water body)
- Humber Middle (transitional water body)
- Keyingham Drain (part of Sands/Keyingham/Roos Drain from Source to Humber artificial water body)
- Otteringham Drain
- Burstwick Drain
- North Killingholme Main Drain (freshwater artificial water body)
- Hull and East Riding Chalk (ground water body).

This report presents the WFD assessment of the AMEP and habitat compensation scheme on the water bodies listed above.

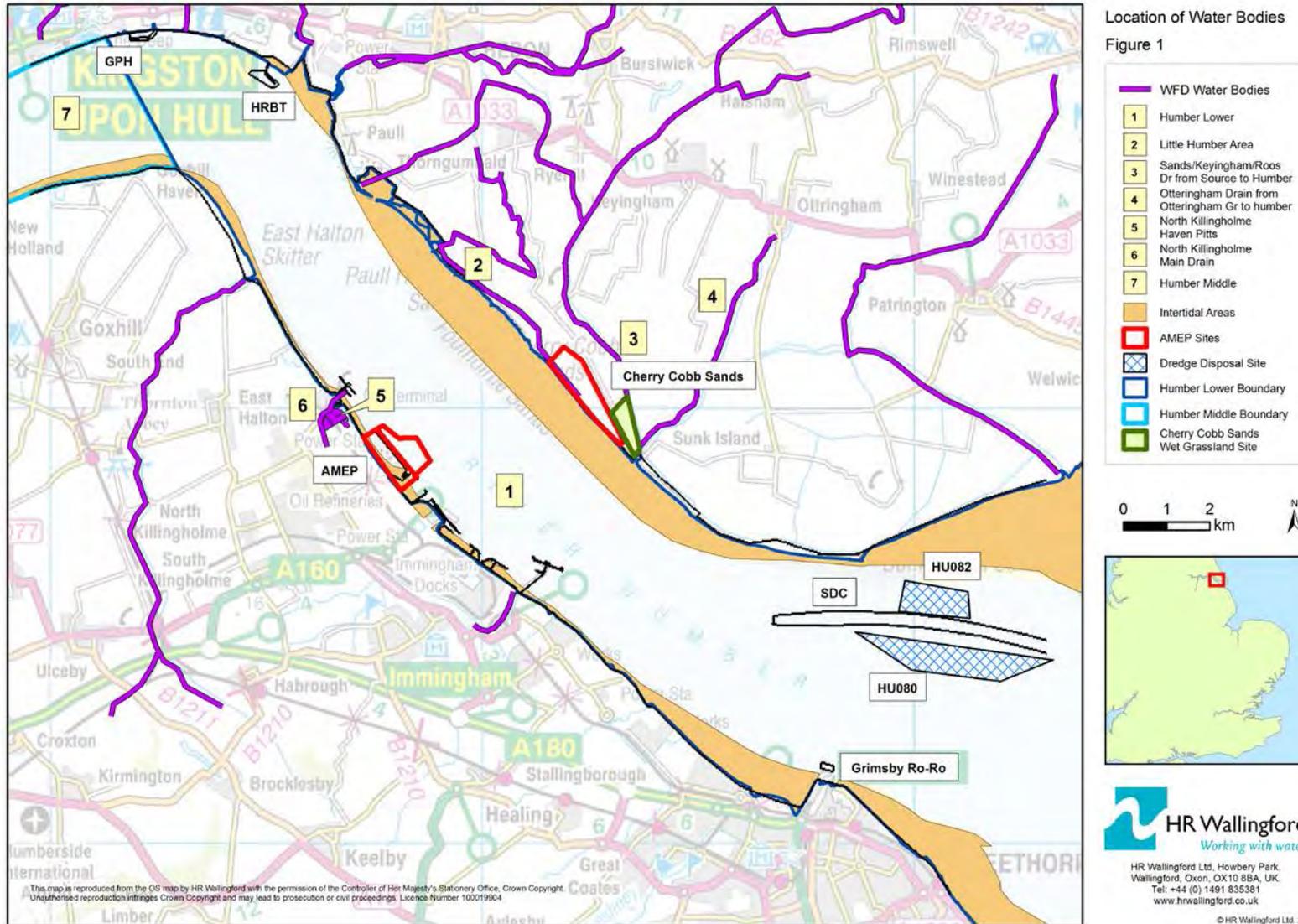


Figure 1 WFD water bodies within and adjacent to the compensation site

## 2. WFD Assessment Methodology

Presently, there is no specific guidance about the application of the WFD to marine/estuarine construction projects or managed realignment schemes. This WFD assessment is, therefore, based upon the philosophy set out in existing Environment Agency and other guidance for transitional waters (including the 'Clearing the waters' guidance and relevant UKTAG standards). The principles and concepts described in these documents have been applied to the WFD compliance assessment.

The WFD assessment has been informed by the ESs prepared for the AMEP and habitat compensation scheme (ERM and Black & Veatch, 2011) in addition to discussions with the Environment Agency and Defra as well as the expert opinion of the HR Wallingford-led project team.

HR Wallingford has not undertaken a peer review or quality audit of the ES or the associated technical reports. While we have drawn our conclusions making reference to the ES and associated technical documents (see Section 1), in cases where the ES conclusions may be unclear or the reasoning behind the impact assessment is not explained we have used our experience to assess the likelihood of an effect on WFD parameters at water body level.

During the assessment it was necessary to make a number of assumptions, as follows:

- The scope of the EIA had previously been agreed with the appropriate regulators including the Environment Agency (and that the Environment Agency response highlighted the issues of potential relevance to the WFD).
- The Habitats Regulations Assessment (HRA) compensation proposal will 'sign off' the HRA (i.e. no outstanding issues regarding effects on the Special Protection Area/Special Area of Conservation).
- Where the River Basin Management Plan (RBMP) contains insufficient data for a parameter, for freshwater water bodies we have used information from adjacent water bodies while for transitional water bodies we have assumed the parameter is at good status unless indicated otherwise in Annex B of the RBMP.
- For transitional water bodies where data are not available for certain specific pollutants or hazardous priority substances due to their not forming part of routine sediment analysis for dredged material, we have based our assessment on our prediction of the likelihood of them being present at levels above CEFAS Action Level 1.

### 2.1 POTENTIALLY AFFECTED WATER BODIES

The water bodies in the vicinity of the habitat compensation scheme are listed in Section 1.6 and shown on Figure 1. Of these water bodies a detailed assessment of WFD compliance has been carried out for Humber Lower transitional water body (Section 3), the Keyingham Drain (part of Sands/Keyingham/Roots Drain from Source to Humber artificial water body) and the Otteringham Drain water body (Section 4). The other water bodies were excluded from the detailed assessment for the reasons given below.

#### 2.1.1 *Adjacent water bodies*

The Humber Lower water body becomes the Humber Middle water body upriver (See Figure 1), whilst to seaward it becomes the Yorkshire South/Lincolnshire coastal water body. The closest part of the project to the boundary with the Humber Middle water body is the AMEP at >10 km. Moving seaward, the disposal sites are located closest to the coastal water body at a distance of approximately 10 km. The Humber Middle water body is considered to be sufficiently distant that it should not form a part of this WFD assessment.

The coastal water body, while closer, is a very large water body extending from Flamborough Head in the north to the Wash. This water body is heavily modified and at moderate ecological potential with nitrogen and phytoplankton being identified as the cause of the failure to meet good ecological potential. There is no indication that the sediment from the AMEP that will be placed at the disposal sites has a high nitrogen content. It can be concluded, therefore, that the use of these existing disposal sites is not considered likely to cause deterioration in the Yorkshire South/Lincolnshire water body or affect its ability to move towards good potential.

The approach taken in the WFD assessment is, therefore, to assume that as long as there are no effects on the Humber Lower water body that are considered significant at water body level then there will equally not be any significant effects on these adjacent water bodies. This working assumption is reviewed in the overall conclusions (Section 5).

### *2.1.2 North Killingholme Main Drain*

The North Killingholme main drain (ID GB104029067580) is a freshwater/river water body located to the north west of the development site. This is an artificial water body so-designated for land drainage; it is currently at moderate ecological status (very certain) due to the failure of ammonia to achieve good status and is at good chemical status. Section 13.6.7 of the ES confirms that foul water from the operation of the AMEP will be discharged to this waste water treatment works (WWTW) and notes that Anglian Water will carry out a feasibility study and identify any necessary improvement works. Any potential effects of the (post-AMEP development) discharge from the WWTW to the receiving water body will be controlled by consents to be obtained by Anglian Water as part of their upgrading of the WWTW. A separate consenting process thus applies. It is further noted that as the Environment Agency is the WFD competent authority it is considered very unlikely that Anglian Water would be given authorisation from the Environment Agency for a discharge which could lead to deterioration in the chemical status of the water body.

The site is currently drained by a network of open watercourses (the Killingholme Marshes Drainage System under the control of the North East Lindsey Drainage Board - NELDB) that discharge into the Humber Estuary via a flapped gravity outfall on the coast in the middle of the AMEP frontage (Section 13.5.16 of the ES). The existing tidal outfall and the site of a proposed pumping station are located within the footprint of the proposed quay. The pumping station therefore needs to be relocated to accommodate the development. A feasibility study has been undertaken which presents various options for relocating the proposed NELDB pumping station. In accordance with the recommendations of that study the pumping station will be located to the south of the site and will discharge into the Lower Humber water body. This does not constitute a change to the current surface water discharge situation for North Killingholme main drain.

Taking into account the above, it is concluded that no further assessment of the North Killingholme main drain water body is required at this stage.

### *2.1.3 North Killingholme Haven Pitts*

The North Killingholme Haven Pitts transitional water body (ID GB560402916700) (see Figure 1) is located in the vicinity of the proposed development. There is occasional direct hydraulic connectivity via a sluice between the Humber Lower and the North Killingholme Pitts water bodies; however, this sluice is opened only at certain periods during the year. If the water in the lagoon is too high then the sluice is opened at low tide to allow water to flow from the lagoon to the Humber. If the water in the lagoon is too low then at high tide the sluice is opened to allow water to flow from the Humber to the lagoon. The location of the sluice gate itself is on the Humber side of the seawall in the north-west corner of the area, just outside the site. The water from the Humber already contains a high suspended sediment load: the increases in suspended solids associated with the dredging activity will be temporary and within the envelope of normal background levels (Sections 8.6.20 – 8.6.22 of the ES).

Further, there does not appear to be any mechanism by which on-site construction activities (including drainage) or the subsequent operation of the site would affect this water body. HR Wallingford's report on dispersion modelling (EX6503) around the E.ON intake and outfall concludes that under existing conditions the thermal plume from the outfall is rapidly dispersed so that water abstracted at the intake is less than 0.1°C above ambient temperature. The presence of a quay will force the plume from the outfall offshore parallel to the side of the quay in the direction of the intake. There is, therefore, no obvious mechanism by which the development of the AMEP could have a non-temporary effect on the status of North Killingholme Haven Pitts at water body level. No further assessment has been undertaken for this water body.

#### 2.1.4 *Burstwick Drain*

This water body lies outside the boundaries of the habitat compensation site and will not be directly affected by any of the works to create the new habitats. However, the drain discharges to the Humber Lower water body. The potential for an effect is therefore related to construction activities at the Cherry Cobb Sands site resulting in sediment-laden or contaminated water entering the drains. Burstwick Drain discharges into the Humber via a sluice that only opens at low tide. As the sluice is closed, except for at low tide, this prevents any estuarine water from entering this water body, thus there is no mechanism for potential impacts associated with temporary increased suspended sediment concentrations sourced from the artificial water body entering the adjacent Humber Lower transitional water body.

The Environment Agency is, however, concerned that siltation may occur in front of the sluice that could prevent the water body from discharging to the Humber Lower water body. This could lead to additional deposition in areas of reduced velocity behind the sluice gate which could in time affect the status of the artificial water body. This issue is recognised in the ES: Section 36.6.1 refers to 'construction activities' being 'managed to ensure drainage of surrounding land is not compromised at any time'. This assessment therefore assumes that this includes ensuring that the current deposition levels in front of the sluice gates are not exacerbated and no further investigation has therefore been carried out.

#### 2.1.5 *Hull and East Riding Chalk ground water body*

Section 33 of the habitat compensation scheme ES concludes that there will be no impact from the habitat compensation scheme on the Hull and East Riding Chalk ground water body, in part because of the depth of this primary chalk aquifer which is overlain by around 20 to 25 m of marine and estuarine alluvium and 1 to 5 m of more recent deposits (Black and Veatch, 2012a). The ES further concludes that there are no source protection zones within 2 km of the proposed compensation site and it is therefore considered that no source protection zones will be affected by the works at either Cherry Cobb Sands compensation site or grassland site. Based on the conclusions of the ES, no further consideration of ground water is included in this WFD assessment.

### 3. *Humber Lower Water Body*

The dredging, reclamation and disposal will all take place in the same water body – the Humber Lower transitional water body (ID GB530402609201). The proposed Cherry Cobb Sands compensation site will, once the sea wall is breached, become part of the Humber Lower transitional water body (ID GB530402609201). The WFD assessment for the Keyingham Drain and Otteringham Drain water bodies is presented separately in Section 4.

#### 3.1 CHARACTERISTICS

Reference to the 2009 Humber RBMP indicates that the Humber Lower water body is designated as a heavily modified water body (HMWB), with both flood protection and

navigation (i.e. dredging) cited as the reasons for this designation. The WFD ecological target for the water body is therefore good ecological potential (GEP) and, as with all surface water bodies, the default chemical status objective is good chemical status (GCS). The water body is large, covering an area of 247 km<sup>2</sup>.

### 3.2 CURRENT STATUS

Annex B of the Humber RBMP confirms that the Humber Lower water body is at moderate ecological potential overall. According to this Annex, the water body is currently failing to meet its WFD objectives in respect of dissolved inorganic nitrogen, zinc and tributyl tin. It is also at moderate potential in terms of invertebrates but as invertebrates are sensitive to morphological pressures, it is difficult to determine whether they are at less than good status due to the effects of morphological changes alone or also the impacts from other pressures; this is known as the MS (morphology-sensitive) exemption and as such no mitigation measures are proposed in the RBMP to improve the status of this parameter.

The Humber Lower water body is also currently at moderate ecological potential because several mitigation measures are recorded as being 'not in place'. These are related to the flood risk management element of the HMWB designation, and comprise:

- Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone
- Managed realignment of flood defence
- Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution.

With the exception of zinc (where the Environment Agency anticipates that the closure of the point source causing the problem will lead to an improvement from moderate (uncertain) to high status), the 2015 WFD target in respect of the other currently failing ecological and chemical parameters is unchanged from the present situation. The reasons cited for this continued failure include disproportionate cost and technical infeasibility – however, it is anticipated that the water body will meet its WFD objectives by 2027.

There are a number of mitigation measures relating to port activities (including dredging and disposal, structures and vessel movement) and according to the RBMP, all measures which are relevant with regard to existing navigation activities are already 'in place'.

Table 2 lists the mitigation measures used in the GEP assessment that may be relevant to the development and operation of the AMEP; this is included here to ensure that all measures which may be relevant to the various project elements can be identified as these may differ from the measures relevant to ongoing maintenance dredging and disposal operations.

**Table 2 Full list of Port related mitigation measures**

<b>Mitigation Measure</b>
<b>Dredging</b>
Avoid need to dredge (e.g. by use of fluid mud navigation)
Prepare dredging strategy (includes disposal strategy)
Reduce impact of dredging (shallower depth, choice of dredger type)
Reduce sediment re-suspension
Alter timing of dredging (includes disposal)
Sediment management (by-passing, recharge, beneficial use) (26)
<b>Disposal</b>
Avoid sensitive sites in disposal site selection
Manage (limit) physical disturbance
Prepare disposal strategy
Alter timing of disposal
<b>Structures</b>
Remove obsolete structures
Modify structures to reduce effect on natural processes
Manage flows
Sediment management

Insofar as protected areas are concerned, Annex D of the RBMP records the status of protected areas as shown in Table 3.

**Table 3 Protected area status**

<b>Protected Area</b>	<b>Relevant Legislation</b>	<b>Status</b>
Humber South East Shellfish Water	Shellfish Waters Directive (SWD)	Guideline fail, imperative pass
Cleethorpes Recreational Bathing Water	Bathing Waters Directive (BWD)	Guideline pass; predicted compliance assessment under revised BWD, excellent
Humber Estuary Special Protection Area (SPA) and Special Area of Conservation (SAC)	Birds and Habitats Directives	Humber Estuary SPA not currently meeting water quality objectives; Humber Estuary SAC not meeting abstraction, by-catch, coastal squeeze, diffuse pollution or water quality objectives (however, both are due to meet their Article 4(1c) objectives by 2015)

Nitrate Vulnerable Zones exist within the vicinity of both the AMEP site and the Cherry Cobb Sands site (see Figure 3).

Annex D of the RBMP does not make clear why protected areas under the Freshwater Fish and Urban Waste Water Treatment (UWWT) Directives are listed in Annex B for the Humber Lower transitional water body. As there is no obvious mechanism for the AMEP project to affect the areas that are designated under the UWWT Directive, and as the Freshwater Fish

Directive is not applicable to transitional water bodies, no further assessment of these protected area characteristics was deemed necessary.

### 3.3 SCOPE OF WFD ASSESSMENT

The potential impacts associated with the AMEP and habitat compensation scheme at Cherry Cobb Sands that may affect the Humber Lower water body are considered to be:

- Removal of aquatic flora which is protected under the SAC, SPA and Ramsar designations; but note the predicted medium-long term gains of saltmarsh in the compensation area;
- Changes to morphology, water depth and bed substrate;
- Changes in current speeds and consequent changes to erosion or deposition patterns;
- Temporary increases in suspended sediment levels;
- Disturbance to fish and ecology (throughout life cycle);
- Remobilisation of contaminated sediments within the soil of the compensation site and flushing of pollutants into the estuarine waters after the breach;
- Reduction in levels of dissolved oxygen;
- Changes to the intertidal zone structure during operation of the Cherry Cobb Sands compensation site;
- Local siltation in front of the sluice affecting adjacent water bodies - discussed in Section 2.1.4.

It is noted that other construction activities may be associated with environmental effects. for example noise, however noise is not within the scope of the WFD. Noise is within the scope of the Marine Framework Strategy Directive but it is understood that compliance with this Directive can be demonstrated via the EIA process. Noise impacts should, therefore, be progressed through that route and are not considered in this report.

Using a combination of the thresholds and triggers in 'Clearing the waters' (which are specifically designed for transitional and marine water bodies) and UKTAG standards, the WFD assessment for the Humber Lower water body has been scoped to include the WFD parameters in Table 4.

Table 4 Scope of WFD Assessment

WFD Parameter (quality elements, specific pollutant priority substance, Protected Area)	Reclamation	Capital Dredging	Disposal of Dredged Material	Intertidal Compensation Site (Cherry Cobb Sands)
<b>Biological elements</b>				
Phytoplankton	Most phytoplankton are confined to the outer limit of the estuary with the plume extending into coastal waters (Section 10.5.22 ES) i.e. not in the vicinity of the AMEP development. There is no clear mechanism for any of the aspects of the project to affect phytoplankton.			
Other aquatic flora (e.g. saltmarsh and seaweed)	The reclamation, dredging and disposal activities are not predicted to have a significant direct effect on aquatic flora including saltmarsh (Figure 10.2 ES). There will be the loss of a few individual saltmarsh plants in the vicinity of the site (Section 10.6.10 ES) The indirect effects of these activities may result in the creation of saltmarsh however flow modelling does not predict any potential erosion of saltmarsh (or any intertidal) areas (Table ES1 and ES2 in Exec Summary of JBA supplementary report to section 8.1 of ES)			The creation of the breach at the Cherry Cobb Sands site will affect saltmarsh. Guidance indicates that any loss of saltmarsh should be assessed for its significance.
Benthic invertebrate fauna	The combined footprint of the activities and their zone of effect indicates that a WFD assessment is required.			No effect on subtidal invertebrates.
Fish fauna (transitional only)	The combined footprint of the activities and their zone of effect indicates that a WFD assessment is required.			
<b>Hydromorphological elements supporting biological elements</b>				
<b>Morphological conditions</b>				
Depth variation	<p>The combined footprint of the activities (using figures from Table 1) and their zone of effect is considerably less than 5 % of the total water body area, therefore a WFD assessment is not required.</p> <p>Zone of effect of dredging activities (dredging footprint x 1.5): 938,670 m<sup>2</sup>  Footprint of disposal activities, and dispersal of gravel from HU080: 1,443,644 m<sup>2</sup>  Footprint of reclamation: 450,000 m<sup>2</sup>  <b>Total area affected: 2,832,314 m<sup>2</sup> (2.83 km<sup>2</sup>)</b>  <b>Total water body area: 2.47 km<sup>2</sup></b>  <b>Percentage of water body affected: 1.15 %</b></p>			

WFD Parameter (quality elements, specific pollutant priority substance, Protected Area)	Reclamation	Capital Dredging	Disposal of Dredged Material	Intertidal Compensation Site (Cherry Cobb Sands)
Bed	<p>The combined footprint of the activities (using figures from Table 1) and their zone of effect is considerably less than 5 % of the total water body area, therefore a WFD assessment is not required.</p> <p>Zone of effect of dredging activities (dredging footprint x 1.5): 938,670 m<sup>2</sup>  Footprint of disposal activities and dispersal of gravel from HU080: 1,443,644 m<sup>2</sup>  Footprint of reclamation: 450,000 m<sup>2</sup>  <b>Total area affected: 2,832,314 m<sup>2</sup> (2.83 km<sup>2</sup>)</b>  <b>Total water body area: 2.47 km<sup>2</sup></b>  <b>Percentage of water body affected: 1.15 %</b></p>			
Intertidal zone structure	<p>The reclamation and capital dredging will result in a loss of intertidal habitat. The Clearing the waters guidance indicates that any loss of intertidal requires should be assessed for its significance.</p>	<p>The existing disposal sites are sub-tidal and are not located on the intertidal area or within 10m of MLWS (the Clearing the waters trigger for assessment); however ), Section 4.4 of EX8.7A predicts that the change in bathymetry resulting from disposal of dredged material at sites HU080 and HU082 will affect wave direction through changes to the refraction process. An</p>	<p>The creation of the breach at the Cherry Cobb Sands site will result in a loss of intertidal area. Guidance indicates that any loss of intertidal should be assessed for its significance.</p>	

WFD Parameter (quality elements, specific pollutant priority substance, Protected Area)	Reclamation	Capital Dredging	Disposal of Dredged Material	Intertidal Compensation Site (Cherry Cobb Sands)
			assessment of this parameter has therefore been carried out.	
<b>Tidal regime</b>				
Dominant currents (coastal water bodies only)	The Humber Lower water body is not a coastal water body therefore this parameter is not applicable.			
Freshwater flow (transitional water bodies only)	There is no mechanism for the activities associated with the AMEP development to affect freshwater flow in the transitional water body.			
Wave exposure	Whilst wave exposure does not exceed the Clearing the waters trigger for assessment ('Is the activity taking place in a shallow water body?'), Section 4.4 of EX8.7A predicts that the change in bathymetry resulting from disposal of inerodible dredged material at site HU082 will affect wave direction through changes to the refraction process. An assessment of this parameter has therefore been carried out.			
<b>Chemical and physico-chemical elements supporting biological elements</b>				
Transparency	There is no obvious mechanism for the reclamation to have a non-temporary effect on transparency.	The combined effects of the dredging, disposal and discharge from the compensation site exceed the Clearing the waters trigger for assessment.		
Thermal conditions	There is no obvious mechanism for the activities associated with the AMEP development to have a non-temporary effect on thermal conditions.			
Oxygenation conditions	There is no obvious mechanism for the reclamation to have a non-temporary effect on oxygenation conditions.	The combined effects of the dredging, disposal and discharge from the compensation site taken with the presence of a dissolved oxygen sag in the proximal part of the Humber Lower water body indicate that an assessment of the effects on oxygenation conditions is necessary.		
Salinity	There is no obvious mechanism for the activities associated with the AMEP development to have a non-temporary effect on salinity.			

WFD Parameter (quality elements, specific pollutant priority substance, Protected Area)	Reclamation	Capital Dredging	Disposal of Dredged Material	Intertidal Compensation Site (Cherry Cobb Sands)
Nutrient conditions (e.g. nitrogen)	There is no obvious mechanism for the activities associated with the construction of the AMEP development to have a non-temporary effect on nutrient conditions.			The compensation site will be developed on arable land with a potential for elevated nutrient content. An assessment of this parameter is required.
<b>Specific Pollutants</b>				
Arsenic	There is no obvious mechanism for the reclamation to affect specific pollutants.			Levels of specific pollutants exceed CEFAS Action Level 1 therefore an assessment is required.
Chromium				
Copper				
Zinc				
PCBs (congeners to be confirmed by EA & CEFAS)				
<b>Selected Priority Substances</b>				
Anthracene	There is no obvious mechanism for the reclamation to affect priority substances.			Levels of priority substances exceed CEFAS Action Level 1 therefore an assessment is required.
Hexachlorobenzene,				
Hexachlorobutadiene and				
Hexachlorocyclohexane				
Penta Bromodiphenyl ethers				
Cadmium and its compounds				
Fluoranthene				
Lead and its compounds				
Mercury and its compounds (PHS)				
Napthalene				
Nickel and its compounds				
Polyaromatic hydrocarbons (Benzo(a)pyrene) (Benzo(b)fluoranthene) (Benzo(g,h,i)perylene) (Benzo(k)fluoranthene)				

WFD Parameter (quality elements, specific pollutant priority substance, Protected Area)	Reclamation	Capital Dredging	Disposal of Dredged Material	Intertidal Compensation Site (Cherry Cobb Sands)
(Indeno(1,2,3-cd)pyrene) and benzo(g,h,i)perylene)				
Tributyltin compounds				
<b>Protected Areas</b>				
Areas designated for the protection of economically significant aquatic species ( <b>shellfish waters, freshwater fish</b> )	There are no shellfish waters within 2 km of the AMEP site or Cherry Cobb Sands site. The Freshwater Fish Directive is not applicable to transitional water bodies.			
Bodies of water designated as recreational waters ( <b>bathing water</b> )	There are no bathing waters within 2 km of the AMEP site or Cherry Cobb Sands site.			
Nutrient-sensitive areas including Nitrate Vulnerable Zones, polluted Waters and Sensitive Areas	There is no obvious mechanism for the activities associated with the construction of the AMEP development to have a non-temporary effect on nutrient conditions.			As nutrients form part of the assessment for the compensation site, nutrient sensitive areas will be considered.
<b>Protected Areas</b>				
Areas designated for the protection of habitats or species where maintenance or improvement of the status of water is an important factor in their protection, including Natura 2000 sites ( <b>Special Areas of Conservation and Special Protection Areas</b> )	The AMEP development will result in the loss of habitats designated as part of Natura 2000 sites. A Habitats Regulations Assessment (HRA) has been prepared which, if accepted, will meet the requirements of the WFD. The requirements of the Birds and Habitats Directives are usually more stringent than the requirements of the WFD and, therefore, it is assumed that acceptance of the HRA will be satisfy the relevant protected area objectives.			

The following sections consider in turn each of these parameters that have been 'scoped in' to the assessment (Table 4) in order to determine whether there might be deterioration in water body status (defined as a non-temporary effect on status at water body level) or an effect which prevents the water body meeting its WFD objectives.

### 3.4 DETERIORATION OR OTHER EFFECT ON WFD STATUS

The discussion in this section is based *inter alia* on the information provided in the ES and associated technical documents (see Section 1) which overall is considered sufficient to identify whether or not there is likely to be a non-temporary effect on status at water body level.

#### 3.4.1 *Hydromorphological conditions*

##### **Intertidal zone structure**

The construction of the reclamation and capital dredging will result in a direct loss of intertidal habitat as well as the conversion of mudflat to saltmarsh. These effects are in a Natura 2000 site and are significant in the context of the Habitats Directive – a HRA has been prepared and it is assumed that acceptance of the HRA will satisfy the relevant requirements of the WFD. A detailed discussion of the biological function is provided in the HRA and is not repeated in this report.

Excavation of saltmarsh to enable the breach at the Cherry Cobb Sands site will result in permanent local loss of existing habitat and its associated benthic communities. Section 34.6.3 in the ES states that this impact has been assessed to be of a local scale restricted to the zone of influence (i.e. the saltmarsh and intertidal habitat within the excavated footprint).

During the majority of the construction process, the creation of the Cherry Cobb Sands site will not have any impacts on the intertidal zone structure as the new embankments will be built behind the existing flood embankments: the implications of the construction for the Keyingham Drain and Otteringham Drain artificial water bodies are discussed in Section 4. The creation of the breach site will initiate an effect on the hydrodynamic and sediment regime along the frontage of the site as foreshore levels will be lower (Section 32.6.2 of the ES). A maximum velocity of 2.4 – 2.6 m/s has been predicted in section 32.6.7 of the ES within the first two weeks after the breach. Any saltmarsh remaining near the mouth of the breach will be eroded by the high velocity flows. Local erosion is expected to be 0.5 m over a 5 year period close to the breach (Section 32.6.19 of the ES). Additional work has compared the predicted erosion for the RTE scheme with the results of the ES and suggests that erosion will be approximately 20 % greater during the first years following breaching when the RTE fields warp up (EX28.3 Part 3). After this period the erosion will be less than that predicted in the ES. The cross section of Cherry Cobb Sands Creek downstream of the breach will enlarge following breaching of the site and will stabilise over time as the RTE fields and the realignment area of the site accrete to their new equilibrium.

In itself the process described above represents a change to the morphology of the intertidal zone. However, even after the breach, the bed levels at the frontage of the Cherry Cobb Sands site will remain intertidal. There is therefore no permanent loss of intertidal zone and as the biological effects are not considered to be significant at water body level then the effects on the intertidal zone structure supporting element are also not considered to be significant at water body level.

All the species recorded in the vicinity of the reclamation site and Cherry Cobb Sands are typical of the benthic community within the Humber Estuary, with moderate abundance and diversity of mostly common species with low sensitivity. There are no species of particular conservation importance (Sections 34.5.11 and 34.5.15 of the ES).

Section 4.4 of EX8.7A predicts that the change in bathymetry resulting from disposal of ineredible dredged material at site HU082 will affect wave direction in the intertidal zone

through changes to the refraction process. The impacts on the intertidal area as a result of this change are considered in the 'Wave exposure' section below.

#### *New Intertidal Habitat*

Whilst construction of the Cherry Cobb Sands site will result in a loss of intertidal habitat in the area of the breach it is expected that the area immediately around the breach in the set-back site will become colonised quickly by the opportunistic benthic species which are present in the Humber (Section 34.6.5 of the ES). Within approximately six months pioneer communities should be established and after 12 months more stable communities potentially mimicking those found in the Humber may be present. Colonisation will be incremental with areas nearest to the breach being colonised first and the communities slowly spreading out to the furthest edges of the site (Section 34.6.10 of the ES). The regulated tidal exchange fields will be managed to promote the development of wet mudflat habitat.

As intertidal invertebrates do not currently form part of the benthic invertebrate parameter then the timescale associated with the development of this additional habitat does not affect the status of the biological quality element.

#### **Wave exposure**

Whilst wave exposure does not exceed the Clearing the waters trigger for assessment ('Is the activity taking place in a shallow water body?'), Section 4.4 of EX8.7A predicts that the change in bathymetry resulting from disposal of inerodible dredged material at site HU082 will affect wave direction in the intertidal zone through changes to the refraction process.

The change in bathymetry will affect wave direction through changes to the refraction process (Section 4.4 of EX8.7A). There are no predicted changes to the local hydrodynamic or sedimentary regimes. This is considered to be a localised minor impact on the intertidal zone that is not significant at water body level. There are no other significant effects predicted on the wave regime as a result of the AMEP development.

#### **Conclusion**

The WFD assessment concludes that there is not likely to be a non-temporary effect on hydromorphological WFD parameters of the Humber Lower water body at water body level.

### *3.4.2 Physico-chemical conditions and chemical status*

#### **Transparency**

The Humber is one of the most turbid estuaries in England (Section 9.5.14 of the ES). Increases in suspended sediment concentrations can affect light penetration; however, as indicated in Section 33.6.4 of the ES, the Humber Lower water body has a low sensitivity to increases in suspended sediment concentration due to the existing high concentrations of suspended sediment and the size of the water body. Losses of suspended sediment from the dredging and disposal activities and from the reclamation run-off will be temporary (Sections 8.6.14 – 8.6.23 of the ES). Suspended solids levels decay relatively quickly as the material is dispersed by the currents and levels are likely to return to background within a short period of the dredging or disposal ceasing.

Clean naturally occurring clays will be used to raise the site levels to meet the required flood levels on the adjacent foreshore and be used as fill material for the construction of the AMEP (Question 1 of EX7.7 - Materials Management Plan). It is assumed that the mitigation measures proposed to control run-off from the reclamation activities (Sections 9.8.23 – 9.8.26 of the ES) will also be applied to the use of material on land.

With respect to the run-off from the compensation site the impact would be low given the size of Cherry Cobb Sands and the localised area that would be affected compared to the size of the water body.

## **Dissolved oxygen**

High levels of suspended sediment in the water column can cause dissolved oxygen levels to decrease and, in extreme cases, this can result in a dissolved oxygen sag. However such effects are generally associated with material containing high levels of organic material, for example plant material or sewage. Estuary muds, silts and sands are not usually associated with effects on dissolved oxygen. The ES highlights the presence of a dissolved oxygen sag in the Humber Lower water body and at Section 33.16.15 suggests that there may be a small decrease in dissolved oxygen associated with the increases in suspended sediment. However, this decrease is described as being associated with a decrease in primary production caused by a reduction in light attenuation. There is no indication that the material to be dredged or disposed of contains high levels of organic matter thus no effect is considered likely. Such an effect, should it occur, would be highly localised and temporary and therefore it is not considered to be significant at water body level.

