

Annex 11.9

Able Marine Energy Park:  
Bird Survey Results – April  
2010 to April 2011

*(Institute of Estuarine and  
Coastal Studies University of  
Hull)*



the  
**INSTITUTE**  
of  
**ESTUARINE**  
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**COASTAL**  
**STUDIES**



**Marine Energy Park:  
Bird Survey Results – April 2010 to April  
2011**

Report to Able UK Ltd

Institute of Estuarine and Coastal Studies  
University of Hull

20<sup>th</sup> June 2011

**Author(s): L. Mander, J. Spencer, J.  
Harris & N.D. Cutts**

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**Institute of Estuarine & Coastal Studies  
(IECS)**

The University of Hull  
Cottingham Road  
Hull  
HU6 7RX  
UK

Tel: +44 (0)1482 464120  
Fax: +44 (0)1482 464130

E-mail: [iecs@hull.ac.uk](mailto:iecs@hull.ac.uk)

Web site: <http://www.hull.ac.uk/iecs>



THE UNIVERSITY OF HULL

Institute of Estuarine and Coastal Studies (IECS)

Able UK Ltd

**Marine Energy Park:  
Bird Survey Results – April 2010 to  
March 2011**

20<sup>th</sup> June 2011

Reference No: SBB327- Draft V1-2011

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## 1. INTRODUCTION

- 1.1. Able UK Ltd (Able) proposes to submit an application to the Infrastructure Planning Commission (IPC) for the construction of the Marine Energy Park (MEP) which will incorporate a new quay together with manufacturing facilities for offshore wind turbines on the south bank of the Humber Estuary.
- 1.2. The development on the south bank, east of North Killingholme, will comprise a Marine Energy Park (MEP) and will lie partly within the Humber Estuary, which is designated under European law as an important site for nature conservation and forms part of the Natura 2000 network of sites.
- 1.3. The MEP site lies on the southern bank of the Humber Estuary. It is within the middle estuary and located between the Humber Sea Terminal and Immingham Port. The Lindsay Oil Refinery is located on the landward side of the site. The site is in effect surrounded by heavy industry which generally extends from East Halton to Grimsby and makes up a large part of the South Humber Gateway.
- 1.4. The MEP development area encompasses a variety of terrestrial, intertidal and subtidal habitats, although many are small in size (ERM, 2011). The dominant landcover across the site is arable and pasture farmland which is interspersed with smaller pockets of scrub, woodlands, ruderal areas and open water. As the MEP site is currently used in part as an active car storage compound, much of the site is also covered in hard standing and gravel. Although the intertidal habitats represent a small proportion of the MEP habitats, the avifaunal value of the intertidal habitats is high and thus included in the Humber Estuary Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar site and Site of Special Scientific Interest (SSSI). Adjacent to the northern extent of the MEP site is located the North Killingholme Haven Pits which is also part of the Humber Estuary SPA SAC, Ramsar site and SSSI site. This area, totalling approximately 22 ha, consists of a series of lagoons fringed throughout by Common Reed (*Phragmites australis*). The pits are an important roosting site for Black-tailed Godwit on the Humber Estuary.
- 1.5. As part of the MEP development site a programme of ornithological surveys were devised in order to provide baseline data. The methodology was sufficiently robust to accurately characterise the avifauna of the MEP development site, allow the impacts of the proposed development to be addressed in respect to the European Marine Site (EMS) integrity so that if required any mitigation strategies can be assessed and implemented.
- 1.6. Monthly 'through the tide' counts have been conducted on the intertidal zone of the MEP site from April 2010 and to April 2011. In addition, monthly high tide counts were carried out in arable fields located within the site and in the adjacent North Killingholme Haven Pits. This report details the findings of surveys conducted between April 2010 and April 2011 with the following aims:
  - To assess the spatial and temporal waterbird usage at MEP development site and at the adjacent North Killingholme Haven Pits.
  - To discuss the findings into the context of the Humber, national and international population.

## 2. METHODOLOGY AND DATA INTERPRETATION

### 2.1 Bird Survey Methodology

- 2.1.1 Monthly 'through the tide' counts of waterbirds were conducted between April 2010 and April 2011 on the intertidal zone, with additional counts carried out in July, August, October, January, February and March. In addition to 'through the tide' counts, high water counts were undertaken at the North Killingholme Haven Pits and in arable fields located on the landward side of the flood defences. The Black-tailed Godwits were of particular interest in the North Killingholme Haven Pits as the lagoons are an important roost site for the species on the Humber, with several thousand individuals recorded from peak counts in autumn.
- 2.1.2 The MEP intertidal zone was divided into several bird recording zones. Where possible these zones have been established using natural divisions (e.g. creek systems) and man-made divisions (e.g. groynes) and were labelled A to E. Zone E was an addition to the initial recording zones (as the project brief developed) and was surveyed from July onwards.
- 2.1.3 Species abundance within each zone was noted every hour and birds were categorised as foraging when actively looking for food or non-foraging (roosting, loafing, preening etc). The counts were carried out on a range of tidal heights (neap, intermediate, and spring) on either falling or rising tides.
- 2.1.4 Waterfowl usage on the intertidal zone was surveyed from the same five vantage points located along the flood embankment. The vantage points were accessed by car from Station Road.
- 2.1.5 A single observer equipped with a telescope and a pair of binoculars carried out the observations from the car in order to minimise the disturbance to the waterbirds on the intertidal zone. The North Killingholme Haven Pits were surveyed from the Lincolnshire Wildlife Trust bird hide situated along the public road.

### 2.2 Data Interpretation

- 2.2.1 Spatial and temporal variation in the number of waterbirds on the intertidal zone and on the adjacent areas surveyed (North Killingholme Haven Pits and arable fields) were examined for the period between April 2010 and April 2011 inclusive.
- 2.2.2 The results of the monthly counts on the intertidal zone were mapped showing usage at both low and high water. Different symbols for different weeks of the month were used when more than one count per month was undertaken. The symbols on the maps indicate the numbers of birds recorded in each count.
- 2.2.3 Low and high peak monthly counts were then calculated for the intertidal zone and the figures tabulated in each species map. In addition, high peak monthly counts for the North Killingholme Haven Pits and arable fields were calculated and tabulated.
- 2.2.4 Inter-monthly variations in the number of birds were examined between April 2010 to April 2011 for a number of indicator species which are characteristic for the area, and key components of the Humber SPA assemblage: Shelduck (*Tadorna tadorna*), Ringed Plover (*Charadrius hiaticula*), Dunlin (*Calidris alpina*), Black-tailed Godwit (*Limosa limosa*), Bar-tailed Godwit (*Limosa lapponica*), Curlew (*Numenius*

*arquata*) and Redshank (*Tringa totanus*). The variations in use over the tidal cycle were also examined for these species with a series of graphs produced.

2.2.5 Species findings are presented in taxonomic order.



### **3. RESULTS**

#### **3.1 Mute Swan (*Cygnus olor*)**

##### **3.1.1 PROTECTION & CONSERVATION STATUS**

- 3.1.1.1 Mute Swan is listed on Annex II of the Wild Birds Directive and the Appendices of the Bern (III) and Bonn (II) Conventions. It is also listed in the African-Eurasian Waterbird Agreement.

##### **3.1.2 BACKGROUND INFORMATION**

- 3.1.2.1 This species fails to meet the nationally and internationally important thresholds over the last five years on the Humber Estuary (Calbrade *et al.*, 2010), this despite exceeding the threshold of national and international importance in 2006/07 and 2008/09. Birds are distributed around the estuary, using adjacent water bodies and fields for foraging. Intertidal fringes and river channels around the New Holland Pier are the prime foraging areas for Mute Swan on the Humber (Catley, 2000; Mander and Cutts, 2005).

##### **3.1.3 FINDINGS**

- 3.1.3.1 The Surveys found Mute Swans to be occasional visitors to both the intertidal zone and the North Killingholme Haven Pits. Records were spread sporadically throughout the year, with records in January, July, October and December. The peak count for the whole site was for three birds in January. This was made up of a single bird in the pits and two birds on the intertidal zone. The peak count of three birds represents c.1% of the estuary population (Calbrade *et al.*, 2010).

- 3.1.3.2 At high water, the species distribution was limited to the North Killingholme Haven Pits (

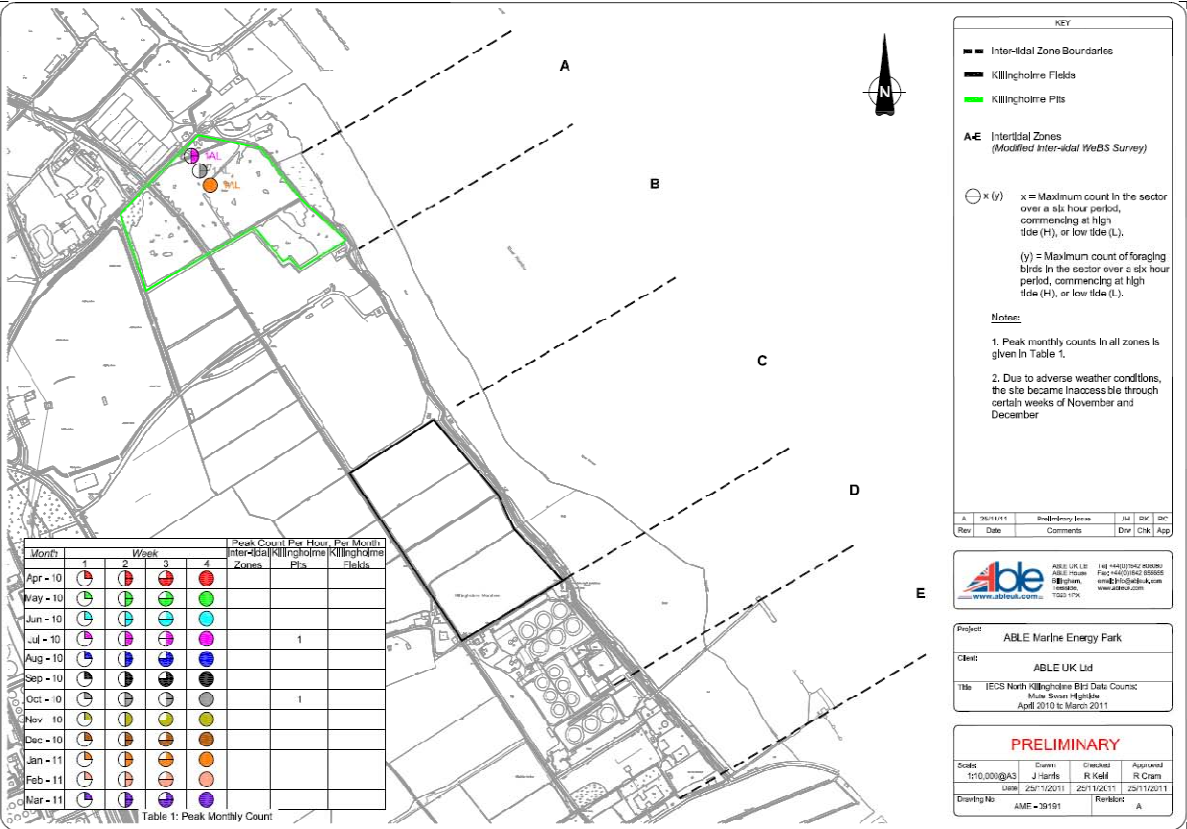


Figure 1).

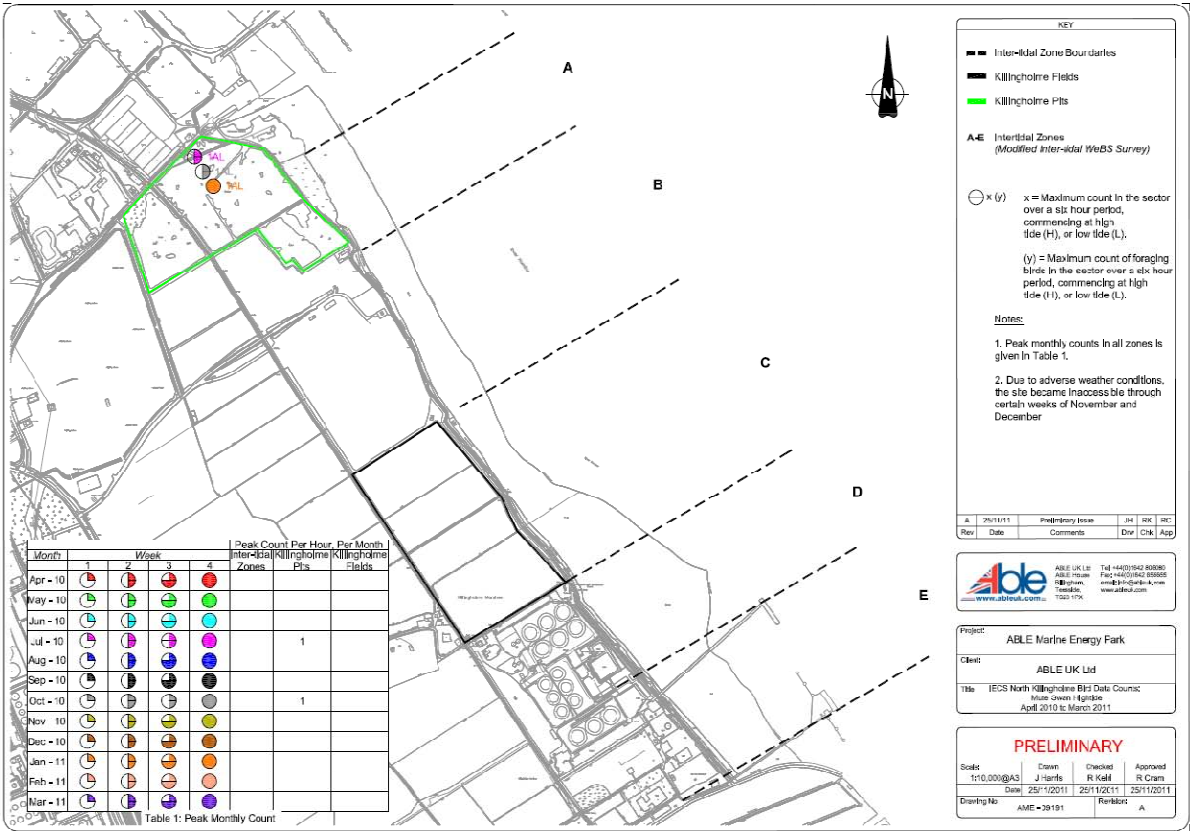


Figure 1: Mute Swan High-tide Counts

## **3.2 Greylag Goose (*Anser anser*)**

### **3.2.1 PROTECTION & CONSERVATION STATUS**

3.2.1.1 The Greylag Goose is listed on Schedule I part II and Schedule II part I and II of the UK Wildlife and Countryside Act, Annexes I and III of the Wild Birds Directive and the Appendices of the Bern (III) and Bonn (II) Conventions. It is also listed in the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

### **3.2.2 BACKGROUND INFORMATION**

3.2.1.1 In many parts of the UK Greylag Geese has been re-established by releasing birds in suitable areas. These re-established populations are associated particularly with lochs, reservoirs and gravel pits surrounded by parkland or agricultural land, which provide ideal year-round feeding opportunities. The re-established population of Greylag Geese appears to be very sedentary in the UK (Wernham *et al.*, 2002). On the Humber, the bulk of the breeding population is found on Read's Island and Whitton Sand (Mander & Cutts, 2005). The Humber population appears to be resident and where present in large numbers can be considered a 'pest' species, potentially out-competing other more naturally occurring species of waterbird.

### **3.2.3 FINDINGS**

3.2.3.1 The Greylag Goose is a very occasional visitor to North Killingholme Haven Pits with only two records in the early spring from the current survey programme. On one of these occurrences two birds were recorded in March whilst the other record was for an influx of five birds noted in April. These records would likely refer to birds moving from wintering areas around the estuary toward the main breeding areas on the inner estuary. There were no records of Greylag Geese from the intertidal zone. The peak count of five birds represented less than 1% of the Humber Estuary population (Calbrade *et al.*, 2010).

## **3.3 Shelduck (*Tadorna tadorna*)**

### **3.3.1 PROTECTION & CONSERVATION STATUS**

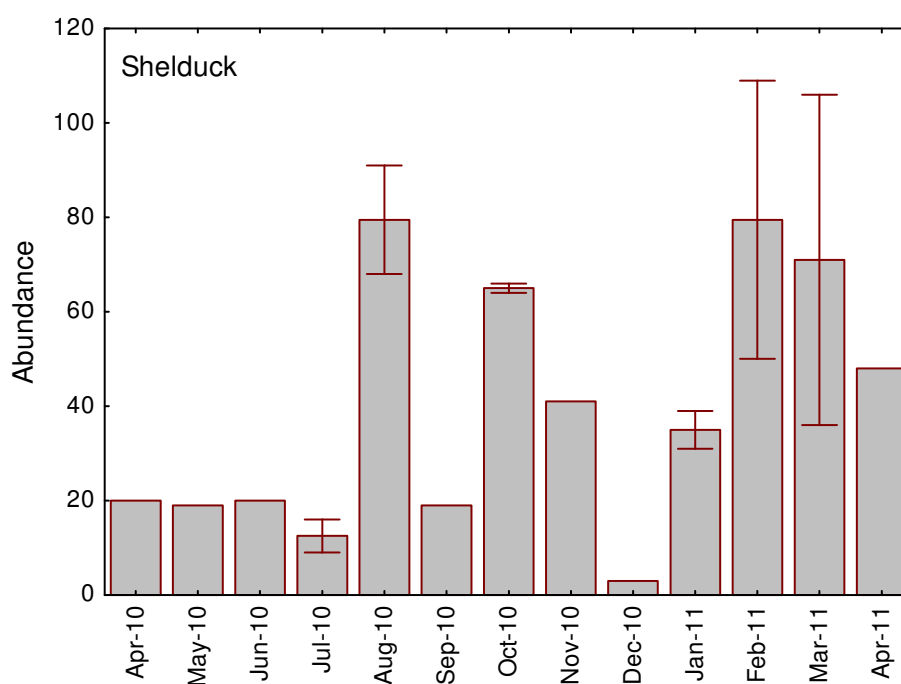
3.3.1.1 The Shelduck is listed on the Appendices of the Bern Convention (III) and the Bonn Convention (II) and is listed in the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

### **3.3.2 BACKGROUND INFORMATION**

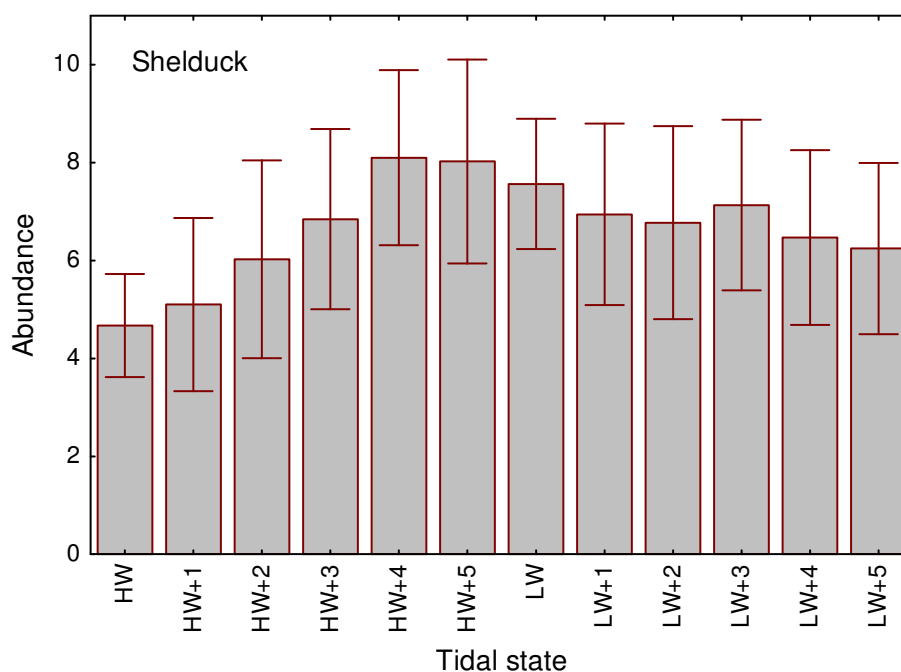
3.3.1.1 The Shelduck has the most widespread distribution of any species of duck on the Humber Estuary. The Humber acts both as an important wintering site and a stop-over site during the migration period in the late summer, as well as a potential moult site. Nine wetland sites are of International importance for Shelduck in the United Kingdom, including the Humber Estuary where the latest 5 year-mean exceeds the international threshold level of 3,000 birds (Calbrade *et al.*, 2010). Approximately 150 pairs of Shelduck breed on the estuary with the majority of these located upstream of the Humber Bridge (Mander and Cutts, 2005).

### 3.3.3 FINDINGS

- 3.3.3.1 The Shelduck is a common bird of the North Killingholme intertidal mudflats, and was present in varying numbers during the survey period (Figure 2). A peak maximum of 109 birds was recorded during the late February survey whilst the lowest number of birds was recorded in December with only three individuals present.
- 3.3.3.2 Numbers fluctuated little during the spring period as birds settled to breed within or in close proximity of the MEP site, with counts of 20, 19 and 20 birds respectively in April, May and June. The numbers declined slightly in July with counts of 16 and nine birds. This would suggest that perhaps birds were moving away from the estuary to moult with a subsequent build-up in numbers recorded in August with counts of 68 and 91 birds. It is thought that the build-up in late summer is birds returning from their moulting grounds on the Wadden Sea and staging on the Humber although there is little evidence from ringing studies (Wernham *et al.* 2002). It is thought that small numbers of birds moult on the Humber but evidence of moulting birds has yet to be definitively identified.
- 3.3.3.3 Shelduck numbers rapidly decreased in September (19 birds) and this was followed by fluctuating numbers into the early winter period before a net decline in December with only three birds recorded. This decline coincided with a period of extreme cold weather and birds may have moved out of the area at this time. The late winter period saw an improvement in climate and this was coincident with the increase of Shelduck throughout January, February and March with a survey peak of 106 birds in early March, although this figure may include the first return migrants. The early spring period saw numbers reducing after the early March survey to 36 birds by late March. A further pulse of pre-breeding birds passed through in April with 48 individuals recorded.
- 3.3.3.4 Numbers of birds appeared to be sustained over the tidal cycle, but with peaks recorded around the low water period (Figure 3).
- 3.3.3.5 At low water, Zone C, D and E (surveyed from July onwards) were the most important zones with the highest counts recorded (**Figure 4**). The numbers appeared to decrease further north on the intertidal zone. At high water, Zones D and E continued to support the largest counts of birds whilst Zone C was of lower importance (**Figure 5**).
- 3.3.3.6 The species was recorded on seven occasions at the North Killingholme Haven Pits site, with a peak count of nine birds recorded in May. Birds were absent at the site throughout the late summer, autumn and early winter periods.