## **Nutrients**

Nutrients were scoped into the assessment due to the conversion of previous agricultural land which may contain high levels of nutrients. Nutrients are discussed along with Specific Pollutants and Priority Substances in the following section.

## **Specific pollutants and priority substances**

### Capital Dredging and Disposal of Dredged Material

The Humber Estuary is known to have historically received contaminants from a number of industrial and urban sources. Trace metals, polychlorinated biphenyls (PCBs), hydrocarbons, and tributyl tin (TBT) are all known to be present in the sediments of the Humber, and they are transient within the system as a result of tides, currents, bioturbation, and maintenance dredging (Section 9.5.26 of the ES). Maximum contaminant concentrations in dredged sediments from other harbours within the Humber Estuary that are currently disposed of at the designated disposal sites contain more contamination than dredged sediments at the AMEP (Section 9.5.28 of the ES). A number of heavy metal contaminants, including copper exceed the UK CEFAS Action Level 1 Guidelines within the material to be dredged; however, the overall impact is not considered to be significant, because of the wide dispersion, and tendency of contaminants to remain bound to or quickly re-adsorb upon dissociation from the sediment (Section 9.9.1 of the ES). Resuspension of contaminated sediments due to dredging is therefore assessed in the ES as having an insignificant impact on water quality (Section 9.8.18).

Clean naturally occurring clays will be used to raise the site levels to meet the required flood levels on the adjacent foreshore and be used as fill material for the construction of the AMEP (Question 1 of EX7.7 - Materials Management Plan). All clay soils dredged and reused on site will be required to meet the current Contaminated Land Exposure Assessment (CLEA) Soils Guidance Values (SGVs) and the Land Quality Management / Chartered Institute of Environmental Health Generic Assessment Criteria (GAC) for a Commercial End Use (Question 13 of EX7.7). It is assumed that the mitigation measures proposed to control run-off from the reclamation activities (Sections 9.8.23 – 9.8.26 of the ES) will also be applied to the use of material on land.

### Cherry Cobb Sands Intertidal Compensation Site

In areas of erosion potential contaminants within the soils of the site could remobilise and enter the water body from this 'grade 2 agricultural land' site (Section 31.5.16 of the ES). This could lead to flushing of pollutants into the estuarine waters after the breach and discharge into the Humber during the first few tidal floods. The Ground Investigation Study carried out in August 2011 (Section 33.5.16 of the ES) highlighted that although the 12 samples inside the Cherry Cobb Sands site contained contaminants below the CEFAS guideline Action Level 1, two nearby samples (outside the site in the north western fields) contained levels of contaminants (zinc, copper, lead and total petroleum hydrocarbons) above the standard level (Section 33.5.16 of the ES).

Additional ground investigation work was carried out and is reported in Delta-Simons, 2012 (EX31.5A). A high-level review has been undertaken to compare the results against the CEFAS Action Levels. Cadmium (Cd) was above Action Level 1 in all samples, although well below Action Level 2. For other individual contaminants, there were few elevations above the Action Level 1, with none approaching Action Level 2. However, sample 45310-38 contained elevated levels of most metals, a majority of PAHs, tributyl tin and detectable levels of PCBs. This sample was taken from a 2 m depth core. In light of the information presented in EX31.5A, it is not considered that the contaminant elevations observed are liable to cause any deterioration in water status within the Humber Lower water body.

### **Conclusion**

Sediment quality levels of the material to be dredged are considered to be within acceptable levels and the temporary nature of the dredging and disposal activity limits the potential for any effects. No deterioration in WFD water quality elements are predicted.

### **3.4.3 Biological quality elements**

#### **Aquatic flora (saltmarsh)**

The effect on saltmarsh is related to the creation of the compensation site at Cherry Cobb Sands. None of the other elements of the AMEP development directly or indirectly impact saltmarsh (although there is a potential for saltmarsh to be created).

With respect to the compensation site there is no mechanism for an impact on any of the WFD elements in the Humber Lower water body until the breach in the flood defence and the channel through the existing saltmarsh between the seawall and Cherry Cobb Sands Creek are made. This is confirmed in Section 32.6.2 of the ES which states that during the construction phase of the project the habitat creation site will not have an impact on the hydrodynamics and sedimentary regime of the estuary until the final stage when the flood defence is breached. At this point the aquatic flora (saltmarsh) (included in the aquatic flora WFD parameter) will be removed. Construction of the breach in the flood defence and channel requires the removal of 2 ha of saltmarsh: this includes both direct removal and any additional loss due to scour around the mouth of the breach. Although saltmarsh is part of the designated nature conservation sites (SPA, SAC and Ramsar) the area lost equates to 0.3% of the total saltmarsh habitat in the Humber Estuary (627 ha). Section 34.6.1 in the ES states that the loss of saltmarsh will be compensated for and will eventually become part of the Lower Humber water body once new saltmarsh habitat forms in the managed realignment part of the compensation site. In this instance the consideration of deterioration relates to the effect on the protected area rather than the effect at water body level. It is understood that this issue is being addressed through the Habitats Regulations Assessment (HRA) which is the appropriate vehicle for assessing the impacts on Natura 2000 sites. Assuming the HRA is accepted by Natural England then the loss of designated saltmarsh habitat will be also considered as acceptable in terms of the WFD: indeed, in the longer term the compensation scheme may well provide a net benefit in terms of the status of saltmarsh in the Lower Humber water body.

#### **Benthic invertebrate fauna**

Benthic invertebrates in the Lower Humber water body are currently at moderate status (Environment Agency Wiyby website, accessed 11 October 2012).

The WFD Assessment should consider whether the activities associated with the AMEP development are likely to:

- a) cause deterioration to the status of benthic invertebrates (i.e. cause the status to change from good to moderate, or moderate to poor); and
- b) (if benthic invertebrates are at moderate status) prevent the benthic invertebrates from achieving good status

It should be noted that the WFD is concerned with deterioration between status classes; the WFD accepts that there may be variation including deterioration within a status class.

The benthic invertebrate parameter is currently based on sub tidal monitoring (Pers. Comm. Sue Manson, Environment Agency 2012) and therefore the assessment of the effects should consider sub tidal benthic invertebrates. The effect of the project on intertidal habitats is considered in Section 3.4.1.

Analysis of the Environment Agency's the latest monitoring data (provided by Environment Agency, Pers. Comm. June 2012) indicates that the status of benthic invertebrates sampling sites ranges from poor to high. Figure 2 shows the status of the benthic invertebrate sites as well as the components of the AMEP project, using the latest sampling data provided by the Environment Agency that was collected during 2008 and 2010.



### Reclamation, dredging and disposal

It can be seen from Figure 2 that the benthic invertebrate monitoring sites close to the AMEP site range from poor to high ecological status. The potential effects on benthic invertebrates arising from the reclamation, dredging and disposal activities are as follows:

- Loss of approximately 135,000 m<sup>2</sup> (13.5 ha) due to the reclamation and dredging of sub tidal habitat (Section 10.8.2 of the ES);
- Temporary local deposition of sediment associated with overflow during the trailer suction hopper dredging;
- Disposal of dredged material at existing licensed disposal sites.

The combined loss of 135,000 m<sup>2</sup> of sub tidal habitat relates to significantly less than 1% of the Humber Lower water body area (247 km<sup>2</sup>). This is not considered to be a significant effect on benthic invertebrates at water body level. The habitat to be lost forms part of a Natura 2000 site and Section 5.4.14 of the HRA notes that the proposed intertidal compensation site at Cherry Cobb Sands will provide compensatory habitat to negate this impact. It is therefore assumed that the HRA will consider the issues related to the effects on the Natura 2000 site.

The dredging of finer seabed material using a trailer suction hopper dredger will result in the overflow of suspended sediment into the water body. Modelling of the dispersion of the plume indicates that deposition levels beyond the immediate vicinity of the site are low to negligible. Deposition is predicted on the intertidal areas up and down stream of the AMEP site however these areas do not form part of the assessment of the (sub-tidal) benthic invertebrate parameter. Figure 14 in Annex 8.4 of the ES shows temporary deposition levels of 1 – 5 mm in parts of the water body. The capital dredging activity using a trailer suction hopper dredger is a relatively short term activity that will be concluded within a five to six week period. Backhoe dredging does not generally result in inputs of large quantities of fine material so does not require further consideration. It is anticipated that once dredging ceases these low levels of temporary deposition will be redistributed throughout the estuary (Sections 8.6.14 – 8.6.23 of the ES). Temporary deposition of 1 - 5 mm is not considered likely to affect any of the benthic invertebrate species in the Humber which are well adapted to this type of effect. It is assumed that the dredging mitigation measures (Table 2) will be applied to the dredging method statement. Therefore, the temporary effects of the short term capital dredging activity are not considered likely to affect status at water body level.

There are two types of dredged material that will be disposed of at existing licensed disposal sites in the Humber Lower water body. Erodible material will be placed at the dispersive site HU080 while non-erodible material will be placed at the capital site HU082. As HU080 is used on a regular basis for very large quantities of dredged material (licence for 7.8 million tonnes in 2008, Humber Estuary Baseline Document) it can be concluded that disposal activities are not adversely affecting the benthic invertebrates in this area. The site was in use during the water body classification period of 2006-08 and disposal activities at this site can be considered to form part of the baseline. The site has previously received up to 8.9 million tonnes per year therefore it is reasonable to assume that the placement of the material from the AMEP project is within the capacity of the site and that any effects will be temporary (i.e. weeks to months).

The erodible material also contains a fraction of coarse gravel which is coarser in nature than that found at HU080. An assessment has been carried out of the impact of the gravel fraction of the erodible material on the HU080 disposal site and any other areas that may be subject to receiving the gravel as a result of physical processes such as tidal currents (JBA, 2012b). A further assessment has been carried out of the ecological impact of the gravel disposal (GoBe Consultants, 2012), which found that as a result of the comparatively short period of deposition, the robust impoverished nature of the faunal community and the expectation that the material will then be transported away from HU080, the impact of smothering and change of substrate on HU080 is considered to be of negligible significance. As a result of the longer term impact, the assessment concluded that the robust impoverished community will undergo some short term loss, and that the gravel material will gradually disperse away from the

disposal site over time. The impact of smothering and change of substrate on the depression is therefore considered to be of minor adverse significance. The disposal of the erodible material at the HU080 disposal site is not, therefore, considered likely to have a non-temporary effect on the water body that will affect status at water body level.

The non-erodible material will be placed at the existing capital disposal site (HU082) (as required by the Marine Management Organisation). The monitoring location within this site indicates that benthic invertebrates are currently at moderate status. When placed at this site material will remain *in situ* with gradual erosion occurring over a period of months to years. It is understood that one of the aims of this site is to provide a structure that aids in managing the maintenance dredging requirements within the adjacent Sunk Dredged Channel. Slow erosion is therefore a feature of the material that is permitted for disposal. There will therefore be a local, temporary loss of benthic invertebrates during the placement of material at the site.

The placement of the dredged material may result in a local change in current speeds in the vicinity of the disposal site. Strictly, the WFD 'currents' parameter relates to coastal waters and is not relevant to transitional water bodies. However, Figures 4-5 and 4-6 in report 8.1 supplementary annex to the ES (JBA Consulting, 2012a) show that the effects on current speeds will be localised to the area around the disposal site and do not extend into the coastal water body. The changes in current speed are minor (<5%) and – importantly given the intention of the WFD supporting elements - are not considered likely to affect the status of the existing benthic invertebrate communities.

Report EX8.7A (JBA Consulting, 2012a) considers the impacts due to the changed bathymetry resulting from the disposal of inerodible dredged material at site HU082. The report does not predict any changes to the bed morphology outside of the disposal sites. Very small changes in the wave climate are predicted in the vicinity of the north bank inter tidal area around Hawkins Point, but these changes are not considered to be significant at water body level. The disposal of inerodible dredged material at the HU082 disposal site is not considered likely to have a non-temporary effect on the status of the Humber Lower water body at water body level.

#### Cherry Cobb Sands Intertidal Compensation Site

During operation, soils from the agricultural land will enter the water column in the local vicinity of the compensation site; however the input rate is considered likely to be relatively low as annual erosion is predicted to be less than deposition across the majority of the site, so overall the ground level within the compensation site is expected to rise (Section 3.5.5 of Black and Veatch, 2012a). After 5 - 10 years there will be a requirement to remove siltation from the regulated tidal exchange fields. This will be undertaken by a combination of flushing, bed levelling and dredging during the months of April to June and will result in elevated suspended sediment concentrations discharging from the compensation site. Increases in concentration are likely to be comparable to those occurring during the largest spring tides and storm conditions. Further, the sensitivity of the intertidal habitat in the Lower Humber water body is low due to the very high concentrations of suspended sediment already present in the Humber Lower water body (Section 33.6.4 of the ES).

During construction, the creation of the breach will result in the scouring of a channel immediately in front of the breach location (section 32.6.7 of the ES). Material within this channel is likely to be dispersed into the Humber Lower water body. This process usually takes place over a relatively short period (weeks to months) in response to the discharge of water from the new habitat compensation site. It is assumed that this material will comprise fine muddy sediments that are similar to the large quantity of suspended sediment that is carried in suspension in the Humber. The release of sediment will only occur on the ebb tide as water flows out of the estuary and will therefore be carried seaward, dispersed and deposited in the existing sediment sinks in the Humber. Given the very high volume of dredged material that is disposed of into the Humber as well as the high natural suspended sediment concentration and bedload, this temporary addition of a relatively small quantity of

material is not considered to be significant for any of the biological elements at water body level (Section 34.6.8 of the ES).

## **Conclusion**

In summary the components of the AMEP project that will affect sub tidal benthic invertebrates are not considered likely to have a non-temporary effect on the status of the Humber Lower water body at water body level. Therefore, no deterioration in WFD status is predicted. In addition, based on the evidence presented above it is concluded that the AMEP project will not affect the ability of the benthic invertebrates to achieve the objective to reach good ecological potential as set out in the RBMP.

Benthic invertebrates are subject to the MS exemption (see Section 3.2) and as such no mitigation measures are proposed in the RBMP. Notwithstanding this it is concluded that the AMEP activities will not affect the 'in place' mitigation measures relevant to dredging and disposal activities in the Humber.

## **Fish fauna**

The current status of the fish parameter is good, based on the Transitional Fish Classification Index (TFCI), the monitoring tool used to classify the ecological status of fish communities (including migratory species) in transitional waters under the WFD.

### Reclamation, Dredging and Disposal of Dredged Material

The Humber estuary acts as an important migratory route for a range of species between coastal waters and their spawning areas (Sections 10.5.40 – 44 of the ES). Some species are thought to migrate up along the banks of the estuary and may be more vulnerable to localised habitat disturbance at the shoreline. However, there have been a number of previous developments as well as ongoing disturbance along the banks of the Humber and the fish fauna parameter is presently at good status, indicating an ability to tolerate and adapt to these pressures.

Habitat disturbance during the construction phase is unlikely to have long-term impacts on fish as they are mobile and, given the width of the water body at this point, will avoid any area affected by disturbance, returning once the disturbance has ceased. Given the naturally high suspended sediment concentrations found in the Humber it is unlikely dredging and disposal operations will have an impact on fish populations (Section 10.6.60 of the ES).

Although local displacement of some fish species may occur as a result of impacts to fish, a significant negative impact on fish populations is not predicted from operation of the AMEP (Section 10.6.95 of the ES). The Humber Estuary provides a wide availability of similar habitat for foraging and reproduction for fish of conservation interest, and fish have the ability to avoid disturbed areas (Section 10.8.7 of the ES).

It is not considered likely that there will be a non-temporary effect on fish fauna at water body level.

### Cherry Cobb Sands Intertidal Compensation Site

Fish fauna in the Humber Lower water body may use intertidal and shallow sub tidal areas as spawning or nursery grounds (Section 34.5.16 of the ES).

During the construction phase, following the initial breach there will be a localised temporary increase in suspended sediment concentration in the waters adjacent to Cherry Cobb Sands (Section 33.6 of the ES). The Humber Estuary has an existing high concentration of suspended sediment and therefore the impact upon fish fauna is considered to be of minor negative significance, and temporary (Section 34.6.4 of the ES).

The operation of the compensation scheme (including the RTE) is not anticipated to affect fish feeding or breeding which may be associated with the mudflat and saltmarsh habitats adjacent to the site, therefore the impact on fish fauna is considered to be negligible (Section 34.6.12 of

the ES; Section 3.3.11 – 3.3.12 of EX28.3 Part 6). The managed realignment element of the compensation site is considered to provide a benefit of resource of food and shelter for the fish as well as providing nursery grounds.

### **Conclusion**

Subject to confirmation through the HRA that the loss of designated intertidal and sub tidal habitat is acceptable in the context of the agreed compensation package, the WFD assessment concludes that there will not be a deterioration on status of the biological quality elements (i.e. there will not be a non-temporary effect on status at water body level). Further, it is not considered that the AMEP development or the habitat compensation scheme will prevent the biological quality elements from reaching or remaining at good potential.

#### **3.4.4 Protected areas**

##### **Natura 2000 designated sites**

The loss of designated estuary habitat that forms part of the Natura 2000 site is considered in detail in the HRA. The WFD assessment has concluded that, with respect to the protected area, the consideration of deterioration relates to the effect on the protected area rather than the effect at water body level. It is assumed that the loss of these designated habitats is being addressed through the HRA which is the appropriate vehicle for assessing the impacts on Natura 2000 sites. Assuming the HRA is accepted by Natural England then the loss of designated habitat will be also considered as acceptable in terms of the WFD.

#### **3.4.5 Effect on mitigation measures ‘not in place’**

The Humber RBMP identifies the requirement for mitigation measures related to the flood protection aspect of the HMWB designation. These measures are to preserve and enhance marginal habitats, promote managed realignment, and replace hard defences with soft engineering solutions etc. With respect to engineering solutions for hard defences, although the AMEP extends riverwards beyond the present land boundary it does not alter significantly the length of frontage that will be subject to hard defences. The AMEP will affect marginal habitats but is compensating for this impact through the provision of a managed realignment site.

It is considered that the Cherry Cobb Sands site (which at approximately 105 hectares is significantly greater than the area of intertidal habitat lost within the water body) will complement and support the achievement of the proposed mitigation measures. The habitat creation site at Cherry Cobb Sands will not, therefore, compromise the mitigation measures ‘not in place’ for the Humber Estuary; rather it will contribute to the achievement of those measures.

The Cherry Cobb Sands site is anticipated to take 2 – 4 years to achieve functionality (Section 1.1.4 of EX28.3 Part 8). Should the HRA deem it necessary to provide overcompensation to reduce the impacts of the time-lag, overcompensation may be required, in the form of the conversion of an arable field to pasture, with a range of different degrees of wetness providing a mosaic of different ecological functionalities. It is proposed that a site in East Halton Marshes, North Lincolnshire, be developed as pasture/grassland site for use as feeding and roosting habitat for estuary birds, particularly the black-tailed godwit, thus providing a quantum of over-compensation for habitat loss to reduce the short-term effects of the issue of delay in compensatory habitat maturation. The site proposed comprises a field currently in arable use and 38.82 ha in extent. Some maintenance works to the existing flood defence wall will become necessary during the period of operation of the site (Section 5.3.3 of EX28.3 Part 8).

According to the Humber Flood Risk Management Strategy, which helped to inform the RBMP for the Humber transitional waters, the Environment Agency does not intend to maintain this line of defence. It is therefore necessary to assess the overcompensation site at East Halton

Marshes against the mitigation measures not in place in the Humber Lower water body, namely:

- Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution;
- Managed realignment of flood defence.

The Ecological Potential Assessment for the Humber Lower water body (Annex B of the Humber RBMP) concludes that the water body will fail to achieve good status by 2015 because the mitigation measures not yet in place for morphology (physical modification - flood and coastal erosion protection) are technically infeasible. Annex E of the Humber RBMP proposes an alternative objective: an extended deadline, assumed to be to 2027, on the grounds that technical solutions to address the ecological impact caused by the physical modification are under development and their effectiveness is not yet known (M3f).

The following extract from Annex E of the Humber RBMP sets out the justification for the alternative objective:

*'There are a range of morphological improvement measures available to mitigate and reduce biological impacts from physical modification. However, we do not always have a high level of confidence in the outcome and effectiveness of these improvement measures in relation to the specific biological quality elements. Many of the morphological improvement measures are yet to be proven in terms of their effect on biology at the water body scale. Similarly, the effectiveness of morphological improvement measures across differing environmental conditions, for example, different river types, remains unknown.*

*A programme of research is underway to improve our confidence in the applicability, feasibility and success of a range of morphological improvement measures. Extending the deadline for achieving objectives will allow time to complete these investigations to confirm the effectiveness of morphological improvement measures.*

*For artificial and heavily modified water bodies, mitigation measures have been identified as necessary in order to achieve GEP. The feasibility of these measures requires further examination. Mitigation measures defined from the ecological potential classification process are derived from a generic list that deals with pressures and impacts on a broad scale. To ensure that the measures are technically feasible in each individual water body, local conditions and requirements must be considered. Mitigation measures must also be looked at in combination to identify their effect where there are multiple pressures and impacts present in the water body.'*

The development of the East Halton overcompensation site and the maintenance of the existing flood defence is not considered to compromise the Environment Agency's ability to complete its investigations into the effectiveness of morphological improvement measures. Table 7.1 of EX28.3 Part 8 anticipates that the Cherry Cobb Sands site, Wet Grassland site and RTE will be fully functional by the end of 2018 and as such the overcompensation site will have fulfilled its purpose by this time. This is well in advance of the extended deadline (which is assumed to be 2027), and as such the East Halton overcompensation site can be considered for delivering the mitigation measures not in place (removal of hard bank flood defence/managed realignment).

In breaching the flood defence at Cherry Cobb Sands in accordance with the mitigation measures not in place Able UK Ltd would, in effect, be acting as a co-deliverer with the Environment Agency.

The AMEP will not, therefore, compromise the mitigation measures 'not in place' for the Humber Estuary.

### 3.4.6 Contributing to improvements in WFD status

In addition to determining whether or not there will be an effect on status at water body level, it is also necessary to consider whether it is possible for a development (in this case the dredging, reclamation or disposal) to be carried out in such a way as to contribute to improving the status of failing WFD parameters in a cost effective and not disproportionately costly manner. This requires consideration of the failing parameters as to whether the development as planned (or with suggested modifications) might contribute to realising the wider WFD water body objectives.

With regard to the currently failing WFD parameters, the assessment identified the following:

- Benthic invertebrates: the MS exemption applies so no mitigation measures are proposed in the RBMP for this parameter. Application of relevant dredging and disposal measures for the Humber RBMP.
- Dissolved inorganic nitrogen: there are no opportunities associated with the development to improve this parameter.
- Zinc: there are no opportunities associated with the development to improve this parameter, and the development will not impact upon other proposed measures aimed at such improvement.
- GEP/mitigation measures assessment: both the disposal method (i.e. retaining sediment within the system) and the intertidal habitat creation will contribute to some improvements by benefiting marginal aquatic habitats; the compensation site will also help to realise the opportunities associated with managed realignment albeit that that the driver in this case is not flood defence.
- Tributyl tin: there are no opportunities associated with the development to improve this parameter.

The Cherry Cobb Sands reclamation site has been chosen based on the ability to provide a 2:1 ratio of creation:loss (Section 28.1.3 of the ES) and should therefore provide an overall benefit to the Lower Humber water body as it will contribute to some improvements by benefiting marginal aquatic habitats and also help to realise the opportunities associated with managed realignment (albeit that that the driver in this case is not flood defence). While the creation of this habitat will not currently contribute to the benthic invertebrate parameter (as intertidal benthic invertebrates are not included in this parameter) should the monitoring method be revised then, once established, the site could contribute to some improvement towards the failing benthic invertebrate parameter. In addition it will contribute to a continuing improvement in the ecological value for fish fauna.

### 3.4.7 Future maintenance dredging

The supplementary information from the application on Maintenance Dredging (EX8.6) prepared by HR Wallingford in June 2012:

- confirms that the operational areas of the AMEP will require ongoing maintenance (Section 1.1);
- suggests that there may be changes in siltation at adjacent facilities (mostly expected reductions although additional accumulations are expected in the vicinity of the Centrica and E.ON intakes/outfalls) (Table 4); and
- describes the associated likely need for future maintenance dredging (Section 5.2).

Section 6.6.2 of EX7.8 (Dredging Strategy) states that the annual maintenance dredge is estimated at between 740,000 and 1,846,000 dry tonnes per year.

In addition, when maintenance of the regulated tidal exchange (RTE) at the Cherry Cobb Sands compensation site begins to be undertaken (approximately 5 years after it becomes operational) there will be a requirement to remove gradual build-up of mud to maintain operability of the RTE fields. It is estimated that up to 20,000 m<sup>3</sup> in total will be annually

flushed or discharged by pipeline out of the RTE fields into the new creek in the managed realignment site to disperse into the wider estuary.

Effects from the loss of estuarine habitat caused by maintenance dredging will be the same as those from capital dredging, except that the area and volume of dredged material is likely to be reduced (Section 10.6.77 of the ES). The maximum area that will be affected by maintenance dredging of the approach channel, turning area, berthing pocket and RTE fields is 645,780 m<sup>2</sup> (see Table 1 for details of dredging areas).

Maintenance dredging material will be placed at the existing dispersive disposal site HU080. This site has been used on a regular basis for very large quantities of dredged material (licence for 7.8 million tonnes in 2008, Humber Estuary Baseline Document), therefore the placement of maintenance dredging material from the AMEP project is within the capacity of the site and it is concluded that any effects will be temporary (i.e. weeks to months). The site was in use during the water body classification period of 2006-08 and disposal activities at this site can be considered to form part of the baseline, therefore this is not considered to be a loss as a result of maintenance dredging for the AMEP development.

Benthic communities that are removed by maintenance dredging will begin to recover between dredging events; however full recovery between events is unlikely (Section 10.6.78 of the ES). Section 3.4 of this WFD Assessment confirms that no mechanisms have been identified whereby the capital dredge will affect WFD status at water body level: this conclusion applies not only to biological status (the biological quality elements and the supporting physico-chemical and hydromorphological elements) and chemical status but also to relevant protected areas. There is thus no reason to anticipate that future maintenance dredging will affect water body status. In essence, the capital dredging will already have locally modified the area in the vicinity of the AMEP.

Applying a worst case scenario, if the total area to be dredged during the construction operation (berthing pocket, turning circle and approach channel) is assumed to be subject to maintenance dredging and is considered to be permanently lost, the zone of effect of maintenance dredging activities (dredging footprint x 1.5) will be 938,670 m<sup>2</sup> (see Table 1 for dredging areas). This equates to significantly less than 1 % of the total water body area of 247 km<sup>2</sup>.

The CIS guidance document on Environmental Objectives (European Commission, 2009) confirms that the WFD is not concerned with temporary effects – rather its priorities are to prevent deterioration in status at water body level and to aim for long term status improvements in failing water bodies. Where future maintenance dredging is required for the AMEP, this will neither involve any new physical modifications nor would it be expected to lead to any deterioration in biological or chemical status. As a matter of good practice, mitigation measures will be implemented to deal with any temporary local effects, but this is not strictly a concern of the WFD.

There are two other potential considerations: effects on mitigation measures not in place and contributing to improvements in WFD status. With regard to the former, Section 3.4.5 of this report already confirms that neither the capital dredging and disposal nor indeed other aspects of the scheme will affect the ability of WFD-related measures ('not in place' GEP mitigation measures; other measures set out in the RBMP) to deliver planned improvements in water body status. Given the scale and nature of maintenance dredging, a similar conclusion can be drawn. Insofar as potential opportunities to improve the status of failing WFD parameters are concerned, if it is possible to undertake maintenance dredging and disposal in such a way as to contribute to such improvements, beneficial methods or techniques will be used as long as they are technically viable and not disproportionately costly. The most obvious opportunity here relates to avoiding disposal methods that remove sediment from the estuarine system: however this assessment assumes that all options would achieve this objective.

## 4. Sands/Keyingham/Roos Drain from Source to Humber water body and Otteringham Drain water body

### 4.1 KEYINGHAM DRAIN WATER BODY

The Sands/Keyingham/Roos Drain from Source to Humber water body (ID GB104026067230) is a freshwater surface water body. It is designated as an artificial water body (AWB) and as such, in WFD terms, the ecological objective for the water body is to meet good ecological potential (GEP) rather than good ecological status. The ecological and chemical quality of Keyingham Drain (which runs along the edge of the Cherry Cobb Sands Wet Grassland Site) is described in Table 33.1 of the ES.

According to Annex B of the Humber RBMP, the water body is designated under the Bathing Waters Directive and the Nitrates Directive. The nitrate vulnerable zone map provided by the Environment Agency (pers. comm. 2012) and reproduced as Figure 3 indicates a nitrate vulnerable zone within the Keyingham Drain water body.

### 4.2 OTTERINGHAM DRAIN WATER BODY

The Otteringham Drain AWB (ID GB104026066510) is a freshwater surface water body. It is designated under the Habitats/Birds Directive and the Nitrates Directive. Figure 3 indicates a nitrate vulnerable zone within the Otteringham Drain water body.

There are no groundwater source protection zones, aquifers, or licensed abstractions within 2km of the Cherry Cobb Sands Wet Grassland Site.

### 4.3 CURRENT STATUS

#### 4.3.1 *Keyingham Drain water body*

The Humber RBMP classifies the Keyingham Drain AWB as being at moderate ecological potential overall (very certain). It is listed as being at bad potential due to the status of macroinvertebrates, but no measures are required because the 'bad' status is directly related to the designation of the water body as an AWB (i.e. the nature of its drainage purpose is not compatible with achieving a higher status in this regard). The AWB is also at moderate physico-chemical potential due, *inter alia*, to issues with dissolved oxygen (poor), phosphate (poor), and ammonia (moderate; specific pollutants). According to the RBMP measures to deal with these failures would be disproportionately expensive; no improvement is therefore foreseen in this water body before 2015. The Keyingham Drain AWB is described as being 'not high' for hydrology. Two mitigation measures which are currently 'not in place' but which could contribute to improving its status notwithstanding the designation of the Keyingham Drain as an AWB are: structures or mechanisms to enable fish to access the water body; and a sediment management strategy. Finally, chemical status in the Keyingham Drain area 'does not require assessment'.

#### 4.3.2 *Otteringham Drain water body*

The Humber RBMP classifies the Otteringham Drain AWB as being at moderate ecological potential overall (uncertain). It is listed as being at bad potential due to the status of macroinvertebrates, but no measures are required because the 'bad' status is directly related to the designation of the water body as an AWB (i.e. the nature of its drainage purpose is not compatible with achieving a higher status in this regard). The AWB is also at moderate physico-chemical potential due, *inter alia*, to issues with dissolved oxygen (poor), phosphate (poor), and ammonia (moderate; specific pollutants). According to the RBMP measures to deal with failures would be disproportionately expensive; no improvement is therefore foreseen in this water body before 2015. Chemical status in the Otteringham Drain area 'does not require assessment'.

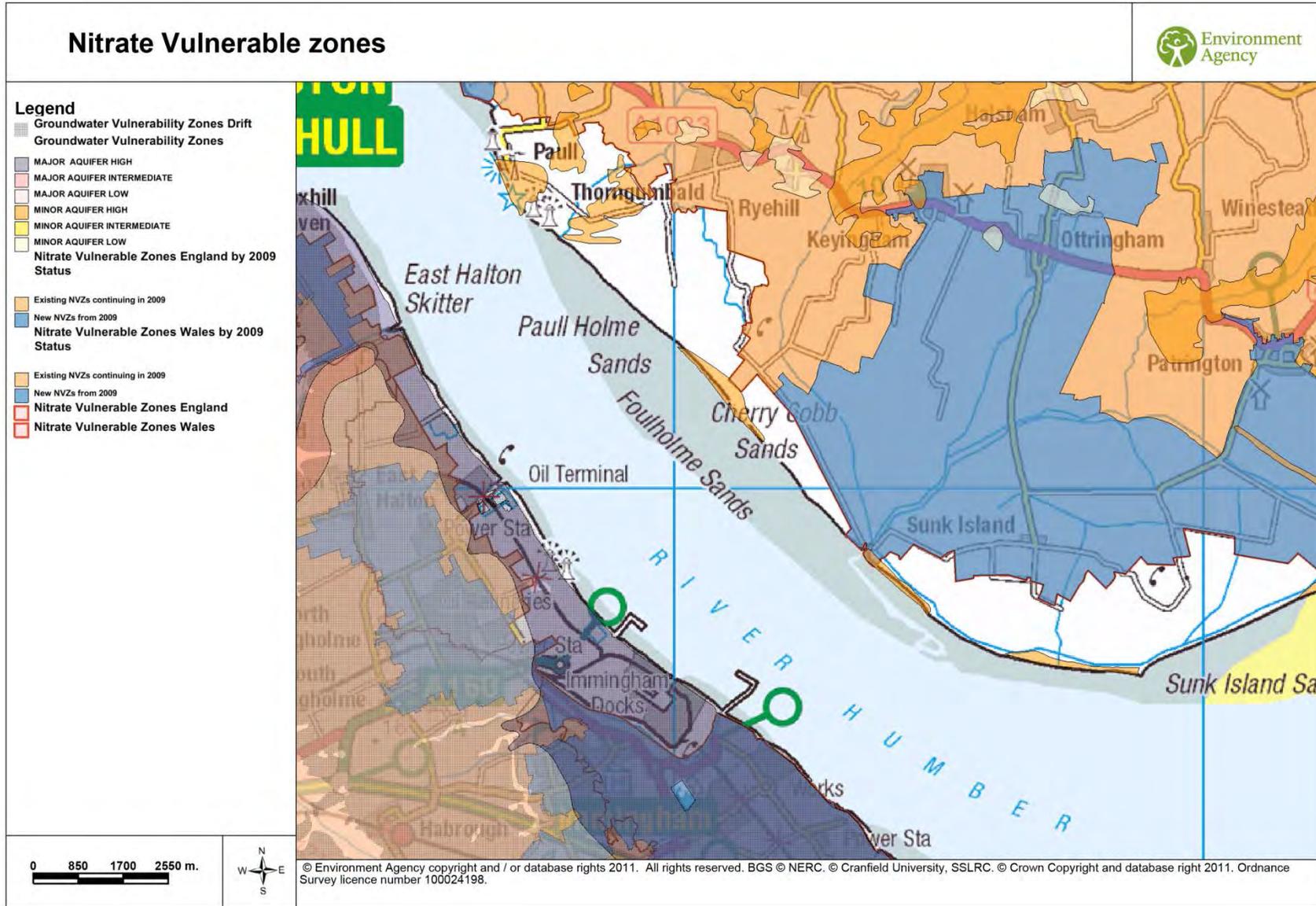


Figure 3 Nitrate vulnerable zones

## 4.4 WFD ASSESSMENT

As partial compensation for the loss of SPA bird habitat associated with the construction of the Able Marine Energy Park (AMEP), it is proposed to create wet grassland immediately adjacent to the Cherry Cobb Sands managed realignment site (Black & Veatch, 2012). This wet grassland site is approximately 38.5 ha and is known as the Cherry Cobb Sands Wet Grassland Site. The site currently comprises arable farmland on reclaimed saltmarsh or other intertidal habitat.