**Figure 2: Monthly variation in the mean numbers of Shelduck on the intertidal zone ( $\bar{x} \pm SE$ )**



**Figure 3: Tidal variation in the mean numbers of Shelduck on the intertidal zone ( $\bar{x} \pm SE$ )**

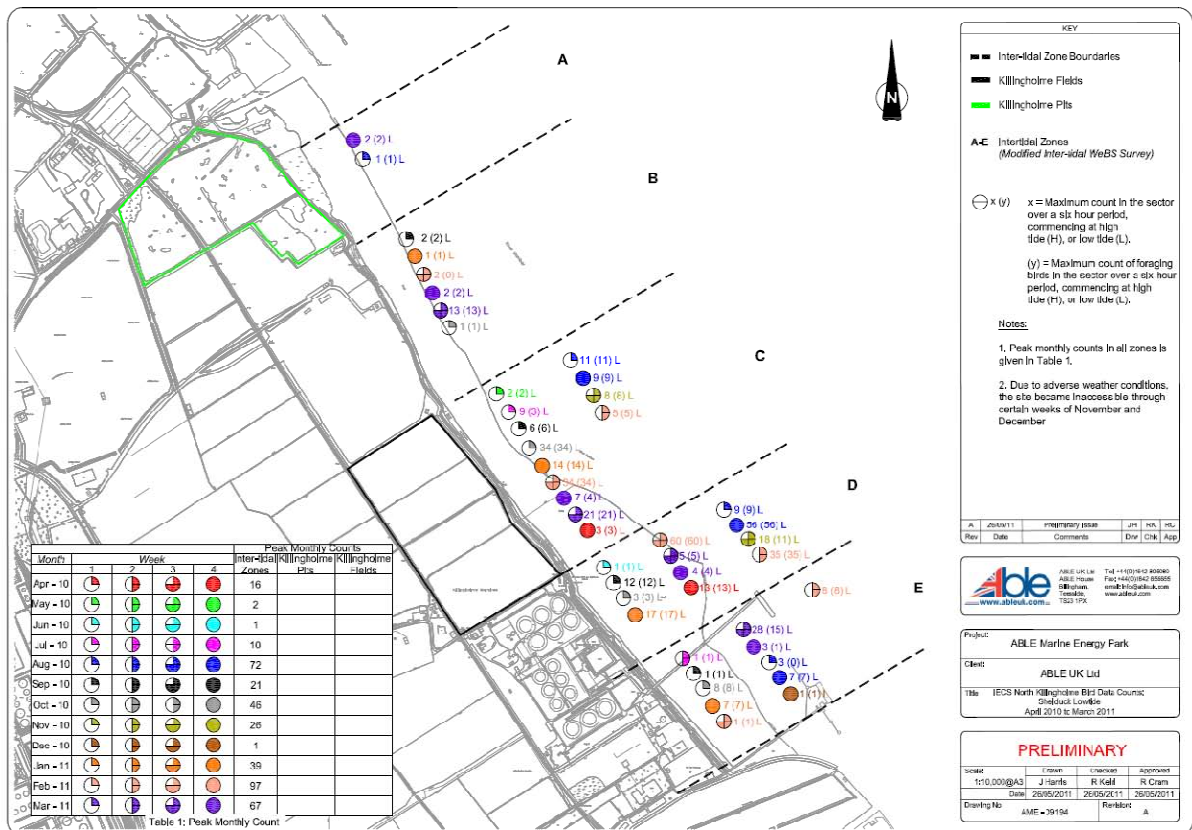
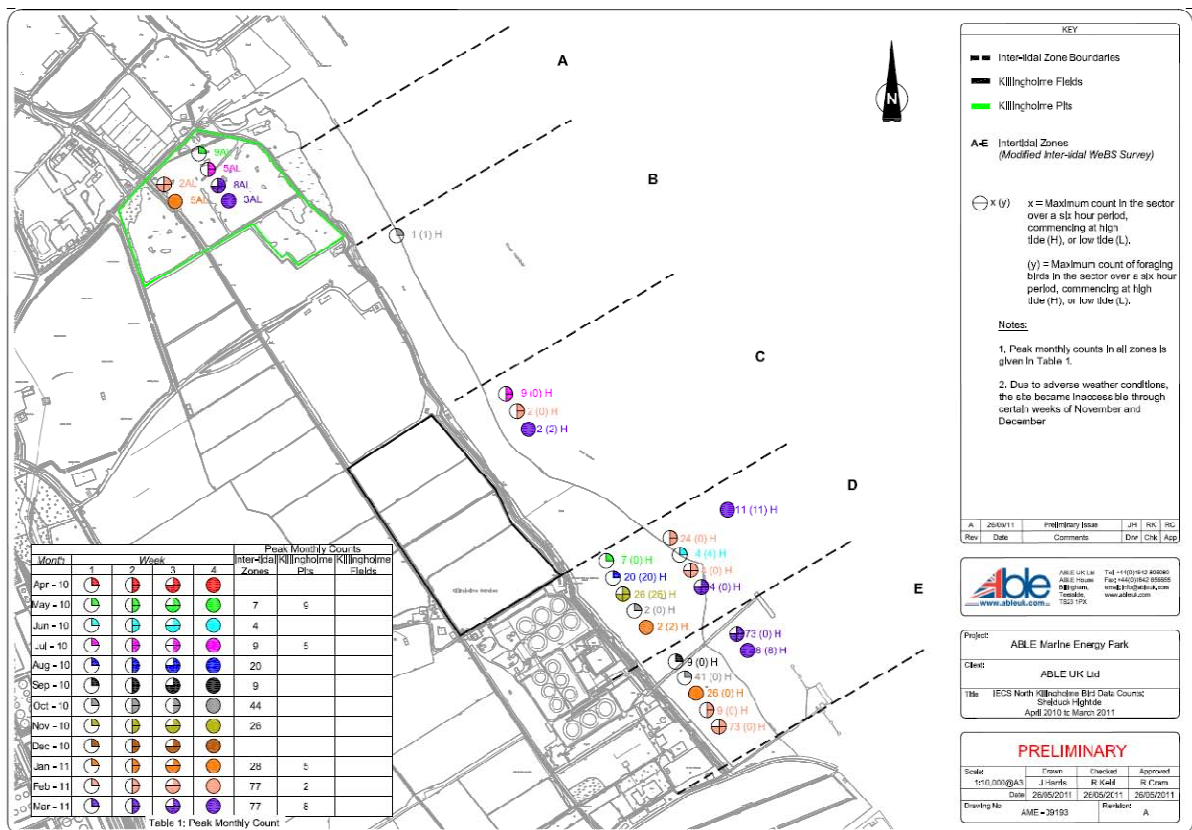


Figure 4: Shelduck Low-tide Counts



**Figure 5: Shelduck High-tide Counts**

### **3.4 Teal (*Anas crecca*)**

#### **3.4.1 PROTECTION & CONSERVATION STATUS**

- 3.4.1.1 The Teal is listed on Schedule II Part I and Schedule III Part III of the UK Wildlife and Countryside Act, Annexes II and III of the Wild Birds Directive, Appendices of the Bern (III) and Bonn (II) Convention and in the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

#### **3.4.2 BACKGROUND INFORMATION**

- 3.4.2.1 The Teal is the smallest of the dabbling ducks recorded from the UK. This species has a clustered distribution within the Humber, often concentrated around creeks and saltmarsh. Read's Island is a stronghold for passage and overwintering Teal on the Humber Estuary at high water (Allen *et al.*, 2003) and low water (Catley, 2000; Mander and Cutts, 2005).

#### **3.4.3 FINDINGS**

- 3.4.2.1 Winter visitors to the site, Teal were mainly recorded in the North Killingholme Haven Pits.
- 3.4.2.2 Teal were recorded on the intertidal zone in September and between December and January (**Figure 6** and **Figure 7**). A peak count of 12 birds in September appeared to be a family party.
- 3.4.2.3 Birds were recorded in the North Killingholme Haven Pits during 11 out of 19 surveys. Birds were present from September until April with the only nil count in December, when the site was frozen. The peak count was of 46 birds in early October. The spring and summer period in 2010 had no records of Teal in the Pits (**Figure 7**).



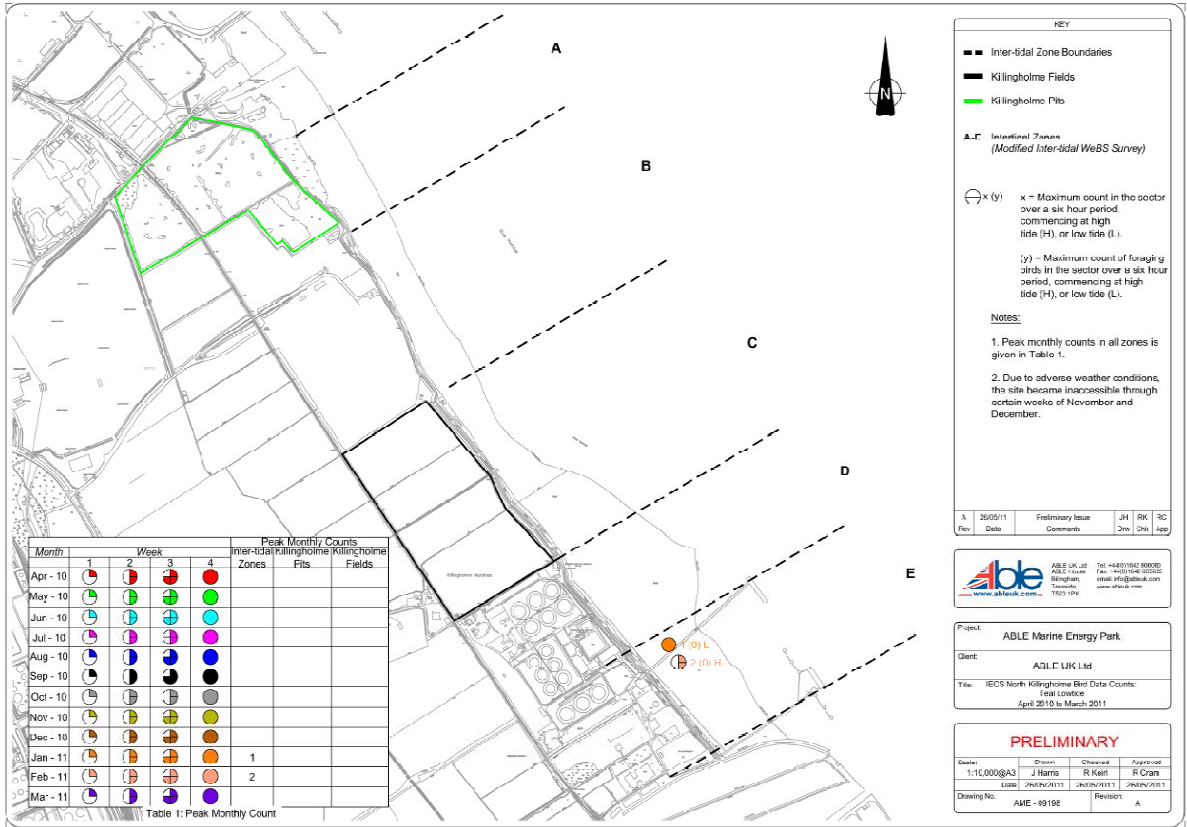
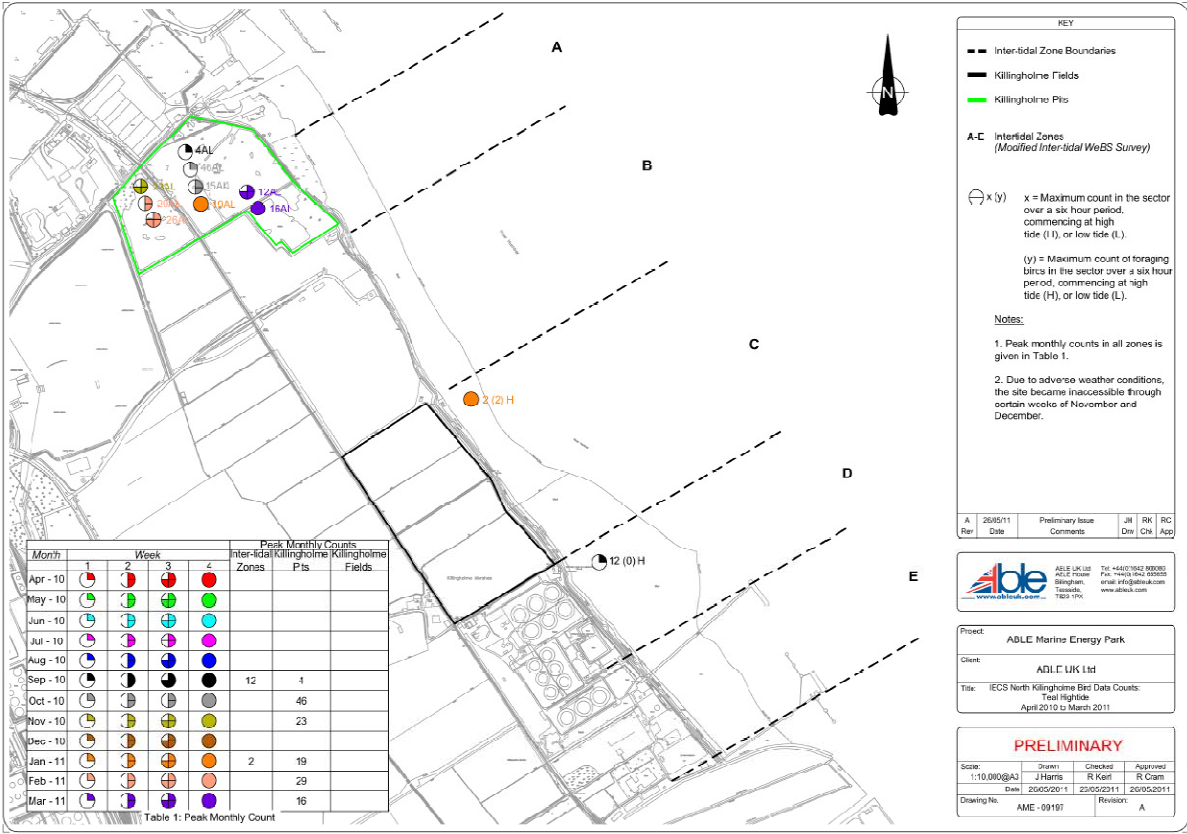


Figure 6: Teal Low-tide Counts





**Figure 7: Teal High-tide Counts**

### **3.5 Mallard (*Anas platyrhynchos*)**

#### **3.5.1 PROTECTION & CONSERVATION STATUS**

3.5.1.1 The Mallard is listed on Schedule II Part I and Schedule III Part III of the UK Wildlife and Countryside Act, Annexes II and III of the Wild Birds Directive and Appendices of the Bern (III) and Bonn (II) Conventions and the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

#### **3.5.2 BACKGROUND INFORMATION**

3.5.2.1 Mallard is the most familiar and widespread duck on the Humber and is present all year round, with peak maxima achieved during the mid-winter period. However, the population has been in decline on the Humber Estuary since the late 1980s this mirroring a reduction in the British population considered to be linked to a decrease in continental immigration (Calbrade *et al.*, 2010).

#### **3.5.3 FINDINGS**

3.5.3.1 Mallard were present on the intertidal zone for 12 out of the 19 surveys (albeit in low numbers). The only extended period of absence was during the summer and early autumn with seven birds present in late August being the only record. A survey maximum of 12 birds was recorded in early July at low water (**Figure 8**). This constituted of a family party of recently fledged young.

3.5.3.2 Mallard were more regularly recorded in the North Killingholme Haven Pits. A peak count of 34 birds was noted in October and figure counts also occurred in November, January and February with small numbers present throughout the spring and early summer (**Figure 9**).

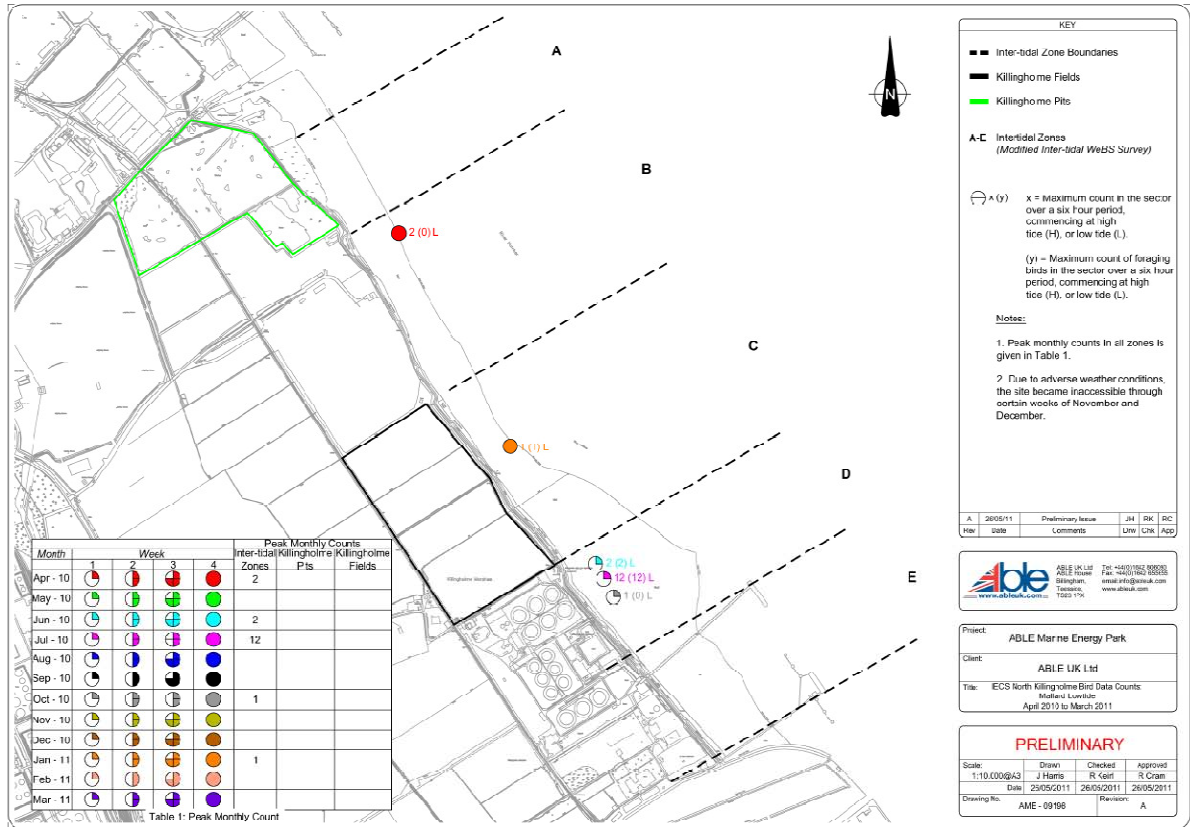


Figure 8: Mallard Low-tide Counts

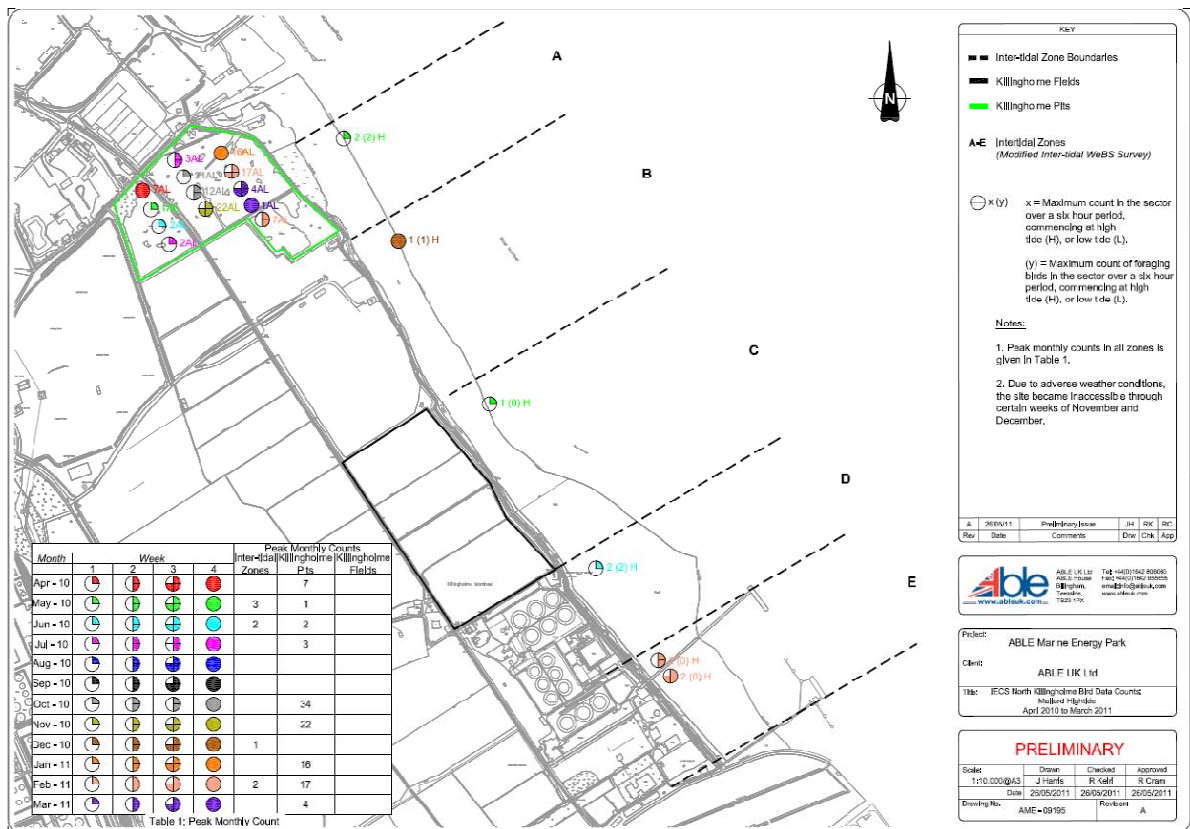


Figure 9: Mallard High-tide Counts

### 3.6 Shoveler (*Anas clypeata*)

#### 3.6.1 PROTECTION & CONSERVATION STATUS

3.6.1.1 The Shoveler is listed on Schedule II Part I and Schedule III Part III of the UK Wildlife and Countryside Act, Annexes II and III of the Wild Birds Directive, the Appendices of the Bern (III) and Bonn (II) Conventions and the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

#### 3.6.2 BACKGROUND INFORMATION

3.6.2.1 Shallow freshwater sites, which are favoured by Shoveler, are scarce around the Humber Estuary. Due to this, the species is found in very low numbers around the Humber and its breeding and wintering distribution is confined to inland water bodies.

#### 3.6.3 FINDINGS

3.6.2.1 Shoveler was a casual passage visitor to the site, recorded twice on passage. All birds were recorded in the North Killingholme Haven Pits. A remarkable count (for the Humber) of 61 birds was made in October and four birds were recorded in March (Figure 10).