### 4.4.1 Physico-chemical conditions

The changes to location and scope of the wet grassland site are not predicted to result in any significant changes in impacts on the physico-chemical conditions. It is possible that contaminated material may be encountered during the reprofiling works at the Cherry Cobb Sands Wet Grassland Site, as the soils are likely to contain agricultural pesticides and fertilisers. Excavation of material across much of the site to a maximum depth of 1 m is unlikely to mobilise substantial additional contaminants compared to the baseline, as most agricultural chemicals are held in the surface layers of the soil and are disturbed regularly during normal ploughing.

The creation of the wet grassland at Cherry Cobb Sands will not require the removal or rerouting of any significant water courses, as it would have done at the previously proposed Old Little Humber Farm. Extraction of water from Keyingham Drain or Cherry Cobb Sands Drain may be required to irrigate the site during the late summer/early autumn period. However, extraction would only be undertaken subject to obtaining an Environment Agency abstraction licence and acceptable levels of salinity (for application on the wet grassland habitats and also to ensure the drain does not significantly increase its salinity).

No changes to the quality of the Keyingham Drain AWB or Otteringham Drain AWB are expected to arise as a result of the creation of the wet grassland scheme at Cherry Cobb Sands. Residual impacts described in the ES are assessed as being temporary minor negative, associated with the possible increase in suspended sediment concentrations however, as the Cherry Cobb Sands Wet Grassland Site will not be flooded, sedimentation of surrounding watercourses is expected to be negligible.

All water extraction would be carried out under licence from the Environment Agency and would not result in changes in salinity levels.

### **Conclusion**

Taking into account all the above, it is not expected that the creation of the Cherry Cobb Sands Wet Grassland Site will cause deterioration in or otherwise affect the ability of the Keyingham Drain or Cherry Cobb Sands Drain AWBs to reach their ecological status (potential) objectives (i.e. as no measures for these AWBs are discussed in the RBMP, there is similarly no likelihood that the proposed works will prevent other planned WFD measures from achieving improvements).

## 5. Conclusion

HR Wallingford has reviewed the relevant ES chapters and associated technical reports prepared for the AMEP and the habitat compensation scheme and concluded that the project components (alone and in-combination) are not likely to have a non-temporary effect on the status of WFD parameters that is significant at water body level. This conclusion is subject to the acceptability of the HRA.

The project is not predicted to cause deterioration to the current status of the Humber Lower water body nor should it prevent it achieving its future status objectives. Further, the intertidal habitat creation is likely to contribute to future improvements in WFD status as the site, once established, could improve the ecological value for saltmarsh communities and fish.

Insofar as the Keyingham Drain or Otteringham Drain AWBs are concerned, there should similarly not be any deterioration in status or any effect on the ability of the water bodies to meet their WFD objectives assuming that the following mitigation measures discussed in the ES are effectively implemented:

- measures to manage sediment run-off and accumulation from the Cherry Cobbs Sands compensation site indicated in Section 36.6.1 of the ES including appropriate measures to prevent the exacerbation of the accumulation of sediment on the estuary side of the sluice affecting the discharge from Stone Creek;
- measures to control run-off from the reclamation as indicated in Sections 9.8.23 – 9.8.26 of the ES;
- measures to reduce saline seepage mentioned in Section 33.6.17 of the ES;
- measures to manage plant and equipment to avoid pollution during the construction process described in Section 33.8.2 of the ES.

Finally, with respect to adjacent water bodies, the WFD assessment concludes that there is no mechanism for any effect of the AMEP or habitat compensation scheme or associated works in the Humber Lower transitional water body, on the status of the adjacent Humber Middle transitional and Yorkshire South/Lincolnshire coastal water bodies. As previously stated measures will, however, need to be put in place to prevent the exacerbation of local accumulation of sediment on the estuary side of the sluice at Stone Creek detrimentally affecting the discharge of the adjacent AWBs.

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## **Annex K**

Natural England's consultation response to the Application, dated 24 October 2018

Date: 24 October 2018  
Our ref: 259970  
Your ref: TR030001



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Crewe Business Park  
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**BY EMAIL ONLY**

T 0300 060 3900

Dear sir/madam

**NSIP Reference Name / Code: The Able Marine Energy Park Development Consent Order 2014 – S.I. 2014 No. 2935**

1. a non-material change to amend the certified drawings set out in Requirement 6 of Schedule 11 (Requirements) of the DCO to remove reference to Area A and to introduce a new drawing which identifies the new site at Halton Marshes; and
2. a non-material change to Schedule 1 to confirm that the ecological mitigation will be provided in accordance with the environmental monitoring and management plans but to reflect that the re-siting of Area A to Halton Marshes will be outside of the Order limits.

Thank you for your consultation on the above dated 18 September 2018 which was received by Natural England on 20 September 2018.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Mitigation Area A was required to offset the loss of Functionally Linked Land (FLL) for the Humber Estuary Special Protection Area (SPA) associated with the development of Killingholme Marshes. Therefore the alternative site at Halton Marshes also needs to be able to offset the loss of FLL. The Secretary of State's (SoS's) decision letter dated 18 December 2013 states:

*8. In relation to the terrestrial area of the AMEP development at North Killingholme, the Secretary of State has taken into account the mitigation measures proposed by the applicant that are relevant to the qualifying features and conservation objectives of the Special Protection Area (SPA). The measures, which would be secured by the Terrestrial Environmental Management and Monitoring Plan ("EMMP"), include the provision of two mitigation areas within the project site boundary to mitigate the loss of habitat as a result of the AMEP development. Mitigation Area A will provide wet grassland habitat for the use of feeding and roosting birds from the SPA assemblage (predominantly curlew) as well as for farmland birds.*

*9. The Secretary of State notes Natural England's opinion that Mitigation Area A, taken with the management and monitoring measures to be agreed under the Terrestrial EMMP, is sufficient to avoid an adverse effect on the site integrity of the SPA (PR 10.68).*

Natural England notes that the proposed change of location to Halton Marshes for the mitigation for the loss of functionally linked land at Killingholme Marshes, alongside mitigation measures for other permissions, will create a larger, contiguous area of wet grassland habitat overall that will potentially have significant value for SPA birds.

The current location of Mitigation Area A is stated in paragraph 10.55 of the Examining Authority's ("the ExA") report on the DCO Examination: "*The mitigation measures would all be within the project site boundary and would be secured by one of the three Environmental Management and Monitoring Plans (EMMPs).*" It is further reflected in paragraphs 8 and 9 of the SoS' Habitat Regulations Assessment for the AMEP DCO, which states: "*The measures, which would be secured by the Terrestrial Environmental Management and Monitoring Plan ("EMMP"), include the provision of two mitigation areas within the project site boundary to mitigate the loss of habitat as a result of the AMEP development.*"

However, in neither the SoS' Habitats Regulations Assessment nor the ExA's report is there any assessment of the relocation of Mitigation Area A. Natural England considers that the proposal constitutes a significant change to the mitigation set out in the original assessment. Therefore, whether or not this is considered a material amendment, it is imperative that the Habitats Regulations Assessment is updated and that the impacts of the relocation of the mitigation area are clearly defined.

In paragraph 9: *He notes also the Panel's view that the draft Terrestrial EMMP submitted at the end of the examination formed a firm basis for finalising measures that would fully mitigate the impacts on habitats and species of the AMEP development on land at North Killingholme (PR 10.76-78). Since the details of this and the other EMMPs have now been agreed between the applicant and Natural England, the Secretary of State is satisfied that the Terrestrial EMMP will ensure that the objectives of the mitigation measures relevant to the SPA (as well as other habitats and species) will be achieved.*

A series of Environmental Management and Monitoring Plans (EMMPs) were created (specifically marine, terrestrial and compensation) to ensure the ongoing management and monitoring of the land, together with any mitigation measures required to mitigate for the impacts of the development. The EMMPs were secured via a legal agreement between Natural England and Able UK dated 29 April 2013. The EMMPs have all been subsequently approved by Natural England. Natural England would like to highlight that an updated Terrestrial EMMP, that includes this updated mitigation scenario, will need to be submitted to and agreed by Natural England.

For any queries relating to the specific advice in this letter please contact Hannah Gooch at [Hannah.Gooch@naturalengland.org.uk](mailto:Hannah.Gooch@naturalengland.org.uk) or 02082 258503. For any new consultations, or to provide further information on this consultation please send your correspondence to [consultations@naturalengland.org.uk](mailto:consultations@naturalengland.org.uk).

Yours sincerely

Lauren Garside  
Yorkshire and Northern Lincolnshire Area Team  
Natural England



## **Annex L**

Natural England letter dated 28 October 2011

Date: 28 October 2011



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Dear Peter

### **ABLE UK MARINE ENERGY PARK (AMEP)**

Thank you for your email of 24 October and most recent letter, received on 26 October 2011. We welcome your proposal to “agree to disagree” on a number of matters and seek to agree a pragmatic way forward.

I committed to responding to you this week on two points; the footprint of the development site and the mitigation proposals. Our comments are therefore given below. We will provide a substantive response to the other key points raised in your correspondence next week.

#### **Area of the proposed development site**

We acknowledge that the statement under point 1 in our letter of 21 October could have been clearer. We recognise that some of the area proposed for AMEP is currently consented and developed and therefore not all of the AMEP development site footprint is functioning habitat that will be permanently lost to SPA and Ramsar waterbirds. However, there will clearly be a significant change of use from the existing car storage to a new port facility and the impact of this must be adequately assessed under the EIA Regulations and the Habitats Regulations.

The documentation that we have recently received presents a number of differing figures for the land that is currently undeveloped; this figure varies from 102ha in your letter of 29 September to 154ha shown on the drawing attached to your email of 14 October. In your most recent letter it is stated that “planning consent already covers 122ha of that land”, however the attachment to that letter lists planning permissions with a total area of 117ha.

**We would be grateful if you could provide clarity on these figures.**

However, it is important to clarify that our advice on the amount of mitigation required for the loss of roosting and foraging habitat at Killingholme Marshes is based on the bird monitoring records of the area. This provides information on the actual fields utilised by waterbirds and so the areas already developed were not included in our calculations.

## **Mitigation principles**

As you are aware, it is our advice that a core area of 16.7ha with a buffer of 150m where the adjacent land use is unsecured would be sufficient to mitigate for the loss of terrestrial feeding and roosting habitat within Killingholme Marshes. We welcome your acceptance of our advice and proposal “to include a 16.7ha core mitigation area within the red line boundary that we have used in our statutory consultations”.

As discussed at our meeting in Peterborough it may be possible to reduce the 150m buffer along the sides adjacent to the fuel depot and the development site to 100m if further information is provided on the levels and types of activity that will be carried out on these sites. **We would be grateful if you could send this information through to us, as agreed in Peterborough, as soon as possible for our consideration.**

It is unclear what is meant by your statement that the core area will be buffered by “150m of farmland”. All of the mitigation area, including the buffer must be optimally managed as wet grassland. This has been discussed previously and was one of the principles agreed in the MOU for ALP “Memorandum of Understanding For Able UK East Halton Application, 24<sup>th</sup> February 2011” signed by yourself, Peter Nottage Natural England and Peter Robertson RSPB. The reason that the entire area must be managed as wet grassland is to ensure that the core area is optimal at all times. If the surrounding buffer was an alternative habitat type then it would be almost impossible to ensure that the water levels and habitat quality within the entire core area was optimal wet grassland. As you are aware, the purpose of the buffer is to reduce disturbance to the core area so that the entire 16.7ha is able to function optimally at all times. It will not be possible therefore to farm the buffer as this will cause disturbance to the SPA/ Ramsar waterbirds. Subject to your confirmation on these points,

**It is Natural England’s opinion that this option of delivering sufficient mitigation within the footprint of AMEP would meet the requirements of the Habitats Regulations and mitigate the loss of feeding and roosting habitat from Killingholme Marshes.**

## **Alternative mitigation options**

Whilst the mitigation option described above would, in our view, meet the requirements of the Habitats Regulations, you have made it clear that you wish (and will plan) to mitigate for the loss of Killingholme Marshes at AMEP alongside the mitigation that you are providing for ALP. As discussed in Peterborough, we accept that there are alternative options where mitigation can be delivered in close proximity to AMEP but still within the South Humber Gateway and therefore these options would also meet the requirements of the Habitats Regulations and mitigate for the loss of feeding and roosting habitat at Killingholme Marshes.

## **Option 1**

The option that was discussed in Peterborough was for the provision of a 20ha core area to partially mitigate for ALP and a 16.7ha core area to mitigate for AMEP – ie a 36.7ha core area. This would be surrounded by a 150m buffer, except adjacent to the seawall where a buffer of 50m was agreed if public access was screened. To complete the mitigation for ALP, this option also requires a 20ha core area surrounded by 150m buffers where the adjacent land is unsecured, outside of the South Humber Gateway. The location of this offsite

mitigation would be agreed with Natural England and would need to follow the principles of the South Humber Gateway and the Habitats Regulations in respect of delivering the conservation objectives for the site. All of the land should be optimally managed as wet grassland.

## **Option 2**

Drawing No. ALP 08039 A attached to Neil Etherington's email of 14 October shows a core area of 48ha and as stated in our previous letter, if the core area is amended to 32ha + 16.7ha – ie a total core area of 48.7ha with a 150m buffer, except adjacent to the seawall where a buffer of 50m was agreed if public access was screened, then Natural England is of the opinion that this option would also meet the requirements of the Habitats Regulations.

Our advice is that option 2 represents the best option for the designated site, as it would create a large mitigation area in the closest proximity to the impacts of ALP and AMEP. However we advise that **there are three options – one on AMEP and two on ALP that we believe would all enable the impact of the loss of feeding and roosting habitat from Killingholme Marshes to be mitigated.**

Able UK has also put forward a number of other options that result in a reduction in the area of mitigation provided on the ALP site. As Natural England provided clear advice at our meeting in Peterborough that mitigation for AMEP could be moved to ALP, not to a location outside the South Humber Gateway, we assume that these options are proposals to amend the existing planning permission for ALP.

Your letter also states that “other alternatives may emerge and we would hope that you maintain an open mind in any future discussions”. Obviously, Natural England is happy to keep an open mind and work with you on mitigation proposals, but we understood that there was a pressing timeframe to deliver AMEP and therefore submission to the IPC was imminent. We have provided advice on 3 options that, in our view, would meet the requirements of the Habitats Regulations; therefore we would welcome your decision over which one of these options to progress, rather than continued debate of alternative proposals.

In the interests of resolving our discussions on developments within the South Humber Gateway, we do not wish to reopen long and protracted discussions on previous cases. As you will be aware, resolution of ALP took considerable time and effort from a number of parties – Able UK, Natural England, RSPB, North Lincolnshire Council and Peter Barham Environment Ltd. If the mitigation for ALP was considerably revised then North Lincolnshire Council would need to undertake a new assessment under the Habitats Regulations and those parties that signed the MOU would need to be reconsulted and new agreements drawn up. It would seem that the public purse would be better served by advancing a positive outcome for the AMEP proposal that does not rely on significant amendments to the planning permission for ALP which threaten to undo much of the hard work put into that application.

## **Compensation**

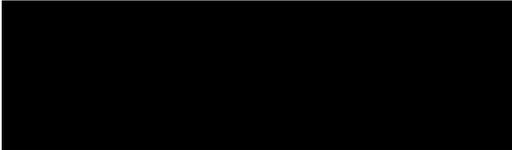
We will respond to the compensation proposals in our letter of detail next week.

**Drax**

As we stated in our previous letter, we are looking into the details of this case and will respond in detail in due course. However, we can assure you that it is unlikely that this will change the advice we have given for AMEP.

I would like to reassure you that we remain committed to regular open and transparent dialogue with Able UK to bring this proposal forward to the point of submission to the IPC as soon as possible. As you are aware, we have a teleconference set up on Wednesday with your team to discuss any outstanding matters.

Yours sincerely



Alan Law  
Director, Land Use



## **Annex M**

Natural England letter dated 13 December 2018

Date: 13 December 2018  
Our ref: 259970  
Your ref: TR030001



National Infrastructure  
The Planning Inspectorate  
Temple Quay House  
2 The Square  
Bristol, BS1 6PN

Customer Services  
Hornbeam House  
Crewe Business Park  
Electra Way  
Crewe  
Cheshire  
CW1 6GJ

**BY EMAIL ONLY**

T 0300 060 3900

Dear sir/madam

**NSIP Reference Name / Code: The Able Marine Energy Park Development Consent Order  
2014 – S.I. 2014 No. 2935**

Further to our consultation response dated 24 October 2018, Able UK has requested that Natural England states its view on the current status of the Terrestrial Environmental Management and Monitoring Plan (TEMMP) of which a new version (Revision J) was presented within the current consultation. This version of the TEMMP removes all mention of the original Mitigation Area A and includes the new design for the proposed mitigation site at Halton Marshes, of which some details differ to those of Mitigation Area A, for example the buffer sizes, as these are dependent on the site location.

During the original consenting of the Development Consent Order (DCO), a legal agreement was set up between Able UK and Natural England to ensure that the Secretary of State was satisfied that there was a mechanism to ensure that the objectives of the mitigation measures would be achieved. If the DCO is amended, the legal agreement needs to be updated to reflect the changes.

Natural England are content to approve the TEMMP in principle, however, the TEMMP cannot be formally approved prior to an amendment to the DCO to relocate the mitigation area being approved by the Secretary of State. It must also only be approved with agreement from the Environment Agency and North Lincolnshire Council, as per schedule 11, requirement 19(1) of the DCO.

Please note that these our original comments still stand and we would like to re-iterate that a full HRA should be required to fully assess the impacts of the relocation of the mitigation area.

For any queries relating to the specific advice in this letter please contact Hannah Gooch at [Hannah.Gooch@naturalengland.org.uk](mailto:Hannah.Gooch@naturalengland.org.uk) or 02082 258503. For any new consultations, or to provide further information on this consultation please send your correspondence to [consultations@naturalengland.org.uk](mailto:consultations@naturalengland.org.uk).

Yours sincerely

Lauren Forecast  
Yorkshire and Northern Lincolnshire Area Team, Natural England

## **Annex N**

Natural England letter dated 20 September 2011

Date: 20 September 2011  
Our ref: O/N Lincs  
Your ref: PMS.KJ.A.E11-0620

The logo for Natural England, featuring the words "NATURAL" and "ENGLAND" in a bold, sans-serif font. "NATURAL" is in white and "ENGLAND" is in a dark purple color, both set against a bright yellow-green rectangular background.

Peter Stephenson  
Able UK  
Able House  
Billingham Reach Industrial Estate  
BILLINGHAM  
TS23 1PX  
By email

Natural England  
Touthill Close  
City Road  
Peterborough  
PE1 1XN

Dear Peter,

**RE: Able Marine Energy Park Mitigation and Compensation Proposals**

Thank you for your letter dated 8 September 2011 regarding the amended mitigation proposals for the loss of SPA and Ramsar waterbird habitat within the AMEP footprint, and for your email of 14 September 2011 regarding the proposed compensation measures. I will respond to each of these matters in turn. Please note that this advice is given without prejudice to any advice Natural England may offer the competent authority in accordance with our statutory roles under the Conservation of Habitats and Species Regulations 2010.

**Proposed mitigation**

In light of this new proposal, I thought it would be useful to set out the advice, relevant to this application, which has been provided by Natural England directly to Able UK or is available through the South Humber Gateway strategic work:

**Able 2009/0600 Planning permission at East Halton for port related storage.**

As you will be aware, this development site supports significant numbers of SPA and Ramsar waterbirds and Natural England provided advice to Able UK over the course of 4 years before agreement was reached over the area of mitigation that needed to be provided to meet the requirements of the Habitats Regulations. During these discussions, the mitigation principles for developments within the South Humber Gateway were discussed in great detail. These principles are that a core area should be provided that is sufficient to meet the needs of the birds adversely affected by the development. The core area should be buffered by an area of 150m width where the adjacent land use is unsecured; this ensures that the core area is available to the birds at all times once the surrounding land is developed. All the mitigation area should be optimally managed as wet grassland.

**South Humber Gateway Strategic Approach to Mitigation**

A series of documents produced by the Ecology Group detailing the mitigation principles for the South Humber Gateway and the proposed strategic approach:

The South Humber Bank: Principles to underpin a strategic approach The RSPB's position  
**Feb 2009**

Joint position statement regarding the emerging South Humber Gateway SPA/Ramsar mitigation strategy from Natural England, Lincolnshire Wildlife Trust and the Royal Society for the Protection of Birds **October 2009**

Memorandum of understanding for the delivery of the South Humber Gateway Strategic Mitigation **April 2010**

South Humber Gateway Conservation Mitigation Strategy Delivery Plan **August 2010**

### **Marine Energy Park - meeting minutes**

Minutes of meetings dating back to 21 September 2010 where Natural England (and the RSPB) clearly explained the principles of the South Humber Gateway and the requirement for 4 x 50ha blocks of wet grassland mitigation to be delivered within the Gateway. There is agreement that Able UK only have to provide mitigation for the impact of their development in combination with other developments within the Gateway. Natural England's advice at these meetings was that Able UK's proposed mitigation area (approximately 28ha) is not sufficient to avoid an adverse effect on the site integrity of the Humber Estuary SPA and Ramsar site.

### **Marine Energy Park – Natural England written advice provided to Able UK**

- Email from Emma Hawthorne dated 9 June 2011 stating that the proposed mitigation area (approximately 30ha) "is not of sufficient size to mitigate for the proposed development in combination with other developments....We advise that a 50ha mitigation area – 20ha core plus suitable buffers (150m unless otherwise agreed) – is required in this location".
- Natural England paper "Advice from Natural England and RSPB on suitable buffers for SPA and Ramsar waterbird mitigation areas within the South Humber Gateway" dated 15 July 2011. This document sets out the evidence base for 150m buffers to support the core area "We believe that the proposed buffer of 150m is the minimum that should be considered in a situation where the adjacent land use is unsecured".
- Letter from Andrew Hearle dated 26 August 2011 "Your proposal for mitigation is for a total area of 28ha comprising 5.5ha of core area with a 150m buffer along three sides of this area.....Whilst we welcome in principle the core and buffer approach which you have proposed, Natural England's advice remains that we disagree with the methodology used in determining the extent of the mitigation area required and thus advise that the extent of core area proposed is inadequate to support the numbers of birds that are currently utilising the development land".

In light of the above, we are disappointed to see that your latest proposal is for an area of mitigation smaller than the previous proposal which we had already stated was not adequate. Your current proposal is for a core area of 4.2ha surrounded by a 100m buffer on 3 sides and an operational buffer adjacent to the development site, resulting in a mitigation area of approximately 15ha which we assume will be managed as wet grassland. Our advice on this proposal remains as previously stated; this is that the area proposed for mitigation, now reduced in extent, is not adequate to meet the requirements of the Habitat Regulations.

We have considered the evidence presented in the documents which you have used to support your proposal for a reduced area of mitigation and make the following observations:

### **Wader day calculations**

As you are aware, the wader day calculation put forward by North Lincolnshire Council's ecologist was used to reach agreement for Able UK's previous development at East Halton. We therefore recognise the rationale for using wader day calculations to calculate the size of the core area for this development. However, there appear to be a number of errors in the calculations presented and therefore we cannot agree with the results which it reports. It would be useful to discuss this with your team in detail, but in summary the issues are:

- Whilst a number of wet grassland sites are discussed in the paper - LCGM site 1, LCGM site 2, 8 RSPB reserves – only one site, LCGM site 1 has been used in the calculation. This is the site with the highest bird densities and therefore results in a calculation of the smallest mitigation area at Killingholme Marshes.
- The area of mitigation calculated has then been reduced by 50% owing to a comment from Roger Wardle<sup>1</sup> that “virtually no roosting waders are recorded on around 50% of the site” (LCGM site 1). Roosting birds will form dense flocks to reduce risks from predation and the loss of body heat, whereas feeding birds require greater areas due to inter and intra specific competition. Since the impacts of the development are on *feeding* curlew, the implication that surrounding land has no value based on a more limited area utilised by roosting birds is flawed.
- The proposed mitigation area has been further reduced as it is stated that “the pro-rata quantum of compensation (sic) needed for the AMEP development is around 60 per cent”. However, we have mapped the land within Killingholme Marshes that is utilised by curlew and determined that 83.6% will be either developed as part of the MEP or become the proposed mitigation land.
- Roger Wardle's report states that the counts on the Lincolnshire Coast grazing marsh sites are records of birds feeding, roosting and flying over. Therefore, the data analysis has not been undertaken on a like with like basis as records for Killingholme Marshes are only for feeding birds. Furthermore, the inclusion of birds flying over a site will overestimate the number of birds that the site can support; clearly birds flying over a site are not obtaining any ecological value from it.
- The new drawing AME-08050 revision B shows buffers around the core area of 100m. Natural England has already provided very pragmatic advice that 150m buffers are required, as evidenced in our paper sent to Able UK on 15 July 2011. No evidence is provided to support the reduction in buffer in this case, and therefore it is still Natural England's advice that a 150m buffer is required.

### **Required mitigation**

The wader count data for the Lincolnshire Coast grazing marsh sites are provided in Roger Wardle's document entitled *Wader Roosting Assessment Additional Record Interpretation*, provided to Natural England in your email of 8 September.

---

<sup>1</sup> Wader Roosting Assessment Additional Record Interpretation Able Humber Ports Facility, Killingholme Roger Wardle July 2010

It is possible to skew the area of mitigation required, either upwards or downwards, by selecting a specific wet-grassland site with lower or higher bird densities respectively. There is no rationale for adopting either approach.

Rather than selecting the Lincolnshire Coast site with the highest bird density, if the available data are used as presented in the report (which takes into account areas with both higher and lower bird densities) the area of mitigation should be calculated as follows:

**i) Correct area using wader days approach and Lincolnshire Coast wet grassland sites**

Lincolnshire coast curlew counts (7 counts):

Date	16/12	14/01	14/02	23/02	07/03	14/03	29/03
Number of birds	60	15	6	0	75	774	261

- Total curlew count = 1191 birds
- Mean curlew count = 1191 / 7 counts = 170 birds
- Count period = 16 weeks = 112 days
- Therefore wader days = 170 \* 112 = 19,056

Killingholme curlew counts (16 counts):

- Total curlew count = 768 birds
- Mean = 768 / 16 counts = 48 birds
- Count period = 16 weeks = 112 days
- Therefore wader days = 48 \* 112 = 5,376

Area of mitigation required:

- Lincolnshire coast = 46 + 73 = 119ha
- Bird days per hectare = 19,056 / 119 = 160

**Therefore requirement at Killingholme Marshes:**

- 5,376 wader days / 160 wader days per ha = 33.6ha required

As discussed previously, this should form the core area, which should then be surrounded by a buffer of 150m to ensure that the core area is available to birds at all times.

- Total area of mitigation including 150m buffers mapped to be approximately 77ha

This area is almost exactly the same extent as the area currently utilised by curlew that will be lost, i.e. 32.5ha significant/ frequent use, 32ha used by low numbers, 12ha which will now form most of the proposed mitigation area; a total of 76.5ha.

**ii) Acceptable area based on South Humber Gateway strategy work**

Despite our calculation that a core area of 33.6ha is actually the correct figure that should have been arrived at based on the wader day calculation, Natural England still believe that a 20ha core area plus 150m buffer as outlined in the South Humber Gateway Conservation Mitigation Strategy Delivery Plan August 2010 would meet the requirements of the Habitats

Regulations. These 4 x 50ha mitigation areas were determined from the South Humber Gateway INCA bird survey data and based on expert opinion from national Natural England and RSPB staff based on their knowledge and experience across the country.

It is accepted that the 20ha core area, plus 150m buffers for the South Humber Gateway Strategy was based on the loss of all of Killingholme Marshes. Therefore, we agree that the 20ha core area can be reduced to take account of the area of land utilised by curlew that will be affected by the proposed AMEP; constituting a reduction of 16.4%. As discussed previously, this core area should be surrounded by a buffer of 150m where the adjacent land use is unsecured and the entire mitigation area should be optimally managed as wet grassland. Whilst we are happy for an operational buffer to be in place adjacent to the development site, the terms of this buffer require further discussion as they have been amended since our earlier conversations and are not consistent with the operational buffers currently in place at North Killingholme Haven Pits.

We therefore calculate that the core area should be:

**83.6% of 20ha = 16.72ha**

In conclusion, we consider that a core area of almost 17ha with a buffer of 150m is required to mitigate for the impact of AMEP on the SPA and Ramsar waterbirds that utilise Killingholme Marshes. The entire mitigation area (excluding the operational buffer) should be optimally managed as wet grassland. If mitigation can be provided at this level, it is Natural England's advice that this mitigation would satisfy the requirements of the Habitat Regulations; our advice is that your plans do not currently provide for this.

### **Proposed compensation**

Our advice on compensation is based on the information currently before us and is given without prejudice to the decisions that are required to be made by the competent authority with respect to the statutory alternatives and imperative reasons of overriding public interest tests. This advice is also provided without prejudice to the view we may form in light of all of the scientific information available to us during the formal consultation process under the Habitats Regulations.

According to your email we understand that your compensation proposals are for:

- A managed realignment site of 110ha
- A maximum of 38ha of temporary grassland fields including a seasonal shallow lagoon if practicable

As we have stated previously, we have been provided with numerous different figures for the scale of impacts at North Killingholme with regards to the amount of designated site habitat that will be lost due to direct and indirect impacts. These losses will need to be clearly set out in the Habitats Regulations Assessment. For the purposes of this response we have assumed that the total losses are as set out in the ERM report entitled *AMEP Compensation Site on North Bank of Humber* dated September 2011. That is 18.4ha of subtidal habitat, 33ha of direct intertidal mudflat loss and 7ha of indirect mudflat loss through disturbance.

- i) Replacement estuarine habitat

We advise that the compensation ratios set out in the ERM report – 2:1 for intertidal mudflat and 1:1 for estuarine habitat – appear adequate to meet the test of maintaining and enhancing the overall coherence of Natura 2000. We believe that the measures outlined in the ERM report and supported by the detail and assurances given by Black & Veatch in their letter of 8 September 2011 give sufficient confidence that the managed realignment site is capable of delivering the required amount of compensation for the designated site habitat destroyed and/or disturbed as a result of the AMEP development – a minimum of 80ha of intertidal mudflat and 18.4ha of estuary habitat. Our view is that provided these measures are implemented and applied as described in these documents, the requirements of the Habitat Regulations should be met.

ii) The provision of a maximum of 38 ha temporary grassland habitat

There is recognition that the compensation habitat will not be provided in advance of the loss of designated site habitat and there will also be a significant time lapse between the creation of the realignment site and its ecological functional value as feeding habitat for SPA and Ramsar waterbirds. There are also uncertainties around how much mudflat can be created and maintained in the longer term; your letter states that the amount of mudflat that will remain after 10 years can only be estimated. It is therefore Natural England's advice that the wet grassland should form an integral part of the compensation package. It will be an important feeding resource for birds displaced by the AMEP development whilst the feeding value of the compensation site is established and will also reduce the uncertainties surrounding the long term predictions of sustainable mudflat habitat.

Therefore we advise that the compensation proposals should include:

- The establishment of an area of wet grassland (the detail of this to be agreed including the proposed creation of a seasonal shallow lagoon).
- The wet grassland habitat to be established before the development breaks ground in order for the grassland to be of feeding value for displaced birds as soon as possible and before the existing feeding habitat is lost. Natural England would wish to be consulted and to advise on the design and engineering of the land including drain/ditch management to create and maintain wet grassland habitat.
- The land should be optimally managed as wet grassland and maintained until such time that it is no longer required. This will be informed by the results of a detailed monitoring programme which Natural England will be happy to advise upon.

### **Habitats Regulations Assessment of the proposed compensation site**

Natural England (and the RSPB) have previously advised Able UK that the impacts of the proposed compensation site also need to be assessed under the Habitats Regulations; you will recall this was mentioned in our response to the HRA in our email of 16 August 2011. The inclusion of an assessment of existing bird usage of the compensation site in the HRA was also minuted in the meeting of 9 August 2011. The HRA can be done as a separate stand-alone assessment of the realignment site or included in the existing HRA of the proposed development. The report by ERM refers to the loss of an area of 2ha of saltmarsh that will be removed to create the new breach. This will need to be assessed under the Habitats Regulations. We are also aware that the proposed realignment site provides terrestrial habitat for several SPA and Ramsar waterbirds. The draft chapter 35 states "Five species listed in the SPA assemblage were recorded within the Compensation Site in Zones 1-9, curlew (640 in September), grey plover (26 in October), mallard (9 in March), teal (42 in February) and lapwing (787 in February)". These are significant numbers of SPA/ Ramsar birds and

this chapter appears to recognise this, stating “Construction of the Compensation Site will cause loss of roosting and feeding habitat for waterbirds utilising the fields behind the existing embankment at Cherry Cobb Sands. This is an important roosting area for certain waterbirds, including Curlew and eight other SPA designated species”. If this loss of terrestrial habitat is determined to have an adverse effect on the integrity of the SPA and Ramsar site then mitigation will be required in order to avoid these impacts. We advise that it would be sensible to deliver this mitigation alongside the proposed wet grassland area which forms part of the compensation proposals. As we have not had sight of the HRA of the managed realignment site, it is not possible to advise how much wet grassland is required in addition to the area which will form part of the compensation scheme.