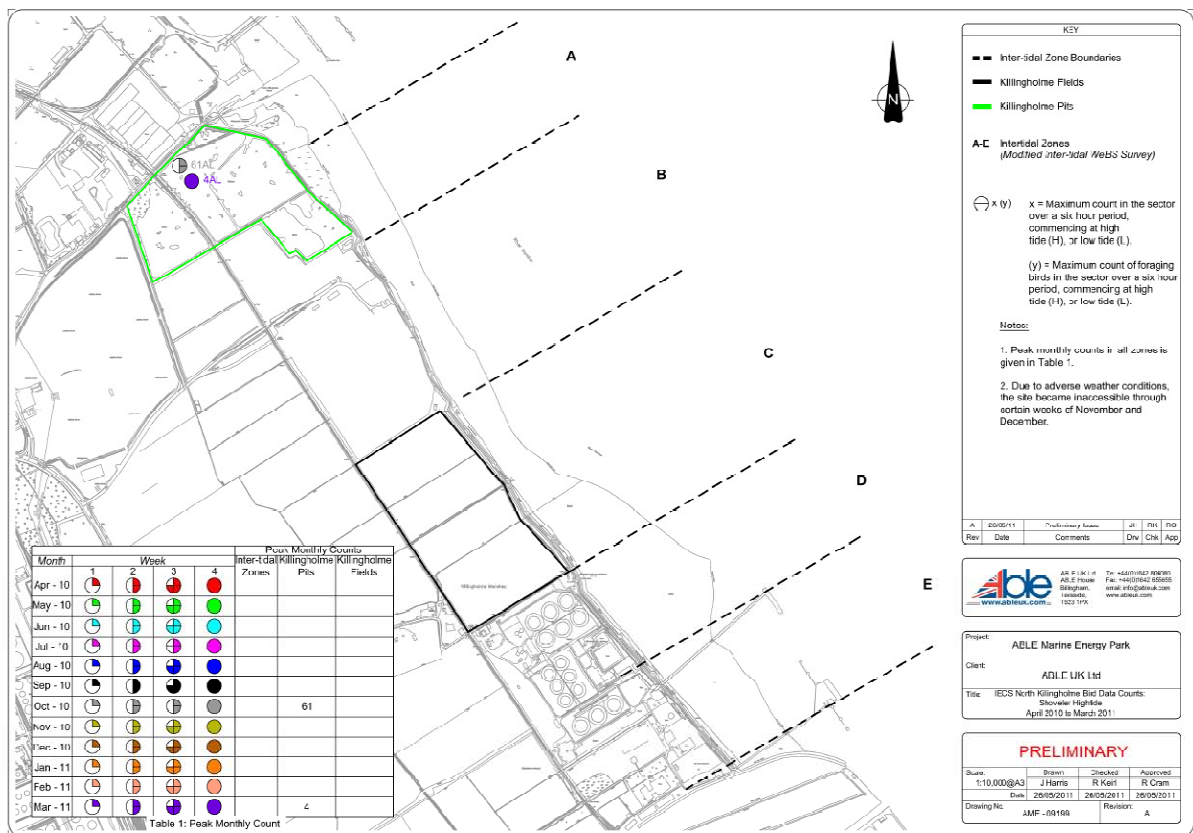


Figure 10: Shoveler High-tide Counts

### **3.7 Tufted Duck (*Aythya fuligula*)**

#### **3.7.1 PROTECTION & CONSERVATION STATUS**

3.7.1.1 The Tufted Duck is listed on Schedule II Part I and Schedule III Part III of the UK Wildlife and Countryside Act, Annexes I and III of the Wild Birds Directive and the Appendices of the Bern (III) and Bonn (II) Conventions. It is also listed in the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

#### **3.7.2 BACKGROUND INFORMATION**

3.7.2.1 This diving duck has had a marked range expansion and population increase in the late 19<sup>th</sup> and 20<sup>th</sup> Centuries partly because of the rapid creation of artificial inland waters, such as gravel pits and reservoirs (Cramp, 1998). There are no sites of international importance for Tufted Duck in the UK. The Humber supports a small population confined to the Barton-Barrow Clay Pits on the south bank of the estuary. Traditionally, the intertidal fringes and river channels around the New Holland Pier were a favoured foraging area as the direct result of the inadvertent provision of split grain and animal feeds from the New Holland Bulk Services Complex (Catley, 2000). However, the low tide count programme of 2003/04 failed to provide evidence of foraging birds around New Holland Pier and it is thought that numbers have declined in the last decade.

#### **3.7.3 FINDINGS**

3.7.3.1 A scarce visitor to the North Killingholme Haven Pits with only a single bird recorded in July. Other birds were regularly noted on the two small man-made reservoirs behind the foreshore of Zone D.

### **3.8 Smew (*Mergellus albellus*)**

#### **3.8.1 PROTECTION & CONSERVATION STATUS**

3.8.1.1 The Smew is listed in Annex I of the Wild Birds Directive and the Appendices of the Bern (III) and Bonn (II) Conventions. It is also listed in the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

#### **3.8.2 BACKGROUND INFORMATION**

3.8.2.1 Small numbers winter in Britain and the majority of these occur in the south-east of England and East Anglia. Very few Smew winter in the Humber and they are extremely rare away from key sites in the region (Tophill Low and Fairburn Ings). The very few sightings made during the 1998/99 and 2003/04 low tide counts originated from the Pits between Killingholme and Barton (Catley, 2000; Mander and Cutts, 2005).

#### **3.8.3 FINDINGS**

3.8.3.1 A rare visitor to the site with a single record of a redhead (female bird) in the North Killingholme Haven Pits from the first January survey.

### 3.9 Cormorant (*Phalacrocorax carbo*)

#### 3.9.1 PROTECTION & CONSERVATION STATUS

3.9.1.1 This species is included in Annex III of the Bern Convention, is included in the African-Eurasian Waterbird Agreement and is included as an Amber List Species of Conservation Concern (UK).

#### 3.9.2 BACKGROUND INFORMATION

3.9.2.1 The Humber Estuary is not a nationally important area for Cormorants (Calbrade *et al.*, 2010), however, general observations suggest birds are widely and thinly distributed across the estuary with concentrations occurring at roosts, including the use of navigation vessels.

#### 3.9.3 FINDINGS

3.9.3.1 The species was an occasional visitor to the intertidal zone between July and November. At high water, a peak count of two birds was recorded in November (Figure 11). Single records were noted in the North Killingholme Haven Pits in July and August.

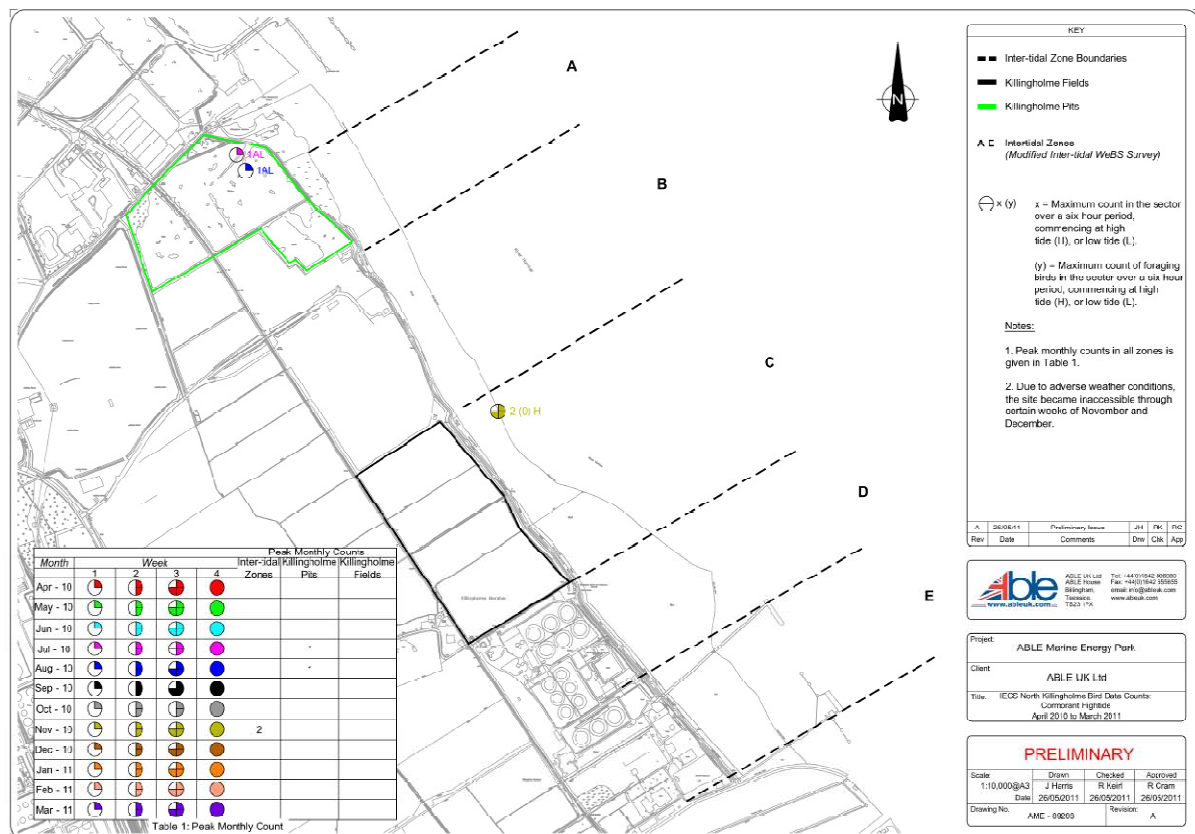


Figure 11: Cormorant High-tide Counts

### **3.10 Little Egret (*Egretta garzetta*)**

#### **3.10.1 PROTECTION & CONSERVATION STATUS**

3.10.1.1 The Little Egret is listed on Annex I of the Wild Birds Directive and Appendix III of The Bern convention. This species is an Amber List Species of Conservation Concern (UK).

#### **3.10.2 BACKGROUND INFORMATION**

3.10.1.1 The Little Egret first appeared in the UK in significant numbers in 1989 and first bred in Dorset in 1996. Its colonisation followed naturally from a range expansion into western and northern France in previous decades. Range has continued to expand and in recent years Little Egrets have become a familiar sight on the Humber Estuary, both as a summer and as a winter visitor. The latest five-year mean from the WeBS core counts provided an estimate of 38 birds on the Humber estuary (Calbrade *et al.*, 2010).

#### **3.10.3 FINDINGS**

3.10.3.1 Little Egrets were recorded in the North Killingholme Haven Pits with single birds present in June and July, possibly reflecting the post-breeding dispersal from the North Lincolnshire colonies. No birds were recorded on the intertidal zone during the surveys.

### **3.11 Grey Heron (*Ardea cinerea*)**

#### **3.11.1 PROTECTION & CONSERVATION STATUS**

3.11.1.1 The Grey Heron is listed on Appendix III of the Bern Convention, is included in the African-Eurasian Waterbird Agreement and is a Green List Species of Conservation Concern (UK).

#### **3.11.2 BACKGROUND INFORMATION**

3.11.2.1 The latest Wetland Bird Survey (WeBS) report indicates that an average of 76 individuals wintered over the last five years in the Humber Estuary (Calbrade *et al.*, 2010). General observations suggest that this species is more prevalent in the upper estuary and more often present on associated waterways than the mudflats themselves.

#### **3.11.3 FINDINGS**

3.11.3.1 Grey Herons were a regular resident bird in the North Killingholme Haven Pits during the survey programme. Peak counts of three birds were noted in July and October (Figure 12). Birds were absent in mid-winter due to bad weather and also in April, with the Grey Herons presumably being away on their breeding grounds at this time of the year. The Humber WeBS peak count occurs in September (Calbrade *et al.*, 2010) but this was not seen at the North Killingholme Haven Pits with only a single bird noted during this period.