The information provided above relates specifically to the issues raised in your recent correspondence regarding specific mitigation and compensation proposals. We will write to you separately in relation to matters concerning protected species.

Natural England recognises the importance of Able UK’s proposed Marine Energy Park to the regional and national economy; however a development of this scale will have major impacts on the Humber Estuary designated site which need to be fully considered and managed as a matter of law. It is Natural England’s role to work with you to ensure compliance with the statutory protection that the site is afforded and to reduce, as far as possible, the impacts of the proposed development on the nature conservation interest of the site. I look forward to continuing discussions, within what I recognise is a pressing timetable.

Yours sincerely

Alan Law  
Director, Land Use

## Annex O

'Halton Marshes Wet Grassland: Marsh Harrier Function & Status: Information to Assist the HRA & SoS Review Process', Cutts & Hemingway Estuarine Ecology and Management Ltd. (CHEEM), UK. Final Report to Able UK Ltd; Report No. CHEEM015-F-2020

## **Halton Marshes Wet Grassland: Marsh Harrier Function & Status**

### **Information to Assist the HRA & SoS Review Process**

**Report to Able UK Ltd**

Cutts & Hemingway Estuarine Ecology  
and Management (CHEEM) Ltd.

11<sup>th</sup> November 2020

**Author(s): N.D. Cutts**

Report: CHEEM015-F-2020



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## Document Control

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Client contact: Richard Cram

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11/11/20		S. Percival, Ecology Consulting	External Peer Reviewer	Quality control by
11/11/20		N. Cutts, CHEEM	Co-Director	Approved by

## Project Personnel

This report was written by Nick Cutts (Co-Director, CHEEM Ltd).

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## Disclaimer

This report has been prepared by Cutts & Hemingway Estuarine Ecology and Management Ltd. (CHEEM), with all reasonable care, skill and attention to detail as set within the terms of the Contract with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This is a confidential report to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such parties rely on the report at their own risk.

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## 1. INTRODUCTION

### 1.1 Report Context & Aims

This Technical Note has been produced to provide information on the status and requirements of Marsh Harrier (*Circus aeruginosus*) with particular reference to the area of and immediately surrounding the Halton Marshes Wet Grassland (HMWG) site on the south bank of the Humber Estuary.

The context of this information provision is to address issues raised by the Secretary of State (SoS) (letter dated 28<sup>th</sup> October 2020) in relation to an application by Able UK Ltd (the Applicant) for a Non-Material Change to the Able Marine Energy Park Development Consent Order 2014 and the Secretary of State's minded position on this as a Material Change, subject to further submissions by the Applicant. In particular, in the response by the SoS, the following concerns and/or requirements for clarification were raised:

34. At the HMWG site, the works would affect the following receptors:

- Existing agricultural land (20ha), which is FLL supporting an existing bird assemblage, which includes Marsh Harrier (a qualifying feature of the Humber SPA);

35. The Secretary of State therefore considers that the relocation of the site has the following implications for the original ES assessment:

- Impacts on a new area and quantum of agricultural land supporting a different bird assemblage that was not previously assessed in terms of construction disturbance or operation in the original ES.
  - The impact of the new proposals on Marsh Harrier, which was recorded on the HMWG site in ecological surveys in 2005, has not been assessed or addressed.

48. In addition, the Applicant's shadow HRA in respect of the NMC application screened out effects on Marsh Harrier. Marsh Harrier is a qualifying feature of the Humber SPA and neither the original HRA nor the shadow HRA produced for the NMC Application appear to take into account impacts on Marsh Harrier using arable land to forage at the HMWG site. The shadow HRA for the NMC Application is therefore considered to be incomplete in the absence of this information or clarification of the reason for screening out effects on Marsh Harrier. The Secretary of State therefore considers that he does not have the necessary information to conclude that there would be no significant effect on Marsh Harriers.

The Secretary of State concludes:

49. In the absence of an assessment of the effects on all affected FLL, and on Marsh Harrier, the Secretary of State cannot conclude that the HRA conclusions remain the same and is therefore minded to consider that the application is material. In respect of European Protected Species, the Secretary of State is satisfied based on the current information that the changes considered in this letter do not bring about the need for a new or additional licence.

Based on these points, the following text is aimed to address issues relating to Marsh Harrier status on the Humber and around the HMWG site, the functional requirements of the species, and likely potential impacts from the revision to the HMWG area and provisions for the species.

As such, the report also provides information considered of value to support any additional Habitats Regulations Assessment (HRA) considerations for the species (but not a full HRA Report). On this basis, information provided within Natural England's Supplementary Advice on Conservation Objectives (SACO) for Breeding Marsh Harrier as a Feature of the Humber Estuary SPA is utilised and addressed. The full details of the SACO for breeding Marsh Harrier on the Humber Estuary SPA can be accessed at:

<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9006111&SiteName=Humber&SiteNameDisplay=Humber+Estuary+SPA&countyCode=&responsiblePerson=&NumMarineSeasonality=15>

However, for quick reference, the SACO targets for the Marsh Harrier from Natural England's Designated Sites View for the Humber Estuary SPA are:

*Maintain the size of the non-breeding population at a level which is above 21 breeding females, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.*

*Maintain safe passage of birds moving between nesting, roosting and feeding areas.*

*Reduce the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed*

*Restrict predation and disturbance caused by native and non-native predators*

*Maintain concentrations and deposition of air pollutants at below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System*

*Maintain the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.*

*Maintain the extent, distribution and availability of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding) at: current level. Exact ha not known at this time.*

*Maintain the distribution, abundance and availability of key food and prey items (eg. mammals, birds) at preferred sizes (eg. voles, mice, rabbit; birds of pipit to duck size).*

*Maintain continuous reed cover over large areas avoiding fragmentation of extensive reedbeds.*

*Maintain a management regime that ensures the constant availability of areas of dense reed stands as nesting cover.*

*Maintain the availability of water over the entire reedbed area, with a high proportion of the area with a water depth of 0.1 m to 0.3 m.*

*Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels.*

*Maintain the dissolved oxygen (DO) concentration at levels equating to Good Ecological Status (specifically  $\geq 5.7$  mg per litre (at 35 salinity) for 95 % of the year)], avoiding deterioration from existing levels.*

*Maintain water quality and specifically mean winter dissolved inorganic nitrogen (DIN) at a concentration equating to High Ecological Status (specifically mean winter DIN is  $< 12 \mu\text{M}$  for coastal waters), avoiding deterioration from existing levels.*

*Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat.*

In summary then, in addition to providing background information on the ecology of Marsh Harrier and its status around the HMWG, this Technical Note therefore examines the proposed HMWG works in the context of the Marsh Harrier SACO targets above, in order to assist in the identification of any potential Likely Significant Effects (LSE) and impacts to Feature Integrity either alone or in combination. In particular, aspects of habitat change / loss and disturbance will be characterised for the species at the site in order to address this.

## **1.2 About the Author**

The author of this Technical Note is Mr Nick Cutts, Director of Cutts & Hemingway Estuarine Ecology and Management Ltd.

Nick has been an ecologist for over 30 years, and started his career working both for the RSPB and BTO, before joining the Institute of Estuarine & Coastal Studies at the University of Hull in 1990, where he was Deputy Director and Senior Ornithologist. After almost 30 years of experience there he has formed a new small consultancy team to deliver a range of expertise in aspects of estuarine and coastal zone ecological management, and in particular, ornithology.

Although his specialism is estuarine ornithology, and in particular bird disturbance and associated mitigation solutions, he also has an extensive track record working in other areas of estuarine ecology and on aspects of estuary management and consenting, including PEI, EIA, EclA and HRA. Nick has worked for a large range of industrial sector clients and provides advice to government agencies, for instance the Environment Agency in relation to aspects of their flood risk management strategies and strategic assessments.

He has been instrumental in the development of a Waterbird Disturbance Mitigation Toolkit, produced to assist planners and consenting agencies to identify the risk of construction generated disturbance to waterbird populations in N2K environments, including information on noise impact thresholds, waterbird responses and appropriate mitigation measures. He has also recently undertaken a number of projects with the Environment Agency, developing greening and softening techniques to enhance flood resilience, increase biodiversity, restore natural processes and enhance WFD & HSD provisions in a series of estuaries.

Although being based for a considerable length of time at Hull University, and thus working around the Humber Estuary for most of his professional life, Nick has worked widely in Europe,

on multi-partner/multi-state research projects, as well as further afield, e.g. in relation to the development and management of compensatory habitats arising from port development in South Africa. He is also the co-author of several book chapters, e.g. *Temperate Estuaries: Their Ecology under Future Environmental Changes* (in *Coasts and Estuaries*, 2019) and *Coastal Hazards and Risks* (in *Coastal Management*, 2010). He is the WeBS Organiser for the north bank of the Humber Estuary and WeBS counter, member and previous Chair of the Humber Wildfowl Refuge Committee, member of the Humber Nature Forum and was a member and Chair of the Birds of the Humber Trust.

He has been carrying out ornithological survey work within and in the vicinity of the HMWG site for several decades, and is currently conducting a programme of waterbird usage surveys at the site on behalf of Able UK Ltd.

### 1.3 The Halton Marshes Wet Grassland Site

The terrestrial fields prior to the development of the HMWG site consisted of arable farmland (Figure 1, 2007), although with active arable farming tending to have ceased in the years prior to the preparation works on the HMWG (Figure 1, 2015) allowing rank vegetation to develop.



**Figure 1: HMWG and surrounding habitat 2007 & 2015. Source: Google Earth Pro.**

Following landscaping works required to deliver the required habitat functions of the HMWG a modification to the field management occurred, with the north-western field currently managed as a grassland with a hay crop taken, but with practices designed to increase biodiversity and ensure the sward height is suitable for waterbird utilisation during the passage and winter months.

The fields in the south-eastern part of the HMWG, which were subject to modification to provide areas of wetland within the HMWG have subsequently been managed through water level management (via wind pump and a series of sluices) to ensure a range of wetland areas are present during the passage and winter months, with adjacent terrestrial areas managed to keep ruderal and grass sward height and a suitable level through both mechanical intervention and grazing by cattle.

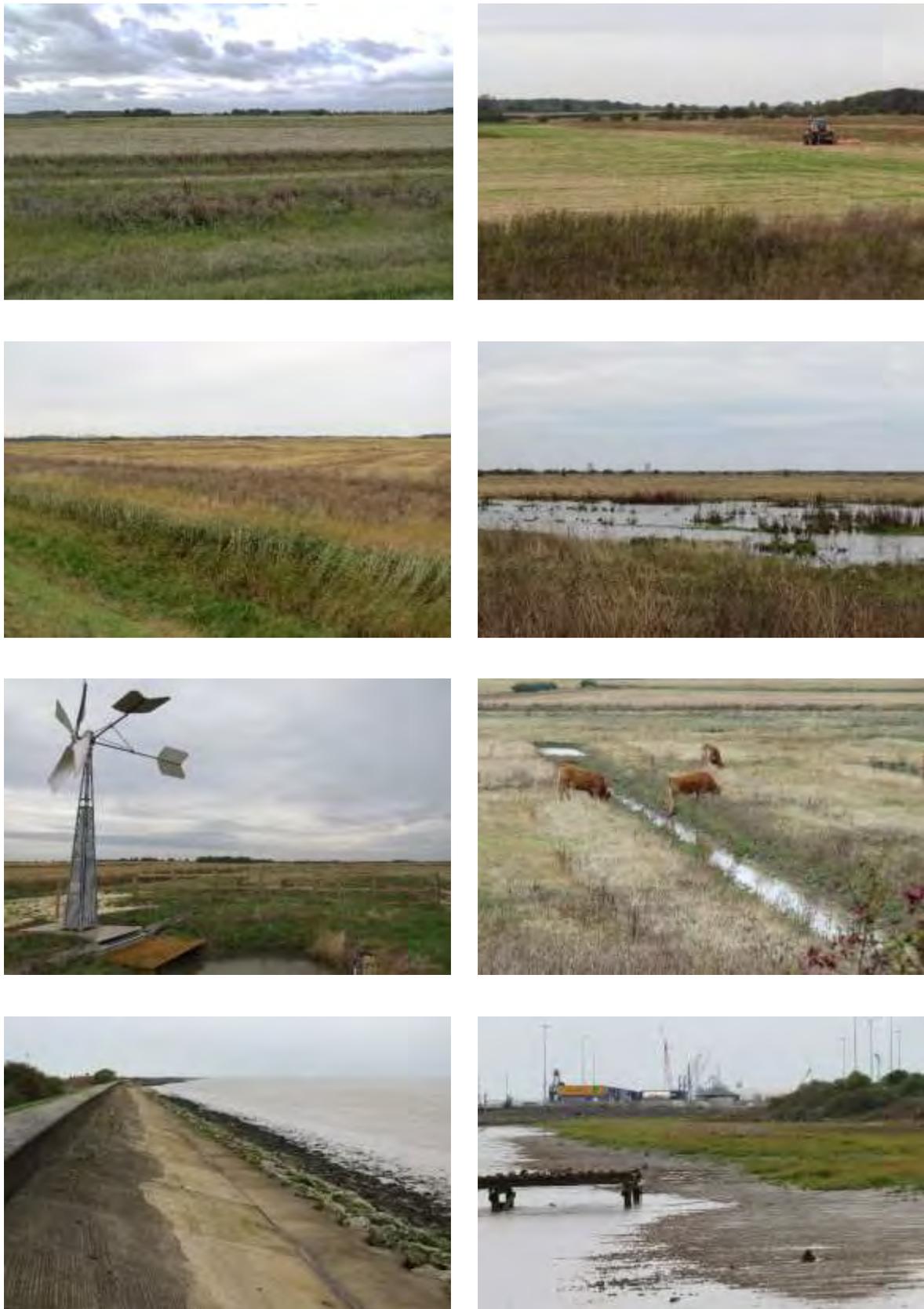
The landscaping works in the south-eastern section of the HMWG are evident in Figure 2.

The HMWG is subject to an ongoing management plan with waterbird utilisation as well as other ecological targets monitored on an annual basis. The outcomes from these monitoring programmes are reviewed by an independent management group, and where necessary modification undertaken.



**Figure 2: HMWG and surrounding habitat 2019. Source: Google Earth Pro.**

Examples of the habitats present within and around the HMWG site are shown in Figure 3. The top row shows the north-western arable field and crop management, the second row shows the grass and wetland areas of the south-eastern component, with the third row showing management approaches here (wind pump and cattle grazing). The bottom row shows the adjacent estuarine habitat with consists of relatively narrow intertidal mudflat, backed by a man-made hard upper substratum flood defence. The intertidal mudflat widens slightly further to the south-east and here an area of upper shore saltmarsh has developed in front of the hard concrete defences.



**Figure 3: HMWG and surrounding habitats 2019. Source: Google Earth Pro.**

It is considered important to note that a public right of way exists along the flood defence crest, which is subject to relatively high use, with recreational fishing also undertaken. In addition, vehicular access occurs along the crest. On occasion the author has observed these activities generate disturbance events to waterbirds using the HMWG area (e.g. Cutts & Hemingway 2020).

## 2. MARSH HARRIER ECOLOGY

The following provides a brief synopsis of aspects of the ecology and status of Marsh Harrier, both in general terms and within the Humber Estuary Context. It is not a definitive review of all data sources but is considered to provide a general indication of key aspects of the Marsh Harrier's habitat requirements and sensitivity to disturbance.

### 2.1 General Information

The Marsh Harrier is Protected under Schedule 1 Part 1 and Schedule 4 of The Wildlife and Countryside Act (1981) with around 400 breeding pairs in the UK. It is also included on the Amber List of Birds of Conservation Concern. It is also listed in Annex I of the EC Birds Directive (79/409/EEC); Appendix II of the Bonn Convention; Appendix II of the Berne Convention.

Historically it has been a very rare breeding species in the UK, but in recent decades has expanded its range from a stronghold in East Anglia to other sections of the country where reedbed habitat is found. Although typically a migrant bird, arriving in the UK to breed in April and leaving in October to winter in Africa, an increasing number are choosing to overwinter in the UK, and the species is now a resident in much of eastern, south-eastern and north-western England.

The species tends to breed and hunt in large reedbeds where it feeds on frogs, small mammals and birds, such as waterbirds and nestlings, but has expanded both its breeding and foraging range into adjacent agricultural areas.

Marsh Harriers typically reach 6 years old, but up to 20 years of age has been recorded, with breeding areas habitually used. They have extensive home ranges, with males having a larger range radius and females tending to remain closer to the nest site.

#### 2.1.1 BREEDING REQUIREMENTS

##### *Habitat*

Marsh Harriers are ground-nesting birds that primarily utilise *Phragmites* reedbeds of variable size, ranging from small features <1ha to extensive beds (Clarke, 1995), with a nest of approximately 50-80cm in diameter and a cup of 15-20cm in diameter constructed from reeds, grasses and twigs (Cramp et al, 1980). It is presumed that nesting within dense reeds provides a degree of protection from ground predators e.g. Fox.

Although reedbeds provide the preferred breeding habitat (86% of UK nests between 1983-1990 and 1995), there were also records in arable crops (13%), and in rough grassland (Underhill-Day 1998).

An radius of between 50-300m around the nest is actively defended (Bildstein 2007) but with partial colonial nesting sometimes occurring and, on some occasions, polygamous pairing and nearby nesting taking place.

Egg-laying typically takes place from mid-April to early May with a clutch from 2-8 eggs (Underhill-Day 1985). Incubation is between 31-38 days and fledging occurs after 35-40 days and young are dependent on the adults for a further 15-25 days (BTO undated).

As noted above, habitats other than wetland reedbed are increasingly being used, with agricultural areas being used for breeding. For instance, in north-east Spain, Cardador et al (2011) recorded an increase in breeding Marsh Harriers in irrigated agricultural habitats. This expansion of acceptable breeding habitats has also been seen in Europe, for instance in wet grassland in the Netherlands and with a range of agricultural habitats now utilised in the UK. For instance, Underhill-Day (1998) reporting on a 1995 census of breeding Marsh Harriers in the UK identified over 55% of nests in crops, ditches or small remnant reedbeds in predominantly arable areas, this being an increase in utilisation from 11% from a similar 1983 census. Importantly, nests were not restricted to relict wetland areas in agricultural habitats but also within crops, with the rate of successful fledging for these marsh Harriers the same as for reedbed birds.

### *Diet*

Marsh Harriers are generalists and opportunists taking a wide variety of prey from a range of habitats. Foraging habitats include reedbeds, marsh, grassland and agricultural fields, with preference based on habitat composition and foraging efficacy.

According to Underhill-Day (1985) in a study of Marsh Harrier in East Anglia during 1983-84, they were found to take a range of birds and mammals present in their hunting ranges, and with a change in diet during the year reflecting changes in prey availability. However, foraging tends to be centred around locations closer to the nest site when prey availability is sufficient.

Cardador et al (2012) identified a larger proportion of small mammals in the diet of Marsh Harriers compared to less intensively managed/more natural habitats where small birds were more commonly taken. Prey tend to be taken from the ground and nests and Tornberg and Haapala (2013) from a study in the Gulf of Bothnia found the species to have an opportunistic foraging strategy allowing expansion into a range of habitats e.g. they can adapt their prey preference depending on habitat and prey availability.

### *Foraging Preferences*

Cardador and Manosa (2011) recorded the species utilising a wide foraging niche, exploiting wetlands and different agricultural crop types over the year, with the authors suggesting that this related to changes in vegetation and crop height and thus hunting efficiency. This is an important component, as depending on habitat (and thus prey), active management may be required to deliver a suitable foraging medium e.g. grassland type and sward height. For instance, in the area of this study, birds were also noted to take advantage of recently mown fields (intensively managed alfalfa), which offered an adequate vegetation structure for hunting during most of the year.

Witkowski (1989) found that male Marsh Harrier home ranges could be located at some distance from the nest location, with two males tracked as part of the study having a home range located at 3km and 6.5km from the nest, and with a similar extensive range in male birds in East Anglia situations recorded by Underhill-Day (1990) with foraging up to 7km from the nest.

A similar territory range was described by Hardey et al (2009), with male birds observed to hunt up to 7km from their nesting site and with females having a smaller home range, but these increase in size when they start to feed young (from 100–1,300ha).

Cardador et al (2009) also examined the extent of the home range of Marsh Harriers through radio-tagging within a largely agricultural landscape in the Ebro Basin. The study found that the home range of male birds during the breeding season varied considerably, from 341-6,353ha with males found to forage up to 15km from the breeding site, although this distance varied considerably and was more often within 3km. Importantly for the context of this document, the research suggested that the variation in range reflected varying levels of agricultural intensity and prey availability e.g. the greater the agricultural intensity, the lower the prey availability.

### **2.1.2 DISTURBANCE SENSITIVITY**

The Marsh Harrier is often cited as being sensitive to disturbance on nesting sites. For instance, Fernandez and Azcona (1993) found that the number of food items provided and time spent by male and female Marsh Harriers at the nest decreased during periods of disturbance. However, breeding success was unaffected when comparing disturbed pairs and undisturbed pairs, although the chicks from disturbed nests had higher levels of malnutrition. The study also evidenced that the regular presence of crayfish trappers near to breeding sites caused Marsh Harriers to become habituated, with only limited displacement.

Ruddock and Whitfield (2007) suggest that a radius of 300-500m is an adequate buffer for Marsh Harrier breeding sites to avoid the adverse effects of human disturbance. They also note that there is a degree of protection offered by reedbeds which reduces both the visible detection of disturbance by the birds and the likelihood of 'casual' human disturbance.

Madders and Whitfield (2006) consider that the Marsh Harrier has a lower sensitivity to displacement from the effects of operational wind farms than Hen Harrier (*Circus cyaneus*) although Alves *et al.* (2014) studying Marsh Harrier in Portugal found that human disturbance sources, such as agricultural machinery and construction had a generally negative effect on Marsh Harrier with traffic having a significant negative effect during the breeding season. However, this is in contrast to other studies (e.g. Cardador et al 2011) which found no relationship between human pressure and nesting-site occupancy. Similarly, RPS in an HRA document state that Marsh Harrier were recorded as both breeding and roosting within 100m of an active haul road that was 'heavily trafficked by HGVs' (RPS, 2018). As such, it would appear that whilst Marsh Harrier are susceptible to human disturbance on and adjacent to the nest, they are also able to habituate to some activity, at least to perhaps 300m radius of the nest and possibly in some instances to within 100m.

There appear to have been no direct studies on noise disturbance to breeding Marsh Harriers that provide specific information on the likely scale and severity of behavioural responses. As such, there would be a need to use surrogate information where available, e.g. from other similar species.

In the context of a range of Harrier species, the reliance on aural detection of prey may be less marked in Marsh Harriers due their tendency to forage at greater flight heights, although this may vary with main prey items e.g. a greater hearing component required to hunt for small mammal items rather than say waterbirds.

As such, the identification of a noise threshold for Marsh Harrier will be complex and require a precautionary approach and is not considered of particular relevance in this particular case.

## 2.2 Humber & HMWG Focus

### 2.2.1 PREFERRED HABITATS/AREAS

The recent historical status of Marsh Harriers breeding on the Humber Estuary has been one of an increase from absence in the 1980s, to a broad stability over the last couple of decades. However, given the rarity and conservation status of the species, in many instances the location of nesting sites has been specific only to a general area, and the following therefore does not necessarily specify exact nest site location.

After sporadic nesting in the 1960s, a small breeding population was established in the early 1980s and grew steadily until the early 2000s (Allen et al, 2003). The recent status of the species on the Humber Estuary suggests there are perhaps 40-55 active nesting sites/territories and in the region of 40-60 wintering individuals (D. Clarke Pers. Comm. to R. Cram via email).

The stronghold of the breeding population has been the upper Humber Estuary, and in particular, the Blacktoft Sands RSPB reserve, although even at this site, with active management of habitat and visitors, numbers of breeding pairs have been variable. However, with the increase in *Phragmites* reedbed extent in the intertidal area of adjacent sites during the 1990s and 2000s, there was a steady increase in the number of nesting females within the upper Humber Estuary in general, with evidence of polygamy on a number of occasions. Furthermore, the species is also now resident in the area, with a number of birds wintering in the upper estuary, these individuals often foraging over an extensive range at this time, including estuary margins and the hinterland, including arable and heathland habitats.

Whilst the reedbed wetlands of the upper Humber Estuary, upstream of the Humber Bridge are the core of the breeding population, the species utilises reedbed habitats in other areas around the Humber and the immediate hinterland, including areas on both the north and south of the middle to outer estuary, with foraging range from these sites leading them into marsh and arable areas, and with trans-estuary movements taking place.

In addition, birds have nested in reedbeds along the tributaries of the estuary, in some cases these reedbed sites being relatively small. However, in the stronghold of the upper Humber, numbers of breeding females appear to have stabilised in recent years, despite an ongoing increase in reedbed extent, suggesting that despite more available preferred suitable nesting resource being available, capacity for nesting e.g. competing ranges, has been reached. However, similarly there is evidence around the estuary that pockets of suitable but relatively small reedbed and even on occasion, rank vegetation and arable crops are being utilised.

Marsh Harriers breeding on the estuary can be recorded, from reedbeds in particular, around most of the estuary, and with associated foraging occurring along the marsh, reed grass and arable habitats on the estuary margins, although with the majority of records relating to sites upstream from the Humber Bridge.

As such, whilst the large reedbed sites around the estuary remain the main nesting areas for the species, they can be recorded from other sites including along the estuary's tributaries and even in agricultural settings. Furthermore, the foraging range associated with nesting birds, particularly in sub-optimal areas, can be extensive e.g. a 7km radius. The species now also overwinters on the Humber, in some cases utilising roost sites that are not necessarily used

for breeding, with winter foraging range being generally greater than during the summer months.

Figure 4 shows the potential 7km foraging range centred on the HMWG site. Whilst the use of this radius cannot be definitive for all individuals and seasons, on this basis, there is a clear potential for the HMWG area to be utilised for foraging from a number of potential breeding sites in the middle to lower Humber.



**Figure 4: 7km radius (potential Marsh Harrier foraging range) centred on the HMWG site. Source Bing Maps.**

With particular reference to the HMWG site, the author has observed Marsh Harriers foraging in the north-western part of the site in the past, with two birds present on one occasion, these observations made before the biodiversity improvement work undertaken on the HMWG site, and when the area was all under arable cultivation. However, on all occasions, foraging was observed being restricted to the field margins and in particular, along the flood bank. These foraging movements tend to have originated from the north e.g. Skitterness, with birds tending to spend more time foraging over the extensive marsh to the north of East Halton Skitter, rather than within the arable fields now contained in the HMWG. Movements of Marsh Harriers from the north bank of the estuary to the East Halton Skitter area have also been observed e.g. Foulholme Sands/Cherry Cobb Sands.

More recently, with the HMWG habitat management now in place, the author has observed Marsh Harrier foraging over both the grassland of the northern part of the HMWG as well as the rank grassland of the southern half, with other raptors also hunting across this area. Given the conservation aims of the HMWG, it would be expected that suitable prey would be present, both in terms of waterbirds, passerine nestlings, amphibians and small mammals.

Breeding bird surveys conducted for the North Killingholme Power Project (WSP, 2020) did not identify any Marsh Harrier present from survey programmes in 2010 and 2019, despite the WSP survey area including vantage point locations between 1km and 2km of the HMWG site. Wintering bird surveys for that development reported Marsh Harriers using reed dominated, wetland habitats at Killingholme Haven Pits, and at Halton Marshes (WSP 2020b).

However, there is a record of a Marsh Harrier breeding in the vicinity of Winter's Pit, East Halton in 2019 (D. Clarke Pers. Comm. to R. Cram via email), adjacent to the southern end of the HMWG site. This location would in principle appear to offer suitable nesting habitat, with the presence of a mosaic of reedbed, open water and scrub of c. 5ha. Importantly for the context of this report, it should be noted that if successful breeding took place at this site, it was almost certainly within 250m of an active vehicle storage facility, and potentially closer.

As such, this would potentially correlate to sighting of foraging birds across the HMWG site in both 2019 and 2020. However, at no point in many days of bird survey around the HMWG area, has the author observed Marsh Harrier breeding on the HMWG site itself.

In conclusion then, it would be expected that Marsh Harriers will forage over the HMWG site, with these movements occurring both during the summer and winter. Indeed, such activity has been observed by the author. However, the habitat within the HMWG site is certainly not one preferred by Marsh Harrier for nesting given the vegetation type and height, and no breeding by the species within the site has been noted by the author.

### **2.2.2 DISTURBANCE SENSITIVITY AND POTENTIAL IMPACTS**

In general, there is a body of research evidence that suggests Marsh Harrier to be a species that is sensitive to disturbance, and whilst this is no doubt correct for anthropogenic interference at or immediately around the nest, it is the author's experience that this is not the case for activity conducted some distance away from the nest, and additionally with some potential for habituation in the species. In support of this statement, the following is a directly relevant observation of the sensitivity of breeding Marsh Harrier made by the author from the monitoring of breeding Marsh Harrier in a reedbed close to both a PRow and ongoing construction site.

A female Marsh Harrier was observed to establish a nest site in reedbed within c. 100m of an active flood defence construction site. As soon as this activity was noted, the construction work plan was altered such that vehicle access was undertaken from a different route over 200m from the nest site and personnel access from the compound to the area of the nest restricted (c. 150m), although the PRow remained open. Regular hunting by both male and female was observed for the next c. 6 weeks, including foraging across the reedbed within 50m of the active construction site compound. The female close to the works fledged two young, with both the juveniles and adults continuing to hunt around the reedbed close to the ongoing works once fledged.

As noted above, the species has bred successfully on the upper Humber for c. 40 years, with the nesting sites predominantly located for the first c. 20 years under a heavily used low flying military aircraft transit route e.g. nests were established during the use of the flight path with pairs fledging young annually and hunting around the reedbeds under the flight route.

Whilst this noise from the aircraft was not constant, it was from loud, low-level over-flying military jets and with flights repeated daily e.g. multiple movements each day, in particular during the evening.

Outside of the breeding season, the author has also observed Marsh Harrier hunting over a reedbed at c. 500-750m from active wildfowling which would generate an impulsive SPL of c. 63-66 dB  $L_{Amax}$  at the receptor at this range, with no obvious disturbance responses noted in the foraging activity.

The potential record of Marsh Harrier nesting at Winter's Pit in 2019 (D. Clarke Pers. Comm. to R. Cram via email) also supports the suggestion that Marsh Harrier can habituate to disturbance, given the potential nesting location is within 250m of an active vehicle handling and storage facility, and potentially even closer to the facility as the two sites bound each other.

Based on these observations, it is therefore concluded that whilst according to research papers Marsh Harrier can be susceptible to disturbance whilst nesting leading to evidence of desertion and or poor condition in fledglings, there are instances, including at locations on the Humber Estuary, where Marsh Harrier are reasonably tolerant of disturbance stimuli, both in terms of nest location and foraging behaviour, perhaps with habituation occurring in some instances. As such, whilst direct disturbance to nesting and foraging function needs to be avoided, it is considered that in many instances, ongoing low level anthropogenic activity will not necessarily impact on site utilisation. This is certainly the case for the estuary frontage around HMWG and the Mit A site where there is ongoing public access along the flood defence crest.

Furthermore, as part of the HMWG site design, following Natural England's advice, buffer zones were included around the edges of the site to minimise potential third party disturbance e.g. a 150m buffer from ALP site and 50m (screened) from the public footpath along the shore.

### **3. HMWG MARSH HARRIER IMPACT IMPLICATIONS**

#### **3.1 General Site Utilisation & Alteration to Function**

The SoS has raised the following concerns relating to the potential impacts of utilisation of the HMWG by Marsh Harrier (see Section 1).

The following aims to address these concerns (Points) in the light of information provided in Section 2, and based on the authors' knowledge of the site and Marsh Harrier utilisation on the Humber Estuary.

##### **In relation to Point 34:**

Interpreting the SoS's point here, it appears to relate to historical utilisation of the HMWG site footprint when under agricultural use, with some records for Marsh Harrier made at that time in the context of potential changes in utilisation since HMWG development.

Historically, the land under the HMWG footprint was actively under arable agriculture, with predominantly winter utilisation of the fields by roosting waders. Marsh Harrier were recorded in the area, but from the author's experience, this utilisation was predominantly along the field margins e.g. rough grassland/dykes.

The HMWG in its current managed form provides a range of terrestrial habitat, including grassland with a managed sward height to encourage usage by waders, and with a degree of water-logging during the winter months across part thereof, and an area of legacy arable land featuring ruderal vegetation with some management (grazing and cutting), this habitat interspersed with a network of shallow dykes with a degree of water management to maintain levels. After a number of years of no land management and the development of rank vegetation, the whole HMWG site is now managed to maximise both function for passage/wintering waterbirds and wider biodiversity enhancements including both ground nesting birds and other groups such as frogs and small mammals.

As such, it is considered that the HMWG site now provides an improved foraging function to that when it was under arable agricultural production. In addition, there is evidence that the HMWG site is currently used by Marsh Harrier for foraging, and as such, is able to deliver, at a minimum, a comparable foraging support function for Marsh Harrier that was delivered before the establishment of the HMWG.