3.11.3.2 The species was absent from the intertidal zone.



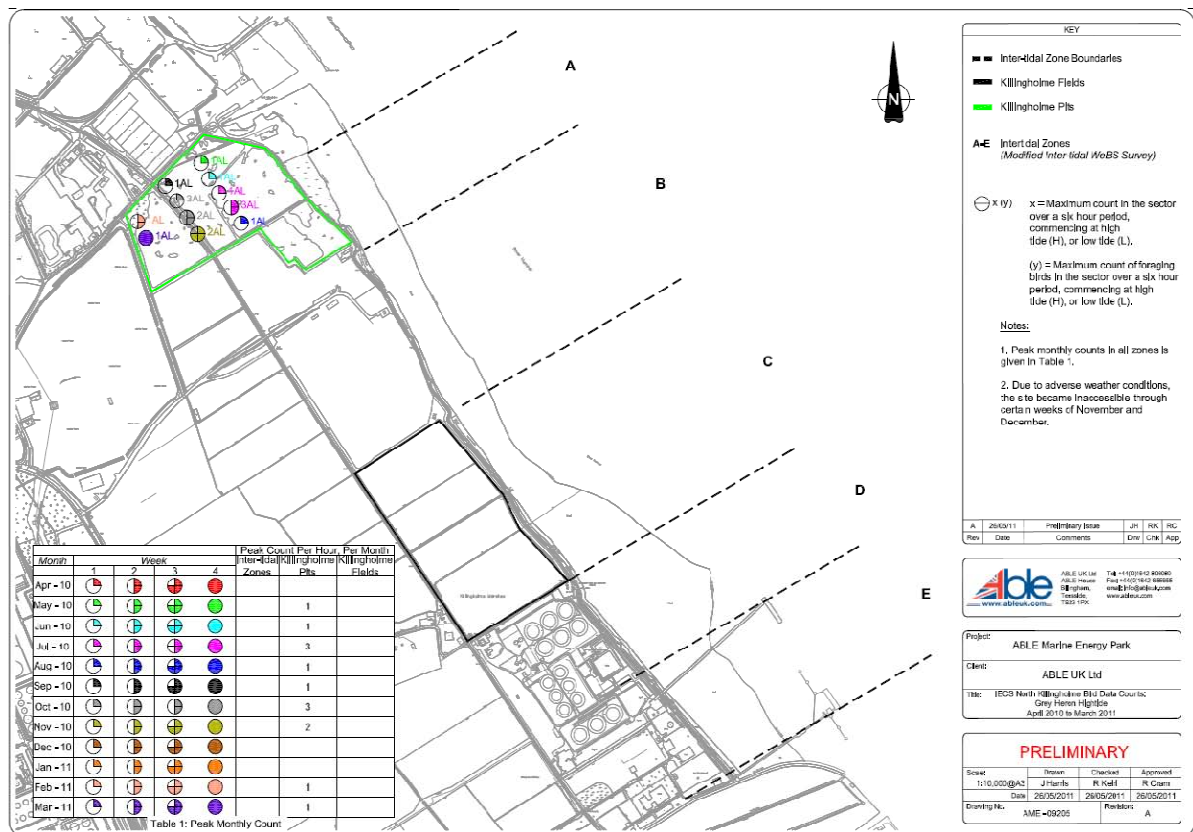


Figure 12 Grey Heron High-tide Counts

### 3.12 Water Rail (*Rallus aquaticus*)

#### 3.12.1 PROTECTION & CONSERVATION STATUS

3.12.1.1 The Water Rail is listed on Annex II of the Wild Birds Directive and Appendix III of the Bern convention.

#### 3.12.2 BACKGROUND INFORMATION

3.12.2.1 Water Rails breed extensively in reedbeds and wetlands in the UK. The species is resident on the Humber with additional birds over-wintering. The Barton Clay Pits complex and Blacktoft Sands are key areas for the species, although in winter, most reedbeds associated with water may support wintering Water Rails (Allen *et al.*, 2003).

#### 2.12.3 FINDINGS

3.12.3.1 Perhaps under-recorded due to their favoured reedbed habitat, Water Rails are probably breeding residents of North Killingholme Haven Pits with the population supplemented by continental birds in winter (Wernham *et al.*, 2002). Birds were recorded in June, July and August with a peak count of two birds in June (Figure 13). No birds were observed in winter but the species may have been forced out of the area by poor weather.

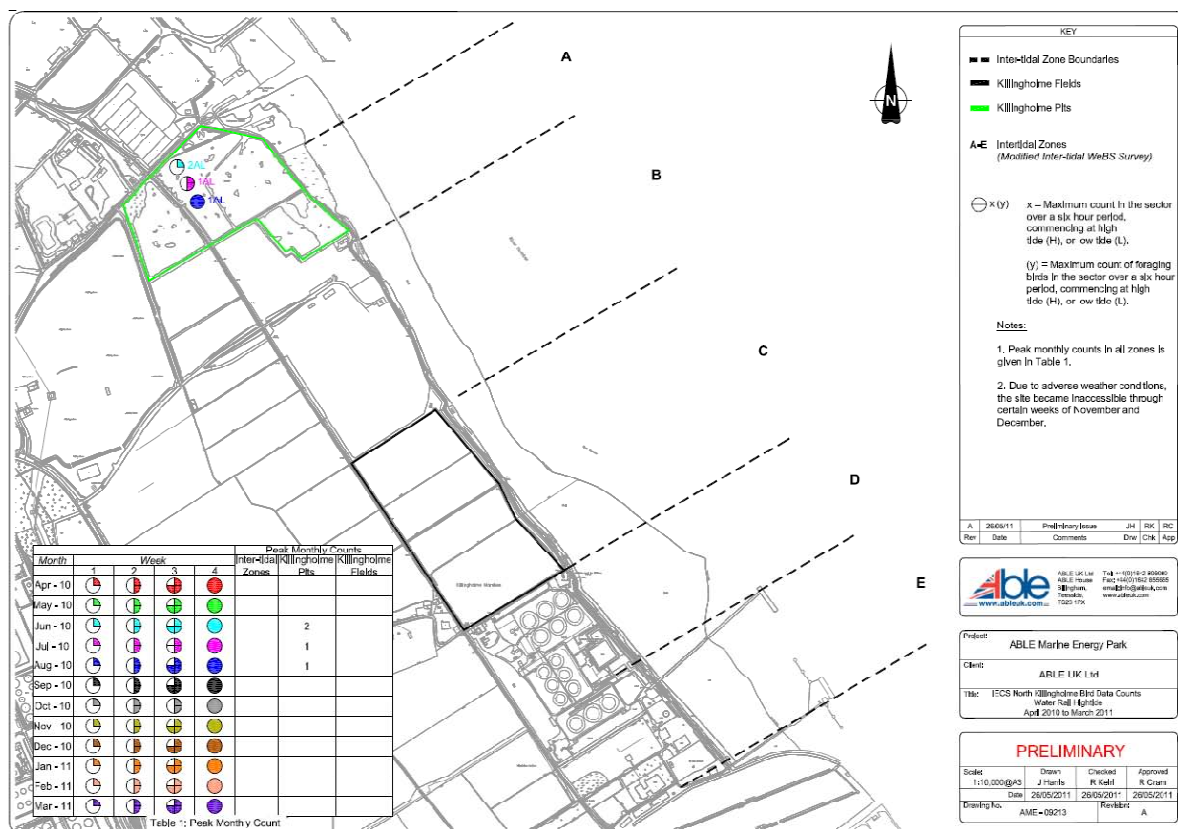


Figure 13: Water Rail High-tide Counts

### 3.13 Moorhen (*Gallinula chloropus*)

#### 3.13.1 PROTECTION & CONSERVATION STATUS

3.13.1.1 The Moorhen is listed on Schedule II Part I of the UK Wildlife and Countryside Act, Annex E of the Wild Birds Directive and the Appendices of the Bern (III) Conventions.

#### 3.13.2 BACKGROUND INFORMATION

3.13.2.1 Moorhens have a widespread distribution throughout the UK and occur in a wide variety of wetland habitats. Because of its distribution, the species tends to be relatively poorly monitored by the WeBS core counts (Calbrade *et al.*, 2010). The latest WeBS survey provides a five-year mean estimate of 146 birds on the Humber Estuary (Calbrade *et al.*, 2010), of which the majority are thought to be distributed in freshwater or brackish standing open waters adjacent to the Humber Estuary.

#### 3.13.3 FINDINGS

3.13.2.1 Moorhens were recorded on seven out of 19 surveys in the North Killingholme Haven Pits and as expected the species was absent from the intertidal zone.

3.13.2.2 Birds were suspected to be breeding residents in the North Killingholme Haven Pits and Moorhens were visible from January to April, with additional sightings in July and August. Peak counts of four birds were recorded in July (Figure 13).



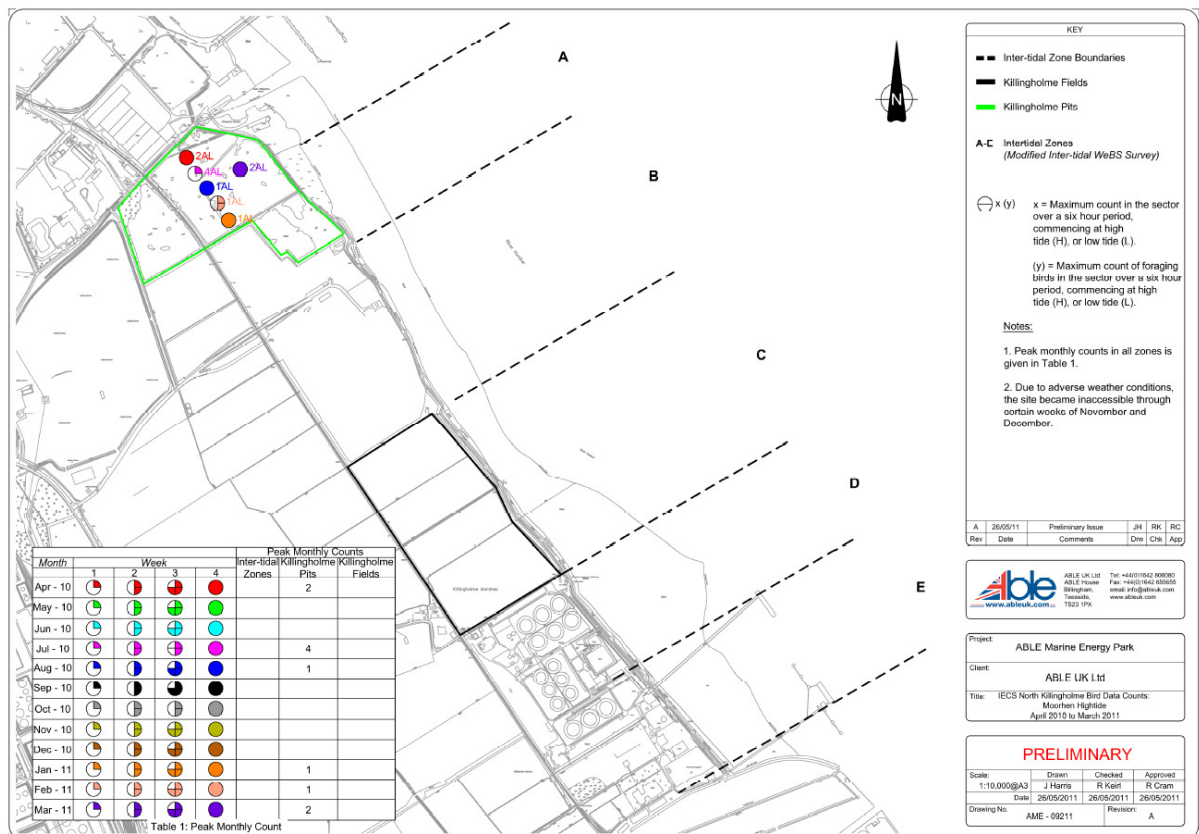


Figure 14 Moorhen High-tide Counts

### 3.14 Coot (*Fulica atra*)

#### 3.14.1 PROTECTION & CONSERVATION STATUS

3.14.1.1 The Coot is listed on Schedule II Part I and Schedule III Part 3 of the UK Wildlife and Countryside Act, Annexes II and III of the Wild Birds Directive and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement.

#### 3.14.2 BACKGROUND INFORMATION

3.14.2.1 Coots favour large bodies of freshwater, but have a widespread distribution on smaller ponds and rivers.

#### 3.14.3 FINDINGS

3.14.3.1 A single Coot was recorded on the intertidal zone in December (probably due to all the bodies of standing water around the Humber being frozen over). Birds were also regularly recorded in the North Killingholme Haven Pits, with maximum counts of two birds in May, February and March (**Figure 15**).

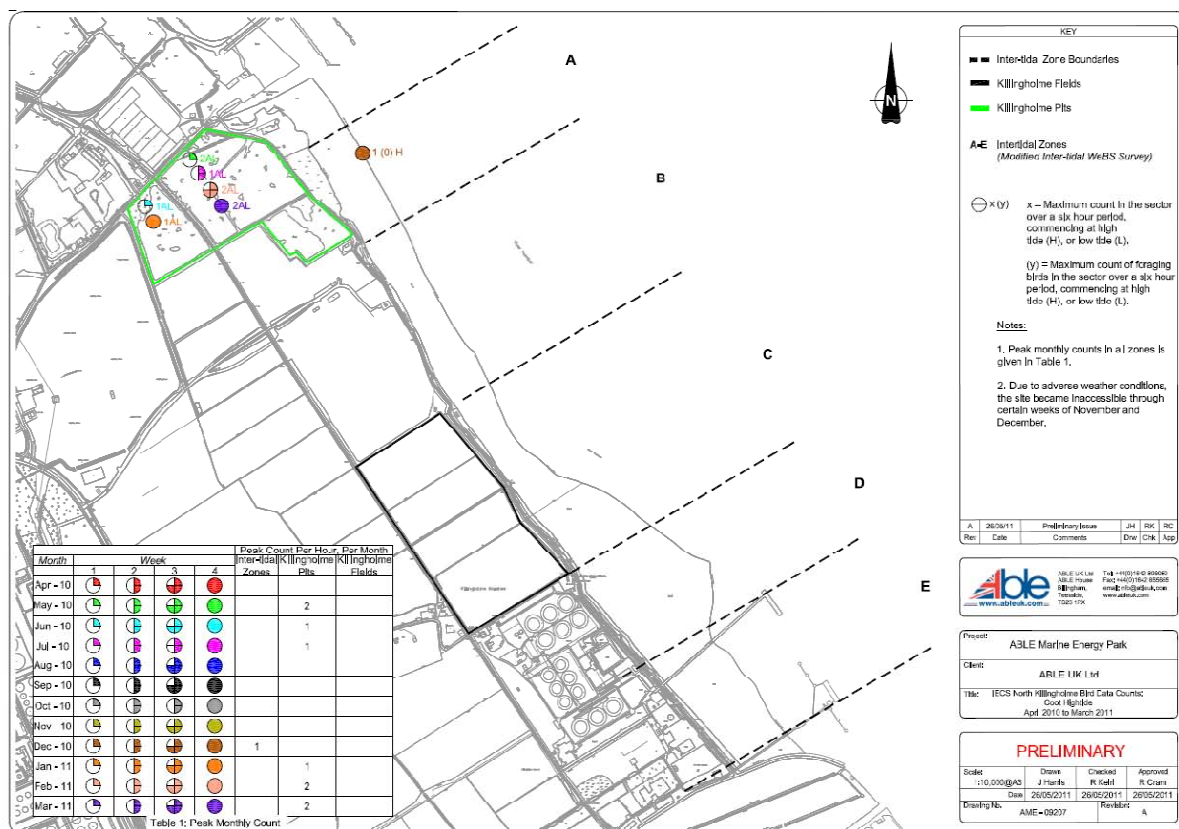


Figure 15 Coot High-tide Counts

### 3.15 Oystercatcher (*Haematopus ostralegus*)

#### 3.15.1 PROTECTION & CONSERVATION STATUS

3.15.1.1 The Oystercatcher is listed on Annex II of the Wild Birds Directive, Appendix III of the Bern Convention and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement.

#### 3.15.2 BACKGROUND INFORMATION

3.15.2.1 On the Humber Estuary, the Oystercatcher is predominantly found in the outer estuary with the majority of the population during all seasons being found downstream of a line drawn from Cherry Cobb to Immingham (Mander and Cutts, 2005; Catley, 2000; Allen *et al.*, 2003).

3.15.2.2 The pattern of distribution of Oystercatcher across the estuary broadly matches the distribution of cockle (*Cerastoderma edule*) beds, although Oystercatcher will take other bivalves, including the Baltic tellin (*Macoma balthica*).

#### 3.15.3 FINDINGS

3.15.3.1 Oystercatchers were suspected to breed in or in close vicinity to the intertidal zone in small numbers. Birds were present between February to early August with birds absent during the autumn and winter with the exception of a single bird in September.

3.15.3.2 A peak count of 11 birds was recorded in March on the intertidal zone, suggesting that the local breeders were supplemented with passage birds. Peaks on the Humber Estuary usually occur in October but these birds winter on the outer estuary with few penetrating further up during non-breeding periods (Allen *et al.*, 2003).

3.15.3.3 The species was widely distributed along the foreshore between Zones B-E with fewer individuals in Zone A at both low and high water (Figure 16 and Figure 17).

3.15.3.4 Oystercatcher roosted in the North Killingholme Haven Pits on five occasions, during early spring to mid-summer. As with the intertidal zone, usage peaked in March with four birds recorded.

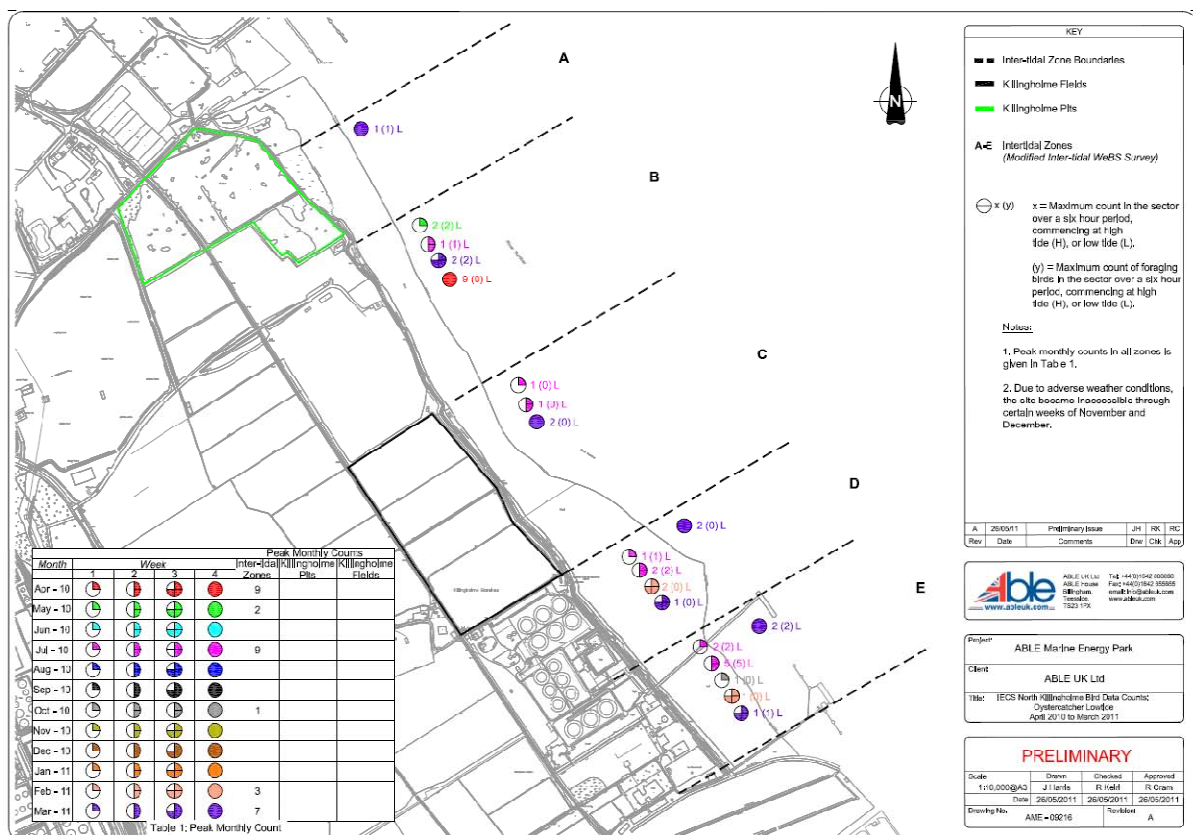


Figure 16: Oystercatcher Low-tide Counts

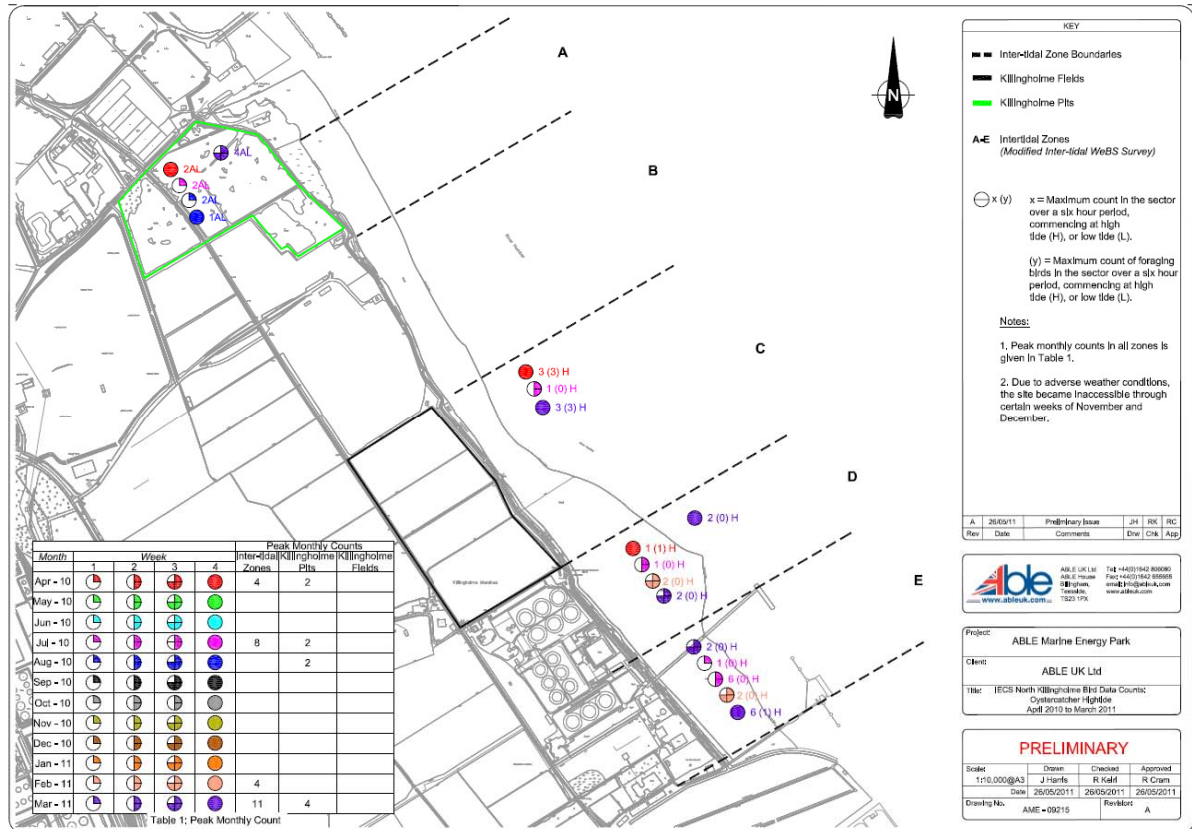


Figure 17: Oystercatcher High-tide Counts

### 3.16 Avocet (*Recurvirostra avosetta*)

#### 3.16.1 PROTECTION & CONSERVATION STATUS

3.16.1.1 The Avocet is protected under Schedule I Part I of the Wildlife and Countryside Act 1981. It is also listed in Appendix II of the Bern Convention and Appendix II of the Bonn Convention as well as the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### 3.16.2 BACKGROUND INFORMATION

3.16.2.1 The Humber Estuary is of national importance for Avocet with a 5-year mean of 493 birds present (Calbrade *et al.*, 2010). Birds are concentrated around the upper estuary, close to their breeding sites but smaller numbers use the middle and lower estuary, especially on passage.

3.16.2.2 According to Allen *et al.*, (2003) 83 pairs of Avocet breed on the estuary but, given their population and range expansion, this number can be revised upwards to 250+ pairs with over 200+ pairs on Read's Island in 2010 (RSPB, 2010) and 30 pairs at North Cave Wetlands in 2011 (North Cave Wetlands, 2011) together with breeding or attempted breeding at a number of other sites around the estuary including Blacktoft Sands.



### 3.16.3 FINDINGS

3.16.3.1 An increasingly numerous breeding bird on the estuary, Avocets were recorded during passage periods in the area surveyed. Four birds were noted in Zone C in late August at low water but all other records were from the North Killingholme Haven Pits (**Figure 18** and **Figure 19**).

3.16.3.2 A maximum count of 16 birds was noted in March in the Pits, the first returning birds of the year. According to the WeBS programme, numbers generally peak in March on the Humber (Calbrade *et al.*, 2010) consistent with the findings of the current surveys. Birds were also noted in April and August in the North Killingholme Haven Pits.