Furthermore, and of importance, the HMWG is actively managed to deliver habitat for waterbirds as well as ground nesting birds and other fauna, and as such is expected to provide a range of prey items that would be suitable for foraging Marsh Harrier which were not available when under arable cultivation, and additionally in greater abundance.

On this basis, it is concluded that the current land management practices at the HMWG and associated function delivery are consistent with an additional utilisation potential by Marsh Harrier for foraging compared to when under its arable management.

##### **In relation to Point 35:**

Interpreting the SoS's point here, it appears again to relate to the consideration that there has not been any assessment of the effect on Marsh Harrier status of the Halton Marshes

conversion from arable agriculture to managed wet grassland. As such, the information used and response are similar to that for Point 34.

The HMWG in its current managed state provides a range of terrestrial and aquatic habitats that provide function for both passage and over-wintering waterbirds e.g. roosting and foraging areas, as well as for breeding passerines and some wildfowl, in addition to habitat for reptiles and small mammals. Effectively this managed habitat is able to provide more suitable foraging potential for Marsh Harrier than that when under arable cultivation.

Prior to the development of the HMWG site under its current management requirements, the site at the time of the original ES featured arable crops. The author observed the fringes of the site being used by foraging Marsh Harrier on a number of occasions, and it is expected that the reference by the SoS to Marsh Harrier records from a 2005 survey programme relate to a similar foraging use.

Certainly the author did not record any breeding activity on what has become the HMWG site, and the actively farmed fields within what is now the HMWG would not have readily supported breeding activity by the species. More likely, the 2005 records refer to foraging activity, and such activity was observed by the author on occasion around this time at the site, with movements predominantly in the north-western half of the site, originating from the extensive marsh area of Skitterness, but with trans-estuary movement into the area also noted.

Over the last 12 months as part of an ongoing waterbird usage monitoring programme at the site, the author has recorded a number of wildfowl and wader species utilising the area, these species and functions required as part of the consenting process, including up to 1,104 Golden Plover, 516 Lapwing, 153 Curlew and 14 Black-tailed Godwit, the with latter two species mostly using the site to forage. In addition, Marsh Harrier have been observed foraging across areas of the HMWG on several survey visits.

As such, on the basis of the above information on the new management aims of the HMWG site, with its mosaic of habitats, as well as information on habitat requirements for Marsh Harrier in Section 2, it is concluded that the new HMWG will support the functions for waterbirds as planned, together with foraging function for Marsh Harrier, with the new habitats within the site increasing the availability of suitable habitat from when it was under arable cultivation.

It is not expected that the habitat mosaic will currently support Marsh Harrier breeding, although over time, and depending on management requirements, reedbed could develop which would be suitable for this.

**In relation to Point 48:**

This is addressed in Sections 3.2 and 3.3.

**In relation to Point 49:**

This is addressed in Section 4.

**3.2 HRA Related Impacts (SACO Components)**

This Section addresses the SoS's concerns about assessment of effects on Marsh Harrier "using arable land to forage at the HMWG site", and provides the necessary information to

assist in conclusion that there would be no significant effect on Marsh Harrier status from the development of the HMWG as a wet grassland habitat managed for a range of biodiversity gains, and in particular utilisation by waterbirds.

As noted earlier, there are a series of SACO targets identified by Natural England, which are relevant to the identification of impacts to the Marsh Harrier Feature, and the associated Integrity of the Feature and Site. The implications for these from the utilisation of the HMWG site are addressed on a point by point basis:

*Maintain the size of the non-breeding population at a level which is above 21 breeding females, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.*

As described in Section 2, Marsh Harrier forage over large areas, particularly during the non-breeding season, and the species is able to utilise a range of habitats and prey types.

Foraging around field margins in the general area by Marsh Harrier will have occurred, and was observed on the footprint of the HMWG site before the creation of the HMWG e.g. arable field edges. The Mit A site would also have potentially provided foraging potential, although given its location away from the estuary frontage, this would have been less likely. The HMWG site has been observed to support foraging Marsh Harrier, since its creation. Effectively then in terms of the delivery of foraging capacity for Marsh Harrier from pre-development to the current HMWG management, there has been a net increase in prey potential e.g. for Marsh Harrier from largely unproductive areas of arable land (although with productive margins), to a more productive site specifically managed to deliver habitat and associated species which can be utilised as a foraging resource by Marsh Harrier.

On this basis, it is not considered that the changes in site and habitat will have a deleterious effect on the non-breeding population of Marsh Harrier.

*Maintain safe passage of birds moving between nesting, roosting and feeding areas.*

As noted above, the HMWG site delivers a range of habitats for foraging Marsh harrier, and is not subject to any large scale site related disturbance other than occasional field management, similar to or at a lower level than on adjacent arable areas. The site does not provide a barrier to Marsh Harrier movement, and potentially delivers a greater foraging potential than when under arable cultivation e.g. to breeding areas around Skitterness and across the estuary.

*Reduce the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed*

As noted above, the habitats provided in the HMWG support the potential increase in foraging potential for the species, whilst at the same time, the site is subject to a generally low level of management activity, this being no greater and probably less, than on adjacent arable fields (and when managed under arable cultivation).

The flood defence alignment supports a PRoW which is regularly used by the public e.g. dog walking, recreational fishing, and this can have a disturbance potential. This type and level of usage appears not to have altered substantially in recent years.

However, the land owner Able UK have recently sought to reduce anti-social recreational activity on their holdings, e.g. informal use of the arable land around the margins of HMWG by motor-bikes and quad-bikes, with the potential for a net reduction in disturbance

occurrence. This has been actioned through both signage indicating private property and an intervention on adjacent rough grassland which had been used as an informal 'grass track' racing circuit by motor vehicles, with the track having been ploughed to stop the activity.

*Restrict predation and disturbance caused by native and non-native predators*

As part of the management plan for the HMWG site, a process of scrub removal was undertaken in order to reduce the potential for predation of waterbirds using the area e.g. removal of cover and perches. This management action in theory would also benefit breeding Marsh Harrier, but with breeding potential currently unlikely within the site.

*Maintain concentrations and deposition of air pollutants at below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System*

The site does not emit air pollutants, with the water pump being wind-powered.

*Maintain the structure, function and supporting processes associated with the feature and its supporting habitat through management or other measures (whether within and/or outside the site boundary as appropriate) and ensure these measures are not being undermined or compromised.*

Habitats within the HMWG are managed to provide function for foraging and roosting waterbirds associated with the Humber estuary SPA. In addition, management for these functions benefits other functions e.g. breeding waterbirds and passerines, small mammals and reptiles. These provide prey items for Marsh Harrier.

*Maintain the extent, distribution and availability of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding) at: current level. Exact ha not known at this time.*

As above – the management of the HMWG for waterbird foraging and roosting, provides a range of habitats suitable for Marsh harrier foraging. It is considered that the current habitat composition and management aims deliver a greater foraging potential for the species than before the establishment of the HMWG (arable fields). Furthermore, depending on site management aims in the future, and habitat management, the site might potentially provide breeding habitat for the species, again this not being delivered before the establishment of the HMWG plan.

*Maintain the distribution, abundance and availability of key food and prey items (eg. mammals, birds) at preferred sizes (eg. voles, mice, rabbit; birds of pipit to duck size).*

Given the core management aim of the HMWG is to deliver habitat suitable for waterbird foraging and roosting, as well as increasing the biodiversity of the site, with potential for breeding waterbirds and passerines as well as small mammals and amphibians, then it is considered that the HMWG delivers a greater foraging potential for the species than before.

*Maintain continuous reed cover over large areas avoiding fragmentation of extensive reedbeds.*

Not applicable at this site. The site has not featured any reedbed, as it consisted of arable fields. There is potential, depending on habitat aims, for small stands of reed to develop in some of the more water-logged areas, but this is not a current priority for the site.

*Maintain a management regime that ensures the constant availability of areas of dense reed stands as nesting cover.*

Not applicable to this site. The site has not featured any reedbed, as it consisted of arable fields, but with the potential, depending on habitat aims, for small stands to develop in some of the more water-logged areas. However, this is not a current priority for the site.

*Maintain the availability of water over the entire reedbed area, with a high proportion of the area with a water depth of 0.1 m to 0.3 m.*

Not applicable to this site. The site does not include reedbed. However, it is subject to a water-level management plan, with water pumped into the site and then distributed through a network of channels.

*Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels.*

No contaminants are used within the site, and management by plant is restricted to annual cutting of the vegetation by tractor, this a less intensive activity than was conducted when under arable cultivation.

*Maintain the dissolved oxygen (DO) concentration at levels equating to Good Ecological Status (specifically  $\geq 5.7$  mg per litre (at 35 salinity) for 95 % of the year)], avoiding deterioration from existing levels.*

The site is terrestrial, with some aquatic provision e.g. channels, scrapes and ephemeral pools. Water levels within the site are managed to ensure retention in the channels where possible. The site is fed by a small wind pump, with additional pluvial input. There is no requirement to manage the site for Dissolved Oxygen.

*Maintain water quality and specifically mean winter dissolved inorganic nitrogen (DIN) at a concentration equating to High Ecological Status (specifically mean winter DIN is  $< 12 \mu\text{M}$  for coastal waters), avoiding deterioration from existing levels.*

The site is terrestrial, with some aquatic provision e.g. channels, scrapes and ephemeral pools. Water levels within the site are managed to ensure retention in the channels where possible. The site is fed by a small wind pump, with additional pluvial input. There is no requirement to manage the site for Dissolved Inorganic Nitrogen (DIN).

*Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat.*

Not applicable to this site. The site is terrestrial.

Based on the above, it is considered that on a stand-alone basis:

- A shift from the Mit A site to accommodation within the HMWG will not have a detrimental impact on the status of Marsh Harrier in the area.
- The HMWG site under its current management is considered to deliver a greater foraging potential for Marsh Harrier.

- Neither the Mit A nor HMWG sites have the potential to deliver breeding sites, and such function was not lost as part of the AMEP development.
- The aims and management of the HMWG site are mutually beneficial for both waterbird foraging and roosting provision and Marsh Harrier foraging.
- The provision of Marsh Harrier foraging function within the HMWG site is not constrained by management of the area for waterbird functions, nor the provision of waterbird functions for foraging Marsh Harrier.

### 3.3 In Combination Impacts Potential

As a stand-alone development, the provision of HMWG is not considered to have a deleterious effect on Marsh Harrier status in the Humber Estuary e.g. as a Feature of the SPA.

In fact, it can be argued that the HMWG site is already *in situ*, and its associated management plan aims to deliver a mosaic of habitats that will enhance foraging potential for Marsh Harrier within the site when compared to the historical arable land-use utilisation.

Effectively the historical arable land use was only able to deliver suitable foraging function along linear features for much of the year e.g. field margins and dykes whereas the HMWG site now provides an extensive coherent contiguous mosaic of wet grassland, aquatic pools and dykes, with an increase in capacity. Furthermore, given the HMWG's extent, it is able to provide a core area sufficiently distant from PRowS e.g. the flood bank, to allow a degree of undisturbed foraging.

As there has not been any breeding utilisation nor potential, site function is restricted to foraging function, both for breeding birds e.g. foraging from further upstream from sites around Skitterness and potentially trans-estuary, and for broader wintering foraging e.g. from established roosts.

There are two projects that could, in the absence of mitigation, lead to in combination disturbance during construction, and for which therefore a cumulative LSE could not be ruled out:

- Construction Disturbance from the Able Logistics Park (ALP)
- Construction Disturbance from the North Killingholme Power Project (NKPP)

These will, therefore, need to be taken forward for Appropriate Assessment.

There are approved mitigation plans in place through planning condition for the ALP project, with several planning conditions included in the amended ALP consent to ensure no likely significant effects on the features of the SAC, SPA and Ramsar site (including the development of a Waterbird Protection Plan). On 25<sup>th</sup> January 2019, Natural England advised North Lincolnshire Council that these planning conditions had been discharged. As a result, with this mitigation in place, there will not be any adverse effect on integrity from the proposal in combination with the ALP project.

There are also mitigation plans required to be approved through planning condition for the NKPP project. As a result, with this mitigation in place, there will not be any adverse effect on integrity from the proposal in combination with the NKPP project.

There could also be a potential in combination effect from AMEP works on the compensation site at Cherry Cobb Sands. This would not affect breeding function directly, but potentially with some disturbance displacement in foraging activity immediately around the area of works and the fronting marsh. However, such an impact would for the most part be expected to be minimal, perhaps relating to the occasional foraging flight from breeding sites such as at Welwick given the distance from this area, e.g. along the flood bank fronting the works area. At an extreme worst case, this would affect an area of perhaps 15ha (e.g. 3km of works x 50m of marsh). This occasional loss of function would be readily accommodated within the HMWG site, which delivers considerably more suitable foraging habitat on a permanent basis.

On this basis, it is concluded that there is no significant in combination LSE risk to Marsh Harrier from this scheme.

Construction of the Outstrays to Skeffling Managed Realignment Scheme will lead to potential disturbance during construction. However, given the mitigation requirements to avoid any impact to Marsh Harriers nesting in the area, it is not expected that any LSE will occur for the species from this scheme.

Furthermore, the Outstrays to Skeffling Managed Realignment Scheme is over 15km from the HMWG site, and as such, even during winter foraging, which has a greater radius, any in combination effects would be extremely minimal in potential.

As above, the any extremely unlikely occasional loss of function would be readily accommodated within the HMWG site, which delivers considerably more suitable foraging habitat on a permanent basis.

Overall, therefore, there would be no in combination effects that could possibly result in any adverse effect on the integrity of the Humber Estuary SPA.

#### **4. CONCLUSIONS ON IMPLICATIONS TO MARSH HARRIER STATUS FROM THE PROPOSED NON-MATERIAL CHANGE**

In conclusion, based on the above, it is considered that the switch in provisions from the MIT A site to the HMWG site does not deleteriously affect the functional accommodation requirements to ensure the maintenance of the Conservation Objectives, Feature & Site Integrity and Network Coherence.

There is no likelihood of impacts to any of the targets established for Marsh Harrier on the Humber Estuary, and potentially, for some targets at least, a likelihood of improvement.

There is no likelihood of any Stand-alone Impacts to Feature Integrity for breeding Marsh Harrier nor other proximal works affecting similar functional requirements for the species and it is concluded that there are similarly no in combination impacts to Feature Integrity. No mitigation measures are necessary and no residual impacts are anticipated.

It is also considered that the current land management practices at the HMWG and associated function delivery are consistent with additional utilisation by Marsh Harrier for foraging e.g. current provisions will be suitable for aspects of breeding Marsh Harrier ecology e.g. foraging.

Furthermore, HMWG will support the functions for waterbirds as planned e.g. with no deleterious effects on the existing provisions for wintering waterbirds, together with foraging function for Marsh Harrier, with the new habitats within the site increasing the availability of suitable habitat from when it was under arable cultivation.

N Cutts,

08-11-20

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## **Annex P**

Natural England letter dated 25 January 2019

Date: 25 January 2019  
Our ref: 267683  
Your ref: PA/2015/1264



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Cc'd – Andrew Taylor, North Lincolnshire Council

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**BY EMAIL ONLY**

Dear Shaun

**Planning consultation:** Discharge of conditions 48, 50, 51 and 53 of planning permission PA/2009/0600 to erect buildings and use land for purposes within Use Classes A3, C1, B1, B2 and B8 for port-related storage and associated service facilities together with amenity landscaping and habitat creation, including flood defences, new railway siding, estate roads, sewage and drainage facilities, floodlighting, waste processing facility, hydrogen pipeline spur and two 20 metre telecommunication masts.

**Location:** Land off Skitter Road, East Halton

Thank you for your consultation on the above dated 04 December 2018 which was received by Natural England on the same date.

Natural England (NE) is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Condition 48

Natural England is content that following the submission of the "Conservation Management Plan for Waterbird Mitigation Areas" revision 3 dated 18 January 2019 that the condition can be discharged. In conversations last week Natural England was asked to determine if there are any alternative measures to monitor lowland wet grassland habitat suitability for the target wader species compared with those currently submitted. However, we received a further email from Richard Cram on 23 January 2019 detailing that this condition has already been discharged on 19 December 2019 by North Lincolnshire Council. Therefore, we assume that this advice is no longer required. We would like to highlight our concerns that a number of significant changes were made to the document after the condition had been discharged, we recommend that the current version of this document (that has been revised in consultation with Natural England) is used, and is submitted to the Council by the Applicant.

Condition 50

Natural England is content that following the submission of the "Bird Monitoring Programme" revision 9 dated 23 January 2019 that the condition can be discharged.

However, we would like to highlight the importance of replicating the survey methodology from the original baseline surveys in order to make direct comparisons between the data. We recommend that thought is placed in how the data will be used to determine whether any declines are due to effects on the site rather than wider population trends, this is likely to be very difficult to disentangle,

particularly as a considerable amount of time has passed since the original surveys were carried out and the land management has changed over this time.

In addition, the winter and passage bird targets should be reviewed in consultation with the Environmental Steering Group, as at present there is uncertainty about what bird numbers would determine no adverse impact on integrity to the Humber Estuary SPA, and what the threshold would be for further remediation works to be undertaken. Given the short timescales for the discharge of this condition, Natural England is broadly satisfied with the scope of the document at present to discharge the condition, however these issues need to be resolved at the next Environmental Steering Group meeting in Spring 2019.

#### Condition 51

Natural England is content that following the submission of the "Waterbird Protection Plan" revision 4 dated 24 January 2019 that the condition can be discharged.

Natural England notes that the applicant plans to carry out noise and visual disturbance monitoring for during both construction and operational works, however, we are content that as long as the 150m buffer is provided on the side of the mitigation area closest to the proposed development that this adequately mitigates for any potential noise and visual disturbance impacts on SPA birds.

#### Condition 53

Natural England is content that following the submission of the "Landscape and Biodiversity Strategy" revision 2 with corrigenda dated January 2019 that the condition can be discharged.

Natural England recommends that the final versions of all of these documents are shared with members of the Environmental Steering Group for further comments prior to the discharge of the condition. In addition, we would like to reiterate the importance of this group for the ongoing decisions on ecological monitoring and habitat management with regards to the Humber Estuary SPA and advises that the council allocates sufficient resource to it. Natural England will sit on the Environmental Steering Group and would be happy to provide additional advice on these aspects of the scheme going forward.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us. For any queries relating to the specific advice in this letter please contact Hannah Gooch at [Hannah.Gooch@naturalengland.org.uk](mailto:Hannah.Gooch@naturalengland.org.uk) or 02082 258803.

Yours sincerely

Hannah Gooch  
Yorkshire and Northern Lincolnshire Area Team  
Natural England

## **Annex Q**

Habitats Regulations Assessment undertaken for the NKPP and associated infrastructure



Department  
of Energy &  
Climate Change

**RECORD OF THE HABITATS REGULATIONS ASSESSMENT UNDERTAKEN  
UNDER REGULATION 61 OF THE CONSERVATION OF HABITATS AND  
SPECIES REGULATIONS 2010 (AS AMENDED) FOR AN APPLICATION UNDER  
THE PLANNING ACT 2008 (AS AMENDED)**

***Project Title:* North Killingholme Power Project**

***Date:* 7<sup>th</sup> September 2014**

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# 1 Introduction

## Background

- 1.1 This is a record of the Habitats Regulation Assessment (HRA) that the Secretary of State (SoS) for Energy and Climate Change has undertaken under Regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations) in respect of the Development Consent Order (DCO) and Deemed Marine Licence (DML) for the proposed North Killingholme Power Project and its associated infrastructure (the Project). For the purposes of these Regulations; the SoS is the competent authority for the Project application that has been submitted under the Planning Act 2008 regime (as amended).
- 1.2 C.GEN Killingholme Ltd (hereafter the Applicant) has applied to the Secretary of State for a DCO under Section 37 of the Planning Act 2008 (as amended) for the proposed North Killingholme Power Project. The Project application is described in more detail in Section 2.
- 1.3 In England and Wales, onshore energy generating stations greater than 50 MW constitute nationally significant infrastructure projects (NSIPs) and applications for development consent are subject to the requirements of the Planning Act 2008 (as amended).
- 1.4 The Project was accepted by the Planning Inspectorate (PINS) on 19<sup>th</sup> April 2013 and a three-member Panel of Inspectors (the Panel) was appointed as the Examining Authority (ExA) for the application. The examination of the Project application began on 12 September 2013 and was completed on 11 March 2014. The Panel submitted its report of the examination, including its recommendation (the Panel's Report), to the SoS on 11 June 2014.
- 1.5 The SoS conclusions on habitats and wild birds issues contained in this HRA report have been informed by the Panel's Report, and further information and analysis, including a Report on the Implications for European Sites (RIES) and written responses to it.

## Habitats Regulation Assessment (HRA)

- 1.6 Council Directive 92/43/EC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and Council Directive 2009/147/EC on the conservation of wild birds (the Birds Directive) aim to ensure the long-term survival of certain species and habitats by protecting them from adverse effects of plans and projects.
- 1.7 The Habitats Directive provides for the designation of sites for the protection of habitats and species of European importance. These sites are called Special Areas of Conservation (SACs). The Birds Directive provides for the classification of sites for the protection of rare and vulnerable birds and for regularly occurring migratory species. These sites are called Special Protection Areas (SPAs). SACs and SPAs are collectively termed European sites and form part of a network of protected sites across Europe. This network is called Natura 2000.

- 1.8 In the UK, the Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations) transpose the Habitats and Birds Directives into national law as far as the 12 nm limit of territorial waters. The Convention on Wetlands of International Importance 1972 (the Ramsar Convention) provides for the listing of wetlands of international importance. These sites are called Ramsar sites. UK Government policy is to afford Ramsar sites the same protection as European sites.
- 1.9 Regulation 61 of the Habitats Regulations provides that:
- “.....before deciding to give consent, permission or other authorisation for, a plan or project which is likely to have a significant effect on a European site (either alone or in combination) and which is not directly connected with or necessary to the management of the site, the competent authority must make an appropriate assessment of the implications for the site in view of the site’s conservation objectives.”*
- 1.10 This project is not directly connected with, or necessary to, the management of a European site or a European marine site. However, it may affect European and Ramsar sites and so a Habitats Regulation Assessment (HRA) is required by Regulation 61.
- 1.11 The Habitats Regulations require that, where the project is likely to have a significant effect on any such site, an appropriate assessment (AA) is carried out to determine whether or not the project will adversely affect the integrity of the site in view of its Conservation Objectives. In this document, the assessments as to whether there are likely significant effects (LSEs), and, where required, the AAs, are collectively referred to as the HRA.
- 1.12 The HRA takes account of mitigation measures being secured, by requirements and conditions, within the DCO and DML.
- 1.13 In considering the possible impacts of the Project and in reaching his conclusions, the SoS has also taken into account duties and obligations provided for under the Conservation of Habitats and Species (Amendment) Regulations 2012, SI 2012 No. 1927, which came into force on 16th August 2012 and amend the Habitats Regulations. In particular, regulations 9(1) and 9A(1), (3) and (8) of the 2010 Regulations as inserted by regulation 8 of the 2012 Regulations are engaged when the SoS exercises his functions in relation to granting consent for a new electricity generating station and applies regulation 61(1). The key considerations in this context are securing compliance with the Habitats and Birds Directives; preserving, maintaining and re-establishing a sufficient diversity and area of habitat for wild birds in the United Kingdom; and using all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds.
- 1.14 This report should be read in conjunction with the following documents that provide extensive background information:
- Report on the Implications for European Sites proposed North Killingholme Power Project. An examining authority report prepared with the support of the environmental services team, 10<sup>th</sup> February 2014. – termed “the RIES”
  - Environmental Statement (the ES).
  - Applicant’s report to inform Habitats Regulations Assessment.

- Draft Development Consent Order dated 11 June 2014 (DCO).
- Statements of Common Ground between the Applicant and Natural England (V4.0) signed on 31 January 2014.
- Statements of Common Ground between the Applicant and Environment Agency signed on 5 November 2013.
- Statements of Common Ground between the Applicant and the Marine Management Organisation.
- Applicant's revised screening matrix summarising effects on European Sites by C.gen Killingholme Ltd, 27 November 2013.
- Natural England *comments on the Report on the Implications for European Sites 28<sup>th</sup>* February 2014.
- Environment Agency *comments on the Report on the Implications for European Sites 28<sup>th</sup>* February 2014.
- Written Representations of Natural England, 14 October 2013.
- First round of question responses from Environment Agency, 14 October 2013.
- First round of question responses from Natural England, 14 October 2013.
- First round of question responses from the Applicant (Habitats, Ecology and Nature conservation 1 of 2), 14 October 2013.
- Second round of question responses by Environment Agency, 7 January 2014
- Natural England comments on the Applicant's response to the ExA's second round of questions, 24 January 2014.
- Integrity Matrices provided by the Applicant in Response to the ExA's Rule 17 Request on 7 February 2014.
- Information from Natural England's letter to PINS in relation to Black-tailed Godwit, 10 February 2014.
- Second round written question responses from C.Gen Killingholme Ltd (Habitats, Ecology and Nature Conservation), Noise Compliance Appendices. Outline operational noise compliance methodology January 2014.
- Application for a new bespoke environmental permit from C.Gen Killingholme Ltd. Published 13<sup>th</sup> November 2013.
- Record of appropriate assessment under regulation 61 of the conservation of habitats and species regulations 2010 for an application under section 36 of the electricity act 1989. Heron renewable energy plant south Killingholme. May 2011.
- Relevant representation from the Lincolnshire Wildlife Trust Received on the 20<sup>th</sup> June 2013.

1.15 So far as is possible, the key information in these documents and written representations is summarised and referenced in this report.

## **The RIES and Statutory Consultation**

- 1.16 Under Regulation 61(3) of the Habitats Regulations the competent authority must, for the purposes of an AA, consult the appropriate nature conservation body and have regard to any representation made by that body within such reasonable time as the authority specify.
- 1.17 The Panel, with support from the environmental services team of PINS, prepared a document entitled “Report on the implications for European Sites” RIES. The RIES was published on PINS planning portal website on 14<sup>th</sup> February 2014 for a period of 21 days for the purpose of regulation 61(3) consultation. At the time of publication, there were still a number of outstanding matters for agreement and clarification. . Written responses were received from Natural England (NE), Environment Agency (EA) and the Applicant. Within NE’s comments they update the planning inspectorate that since the RIES was issued new requirements 50 and 51 have been added to the DCO to control construction noise and visual attenuation of train movement at North Killingholme Haven Pits SSSI. They are therefore satisfied that with requirement 51 and 26 there will be no adverse effect on North Killingholme Haven Pits arising through construction of the conveyor belt. The EA notes that since the Environmental Permit application had not been duly made they were unable to issue a ‘letter of no impediment’ to the planning inspectorate. They confirm that their Environmental Permit determination will include an in-combination assessment of the development and other existing local emission sources.
- 1.18 This HRA refers to the matrices within the RIES. The RIES documents the information submitted and considered during the examination until the 14<sup>th</sup> February. This information and its matrices have been used to inform this report, supplemented by further written representations.

## **Relationship to other consents and licences / interdependencies**

- 1.19 The DCO is not the only consent, licence or permit required to construct and operate the power station and its associated development. At the time of writing, some of these had been obtained, whilst decisions were still awaited on others such as the environmental permit. Key consents and licences that are required (in addition to the DCO) are summarised below and a brief description given of timings (where known), the competent authority and any relationship with the HRA and the DCO.
- Environmental Permit – EA – The Applicant submitted an application for a new bespoke Environmental Permit for the Project on the 15<sup>th</sup> November 2013. In response to the application, the EA requested further information in respect of deciding whether the application has been duly made. This application was subsequently duly made on the 10th March 2014.
  - Water Abstraction Licence – EA – this will be needed to abstract cooling water for the Project, different volumes would be needed depending on the scenario developed by the Applicant. The Applicant has not yet submitted an application for this licence.

- European Protected Species Licence – NE – the Applicant will decide if this is needed prior to commencement of development. These applications would follow updated ecological surveys undertaken in the season prior to development. NE has advised in particular that emergence surveys of bats from buildings to be demolished would need to be undertaken to adequately assess the potential impact on bats, and this is secured in the DCO by requirement (32(4)).

## 2 Project description

- 2.1 The DCO for the North Killingholme Power Project will authorise the Applicant to construct and operate a new electrical generating station and associated development on land adjacent to the C.RO Ports Killingholme Ltd Terminal at North Killingholme, North Lincolnshire.
- 2.2 The proposed development would have a capacity of up to 470 MW and operate either as a Combined Cycle Gas Turbine (“CCGT”) plant fired on natural gas or an Integrated Gasification Combined Cycle (“IGCC”) plant fuelled by solid fuels such as coal, petroleum coke or biomass. To allow the Generating Station to operate as an IGCC plant, gasification equipment would be constructed and full carbon capture and storage chain would need to be constructed and operational. This will need additional consent including an Environmental Permit from the EA.
- 2.3 When operating as a CCGT plant, the Generating Station would be fired on natural gas which would be obtained from existing high pressure gas supply networks in the area. When operating as an IGCC plant the Generating Station would be fuelled by coal (principally), possibly blended with, petroleum coke (petcoke) or biomass from which syngas will be produced to fuel the generating station. It may also operate on biomass alone in certain circumstances. The use of gasification technology will provide a great deal of flexibility with respect to the choice of fuels.
- 2.4 IGCC operation of the Generating Station, with carbon capture and storage, would take place when a solution for transporting and storing the captured CO<sub>2</sub> from the Generating Station is in place. Currently, a viable transport and storage system is not available. It is anticipated that, in due course, CO<sub>2</sub> transport infrastructure will become available through which captured CO<sub>2</sub> could be transported for storage in empty gas / oil fields or deep saline formations under the North Sea bed. A small proportion of the captured CO<sub>2</sub> could possibly be supplied to industry or other users, but the majority of the captured CO<sub>2</sub> would require transport and storage.
- 2.5 The land that would be utilised for carbon capture and storage is within the redline of the Applicant’s Project area. Additional information is provided by the Applicant in the Carbon Capture Ready Feasibility Study and Carbon Capture and Storage Design Concept Report. The overarching National Policy Statement for Energy EN-1 states that all commercial scale fossil fuelled generating stations have to be carbon capture ready and new coal-fired generating stations must have CCS on at least 300 MW net of the proposed generating capacity and secure arrangements for the transport and permanent storage of carbon dioxide.

- 2.6 The application Project area, covers approximately 286 hectares, which is predominately hardstanding. There are also two large ponds and areas of rough grassland/ scrub within the site. The site lies next to the Humber Estuary approximately 5 km north west of Immingham Docks. The development comprises of three main elements: the Principal Project Area (108 ha); the Electrical Grid Connection Land (93 ha); and the Gas Connection Land (85 ha). These are described below and shown on Figure 1 (see figure 2.1 of the ES). Full details of the infrastructure to be used in the Project are detailed in the schedules of the DCO.
- 2.7 The Applicant is proposing a number of different construction and operation scenarios for the Project. The Applicant is seeking flexibility to decide the scenario at a future date, this means they have had to consider the range of scenarios below within their Environmental Statement (ES):
- Scenario A – Construction of Power Island and Common Facilities only
  - Scenario B – Operation of Generating Station as a CCGT plant
  - Scenario C – Construction of Power Island with the Gasification Plant and Common Facilities
  - Scenario D – Operation of Generating Station as a CCGT plant with subsequent construction of the Gasification Plant
  - Scenario E – Operation of Generating Station as an IGCC plant
- 2.8 Development consent is not being sought for the gas and electric grid connections. These will be subject to a separate application to the Local Planning Authority. This will include a fresh assessment under the Habitats Regulations by the Local Planning Authority as a competent authority for the Habitats Directive.

## **Project stages**

### **Construction**

- 2.9 A programme of remediation across the operations area will need to be undertaken prior to construction. The Applicant states in the ES appendix 3.1 indicative construction programme that the overall construction period is anticipated to be about 36 months. This depends on the final construction programme and the final designs. The gasification plant which will take 36 months might occur in parallel with the construction of the Power Island and Common facilities which will take 26 months or follow commencement of its operations (ES, 3.8.1: 3.8.30 & 9.6.3). The fuel handling system would only take around 2 months to complete (ES, 3.8.16). The gas connection (ES, 3.8.26) will take approximately 18-24 months including commissioning.
- 2.10 The construction contractor will be required to submit and gain approval for a Construction Environmental Management Plan pursuant to Requirement 15 of the DCO. A piling method statement will need to be agreed with the Marine Management Organisation (MMO) as part of the deemed marine licence, to mitigate impacts on the Humber Estuary. Temporary acoustic hoardings will be erected between North Killingholme Haven Pits (NKHP) SSSI and the fuel conveyor which will be erected during construction (requirement 49). Hoarding or similar and a

lighting plan will be designed to reduce light spill from the construction works (RIES, 2.13; requirement 30).

### **Operation and Maintenance**

- 2.11 The operational lifetime of the project will be approximately 30 years. Operations of the plant will run mainly on automated systems. There are a number of hazardous aspects including for example, the natural gas supply, oils, greases, cleaning substances, sewage effluent and a number of different chemicals (ES, 3.9.1: 3.9.37).
- 2.12 The operator will need to agree a written scheme for the management and mitigation of dust emissions as required by requirement 29 of the DCO. The designs for screening the cooling water intake to mitigate impacts on the estuarine ecology needs to be agreed with the MMO in accordance with the DML. A drainage scheme and operational noise control scheme also need to be agreed to minimise potential impacts from operating the power scheme under the DCO requirements. To mitigate impacts on the NKHP SSSI there will be a speed limit of 10 km/h to reduce noise impacts and a planting scheme to screen the Killingholme branch railway as it passes by the site (RIES, 2.13), in line with requirements 48 and 50.

### **Decommissioning**

- 2.13 The ES states (3.10) that the anticipated operational lifetime is 30 years. A decision will be made at this point if it is appropriate to extend the life of the project. The project would need additional permits at this point to extend its operational life and ensure environmental performance in line with future legislative requirements. This would include a fresh assessment under the Habitats Regulations by the relevant authorities at that time.
- 2.14 Decommissioning will take place at the end of the Project lifetime and will involve the removal of buildings to ground level. All underground structures will either be left buried *in situ* or made safe. Project materials will be recycled as far as is practicable.
- 2.15 A full environmental departure audit will be carried out to examine and recommend remedial actions for all potential environmental risks (ES, 3.10.9). A site closure plan is needed as part of requirement 43 of the DCO. This plan will form part of the information needed for the site's Environmental Permit. Decommissioning will be undertaken in accordance with the Environmental Permit for the Project under the Environmental Permitting Regulations 2010.

## **3 Project location and designated sites**

### **Location**

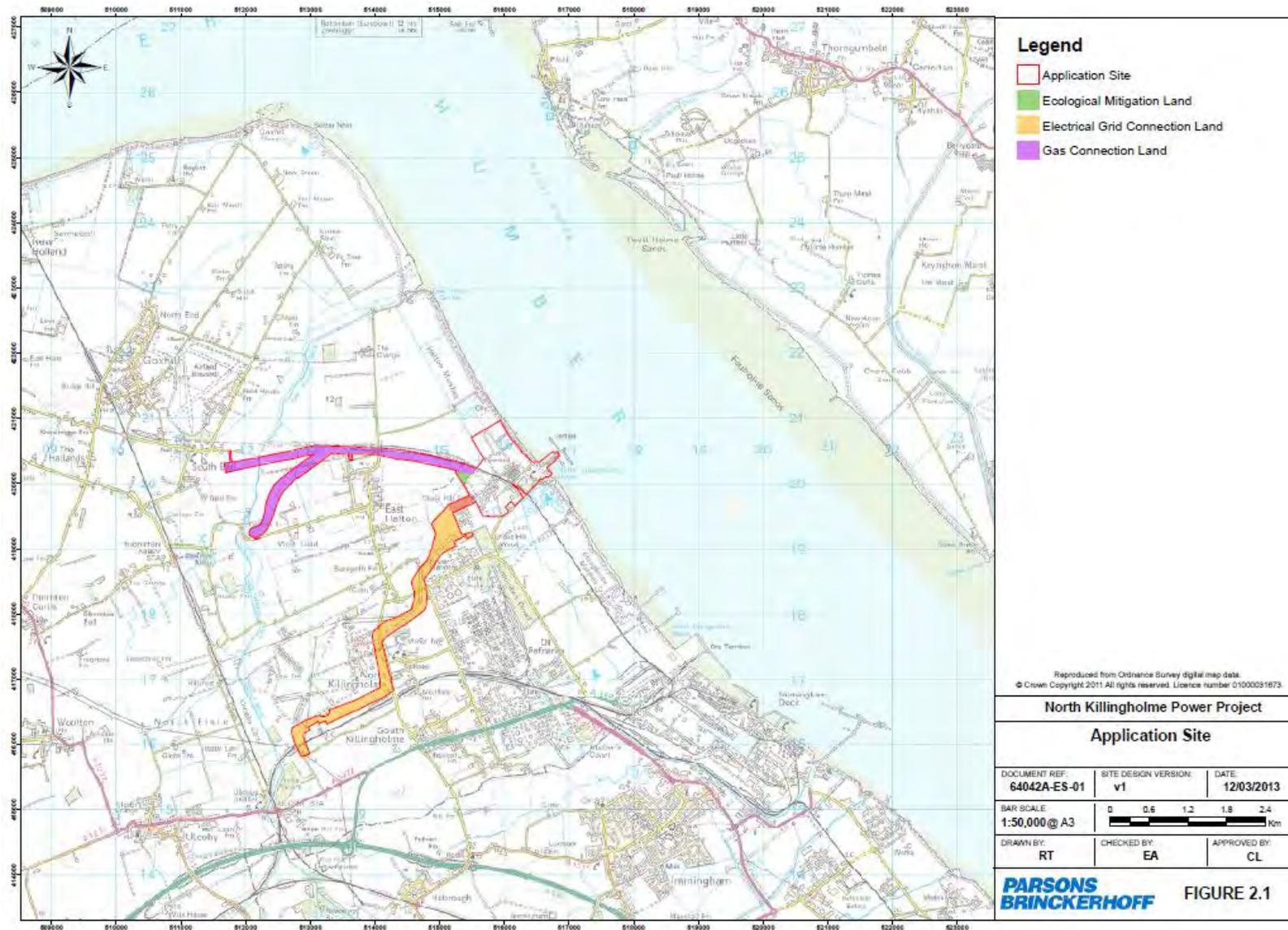
- 3.1 The project as proposed by the Applicant comprises of three main elements: the Principal Project Area; the Electrical Grid Connection Land; and the Gas Connection Land. The Principal Project Area lies approximately 5 km north west of Immingham Docks. This is in the Yorkshire and the Humber region of England. These main elements comprise approximately 286 ha:

- Principal Project Area - 108.2 ha
- Electrical Grid Connection Land - 92.9 ha
- Gas Connection Land - 84.8 ha

These are shown on Figure 1.

- 3.2 The **Principal Project Area** includes the operations area including the land proposed for the generating station, fuel handling areas (to supply and store fuel for the Generating Station via rail or sea and conveyors), cooling water connection (intake and outfall from the River Humber) and construction laydown areas.
- 3.3 **Electrical Grid Connection Land** comprises a corridor of land sufficient for a new connection to the National Electricity Transmission System.
- 3.4 **The Gas Connection Land** comprises two options for the route corridors for a new connection to a high pressure gas network (Gas Connection) in order to supply the Generating Station with natural gas as fuel.

Figure 1 Map of Project location from the applicant's Environment Statement volume 3 - figures



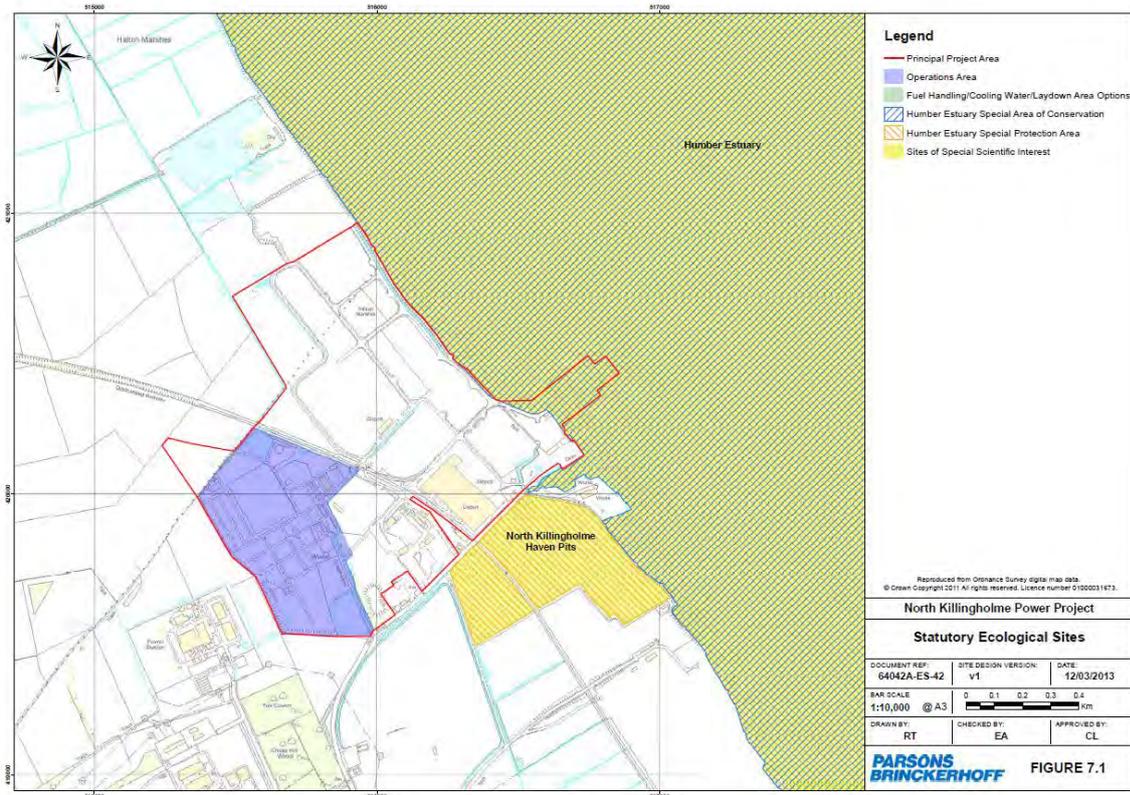
## European and International Sites

- 3.5 The Humber Estuary is the largest macro-tidal estuary on the British North Sea coast. It drains a catchment of some 24,240 square kilometres and is the site of the largest single input of freshwater from Britain into the North Sea. It has the second-highest tidal range in Britain (max 7.4 m) and approximately one-third of the Estuary is exposed as mud or sand flats at low tide. The inner Estuary supports extensive areas of reedbed with areas of mature and developing saltmarsh backed in places by limited areas of grazing marsh in the middle and outer Estuary. On the north Lincolnshire coast the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools. The Estuary regularly supports internationally important numbers of waterfowl in winter and nationally important breeding populations in summer (JNCC Information Sheet on Ramsar Wetlands<sup>1</sup>).
- 3.6 The Humber Estuary is designated as a Special Area of Conservation (SAC) and a Special Protection Area (SPA) under the Habitats Regulations. The Humber Estuary is also a Ramsar site, afforded protection under the Convention on Wetlands of International Importance 1971. It is a matter of UK Government policy to afford Ramsar sites the same protection as Natura 2000 sites. These three designated sites combined make up the Humber Estuary European Marine Site (EMS). The terrestrial site of the proposed project lies on the south bank of the Humber Estuary adjacent to the Humber Estuary EMS with its cooling water intake and discharge structures located within the Estuary and SAC/ SPA/ Ramsar site boundaries.

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<sup>1</sup> JNCC **Natura 2000 standard data form** for Special Protection Areas (SPA) for sites eligible for identification as Sites of Community Importance (SCI) and for Special Areas of Conservation (SAC) 23<sup>rd</sup> August 2007.

**Figure 2 Map of Statutory Ecological Sites and Project area from the applicant's Environment Statement.**



3.7 The boundary of the Humber Estuary SPA and Ramsar sites are broadly the same encompassing an area of approximately 37,600 hectares (SPA) - 37,988 hectares (Ramsar) of the Humber Estuary. The project is located 58km downstream of the upper limits and the boundary extends downstream to the North Sea

## National Sites

3.8 **North Killingholme Haven Pits Site of Special Scientific Interest** is located approximately 3 km east of the Operations area. No part of the proposed Principal Project Area will be within the North Killingholme Haven Pits SSSI. However, delivery of fuel to the Project by rail has the potential to impact upon this SSSI as the railway line passes adjacent to it (ES, 2.5). The site has three pits supports saline coastal lagoon habitats. These support specialist lagoonal species including a population of tentacled Lagoon-worm *Alkmaria romijni* protected under Schedule 5 of the Wildlife and Countryside Act 1981. In relation to this application the lagoons support nationally important numbers of black-tailed godwit. The site is fringed in places with thick hawthorn scrub which provides important bird habitat. The common reed around the lagoons provides valuable feeding and breeding grounds for a range of summer migrants such as reed and sedge warblers.

3.9 The Humber Estuary SAC / SPA described above are also a SSSI. The Estuary naturally supports high suspended sediment loads. The sediment feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and

reedbeds. Also included within the SSSI are saline lagoons, sand dunes, standing waters habitats; wintering and passage waterfowl species; breeding bird assemblage of lowland open waters and their margins; vascular plant assemblages; invertebrate assemblage and grey seal, river and sea lamprey species. The envisaged impacts from the project to the features of special interest for this site are very similar to the Humber SPA and SAC.

## **4 Likely significant effects (LSE) test**

- 4.1 An Appropriate Assessment (AA) is required if a plan or project is likely to have a significant effect on a European site, either alone or in combination with other plans or projects. A likely significant effect (LSE) is, in this context, any effect that may be reasonably predicted as a consequence of a plan or project that may affect the conservation objectives of the features for which the site was designated, but excluding trivial or inconsequential effects.
- 4.2 The purpose of this test is to identify LSEs on European sites that may result from the Project and to record the SoS conclusions on the need for an AA and his reasons for screening activities, sites or in combination plans and projects in or out of further consideration in the AA. For those features where an LSE is identified, these must be subject to an AA. This review of potential implications can be described as a 'two-tier process' with the LSE test as the first tier and the review of effects on integrity (AA) as the second tier.
- 4.3 This section addressed this first tier of the HRA, for which the SoS has considered the potential impacts of the Project both alone and in combination with other plans and projects on each of the interest features of the European sites identified in the RIES (and listed in Annex A) to determine whether or not there will be an LSE. Where there are predicted LSEs, these are described briefly in Table 1. Further detail is set out in the RIES Matrices.

### **Sites screened in/out**

- 4.4 The following sites were included in the RIES LSE screening matrices. Natural England states in their Statement of Common Ground that they are satisfied that the relevant sites, listed below, for assessment have been identified:
- Humber Estuary Special Area of Conservation (SAC);
  - Humber Estuary Special Protection Area (SPA); and
  - Humber Estuary Ramsar site.

### **Treatment of decommissioning impacts**

- 4.5 As outlined in 2.11 and 2.13 above, the anticipated operational lifetime of the project is 30 years. At the end of its lifetime, decommissioning must take place and at that point a separate authorisation will be needed. This would require new environmental assessment including the preparation of an EIA and HRA (including appropriate consultation with the relevant statutory

nature conservation bodies). A full environmental departure audit will be carried out to examine and recommend remedial actions for all potential environmental risks (ES, 3.10.9).

- 4.6 A site closure plan is needed as part of requirement 43 of the DCO. This plan will form part of the information needed for the sites Environmental Permit from the EA. Decommissioning will be undertaken in accordance with the Environmental Permit for the Project under the Environmental Permitting Regulations 2010.
- 4.7 It is not possible at this stage to predict with any certainty what the European and Ramsar site context of the Project will be in the future: sites may increase or decrease in importance over that time.
- 4.8 However, if the environmental baseline were to be similar to the current situation, then the impacts of decommissioning of the project could be expected to be similar to the anticipated impacts of construction. There is no reason to suppose that the impacts of decommissioning would cause an adverse effect on the Humber Estuary EMS site integrity and on this basis, the SoS considers that it is reasonable not to include a detailed discussion on decommissioning impacts in this report. He is satisfied that decommissioning effects will be addressed fully by the relevant authorities, prior to decommissioning and in light of more detailed information on decommissioning processes and environmental conditions at that time.

## Potential impacts

- 4.9 The potential impacts used within the likely significant effects test were considered within the Applicant's HRA report and the RIES. These include habitat loss; fragmentation (e.g. a restriction of movement through or across the Estuary); air quality change (e.g. increased concentrations of NO<sub>x</sub> and/ or increased nutrient/ acid deposition); hydrological change (e.g. discharge of cooling water/ process effluent and/or thermal plume and/or changes to hydromorphology); disturbance (e.g. noise or light or movement); mortality (e.g. resulting from fish mortality from cooling water extraction) and in combination effects.
- 4.10 The furthest reaching potential impact resulting from the proposed development is considered to relate to air quality deposition effects, with a 10 km radius applied in accordance with EA guidelines<sup>2</sup>. This guidance confirms that no likely significant effects are anticipated beyond a 10 km radius from an installation. For a coal or oil-fired power station the limit is greater with a 15km radius.

## Likely significant effects (LSE)

- 4.11 The Secretary of State (SoS) has considered the Project's potential construction, operational and decommissioning impacts on the interest features of the European sites (listed in Table 8 in

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<sup>2</sup> Environment Agency (2011) *Environmental risk assessment for permits: overview. Annex F Air Emissions.*

Annex A) to determine whether there will be LSE in the context of the Habitats Regulations. LSEs as a result of the project are summarised below, with more detail included in the screening matrices in the RIES.

4.12 There is significant overlap between SAC/ SPA and Ramsar designations so for the purposes of this assessment, consideration of the Ramsar designations will be done in parallel with the Humber Estuary SPA and SAC designations. The SPA, SAC and Ramsar designation boundaries broadly overlap all covering the Humber estuary. Both the SPA and Ramsar designations also include North Killingholme Haven Pits. The Ramsar designating features also overlap with the SPA and SAC, including the estuarine habitats, fish, seals, the internationally important assemblage of non-breeding birds, as well as the internationally important populations of SPA bird species. NE's written representation REP-019-022 states that the qualifying features of the SAC and SPA will ensure that the interest features of the Ramsar are taken into account. The exception to this would be the natterjack toad, however, these will not be affected by proposals as the population is found at Saltfleetby to Theddlethorpe Dunes SSSI approximately 30km to the south of the project.

**Table 1** Humber Estuary European Marine Site SAC, SPA and Ramsar features where LSE could not be excluded in the RIES

Designated Site	Feature where LSE could not be excluded
Humber Estuary Special Area of Conservation / Ramsar	<ul style="list-style-type: none"> <li>• Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks</li> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats</li> <li>• <i>Salicornia</i> and other annuals colonising mud and sand</li> <li>• Glasswort and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)</li> <li>• <i>Petromyzon marinus</i>; Sea lamprey</li> <li>• <i>Lampetra fluviatilis</i>; River lamprey</li> </ul>
Humber Estuary Special Protection Area / Ramsar	<ul style="list-style-type: none"> <li>• <i>Botaurus stellaris</i>; Great bittern (Non-breeding) &amp; (Breeding)</li> <li>• <i>Tadorna tadorna</i>; Common shelduck (Non-breeding)</li> <li>• <i>Recurvirostra avosetta</i>; Pied avocet (Non-breeding) &amp; (Breeding)</li> <li>• <i>Pluvialis apricaria</i>; European golden plover (Non-breeding)</li> <li>• <i>Calidris canutus</i>; Red knot (Non-breeding)</li> <li>• <i>Calidris alpina alpina</i>; Dunlin (Non-breeding)</li> <li>• <i>Philomachus pugnax</i>; Ruff (Non-breeding)</li> <li>• <i>Limosa limosa islandica</i>; Black-tailed godwit (Non-breeding)</li> <li>• <i>Limosa lapponica</i>; Bar-tailed godwit (Non-breeding)</li> <li>• <i>Tringa totanus</i>; Common redshank (Non-breeding)</li> <li>• Waterbird assemblage of international importance</li> </ul>

## Humber Estuary SAC/ Ramsar (see RIES matrix A & C)

- 4.13 The RIES identifies LSE on the Estuary features and other habitats and species; mudflats and sand flats not covered by sea water at low tide; *Salicornia* and other annuals colonising mud and sand; Atlantic salt meadows; sea lamprey *Petromyzon marinus*; river lamprey *Lamporeta fluviatilis*.
- 4.14 The construction of the cooling water infrastructure within the Estuary has the potential to affect the features of the SAC through habitat loss and by fragmenting the features. There will be a small scale construction for the cooling water intake outside the inter-tidal habitat. The foundations of the intake will include vibration piling; this could impact on the habitats in direct contact, as well as river and sea lamprey and grey seals.
- 4.15 Given the limited nature of the piling and habitat loss, the Secretary of State agrees with NE (Statement of Common Ground), the RIES and the Applicant within their revised screening matrix and determined that this project does not have a likely significant effect on *Halichoerus grypus* grey seals. The Applicant screens this feature out on the basis that it is outside the project's zone of influence. NE's written representation from the 14<sup>th</sup> October 2013, states that the colony of breeding seals can be found at Donna Nook at the mouth of the Estuary outside the project zone of impact. Condition 20 of the Deemed Marine Licence within the DCO requires that piling will be undertaken in accordance with a piling method statement, that includes soft start procedures and pile pads/ shrouds suggested by NE to ensure that there are no effects on seals or lamprey from piling.
- 4.16 The cooling water intake structures will require up to 4 piles within the Estuary. The small construction footprint is approximately 3.2m<sup>2</sup>, however it will be located next to the existing jetty in the main 'channel' below the tidal range of the Estuary. The Humber Estuary designated site has an intertidal area of approximately 9,382ha and a sub-tidal area of 16,800ha. The construction footprint is therefore approximately 0.0000019% of the total sub-tidal habitat within the Estuary or approximately 0.0000012% of the total estuarine habitat. The Project does not involve construction within the Estuary SAC intertidal habitat. NE within their statement of common ground does not find this significant due to the sub-tidal location, small area affected and pre-existing dredging activities. The jetty that will be used by the Applicant for the cooling water intake and outfall is already subject to regular disturbance from ship movements, ballasting operations and at least monthly dredging. NE have considered studies carried out by the Centre for Marine and Coastal Studies (CMACS) and found no impacts on inter-tidal or sub-tidal habitats from these activities. High levels of sedimentation in the Estuary means frequent dredging is needed to keep safe navigation of vessels.
- 4.17 The Secretary of State considers that the LSE on the Humber Estuary SAC and Ramsar habitat features at this location next to an existing working jetty is negligible, due to the very small size of the habitat loss (0.0000019% of the total sub-tidal habitat), its location within the sub-tidal part of the Estuary, and the fact that Condition 20 of the Deemed Marine Licence within the

DCO limits the maximum pile diameter, thus ensuring the limited size of the piles. The RIES was not able to exclude this habitat loss as having a fragmentation LSE on the Humber Estuary SAC features and the Applicant's integrity matrix was not able to exclude a habitat loss LSE on the Humber Estuary SAC features. For these reasons these LSEs are assessed in the next stage.

- 4.18 During operations the abstraction of water has the potential for direct mortality of fish including sea and river lamprey through impingement on the screens proposed for the cooling water intake. During operations the thermal and chemical properties of the cooling water discharge could also result in a thermal 'plume', discharge of dissolved solids including biocides (e.g. chloride) and scour from the discharge itself. The discharged water would be of a higher temperature than that within the Estuary. Migratory species such as sea and river lamprey are sensitive to changes in temperature. Where there are large differences in temperature within an Estuary this can create a barrier to migration, impacting on spawning and recruitment of the species. Depending on the volume of water the intake and outflow for the cooling water infrastructure has the potential to scour the bed of the Estuary.
- 4.19 The Applicant identified air quality changes during construction, operation and decommissioning of the project as a potential source of LSE on the SAC. Construction of the project without mitigation could impact on the SAC/ Ramsar through dust deposition. Operation of the project will also release pollutants including nitrogen oxides, carbon monoxide, sulphur dioxide and particulate matter (ES table 7.1). The EA's guidance<sup>3</sup> states that conservation sites need to be considered where they fall within 10 km of a SPA, SAC or Ramsar site. Some larger emissions are required to screen to 15km. The EA identify that these emissions to air could impact on ecologically sensitive sites via an increase in the ground level concentrations of certain pollutants and the associated nutrient and acid deposition. The Applicant identifies two SAC features that would be sensitive to this pollution namely reedbeds and mudflats. Other features that are sensitive to air quality such as coastal dunes are beyond the 15km screening limit.
- 4.20 Reedbeds are impacted through eutrophication of the water supply which can affect the structural, photosynthetic and/or aeration tissues of the plant, which can result in weakened stems and regression of the reedbed (Environment Agency, 2004<sup>4</sup>). As identified in the Applicant's ES mudflats can also be affected by eutrophication.
- 4.21 The Humber Estuary forms a transition zone between a fresh water river habitat and marine habitats. Within the SAC some habitats are formed mainly due to the marine influences, such as tides, waves, and the influx of saline water; others are created by riverine influences, such as flows of fresh water and sediment. The project is located far enough away from some of the more marine habitats and NE's advice, as set out in their statement of common ground, is that

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<sup>3</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/298239/geho0410bsil-e-e.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/298239/geho0410bsil-e-e.pdf)

<sup>4</sup> Wheeler, B.D. Gowing, D.J.G. Shaw, S.C. Mountford J.O., and Money R.P., 2004. *Ecohydrological Guidelines for Lowland Wetland Plant Communities* (Eds. A.W. Brooks, P.V. Jose and M.I. Whiteman). Environment Agency.

the project is not likely to have a significant effect on these SAC and Ramsar features due to distance:

- Coastal lagoons;
- Embryonic shifting dunes;
- Shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”),
- Shifting dunes with marram;
- Fixed dunes with herbaceous vegetation (“grey dunes”), Dune grassland; and
- Dunes with *Hippophae rhamnoides*, Dunes with sea buckthorn.
- the natterjack toad

## **Humber Estuary SPA/ Ramsar (see RIES matrix B & C)**

4.22 The Estuary supports large assemblages of waterbirds. This species assemblage comprises many different species including many non-waterfowl species. In addition to the overall population, the site supports a variety of key qualifying species; those which are present in nationally or internationally important numbers (a minimum of 1% of the respective population).

4.23 NE guidance states that bird communities are highly mobile and exhibit patterns of activity related to tidal water movements and many other factors. Different bird species exploit different parts of a marine area and different prey species. Changes in the habitat may therefore affect their food distribution and availability differently. The bird populations at this site require habitats that are capable of supporting their feeding, roosting and nesting requirements. The most important factors related to this include:

- current extent and distribution of suitable feeding and roosting habitat;
- sufficient food availability;
- minimal levels of disturbance consistent with maintaining conditions for birds feeding and roosting and;
- water quality, quantity and salinity necessary to maintain plant and animal communities.

4.24 The direct impacts on the SPA will mirror those presented above for the SAC. The list of qualifying features where a LSE could not be screened out was agreed between the Applicant and NE and is listed in Table 1.

4.25 The LSE have been identified as disturbance, habitat loss and in-combination effects in the RIES.

4.26 Construction of the project will cause increased disturbance from noise, light, vehicular (including train) movement and human activity. Dust deposition and pollution from construction could cause contamination to the SPA. Construction traffic will pass a few hundred metres from the North Killingholme Haven Pits section of the SPA. The construction of the pipeline for the

cool water connection within an existing area of disturbance is unlikely to cause additional disturbance impacts (Environmental Statement 7.5.22).

- 4.27 The impact on populations of SPA waterbirds outside the SPA/ Ramsar site is also raised by NE. In particular the fields adjacent and to the northwest of the Project provide suitable foraging and roosting for a number of bird species. These fields are also to be enhanced to provide optimal wet grassland habitat for these birds as part of the Able Logistic Park development. The Applicant has suggested measures to address the disturbance impacts resulting from the Project's construction works which include physical barriers or hoardings to be fitted around the Principal Project Area and associated Construction Laydown Area on its northern, eastern and north-western boundaries.
- 4.28 The shadow HRA produced by the Applicant considers habitat loss as a result of the Project and specifically the operations area. Their desk study found a very low number of birds during previous surveys. A 2010 wintering bird survey found one roosting lapwing and three mallard within the Operations Area. Only Individual or small numbers of curlew and black-tailed godwit have been recorded flying over the site. The report agrees with the findings of the Applicant and does not consider this habitat loss to be an LSE on the integrity of the SPA/ Ramsar.
- 4.29 The cooling water intake structures will result in the loss of 3.2m<sup>2</sup> of estuarine habitat, through four piles needed to support the pumping systems for the cooling water connection. The Applicant identifies that habitat loss could affect species which are using the estuary for wintering/ staging/ passage. The vibration piling without mitigation as part of construction could disturb wintering or breeding birds.
- 4.30 During operations the RIES screens out an LSE from the direct hydrological changes from the cooling water infrastructure on the SPA features. In particular this is in terms of thermal and water quality impacts from the cooling water discharge. There is no evidence that these changes could impact on the SPA. The SoS therefore considers that there is no LSE from discharges of cooling water, the thermal plume or small changes to hydromorphology in the Humber Estuary.
- 4.31 The unmitigated air quality changes during construction, operation and decommissioning of the project are a LSE on SAC/ Ramsar habitats. The environmental statement does identify potential small dust impacts to the SPA during construction of the conveyor. This however will be fully mitigated through requirements 15 & 26 in the DCO. These requirements will ensure that dust emissions are controlled during construction of the Project. There are not direct impacts on the SPA features identified, therefore in line with the RIES and NE advice these are not considered further.
- 4.32 The Applicant identified fragmentation within their screening matrices however the SoS gives weight to the Panel's recommendation and is in agreement to screen out a LSE. The evidence within the Applicant's report to inform the Habitats Regulations Assessment and Environmental Statement does not identify any fragmentation impacts. The operational area was not found to

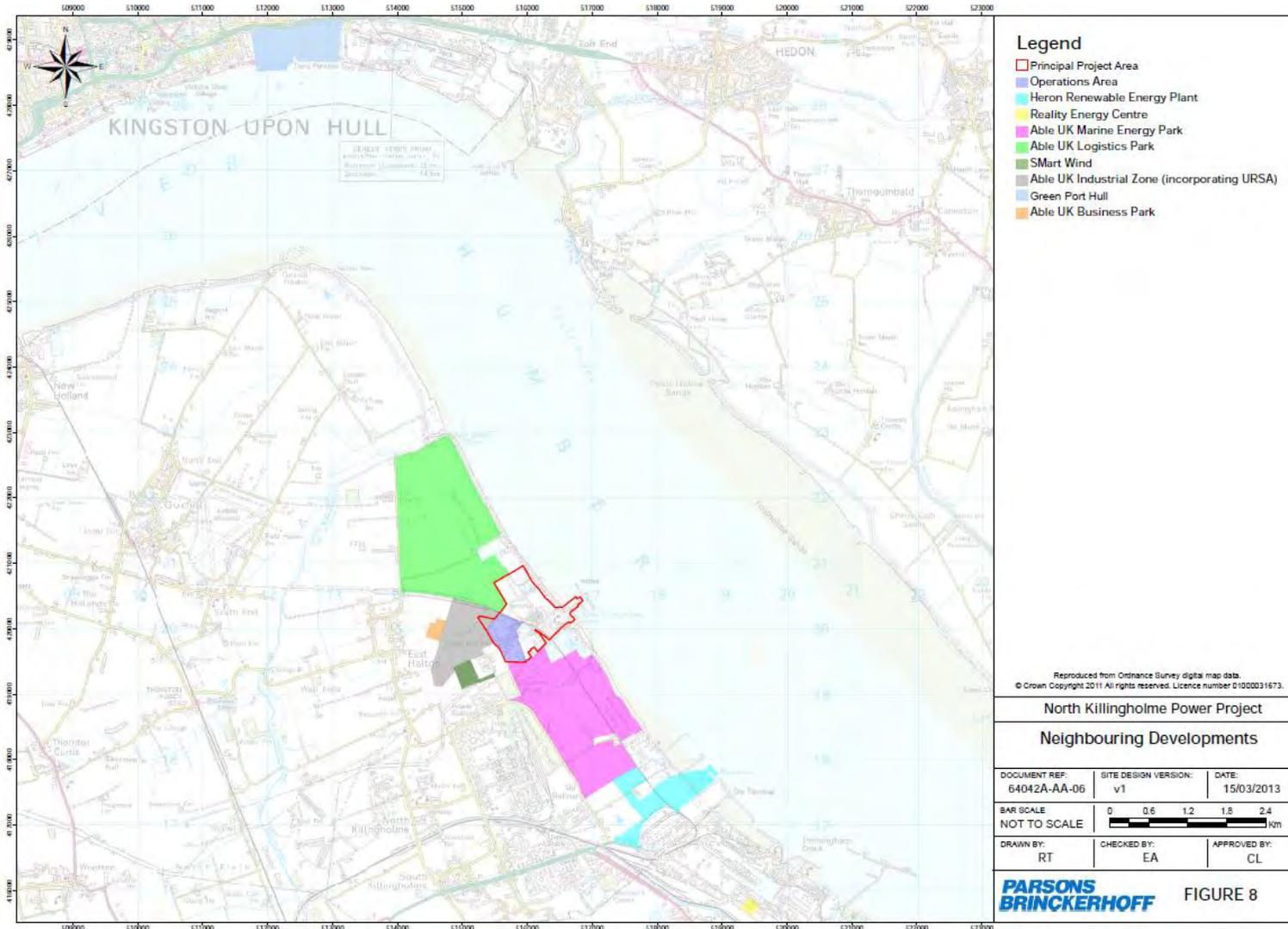
be in the flight line or of roosting/ foraging importance for any of the SPA or Ramsar criteria. NE has not raised fragmentation as a likely significant effect to be addressed. The examining authority has therefore not identified a LSE within their RIES matrices.

## **Likely Significant Effects: In-Combination**

- 4.33 Under the Habitats Regulations, the SoS is obliged to consider whether other plans or projects might affect some of the same European sites as the Project. The Applicant has addressed potential in-combination impacts within their shadow HRA Report. NE did not agree with the methodology of the Applicant's in-combination assessment. However, they did agree with the subsequent analysis and proposed mitigation to resolve any in-combination issues.
- 4.34 There was a dissenting view from Able UK who are an interested party. One of the concerns was that the project's generator station in-combination with Able Marine Energy Park (AMEP) could lead to a far greater significant effect on the Humber Estuary EMS. They were also concerned about the lack of consideration and/or assessment of the impact of the project's generator station on the AMEP proposed compensation and mitigation habitat and on train movements' impact on NKHP SSSI. As part of the AMEP development compensatory and mitigation measures are proposed. The panel's report notes that the project's operations area is about 4 km from the AMEP compensatory habitat and notes the lack of pathway of impact between the projects.
- 4.35 The AMEP development will have a potential impact on wetland bird species occurring in Killingholme Marshes foreshore, North Killingholme Haven Pits and Killingholme Fields. For each of these areas compensation habitat is proposed. Based on advice from NE the SoS will consider the potential disturbance to North Killingholme Haven Pits from the Project in combination with potential disturbance from AMEP.
- 4.36 In this case the three key developments all adjacent to the Project were considered by the Applicant for the purpose of in-combination assessment:
- Able Logistics Park (ALP), north of the Project, this has planning permission but has not been built;
  - URSA Glass-Wool Production facility, west of the Project; the full planning permission has run out and they applied for this to be extended on the 31<sup>st</sup> October 2011, but currently they have withdrawn this application;
  - Able Marine Energy Park (AMEP), south of the Project. Currently a Parliamentary Joint Committee is considering 2 petitions made against the Development Consent Order for this development.

This report limits the scope of the Secretary of State's in combination assessment solely to these projects. The panel report states that there was no disagreement over the scope of developments included. All other developments in-combination with the project were not considered to have LSE on the Humber Estuary EMS.

Figure 3 Developments in close proximity to the Project. Information extracted from the Applicant's Report to inform Habitats Regulations Assessment



- 4.37 Section 2.7 and 16.6 of the Applicant's Environmental Statements set out the reasons to include these three developments. The location of the development and identified potential in combination of impacts on the Humber Estuary EMS means they warrant further examination. The HRA of AMEP has predicted adverse effects and mitigation and compensation measures have been proposed. The ALP and the URSA Glass-Wool Production facility have the potential to alter the roosting patterns of the water bird interest.
- 4.38 The project will need gas and electricity connections as part of the whole development. These will be subject to separate applications. These works would be carried out on fields with significant populations of wintering birds (NE Statement of Common Ground). NE advises in their comments to the second round of questions that if works on the connections are restricted to July to August there will be no LSE on the Humber Estuary SPA/ Ramsar so no requirement to do an in-combination assessment. The timing of the works will allow the period that these birds are using the habitat to be avoided. The separate applications would also be subject to regulations on the Habitats Directive and this mitigation can be secured through appropriate conditions in the relevant planning consents for the connection projects. The SoS is therefore content that these works do not need to be considered within an in-combination assessment.
- 4.39 Paragraph 2.11 of NE's Statement of common ground states that it is not necessary to assess the following projects since they will not have ecological interactions with the Project as they are distant from it, or they are not of a nature likely to interact:
- Heron Renewable Energy Plant, Drax
  - Reality Energy Centre, Real Ventures
  - A160 Highways Improvements, Highways Agency
  - SMart Wind - Hornsea Offshore Wind Farm (Zone 4)
    - i. Project One and
    - ii. Project Two.
- 4.40 Air emissions and cooling water discharges will need assessment in-combination with discharges from other developments. The SoS notes that the EA consider that air quality emissions from the existing Centrica and E.ON Killingholme power stations and Total UK and Phillips 66 oil refineries require in-combination assessment with the Project as part of the Project's Environmental Permit. The UK operates a multi-stage consenting process with the requirements of the Habitats Directive applied at each stage. Although the DCO covers the construction and operation of the project, it would be a criminal offence to operate the project without the required permits and licences in place. The SoS relies on the expertise of the EA as an independent regulator to assess the in-combination effects of air emissions and water discharges and to properly discharge its duties as competent authority under the Habitats Directive for the environmental permits. He is mindful of the provisions in the Overarching

National Policy Statement for Energy<sup>5</sup> which sets out the assumption that pollution control regimes will be properly enforced and applied.

4.41 The SoS therefore relies on the expertise of the EA and the robustness of the environmental permitting regime to ensure that the Project will not have significant effects on the Humber Estuary SPA/Ramsar due to in-combination effects of air emissions and water discharges. No future developments are considered to represent additional point sources of airborne pollutants.

## Conclusions on Likely Significant Effects

4.42 The SoS agrees with the panel that an AA is required and that this should concentrate on the following in considering the impact of the project alone on the integrity of the Humber Estuary EMS:

- Habitat loss
- Fragmentation
- Air quality
- Hydrological changes
- Mortality
- Disturbance

The following will be considered in combination with other plans and projects:

- Hydrological change
- Air quality
- Disturbance

4.43 The SoS considers that sufficient information has been provided in particular by the Applicant, NE and the EA to inform a robust assessment in line with his requirements under the Habitats Regulations.

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<sup>5</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/37046/1938-overarching-nps-for-energy-en1.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/37046/1938-overarching-nps-for-energy-en1.pdf)

## 5 Appropriate assessment

### Test for Adverse Effect on Site Integrity

- 5.1 The requirement to undertake an Appropriate Assessment (AA) is triggered when a competent authority, in this case the SoS, determines that a plan or project is likely to have a significant effect on a European site either alone or in combination with other plans or projects. Guidance issued by the European Commission states that the purpose of an AA is to determine whether adverse effects on the integrity of the site can be ruled out as a result of the plan or project, either alone or in combination with other plans and projects, in view of the site's conservation objectives (European Commission, 2001<sup>6</sup>).
- 5.2 The purpose of this AA is to determine whether or not adverse effects on the integrity of those sites and features during the LSE test can be ruled out as a result of the Project alone or in combination with other plans and projects in view of the sites conservation objectives and using the best scientific evidence available.
- 5.3 If the competent authority cannot ascertain the absence of an adverse effect on site integrity within reasonable scientific doubt, then under the Habitats Regulations, alternative solutions should be sought. In the absence of an acceptable alternative, the project can proceed only if there are imperative reasons of overriding public interest (IROPI) and suitable Compensation measures identified. Considerations of IROPI and Compensation are beyond the scope of this AA.

### Conservation Objectives

- 5.4 European Commission guidance indicates that disturbance to a species or deterioration of a European site must be considered in relation to the integrity of that site and its conservation objectives (European Commission, 2000). Section 4.6.3 defines site integrity as:
- “...the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified.”*
- 5.5 Conservation objectives outline the desired state for a European site, in terms of the interest features for which it has been designated. If these interest features are being managed in a way which maintains their nature conservation value, they are assessed as being in a 'favourable condition'. An adverse effect on integrity is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of its designation (English Nature, 1997<sup>7</sup>).

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<sup>6</sup> European Commission Assessment of plans and projects significantly affecting Natura 2000 sites. November 2001 - [http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura\\_2000\\_assess\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf)

<sup>7</sup> English Nature,(1997). *Habitats Regulations Guidance Note*, HRGN 1.

5.6 There are no set thresholds at which impacts on site integrity are considered to be adverse. This is a matter for interpretation on a site-by-site basis, depending on the designated feature and nature, scale and significance of the impact. The conservation objectives for the interest features for which LSE were identified are listed in Table 1. These have been used by the SoS to consider the potential for adverse impacts on integrity of the Humber Estuary EMS, as a result of the project in combination with other plans or projects.

## 6 The Humber Estuary EMS Conservation Objectives

### Humber Estuary SAC and Ramsar

6.1 The Humber Estuary SAC and Ramsar have been designed on the basis of the important features listed in Annex A. All of the qualifying features which could be affected by the project are considered in this section:

- Estuaries;
- Sandbanks which are slightly covered by sea water all the time;
- Mudflats and sandflats not covered by seawater at low tide;
- *Salicornia* and other annuals colonising mud and sand;
- *Glasswort* and other annuals colonising mud and sand;
- Atlantic salt meadows (*Glauco-Puccinellietalia maritima*);
- *Petromyzon marinus*; Sea lamprey and;
- *Lampetra fluviatilis*; River lamprey.

6.2 The conservation objectives of the **Humber Estuary SAC** are set out below in Table 2. The full list of qualifying features for this site is listed in Annex A.

**Table 2:** Conservation objectives for Humber Estuary SAC from the RIES.

Conservation Objectives	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <li>• The extent and distribution of qualifying natural habitats and habitats of qualifying species;</li> <li>• The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;</li> <li>• The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;</li> <li>• The populations of qualifying species; and,</li> <li>• The distribution of qualifying species within the site.</li> </ul>
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## Humber Estuary SPA and Ramsar

- 6.3 The Applicant's Environmental statement (7.4.7 – 7.4.8) identifies birds of importance to designate the SPA. During the **breeding season** the SPA supports at least 10.5% of the GB bittern (*Botaurus stellaris*) population, 2.1% of the GB little tern (*Sterna albifrons*) population and 6.3% of the GB marsh harrier (*Circus aeruginosus*) population. During the **winter** the SPA supports over 187,000 individual birds, comprising over 40 species. Of note the SPA supports at least 3% of the British bar-tailed godwit (*Limosa lapponica*) population; at least 2% of the British bittern (*Botaurus stellaris*) population; at least 11.7% of the British golden plover (*Pluvialis apricaria*) population and at least 2.7% of the British hen harrier (*Circus cyaneus*) population. It also supports at least 1.7% of the Northern Siberia / Europe / Western Africa population of dunlin (*Calidris alpina*); at least 9.7% of the population of knot (*Calidris canutus*) for the same geographical area; at least 3% of the redshank (*Tringa tetanus*) population of the same area and at least 1.4% of the shelduck (*Tadorna tadorna*) population for the same area. The SPA also supports important numbers of at least ten bird species while **on passage** through the estuary. The key populations include at least 2.9% of the eastern Atlantic population of redshank and at least 1.8% of the Atlantic / Western and Southern Africa population of sanderling (*Calidris alba*).
- 6.4 The Environmental Statement has used a number of different data sources to inform the likely impacts on birds from the project. The surveys cover all the project area and NE in their statement of common ground agreed that they provide a robust picture of the surrounding area. The Applicant did not find any bird recording of breeding birds within the project's operations area. Dunlin and black-tailed godwit were found to be by far the most abundant species on the estuary in the autumn (ES 7.4.50). The Institute of Estuaries and Coastal Studies has shown the importance of the intertidal zone for wader bird species using the Estuary. This habitat in the vicinity of the project is considered by NE to be particularly important to black-tailed godwit, probably due to the proximity of the inter-tidal zone to the high tide roost at NKHP (ES 7.4.59).
- 6.5 The NKHP supports populations of a number of important breeding SPA species including marsh harrier and avocet (ES 7.5.60).

**Table 3 Humber Estuary SPA Conservation Objectives from the RIES.**

<p>Humber Estuary SPA Conservation Objectives</p>	<p>Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <li>• The extent and distribution of the habitats of the qualifying features;</li> <li>• The structure and function of the habitats of the qualifying features;</li> <li>• The supporting processes on which the habitats of the qualifying features rely;</li> <li>• The populations of the qualifying features; and,</li> <li>• The distribution of the qualifying features within the site.</li> </ul>
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## **7 Assessment of effects on the Humber Estuary EMS from the project alone**

- 7.1 Estuaries are complex and highly productive ecosystems, supporting a wide range of habitats and species, which are closely associated with surrounding terrestrial habitats. The Humber Estuary has been selected as entire unit, to include all habitats that are important to the integrity of the site. In particular, the entire water column has been included due to its importance not only in the biological functioning of the system, but also as the means by which sediment is mobilised and transported. The Humber Estuary is extremely turbid and sediment transport is particularly important within the Estuary.
- 7.2 Estuaries form the interface between freshwater and marine environments and extend from the upper limit of tidal influence to the open sea. Where freshwater and seawater meet, and where current flows are reduced in the shelter of estuaries, fine sediments are deposited, often forming extensive intertidal mudflats and sandflats. These habitats are typically inhabited by a variety of invertebrates, many of which provide important sources of food for fish, waterbirds and seabirds. At higher elevations within the tidal range, the mudflats and sandflats are exposed for sufficient periods to become vegetated with salt-tolerant plants forming saltmarshes, which play an important role in the nutrient and sediment cycling processes within the estuarine ecosystem. Saltmarshes also provide essential feeding and roosting areas for waterbirds. The intertidal and subtidal sediments of estuaries support biological communities that vary depending on their geographic location, sediment type, salinity gradients and the tidal currents within the Estuary.

### **Habitat loss and fragmentation within the Humber Estuary SPA/ SAC**

- 7.3 The cooling water intake structures will require up to 4 piles within the estuary. The small construction footprint is approximately 3.2m<sup>2</sup>, however it will be located in the main 'channel' below the tidal range of the estuary. The Humber Estuary designated site has an intertidal area of approximately 9,382ha and a sub-tidal area of 16,800ha. The Applicant's proposal does not involve construction within the intertidal habitat of the Estuary. NE within their statement of common ground does not find this significant due to the small area affected and pre-existing dredging activities. The jetty that will be used by the Applicant for the cooling water intake and outfall is already subject to regular disturbance from ship movements, ballasting operations and at least monthly dredging. NE refers to studies carried out by the Centre for Marine and Coastal Studies (CMACS) which have not shown impacts from these activities. High levels of sedimentation in the Estuary means frequent dredging is needed to keep safe navigation of vessels.
- 7.4 The RIES excludes an adverse effect on integrity of the Humber Estuary SPA, due to the small size and its location within a pre-existing disturbed area. The RIES also does not find a likely significant effect on the Humber Estuary SAC from habitat loss. The Applicant, within their revised

integrity matrices and shadow HRA, does find a likely significant effect from habitat loss on the estuaries features of the Humber Estuary SAC. However, NE's statement of common ground, for the same reasons as those for the Humber Estuary SPA, excludes an adverse effect on integrity of the site. The SoS considers impact on the Humber Estuary SAC, SPA and Ramsar habitat features at this location next to an existing working jetty is negligible, due to the very small size of the habitat loss, its location within the sub-tidal part of the estuary.

- 7.5 The RIES identifies that the construction of the cooling water intake could have a fragmentation effect on the estuaries, sea lamprey and river lamprey features. The SoS agrees with the Applicant and the RIES that this will not have an adverse effect on integrity, as for habitat loss, - because the area to be developed for the cooling water intake structures will be small, in a sub-tidal location and will not form a barrier to migrating lamprey within the estuary.
- 7.6 **Condition 20 of the DML limits the maximum pile diameter without further agreement, thus ensuring the limited size of the piles. Consequently the SoS has determined that this habitat loss will not have an adverse impact on site integrity.**

## Fish Mortality

- 7.7 The project will abstract water for cooling purposes. The Applicant states that the total abstraction requirements for the Project would be up to 43 200 m<sup>3</sup>/day at velocities of less than 1 m<sup>3</sup>/s. The Humber Estuary is the largest macro-tidal estuary on the British North Sea coast. It drains a catchment of some 24,240 square kilometres and the freshwater flow into the Humber estuary from the rivers averages at about 246 m<sup>3</sup>/s, ranging from 60 m<sup>3</sup>/s in drier periods to 450 m<sup>3</sup>/s in wet periods<sup>8</sup>. Peak flows of up to 1500 m<sup>3</sup>/s have been recorded during floods. The volume of water passing Spurn Head at the mouth of the Estuary during a spring tide is about 1.7 x 10<sup>9</sup> m<sup>3</sup> but only 60% of this during a neap tide. This is a relatively small abstraction of water will need to be screened to prevent trash, weed as well as fish and marine mammals entering the cooling water system. NE's statement of common ground discusses how the cooling water intake without mitigation could have a LSE through entrapment on fish. Larger animals such as fish can get trapped on water intake screens. Smaller animals suffer entrainment if they pass through the screens and pass through cooling water system. The intake screening needs to be designed to ensure that there is no residual mortality of SAC/ Ramsar fish species. The deemed Marine Licence for the Project will ensure suitable specifications of the intake screen. The screening specification will also be required prior to operations through the Environmental Permitting Regime. NE in their Statement of Common Ground consider that this is a relatively small abstraction of water and given the size and design of the intake systems and high volume and dilution factor within the Estuary it will have an insignificant impact.

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<sup>8</sup> JNCC (2007) Information Sheet on Ramsar Wetlands – Humber Estuary

7.8 In the ES the Applicant discusses lamprey swimming speeds in order to understand the risk of impingement or entrainment. Adult sea lamprey can swim in excess of 1.1 m/s (Maitland 2003<sup>9</sup>; Almieda, 2007<sup>10</sup>) and have burst swimming speeds in excess of 1.5 m/s, while newly matured adults can sustain speeds of 0.3 m/s (Beamish 1974<sup>11</sup>). Adult river lampreys are smaller and about 30 cm in length. The fish are active swimmers and are capable of speeds of about 0.3m/s (Lucas et al 2007<sup>12</sup>), which is similar to newly matured sea lamprey. Juvenile river lampreys have a burst speed in excess of 0.2 m/s.

7.9 A number of passive and active methods for fish screening could be adopted by the Applicant. Active methods include methods such as an acoustic fish deterrent, however because lamprey are not good at hearing, passive methods are advised by the EA. Passive deflection focuses on the approach velocities around the intake. By keeping velocities low this prevents fish being drawn in; EA guidance (2005)<sup>13</sup> advises that the intake design should lie parallel to the tidal flow meaning water is abstracted at right angles. In line with EA guidance small abstractions of a few  $\text{m}^3\text{s}^{-1}$  or less needed by CCGT power stations, Passive Wedge Wire Cylinder (PWWC) screens are regarded in Britain as the best available technology for juvenile and larval fish protection.

*The applicant Passive Wedge Wire Cylinder screens have a number of features that make them suitable for prevention of fish entrainment. These include the low through-slot velocity, allowing fish to swim away, the relatively smooth external presentation of the screen, which reduces the risk of fish abrasion, and the narrow slot widths available, making it possible to prevent entrainment of fish even down to egg or larval sizes.*

Environment Agency Guidance (2005)

7.10 NE in their written representation of the 14th October 2013 notes that the Applicant intends to install a PWWC screen over the cooling water intake to reduce impacts on SAC fish in line with Environmental Permitting Regulations requirements. The intake will be required to have a low velocity impact of no greater than 0.1 m/s. With an intake velocity of 0.1m/s, as discuss above the Applicant expects that the swimming speeds of sea and river lamprey will allow them to avoid impingement or entrainment on the filter screen from intake velocities.

7.11 NE in their statement of common ground and the Applicant within their revised integrity matrices identified that there will be times when the velocity of the river would be greater than 1.5m/s, which would be greater than the burst swimming speed of river lamprey mentioned above. This would mean that these velocities could, in theory, trap the lamprey against physical structures (which have no 'intake velocity') present in the River Humber. However, it is possible for lamprey to swim perpendicular to the direction of the tidal flow in order to avoid (i.e. swim around) such

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<sup>9</sup> Maitland. P. S. (2003) Ecology of the River, Brook and Sea Lamprey, Conserving Natura 2000.

<sup>10</sup> Almeida. P., Póvoa. I., Quintella. B. R. (2007) Laboratory protocol to calibrate sea lamprey EMG signal output with swimming, Hydrobiologia, 582, 209-220.

<sup>11</sup> Beamish. F.W. (1974) Swimming performance of adult sea lamprey, *Petromyzon marinus*, in relation to weight and temperature, Transactions of the American Fisheries Society, 103, 355-358.

<sup>12</sup> Lucas. M.C., Greaves. R.K., Bubb. D.H., P. S. Kemp. (2007) Stanley Mills Lamprey Report, Scottish Natural Heritage Commissioned Report No. 256 (ROAME No. F04LH03).

<sup>13</sup> A.W.H.Turnpenny & N. O'Keeffe (2005) Screening for Intake and Outfalls: A best practice guide. Environment Agency

structures as the flow velocity in this direction will be virtually zero. The smooth 'wedge' nature of the PWWC is design to help 'guide' fish around the cooling water intake. In addition, the inlets will be designed to abstract water perpendicular to the direction of the tidal flow and therefore there will be no additive effects between the velocity at the inlet and the velocity within the Humber Estuary. Where fish species are swimming past the inlets in this instance, the tidal flow velocity will be dominant over the 0.1m/s at the inlet such that the fish will be effectively pushed away from the inlet thus removing the potential for the impingement of fish species. NE's statement of common ground with the Applicant concludes that the Project is therefore not adding to any impingement effects on lamprey.

- 7.12 This fish screening requirement is set out in condition 19 of the deemed Marine Licence within the DCO. The EA within their written representation confirms that they would also ensure the correct screen specification is covered through the Environmental Permitting process. Additionally they highlight in their oral statements the need for correct screen specification for eels<sup>14</sup> which they can do through the Environmental Permitting process. As described above both the velocity of water and screen size is important to ensure SAC lamprey and eels can escape from the cooling intake.
- 7.13 The RIES and NE consider that adverse effect on the integrity of the Humber Estuary SAC can be ruled out in light of the above. In agreement with the EA the deemed Marine Licence will ensure that suitable specifications of the intake screen will be required through the Environmental Permit. The Statement of Common Ground with the EA also confirms that the Applicant must put forward acceptable mitigation before the scheme can operate. This will be achieved through the Environmental Permitting Regime. **Condition 19 of the deemed Marine Licence ensures that no activities can commence prior to a scheme, to minimise the impact of the intake system on the Humber Estuary including a PWWC to minimise effects on fish screening requirements, is agreed with the MMO in consultation with the EA. The SoS therefore has confidence that there will be no adverse impacts on the Humber Estuary SAC as a result of fish mortality as a result of mitigation requirements in the DCO and the need for an Environmental Permit, prior to operation.**

## Hydrological impacts and Fragmentation on the Humber Estuary SAC

- 7.14 The cooling system for the proposed plant will discharge heated water into the Humber Estuary EMS. Changes in physio-chemical parameters (such as water temperature) adversely affect water quality and the ability of the site to support the interest features for which it is designated. The Humber Estuary acts as an important migration route for both river lamprey and sea lamprey between coastal waters and their spawning areas. Migratory species such as sea lamprey and river lamprey can be sensitive to changes in temperature and, in extreme circumstances, large

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<sup>14</sup> Environment Agency's Eel Manual 'Screening at intakes and outfalls: measures to protect eel'.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/297342/geho0411btqd-e-e.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297342/geho0411btqd-e-e.pdf)

differences in temperature could act as a barrier and influence migratory behaviour. In turn, this could impact upon spawning and recruitment of these species.

- 7.15 The Applicant in their ES section 13.5.51- 13.5.58 predicts that the discharged cooling water will be approximately 10°C warmer than the ambient water temperature within the Estuary. The discharge volumes are however small (<1 m<sup>3</sup> /s), meaning the plume is not predicted by the Applicant to extend beyond 100-200m from the discharge point. The plume is defined as water that is raised 1°C above background levels. The Applicant has stated that they used EA methodology to assess the plume and found the localised increases of water temperature are less than 0.2°C.
- 7.16 The RIES notes that the existing two outfalls of Centrica and E.ON power stations are equivalent to the Project's proposed discharge and can be used to assess the potential 'zone of influence'. The Applicant has used the Thermal Plume Assessment from the Able Marine Energy Park (AMEP) project; this found that at slack water for both high tide and low tide, the thermal plume from each of the existing outfalls extends to no more than between 100-200 m from the discharge point. The RIES concludes that a rise in water temperature has the potential to impact spawning and migratory species, but the area / extent of the thermal plume is very local and is unlikely to impact upon migratory species. They highlight that the area likely to be affected by the thermal plume is used as a migratory route and is not suitable for spawning. The area affected by the thermal plume is very localised and the Applicant's assumption is that migratory species will have the capacity (given the width of the estuary at this location) to migrate 'around' the plume.
- 7.17 The EA stated in reply to written questions that they are satisfied with the methodology deployed by Able UK to model the thermal plume interactions with the Centrica and EON outfalls into the Humber Estuary, and the potential impacts of the AMEP on these outfalls in terms of thermal changes. It would seem appropriate to use some of the results from the AMEP application as a proxy to infer the likely impact of the proposed North Killingholme outfall on temperature within the Humber Estuary, if the likely cooling water purge is going to discharge at 10°C above the wet bulb temperature of the Humber Estuary (paragraph 13.5.55). The EA question the assumption that the temperatures will be similar in the Project as the discharges assessed in the AMEP application; however this is the temperature that the Applicant is predicting in their ES. The discharge will also be regulated through the Environmental Permit regime and the EA can set temperature limits as part of the permit.
- 7.18 From the ES the Applicant has identified the next closest discharge point as Centrica power station which is more than 500 m south east of the jetties and therefore concludes no significant interaction is expected with the operation of the existing Power Stations.
- 7.19 NE's Statement of Common Ground finds that the potential impacts have been adequately addressed. The EA agrees that the discharge zone from the Project will not interact with the existing discharges as they are 500m away from each. The EA do highlight that at this stage they cannot determine whether thermal plume modelling will be sufficient without a detailed permit application. It would be for the Applicant to justify the method used based upon the impact and

assessment of the site of discharge. Further modelling may be required for the Environmental permit based on this assessment.

- 7.20 The Applicant states that some chemicals will be added to the conditioning of the cooling water, including biocides such as chlorine dioxide or sodium hypochlorite. This is to prevent bio-fouling within the cooling system. The impact of these chemicals was not found by the Applicant to change overall WFD status of the receiving water body in the Humber Estuary. All aqueous effluents generated through the Project will discharge into the Estuary following, where possible re-use and treatment. The main sources under scenario B (CCGT plant) are the heat recovery steam generator, and demineralisation plant.
- 7.21 Table 4 from the Applicant ES includes the combined discharge concentrations of each substance. The effluents from the HRSG and the demineralisation plant will be mixed with the cooling tower purge prior to being discharged into the Humber Estuary. This table shows all the process contributions are less than 4% of the relevant Environmental Quality Standard, putting them all within the thresholds set out in EA Environmental Permit guidance annex D<sup>15</sup>. The EA during the examination agreed that potential impacts from this discharge had been scoped out. The Environmental Permit needed for the discharge will set conditions to ensure the emissions and discharges are at a level that will not result in significant impact on the environment. The EA in their written representation also agreed that the project should not impact on the overall Water Framework Directive status for the Humber.

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<sup>15</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/298245/geho0810bsxl-e-e.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/298245/geho0810bsxl-e-e.pdf)

Table 4 extract from the Applicant's ES showing the Process Contribution of EQS Substances ( $\mu\text{g/l}$ ) in their discharge to the Humber Estuary.

Parameter	Discharge Concentration ( $\mu\text{g/l}$ ) Table 13.8 of the ES	Process Contribution (Discharge concentration / dilution factor)	Long Term (Annual) Average EQS Table 13.2 of the ES	Percentage of EQS
<b>Priority Substances</b>				
Cadmium	0.15	0.003	0.2	1.4
Mercury	0.02	0.0003	0.05	0.6
Lead	0.16	0.003	7.2	0.04
Nickel	4.04	0.075	20	0.4
<b>Specific Pollutants</b>				
Cyanide, (as CN <sup>-</sup> )	0.02	0.0004	1	0.04
Arsenic	4.01	0.074	25	0.3
Chromium	0.76	0.014	0.6	2.4
Copper	7.83	0.145	5	2.9
Zinc	13.25	0.245	40	0.6
Iron	148.47	2.749	1000	0.3
<b>Physico-Chemical Standards</b>				
Ammonia (as NH <sub>4</sub> <sup>-</sup> )	68.17	11.36	300*	3.8
N-Total ( $\mu\text{mol/l}$ )	260.73	4.828	180	2.7

\* Short-term Maximum Allowable Concentration

- 7.22 Dredging is already carried out at least monthly for boats to access the jetty that the Applicant is proposing to use. There will not be any further dredges required specifically for the Project so no cumulative impacts need to be assessed.
- 7.23 The ES identifies the potential for scour from the discharge coming out of the outfall however the volumes of water are too small to alter the hydromorphology of the Humber Estuary. This view is not challenged by the EA or NE.
- 7.24 Condition 19 of the deemed marine licence within the DCO requires that a scheme to minimise the impact of the cooling water intake system on the aquatic environment has been submitted to and approved in writing by the MMO. This includes requirements for the details of the concentration of biocides in the water intake system and how they will be monitored and controlled. The Environmental Permit will include specific limits for a range of pollutants. These limits will ensure that they discharge does not detrimentally affect the potential of the receiving water body to meet achieve good status under the Water Framework Directive.
- 7.25 **The SoS agrees that this LSE will be mitigated through the requirement in the deemed Marine Licence (condition 19) and the Environmental Permit. The SoS is therefore satisfied that there would be no adverse effect on the Humber Estuary SAC from hydrological**

changes or fragmentation from the aqueous discharge into the Humber Estuary SAC/ SPA/ Ramsar.

## Air quality

### Air Quality impact on the Humber Estuary SAC from Construction

7.26 Construction of the project without mitigation was determined in the RIES as resulting in LSE through dust deposition. Dust arising from the construction of the fuel conveyor on the edge of the SAC boundary and contamination of the drainage systems flowing into the SAC from construction from the Gasification Plant, Power Island and Common Facilities. NE in their Statement of Common Ground agrees with the Applicant that the dust emissions during construction are negligible and there is not a potential impact on NKHP. **The Applicant has proposed to mitigate the construction impacts through the requirements for a Construction Environmental Management Plan, Requirement 15 of the DCO. The SoS is satisfied that there will be no adverse effect on the Humber Estuary SAC as a result of construction as dust emissions will be negligible and any potential LSE can be mitigated through Requirement 15 in the DCO.**

### Air Quality impact on the Humber Estuary SAC from operation

7.27 The fuel unloading during operation of the Project will be an enclosed system to minimise dust emissions. This is considered by NE to be the best available technique and by dampening emissions at the point of extraction of the fuel this can minimise dust emissions with 98% efficiency. They do not consider that the release of dust is significant for NKHP and is approximately 0.2 kg/day for the whole unloading system. The Applicant has proposed to mitigate the dust impacts during operation of the Project through the requirements for a scheme for the control of dust emissions during operation, requirement 29 of the DCO.

7.28 The ES sets out that when operating as a CCGT power plant, the Project will be fired on natural gas. When operating as an IGCC power plant, a variety of fuels may be used to allow the Project to be fired on syngas. The variety of fuel mixtures include coal, either as a sole fuel or co-fired with petcoke or biomass, which is subjected to pre-combustion treatment producing the syngas. IGCC operation of the Project would need a solution for carbon capture and storage (CCS). Currently, a viable transport and storage system for CCS is not available. If the Project operates as an IGCC using biomass as fuel, this does not require CCS.

7.29 Operation of the Project from all the different methods of electricity generation proposed by the Applicant could impact on estuary habitats. This is from the release of pollutants including nitrogen oxide, carbon monoxide, sulphur dioxide and particulate matter (ES table 7.1). The EA identify that these emissions to air could impact on ecologically sensitive sites via an increase in the ground level concentrations of certain pollutants and the associated nutrient and acid

deposition. The Applicant identifies two SAC features that would be sensitive to this pollution namely reedbeds and mudflats.

- 7.30 The Applicant has modelled these potential impacts within the ES. This include nitrogen deposition and the increase in released NO<sub>x</sub> into the atmosphere, for the scenario operating as a CCGT plant (scenario B & D), and operating as an IGCC plant (scenario E) with the impact of SO<sub>2</sub>. The Project will not result in the release of SO<sub>2</sub> or particulate matter when operating as a CCGT plant. The Applicant concludes that air quality change during the operation of the development is not anticipated to have an adverse effect on integrity of the site because of the insignificant process contributions to ground level concentrations of NO<sub>x</sub> and nutrient nitrogen / acid deposition as a result of the proposed mitigation measures.
- 7.31 The Applicant's ES also assess the emissions from the Flare Stack, however these will only be for a short duration, of less than 15 minutes under emergency conditions. There would also be a high release temperature of any gases which makes the emissions thermally buoyant. During start-up and shut-down the emissions will be much lower than during emergency situations. These short-term emissions are not further considered.
- 7.32 The deposition of sulphur and nitrogen at these sites has been assessed by the Applicant against the relevant critical load for acidification and nutrient enrichment, as identified using the Air Pollution Information System (APIS provides a comprehensive source of information on air pollution and the effects on habitats and species. APIS is a support tool for staff in the UK conservation and regulatory agencies, industry and local authorities for assessing the potential effects of air pollutants on habitats and species).
- 7.33 The Applicant states that the critical load for nutrient deposition within the Humber Estuary SAC is between 8-15 kg/ha/yr for the most sensitive habitats. The modelling carried out finds that there will be a peak of nutrient nitrogen deposition of 0.135 kg/ha/yr. This will occur 1.3 km north-east of the main stack. This location is within the middle of the Humber Estuary. Mudflats are not considered to be sensitive to nitrogen deposition only eutrophication, so the Applicant only further considered reedbeds. When the Project is operating under scenario B the Applicant considers that the peak of 0.135 kg/ha/yr, and 0.097kg/ha/yr under scenario E, will be dissipated within the water body so not affecting any sensitive terrestrial habitats under either scenario. They model that the deposition away from the peak will decrease to non-critical levels. In terms of the reedbeds within the estuary the lower end of their critical load from nitrogen is 10 kg/ha/yr. The Applicant found reedbeds growing to both the north and south of the existing jetties. The results showed that under the higher levels of deposition within scenario B as a CCGT plant the northern-most reedbeds were subject to 0.088 kg/ha/yr, which is 0.9 per cent of the critical load and the southern-most area of reedbeds were subject to 0.053 kg/ha/yr, which they calculate as 0.5 per cent of the critical load. Therefore no sensitive habitats were subject to above 1 % adverse changes due to nitrogen deposition.

- 7.34 EA guidance<sup>16</sup> screens out impacts from long term process contribution where they are <1% of the long term environmental standard. They also screen out impacts where it is unlikely that an emission at a level above the standard will make a significant contribution to air quality since process contributions will be small in comparison to background levels, even if a standard is exceeded.
- 7.35 The ES section 7.5.91 discusses annual ground level concentration of NO<sub>x</sub>. They have modelled that around the nearest and most sensitive terrestrial habitat concentrations will be 0.45 µg/m<sup>3</sup> (0.31 µg/m<sup>3</sup> in scenario E) which is 1.5 per cent of the critical level of 30 µg/m<sup>3</sup> for the protection of vegetation and ecosystems under the Ambient Air Quality Directive 2008 as transposed into UK law by the Air Quality Standards Regulations 2010. The 2010 estimations from Defra report the existing baseline already at 44.1 µg/m<sup>3</sup> so over the threshold. The Applicant's assessment does not predict impacts on the structure and function of the overall site. They give consideration to the size of the SAC and the distribution of sensitive habitats stretched over 100 km of the Humber, and the small change in NO<sub>x</sub> levels at this location. They also note that there are existing high levels, and the envisaged percentage of NO<sub>x</sub> will be limited to 1.0 per cent or equal to the accepted percentage threshold. Furthermore, the 30 µg/m<sup>3</sup> limit is only strictly applicable when more than 5 km from an industrial installation.

*Table 5 Extract from National air quality objectives and European Directive limit and target values for the protection of vegetation and ecosystems<sup>17</sup>.*

Pollutant	Objective	Concentration measures as
Nitrogen oxides	<sup>18</sup> 30 µg/m <sup>3</sup>	Annual mean
Sulphur dioxide	20 µg/m <sup>3</sup>	Annual mean
	20 µg/m <sup>3</sup>	Winter average

The EA<sup>3</sup> has also published Critical Levels for the Protection of Vegetation and Ecosystems. These standards only apply at nature conservation sites however for sulphur dioxide and nitrogen oxides they are similar to the thresholds above.

*Table 6 Extract from Air Emissions annex F to Environment Agency guidance Environmental risk assessment for permits: overview.*

Pollutant	Concentration µg/m <sup>3</sup>	Measured as:
Sulphur dioxide	20	Annual mean for all higher plants
Nitrogen oxides (as NO <sub>2</sub> )	30	Annual mean
	75 <sup>2</sup>	Daily mean

- 7.36 A key mitigation is the main stack height which needs to be constructed in agreement with article 3 of the DCO and requirement 5(1). The height can be up to 85 metres, and the height of the stack affects the dispersion of the gases. During operation of the Project, emissions can be

<sup>16</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/298239/geho0410bsil-e-e.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/298239/geho0410bsil-e-e.pdf)

<sup>17</sup> [http://uk-air.defra.gov.uk/assets/documents/National\\_air\\_quality\\_objectives.pdf](http://uk-air.defra.gov.uk/assets/documents/National_air_quality_objectives.pdf)

<sup>18</sup> 16 ppb in force since 19 July 2001 (total NO<sub>x</sub> expressed as nitrogen dioxide). This is a critical value.

controlled and monitored (ES 6.6.8, 6.7.4 - 6.7.10). These limits will be regulated through the Environmental Permitting Regime. Environmental Permits are issued by the EA and can contain a range of conditions intended to achieve the objectives in the relevant UK and European legislation. These conditions can be detailed numerical limits on emissions or include restrictions on the type of materials the operator can handle. These conclusions are based on the interpretation of the Applicant's modelling data, which will be subject to further scrutiny by the Environment Agency during any environmental permit determination.

- 7.37 During the examination the EA advised that emissions can be regulated through an Environmental Permit. The height of the stack can go as high as set within the DCO and if further reduction is necessary to meet emission limit values; this can be done through abatement within the plant.
- 7.38 NE was satisfied in the Statement of Common ground that the Project will not be likely to result in air quality impacts on designated sites when the Project is considered alone. The EA was also satisfied that the project would not cause an impact alone. They did however feel there should be more consideration of in-combination effects. These are considered in more detail in section 8.
- 7.39 The Applicant has mitigated these impacts through adequate dispersion from the height of the main stack; control of dust emissions during operation including an Outline Coals Dust Management Plan; detailed design will require abatement within the Project to ensure a certain level of emission through for example the use of Dry Low NOx burners and Selective Catalytic Reduction in CCGT plant designs, or through gas turbine design proposed within the Applicant's ES. **Through article 3 and requirements 5 and 29 in the DCO, and the setting of conditions through the Environmental Permit, the SoS is satisfied that there will be no adverse effects on the Humber Estuary SAC/ SPA/ Ramsar from airborne emissions during the operation of the plant.**

## **Bird Disturbance impact on Humber Estuary SPA and Ramsar**

- 7.40 The maximum area within which birds are likely to be subject to visual (or noise) disturbance during either construction or operation is considered to be 500m, (Ferns, 1992<sup>19</sup>; RPS, 2006<sup>20</sup>; Cutts et al., 2008<sup>21</sup>). The susceptibility of birds to disturbance depends on the intensity, frequency and duration of the source of disturbance. In general, infrequent, high-intensity activities tend to cause more disturbance than continuous low-intensity activities (Hill et al., 1997<sup>22</sup>). Although different species vary in their tolerance of disturbance, waterfowl are generally susceptible to disturbance and tend to preferentially select roosting or foraging sites where levels of disturbance

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<sup>19</sup> Ferns, P. N. (1992). *Birdlife of Coasts and Estuaries*. Cambridge University Press.

<sup>20</sup> RPS Glass Wool Plant Surveys / Able Humber Ports Facility – Coastal Birds Survey and Winter Farmland Bird Survey May 2006 to February 2007.

<sup>21</sup> Cutts, N., Phelps, A. & Burdon, D. (2008). *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance*. Institute of Estuarine and Coastal Studies. Report to Humber INCA, October 2008.

<sup>22</sup> Hill, D., Hockin, D., Price, D., Tucker, G., Morris, R. & Treweek, J., (1997) Bird disturbance: improving the quality and utility of disturbance research. *The Journal of Applied Ecology*, 34, No. 2, pp. 275-288.

are low (Hill et al., 1997<sup>11</sup>). The nature of the disturbance response will range from head-raising, walking or swimming away to a flight response with no return.

- 7.41 The potential for visual disturbance has been assessed by the Applicant for both the construction and operation of the development, for the Humber Estuary EMS and relevant areas outside of the designated site that support interest features of the designated site. The Applicant's ES found that the area adjacent to the Project is important for SPA birds. These areas include land to the north of the Project as well as NKHP to the immediate south. NE highlight that the findings of up to 10,000 golden plover on land to the north of the development represents 2.5% of the GB wintering population, and exceeds the threshold for SPA classification in its own right. Also counts of curlew and lapwing represent significant proportions of SPA populations. NKHP is a significant roosting and feeding ground for waterfowl which occur in internationally important numbers in the Humber Estuary in winter.

### **Cooling Water Connection**

- 7.42 Piling works required for the installation of the Cooling Water Connection within the Humber Estuary SPA will have the potential to result in disturbance to breeding and wintering birds present within the SPA.
- 7.43 The jetty that will be used by the Applicant for the cooling water intake and outfall is already subject to regular disturbance from ship movements, ballasting operations and at least monthly dredging. The RIES highlights studies that were carried out by Centre for Marine and Coastal Studies (CMACS) since 1995 to look at the impacts of C.RO Ports Killingholme. Their work has not shown impacts from these activities. The RIES explains the survey programme included quarterly measurements of current velocity, flow direction and sediment load immediately downstream of the terminal jetty, quarterly measurements of mudflat elevation, annual survey of the sediment, invertebrate in fauna and saltmarsh, and finally monthly bird surveys in six months of autumn and winter. The CMACS surveys found stable total bird numbers over the last four years despite the activities at CPK.

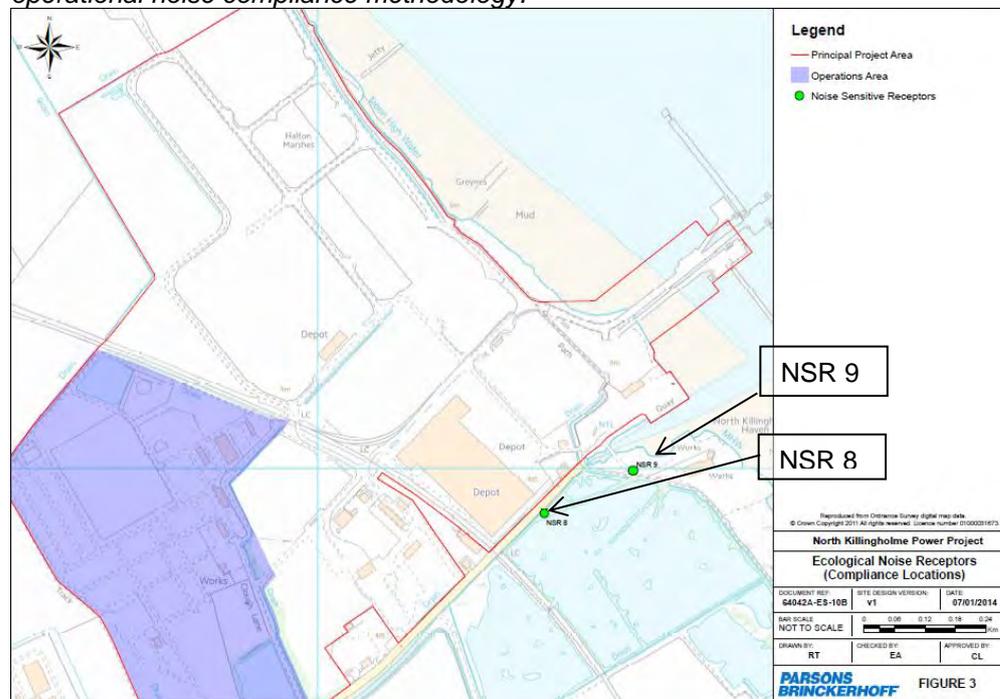
### **Fuel handling and conveyor systems - construction**

- 7.44 During the examination in particular NE and the Lincolnshire Wildlife Trust in their relevant representation (20<sup>th</sup> June 2013) have raised concerns in respect of the fuel handling and conveyor systems, and their impact on NKHP and the populations of SPA/ Ramsar birds. These impacts are a LSE both during construction and operation of the fuel conveyor. The fuel conveyor will be located adjacent to the Humber Estuary SPA/ Ramsar.
- 7.45 The North Killingholme Haven Pits SSSI section of the SPA is known to support large numbers of SPA designated birds, especially during the winter and passage months (NE relevant representation). The NKHP is an important high tide bird roost, with peak numbers during the spring migration period (April) and the return passage period (August to October) (ES 7.5.60). The Humber INCA survey (ES 7.4.48) recorded 26 species of waterfowl and waders in NKHP

with teal, mallard, dunlin, black-tailed godwit and redshank in abundance. There have been particular concerns from NE about the impact on the population of black-tailed godwit. The Humber Estuary is important as their post-breeding moult site, with NKHP supporting up to 100% of the Humber Estuary SPA population of black-tailed godwit roosting during the autumn. Their numbers peak during the autumn, but they are still present over winter and in spring. NE were also concerned that if the birds were displaced that there are limited alternative roost sites to meet the birds requirements during the autumn.

7.46 Construction of the fuel conveyor may involve piling, which could disturb SPA birds within NKHP. Should piling be required it will take approximately 2 months. NE did not consider that there was a vibration impact due to the distance of NKHP from the activities. They evidence the ES 10.3.15 which states significant transient vibration is most likely within 20m of the piling activities and not within the NKHP.

**Figure 4** Ecological Noise Receptors NSR 8 & 9, figure extracted from the Applicant's outline operational noise compliance methodology.



7.47 The Applicant's ES has assessed the worst case scenario of the construction noise levels at NKHP. The modelling was based on a reasonable worst case scenario, which assumes all activities are occurring simultaneously, which in practice is unlikely so construction noise levels should be lower than predicted. They found the highest predicted cumulative noise level to be 78.8 dB(A) (see Table 7). If there is no piling and the conveyor foundations are excavated rather than piled then the ES states the noise levels would be reduced by a further 4.8 dB.

Table 7 Extract from the ES Table 10.11: Cumulative Noise Assessment of all Construction Activities. NSR 8 & 9 are on the Northern boundary of NKHP adjacent to the fuel conveyor see Figure 4.

Calculated Sound Pressure Level from Construction Activities, dB(A)		
Receptor	NSR 8 (NKHP)	NSR 9 (NKHP)
Construction Noise from Operations Area	54.1	55.7
Construction Noise from CWI Option 1	55.2	55.0
Construction Noise from CWI Option 2	55.2	55.0
Construction Noise from CWI Option 3 and CCI	75.2	78.8
CWI Option 1 + Operations Area Cumulative	57.7	58.4
CWI Option 2 + Operations Area Cumulative	57.7	58.4
CWI Option 3 and CCI + Operations Area Cumulative	75.3	78.8

- 7.48 The Project will mitigate this impact by temporary acoustic screens being constructed along the length of the fuel conveyor (DCO requirement 26). This will reduce the noise from construction of both the piling activities as well as other construction noise at the receptor site by between 5 to 10dB. It will also provide a visual screen of the works to prevent visual disturbance (RIES), DCO requirement 26 also requires details of directional lighting in order to prevent light spill into NKHP. With this mitigation the noise levels fall below 70 dB(A) and construction thresholds advised by Cutts *et al.* 2008<sup>23</sup>, thus NE had agreed in their statement of common ground that this is not significant.
- 7.49 The piling associated with the construction of the fuel conveyor would be limited to the January – March period (DCO requirement 26). A piling method statement is also required to ensure the protection of NKHP and the Humber SAP (DCO requirement 25). Requirement 51 of the DCO also ensure that construction outside the piling period from January to March shall not exceed a both a rating level of 56 dB, LAeq or mean maximum level of 75 dB L<sub>Amax</sub> in a 12 hour period. The wording of this DCO requirement was agreed with NE who in their response to the RIES state that they are satisfied that there would be no adverse effect on NKHP through construction of the conveyor belt.
- 7.50 Placing seasonal restriction on the piling, a piling method statement, visual and acoustic screens will prevent the most significant noise disturbance associated with the fuel conveyor and handling systems. **Through the Requirements 25, 26 and 51 set out through the DCO the SoS is satisfied that there would be no adverse effect on bird features of the Humber Estuary SPA, from noise and visual construction disturbance.**

<sup>23</sup> Cutts, N., Phelps, A. & Burdon, D. (2008). *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance*. Institute of Estuarine and Coastal Studies. Report to Humber INCA, October 2008.

## **Construction disturbance outside the Humber Estuary SPA and Ramsar**

- 7.51 The Applicant's ES found that the area adjacent to the Project is important for SPA birds. In particular the fields to the northwest of the operations area provide foraging and roosting for golden plover, curlew and lapwing. The Able Logistics Park will enhance these fields to provide optimal wet grassland habitats for waterbirds (NE's statement of common ground).
- 7.52 The ES includes a worst case noise contour plot based on all construction activities being undertaken at once. NE has reviewed this information and the wintering bird report within the ES. Their findings are that only a small population of birds are recorded in close proximity to the Project. These do not represent a significant proportion of the SPA population. Only Curlew were recorded within an area exposed to over 70dB, however this was within a large field and the area exposed to above 70dB was only 5.7 % of the field. This area was also adjacent to the Project site and railway line NE felt therefore ground feeding/roosting water birds would avoid these boundary features due to predation risk. NE did not necessarily agree with Cutts' threshold level, however agreed that the area potentially affected by increases in noise levels is small and sub-optimal for the SPA water birds.
- 7.53 Modelled noise levels within the ALP 'Core Mitigation Area' would be less than 50dB. The second phase of mitigation would be further away from the operation area so be subject to reduced noise levels of less than 35dB. These levels are below the construction thresholds prescribed by Cutts.
- 7.54 To mitigate effects of noise and visual disturbance the northern, eastern and north western boundaries of the operations area and construction laydown area will be screened with hoarding or barriers. This will be of at least 5m in height to screen the movement of people around the site. Slow moving cranes or slow construction of taller infrastructure are not considered to have a LSE (RIES). The hoarding will also be designed to reduce noise and light spill from the construction site.
- 7.55 **The SoS is satisfied that there would be no adverse effect on SPA/ Ramsar birds outside the designated site boundary from construction disturbance as only a small population of birds are recorded in close proximity and disturbance effects will be mitigated by using hoarding and barriers to screen operations. The mitigation is contained within requirements 30 and 49 of the DCO.**

## **Operational disturbance from the Project on the Humber Estuary SPA/ Ramsar**

- 7.56 As part of the Project operational noise could have a LSE on the Humber Estuary EMS. In particular fuel deliveries from barge or train and operation of the fuel conveyor could cause noise and visual disturbance to the Humber Estuary SPA/ Ramsar. Fuel deliveries under different scenarios could be through a pipe conveyor belt from the existing wharfage area at CPK and train delivery using the Killingholme Branch railway line.
- 7.57 The ES states that the fuel deliveries by barge would be a maximum of 12 barges a week. These would only gain access to the wharf at high tide. This means they cannot disturb water birds

feeding within the inter-tidal estuary habitat around the jetty, as that would be inundated during this period. The RIES has also agreed with the CMAC surveys which indicate deliveries will have a negligible increase in disturbance over the baseline disturbance which doesn't have an apparent effect on the use of the inter-tidal habitat by the waterbirds. Fuel unloading will be via an enclosed system incorporating a continuous ship unloader. Operation of the fuel conveyor will, similarly, have no significant additional increase in noise generated by the Project at the foreshore (RIES). This report does not consider that this part of the operation would impact on the Humber Estuary SPA/ Ramsar. The fuel conveyor is adjacent to the NKHP and the ES finds that this will be the dominant source of noise impacts. The ES uses similar assessments points to the above construction noise assessments within the NKHP northern boundary

7.58 The operation of the fuel conveyor is the potential dominant source of noise impacts to NKHP from operational activity of the Project (RIES). Again the ES has assessed this impact and used NSR 8 and 9 to assess the noise impact as they are on the Northern boundary of NKHP adjacent to the fuel conveyor. The RIES states noise modelling predicts levels at NKHP as 53dB (LAed) at NSR8. This is also modelled showing a worst case scenario, with the receptor height based at 4m meaning the receptor receives direct sounds and sound reflected from the ground (NE statement of common ground).

Requirement 23 of the DCO set operational noise limits on the Project and requirement 21 requires a monitoring programme for noise from the operation of the Project.

Extract of noise limits from requirement 23 below:

<i>Location</i>	<i>Rating Level <math>dB_{LAeq 1 \text{ hour}}</math></i>
NSR8	53
NSR9	47

7.59 Train movement through NKHP could lead to visual as well as noise disturbance of the water birds feeding and roosting in the site (Lincolnshire Wildlife Trust). The susceptibility of birds to disturbance depends on a number of factors including intensity, frequency and duration of the source of disturbance.

7.60 The ES states that rail delivery option for solid fuel would increase train movements on the railway. The railway runs between the Principal Project Area and Immingham. During the examination the assessment of impact was increased to a maximum of 16 train deliveries per day. The type of train that will be used is identified in the ES as a Class 66 diesel locomotive pulling twelve bottom-emptying coal wagons, each with a 73 tonne carrying capacity. These would be unloaded in an enclosed facility to minimise noise.

7.61 The trains will pass slowly through the NKHP and their speed will be limited to 10 km/h, secured through requirement 48 of the DCO. The Applicant provided predicted noise impacts onto NKHP within their ES and further information was provided in response to the examining authority's second written questions. The RIES identifies that these plots show a significant noise reduction can be achieved by reducing train speeds to 10 km/h through NKHP. The anticipated noise from trains would only be >45 dB LAeq within about 25m of the railway line.

- 7.62 Visual disturbance from the movement of trains could disturb and displace the important populations of water birds on NKHP (RIES). NE's opinion is that can be mitigated through planting adjacent to and north of the Killingholme Branch Railway Line as it passes NKHP. This planting will fully screen the rail corridor from NKHP effectively removing any visual disturbance. This is secured through requirement 50 of the DCO.
- 7.63 The SoS agrees with the ExA that, in the absence of any mitigation, there remains doubt as to whether black-tailed godwits and other SPA/ Ramsar water bird features would habituate to train movement. The evidence of habituation provided by the Applicant was not species specific, not specific to large numbers of birds roosting during their autumn moult and not directly comparable to the site conditions at NKHP. The Applicant refers to the Exe Estuary Trail Ornithology Monitoring Reports and the National Cycle Network, Exe Estuary cycleway monitoring within their response to the Examining Authority's second written questions. NE's concerns are set out in their statement of common ground, where they note that there is a lack of literature on the impact of train movement. They felt evidence was needed in particular as to the species that might be impacted at NKHP and those at roost during their autumn moult. The SoS agrees with NE's advice.
- 7.64 However, the combined reduction of train speeds to 10 km/h secured by requirement 48 of the DCO and additional visual screening in requirement 50 enabled NE to conclude no adverse effects on roosting black-tailed godwits in NKHP.
- 7.65 In NE's response to the RIES they also confirm that they would be satisfied if the screening was provided through planting or other measures to provide visual screens. If measures were used that didn't include planting these would also need maintaining.
- 7.66 **The SoS is satisfied that there will be no adverse effect on bird features of the Humber Estuary SPA/ Ramsar from operation disturbance as a result of mitigation measures to reduce train speeds and provide visual screening. The mitigation is contained within the DCO Requirements 21, 23, 48 and 50.**

## **8 Assessment of effects of the Project in-combination with other plans and projects**

### **Bird Disturbance**

- 8.1 The RIES has considered the assessments undertaken as part of the AMEP proposal. Able UK's assessment predicts an LAeq value of 53dB at North Killingholme Haven Pits. The Applicant has considered the noise impact of the operation of its Project (including from train movements and the fuel conveyor) in-combination with the AMEP proposal. This assessment predicts a total noise level of 56dB at NKHP (NSR 8, see Figure 4), which would therefore represent an increase of approximately 3dB against the future baseline. Therefore, the Applicant predicts that the noise impact will result in a negligible increase above the predicted future baseline.
- 8.2 Within NE's Statement of Common Ground, NE agrees that 'any potential (operational) impacts have been adequately assessed and addressed where necessary'. NE did not agree with the in-combination assessment presented by the Applicant. The Applicant has assessed the impacts from the Project not to be adverse and also looked at other developments which have also not been found to have a significant impact on the integrity of the Humber Estuary EMS, they therefore conclude that there is no in combination impact. NE disagreed with this approach and state that the tests of the Habitats Regulations require that the potential impacts of a development are first considered alone to determine if they are likely to have a significant effect on a European site. If there is no likelihood of significant effects alone, then the development should be considered in combination with other plans and projects to determine if the combined effect of the proposals are significant. Therefore the 'not significant' impacts of one development cannot always combine with the 'not significant' impacts of another development to equal an in-combination effect which is always not significant. This is to ensure the in combination assessment avoids many small impacts combining together to impact on the site. NE advised that potential disturbance to North Killingholme Haven Pits from the Project should be considered in combination with potential disturbance from AMEP. However following the further mitigation applied where necessary, NE then agree that there are no longer any significant in-combination effects.
- 8.3 NE also looked at the in-combination assessment of the effects anticipated from the Project from the Gas Connection. The proposed route for the gas connection runs alongside East Halton Dismantled Railway Local Wildlife Site, which supports SPA birds including curlew. They advised that if works were carried out between March and July inclusive, there would be no effect on the Humber Estuary SPA/ Ramsar features and therefore there is no requirement to undertake an in combination assessment. As agreed in the Statement of Common Ground, the Applicant will include this seasonal restriction in its submission to the Local Planning Authority for the gas connection works.

- 8.4 **Different sources of potential disturbance from the Project are mitigated through a number of Requirements 25, 26, 30, 31, 48, 49, 50 and 51. The SoS therefore concludes that the predicted noise impacts will not have an adverse impact on the Humber Estuary SPA/ Ramsar water bird interest features alone or in-combination with other plans and projects.**

## Hydrological change

- 8.5 The Applicant identifies the next closest outfalls as Centrica and E.ON Killingholme Power Stations which are more than 500 m south east of the jetties and therefore concludes there are no significant interactions expected with the operation of the existing Power Stations. The tidal nature of the Humber Estuary and the abstraction/ discharge points for the Project mean that there are no plume interaction predicted in the ES between the Project and the other discharge points. The EA in its relevant representation confirms that they are satisfied that the proposed thermal discharge zone of effect will not interact with existing thermal discharges.
- 8.6 **The SoS agrees with the EA's advice and concludes that the predicted impacts from the Project's intake and outfall are not considered to have an adverse impact on the integrity of the Humber Estuary SAC/ Ramsar alone or in-combination with other plans and projects.**

## Air Quality

- 8.7 The RIES does not find an adverse effect on integrity of the Humber Estuary EMS. In the examination NE acknowledged the Applicant's arguments that there should be no opportunity for significant in-combination effects with emissions from existing developments provided that these other emissions are appropriately reflected in background measurements used for air quality assessment. The EA were satisfied with the conclusion for the purposes of the planning decision and note that these emission will be subject to further operational regulation through the Environment Permit where the EA will require more detail and further validation of air dispersion models. The EA's comments on the RIES state that they are not aware of anything that would preclude the grant of an Environmental Permit but did caveat that their view could change depending on the content of the permit application.
- 8.8 During the examination the EA advised that emissions can be regulated through an Environmental Permit. The in-combination assessment for their Environmental Permit will need to include the impact on air quality of their emissions in combination with those of adjacent industry, including Centrica and E.ON Killingholme power stations and Total UK and Philips 66 oil refineries. The height of the stack may extend to a maximum of 85m as set within the DCO limits and if further emission reduction is necessary to meet emission limit values this can be done through abatement within the plant. The interpretation of modelling data will be subject to further scrutiny during any environmental permit determination by the EA.

**8.9 The SoS therefore concludes that as protection is afforded through the Environmental Permitting regime this will ensure the operation of the Project will not be allowed if there is a risk of adverse effects on the integrity of the site alone or in-combination with other plans and projects.**

## 9 Conclusions

- 9.1 This Appropriate Assessment has been undertaken by the SoS as the Competent Authority in respect of the Project known as the “North Killingholme Power Project” as required by Regulation 61 of the Conservation of Habitats and Species Regulations 2010.
- 9.2 The SoS is satisfied that the Applicant (C.GEN Killingholme Ltd) has provided information to enable a robust judgement to be made on the LSE stemming from the construction and operation of the proposed 470 megawatt electrical generating station, both alone and in combination with other plans and projects.
- 9.3 The SoS notes that the development site is located adjacent to (and in small part within) the Humber Estuary European Marine Site made up of the Humber Estuary SAC/SPA/Ramsar site. The Humber Estuary supports significant numbers of wintering and passage migrant SPA and Ramsar birds species that are qualifying species for the Humber Estuary designated site.
- 9.4 The assessment has considered the potential for significant effects from the project alone and, where appropriate, in-combination with other projects, in both construction and operation.
- 9.5 The assessment has assessed effects relating to: habitat loss; fragmentation; air quality; hydrological changes; mortality; disturbance (noise and visual), taking account of the conservation objectives for the site, with the aim of determining whether it can be shown that the Project, as proposed and with the conditions and requirements described, will not have an adverse effect on the integrity of the Humber Estuary SAC/SPA/Ramsar site.
- 9.6 The assessment has identified that significant effects (before mitigation) are likely, or cannot be discounted, from the project alone and in-combination with other projects in relation to the following impacts:
- Habitat loss
  - Fragmentation
  - Air quality
  - Hydrological changes
  - Mortality
  - Disturbance
- 9.7 In coming to his conclusions, the SoS is confident that the application of the mitigation measures contained in the DCO requirements and the environmental permitting regime administered by the EA will ensure no adverse effects on the integrity of the Humber Estuary SAC/SPA/Ramsar site.
- 9.8 The SoS places weight on NE’s advice that they are satisfied with the wording of relevant (see 9.9) mitigation measures detailed in the DCO Requirements. They do not raise any concerns with the findings of the RIES and advise that the DCO requirements will ensure no adverse effect on the integrity of the Humber Estuary SAC/SPA/Ramsar site from the Project alone and in combination. NE also confirm that wording of requirement 51 to control the construction noise, from the conveyor belt, at North Killingholme Haven Pits was agreed in discussion with NE and

(in conjunction with DCO requirement 26) they were satisfied that there will be no adverse effect on North Killingholme Haven Pits arising through construction of the conveyor belt.

9.9 Mitigation for the Project to protect the Humber Estuary EMS will be secured and delivered through the following DCO requirements:

- Requirement 15 - Construction Environmental Management Plan;
- Requirement 21 – Control of noise during operations – monitoring;
- Requirement 23 – Control of noise during operations – noise limits;
- Requirement 25 - Piling;
- Requirement 26 - Construction of Work Nos. 6a and 6b;
- Requirement 29 - Control of dust emissions during operation;
- Requirement 30 - Construction and security lighting scheme;
- Requirement 31 – Permanent Lighting Scheme;
- Requirement 43 – Decommissioning;
- Requirement 48 - Train speed at NKHP;
- Requirement 49 - Acoustic hoarding;
- Requirement 50 - Visual attenuation of train movements;
- Requirement 51 - Control of construction noise at North Killingholme Haven Pits.
- Deemed Marine Licence condition 19 – Cooling water intake
- Deemed Marine Licence condition 20 – 23 Piling conditions

9.10 The Secretary of State is confident that there will be no adverse effects on the integrity of the Humber Estuary SAC/SPA/Ramsar sites through airborne emissions or aqueous discharges in view of this mitigation and the protection secured by the Environmental Permitting regime. The EA is considering an application for an Environmental Permit for the operation of the Project and indicated during the Examination process that the project is of a type and nature that in principle should be capable of being permitted, and that it is not aware of anything that would preclude the grant of an environmental permit (though its decision will of course be subject to the contents of the permit application). Under the Environmental Permitting regime, in order to operate, a more detailed assessment of the operational impacts will be undertaken to agree the final design and regime. As part of that process the EA as a competent authority for the Habitats Directive will carry out a further Habitats Regulations Assessment. The Environmental Permit issued by the EA is necessary prior to the commencement of operations.

9.11 **The Secretary of State concludes that the construction and operation of the 470 megawatt electrical generating station, referred to as the ‘North Killingholme Power Project’, as proposed, with all of the proposed avoidance and mitigation actions being implemented in full, will not adversely affect the integrity of the Humber Estuary SPA, Humber Estuary Ramsar site or Humber Estuary SAC either alone or in combination with other plans or projects.**

9.12 This Appropriate Assessment is positive; there is therefore no necessity for discussion of alternatives or Imperative Reasons of Overriding Public Interest.

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**National Infrastructure Consents Team, Department of Energy and Climate Change**

**Date:** September 2014

## 10 References

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## Annex A

**Table 8 features of European and International Sites**

Designated Site	Qualifying Features
Humber Estuary Special Area of Conservation	<ul style="list-style-type: none"> <li>• Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks</li> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats</li> <li>• Coastal lagoons*</li> <li>• <i>Salicornia</i> and other annuals colonising mud and sand</li> <li>• Glasswort and other annuals colonising mud and sand</li> <li>• Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)</li> <li>• Embryonic shifting dunes</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes"); Shifting dunes with marram</li> <li>• Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*</li> <li>• Dunes with <i>Hippophae rhamnoides</i>; Dunes with sea-buckthorn</li> <li>• <i>Petromyzon marinus</i>; Sea lamprey</li> <li>• <i>Lampetra fluviatilis</i>; River lamprey</li> <li>• <i>Halichoerus grypus</i>; Grey seal</li> </ul>
Humber Estuary Special Protection Area	<ul style="list-style-type: none"> <li>• <i>Botaurus stellaris</i>; Great bittern (Non-breeding) &amp; (Breeding)</li> <li>• <i>Tadorna tadorna</i>; Common shelduck (Non-breeding)</li> <li>• <i>Circus aeruginosus</i>; Eurasian marsh harrier (Breeding)</li> <li>• <i>Circus cyaneus</i>; Hen harrier (Non-breeding)</li> <li>• <i>Recurvirostra avosetta</i>; Pied avocet (Non-breeding) &amp; (Breeding)</li> <li>• <i>Pluvialis apricaria</i>; European golden plover (Non-breeding)</li> <li>• <i>Calidris canutus</i>; Red knot (Non-breeding)</li> <li>• <i>Calidris alpina alpina</i>; Dunlin (Non-breeding)</li> <li>• <i>Philomachus pugnax</i>; Ruff (Non-breeding)</li> <li>• <i>Limosa limosa islandica</i>; Black-tailed godwit (Non-breeding)</li> <li>• <i>Limosa lapponica</i>; Bar-tailed godwit (Non-breeding)</li> <li>• <i>Tringa totanus</i>; Common redshank (Non-breeding)</li> <li>• <i>Sterna albifrons</i>; Little tern (Breeding)</li> <li>• Waterbird assemblage of international importance (In the non-breeding season the area regularly supports: 153934 waterfowl (5 year peak mean 1996/7 to 2000/1) Including: <i>Teal, Widgeon, Mallard, Turnstone, Common pochard, Scaup, Bittern, Brent</i></li> </ul>

Designated Site	Qualifying Features
	<p><i>Goose, Goldeneye, Sanderling, Dunlin, Knot, Ringed Plover, Oystercatcher, Bar-tailed godwit, Black-tailed godwit, Curlew, Whimbrel, Ruff, Golden Plover, Grey Plover, Avocet, Shelduck, Greenshank, Redshank, Lapwing.</i></p>
<p>Humber Estuary Ramsar site</p>	<p><b>Criteria 1:</b> The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.</p> <p><b>Criteria 3:</b> The site supports England's second largest breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook. The dune slacks at Saltfleetby-Theddlethorpe are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i>.</p> <p><b>Criteria 5:</b> Assemblages of international importance: 153,934 waterfowl, non-breeding season.</p> <p><b>Criteria 6:</b> species/populations occurring at levels of international importance.</p> <p><b>Species with peak counts in spring/autumn:</b> Eurasian golden plover, <i>Pluvialis apricaria Altifrons</i>; Red knot, <i>Calidris canutus Islandica</i>; Dunlin, <i>Calidris alpine Alpine</i>; Black-tailed godwit, <i>Limosa limosa Islandica</i>; Common redshank, <i>Tringa tetanus Brittanica</i>;</p> <p><b>Species with peak counts in winter:</b> Common shelduck, <i>Tadorna tadorna</i>; Eurasian golden plover, <i>Pluvialis apricaria Altifrons</i>; Red knot, <i>Calidris canutus Islandica</i>; Dunlin, <i>Calidris alpine Alpine</i>; Black-tailed godwit, <i>Limosa limosa Islandica</i>; Bar-tailed godwit, <i>Limosa lapponica Lapponica</i>;</p> <p><b>Criteria 8:</b> The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal waters and their spawning areas.</p>