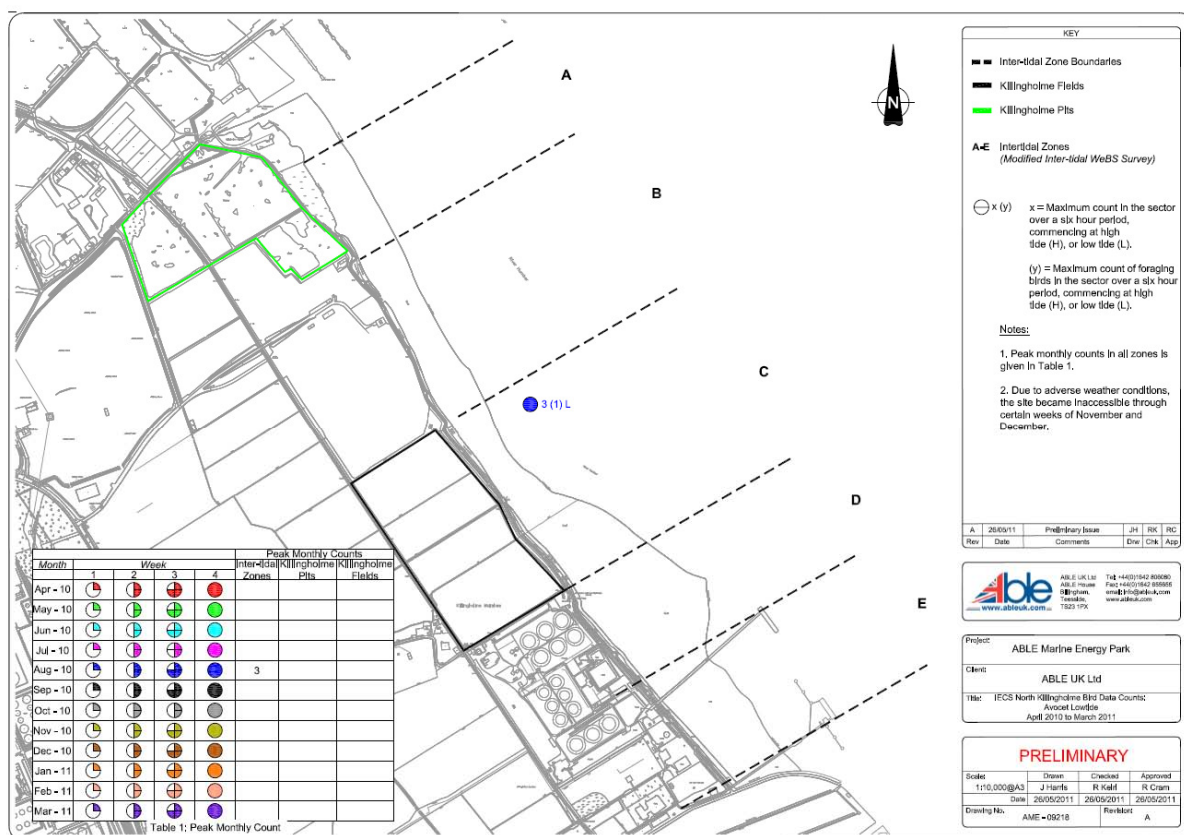


Figure 18: Avocet Low-tide Counts

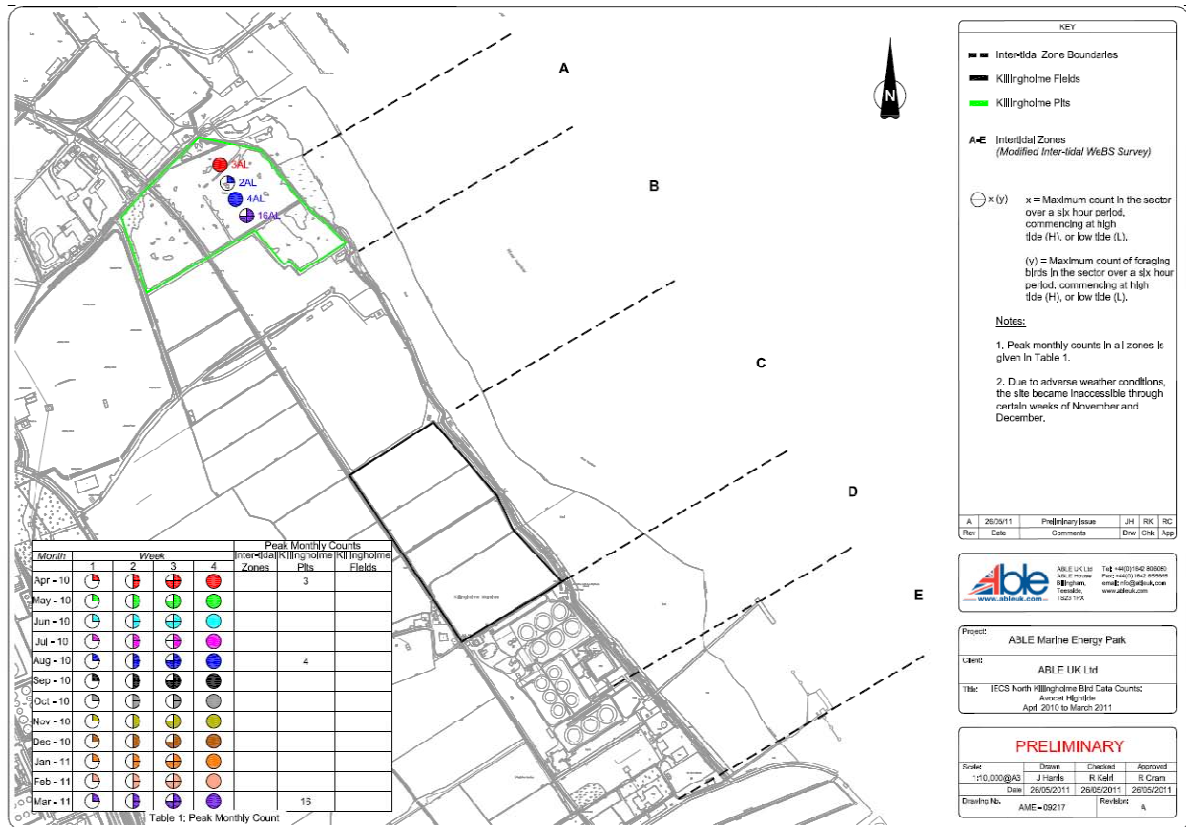


Figure 19: Avocet High-tide Counts

### **3.17 Ringed Plover (*Charadrius hiaticula*)**

#### **3.17.1 PROTECTION & CONSERVATION STATUS**

3.17.1.1 The Ringed Plover is listed on Appendix III of the Bern Convention and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.17.2 BACKGROUND INFORMATION**

3.17.2.1. The species is very mobile within the estuary and has been recorded on the Humber in internationally important numbers during migration periods, with a smaller, nationally important wintering population. A small breeding population of less than 50 pairs breed around the estuary (Allen *et al.*, 2003; Mander and Cutts, 2005).

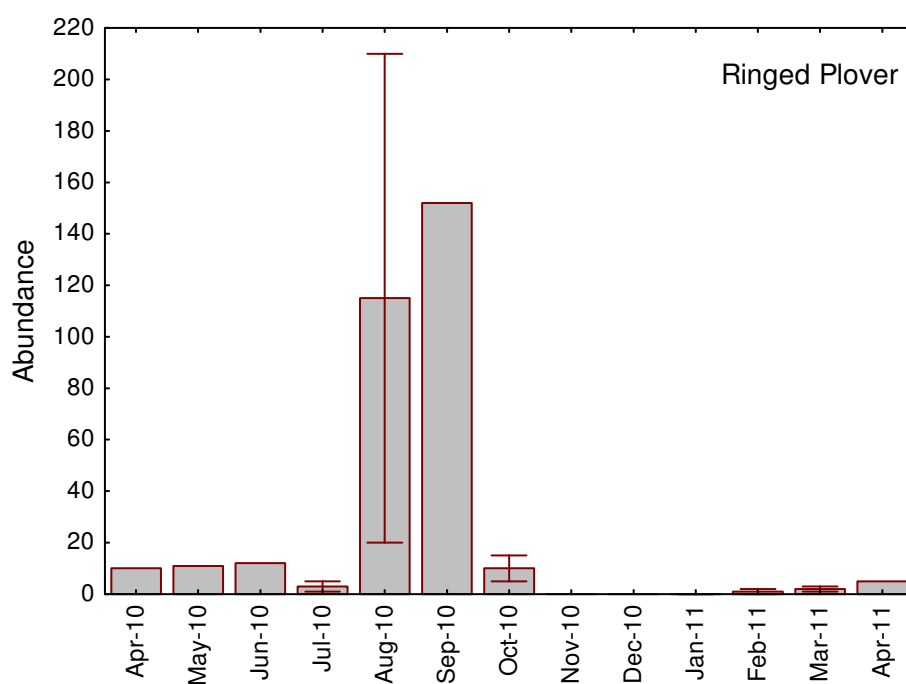
#### **3.17.3 FINDINGS**

3.17.3.1 The Ringed Plover is a regular passage migrant on the intertidal zone. No birds were observed breeding or wintering on the site and the species was recorded in the North Killingholme Haven Pits during spring and autumn passage.

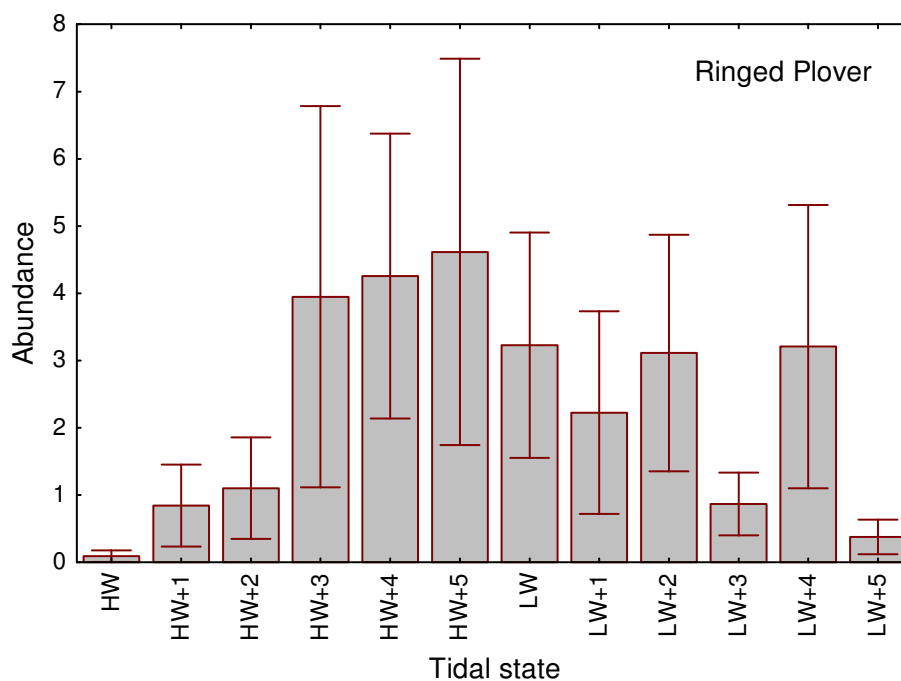
3.17.3.2 Birds were present between February and October in all months but numbers were extremely variable with a distinct peak on return passage in late August (210 birds) and September (152) (Figure 20). The overall peak count of 210 birds on the intertidal area in August was noteworthy for the area, representing 28% of the Humber population. A smaller passage was notable in spring with a peak of 12 birds in June.

3.17.3.3 The highest numbers of Ringed Plover were recorded around the low water period on the intertidal zone (Figure 21).

3.17.3.4 At high water, the largest concentrations were recorded in Zones D and E with fewer individuals recorded further north on the intertidal zone i.e. Zones A, B and C (Figure 22). The species was confined to the North Killingholme Haven Pits at high water (Figure 23).



**Figure 20: Monthly variation in the mean numbers of Ringed Plover on the intertidal zone ( $\bar{x} \pm$  SE)**



**Figure 21: Tidal variation in the mean numbers of Ringed Plover on the intertidal zone ( $\bar{x} \pm$  SE)**



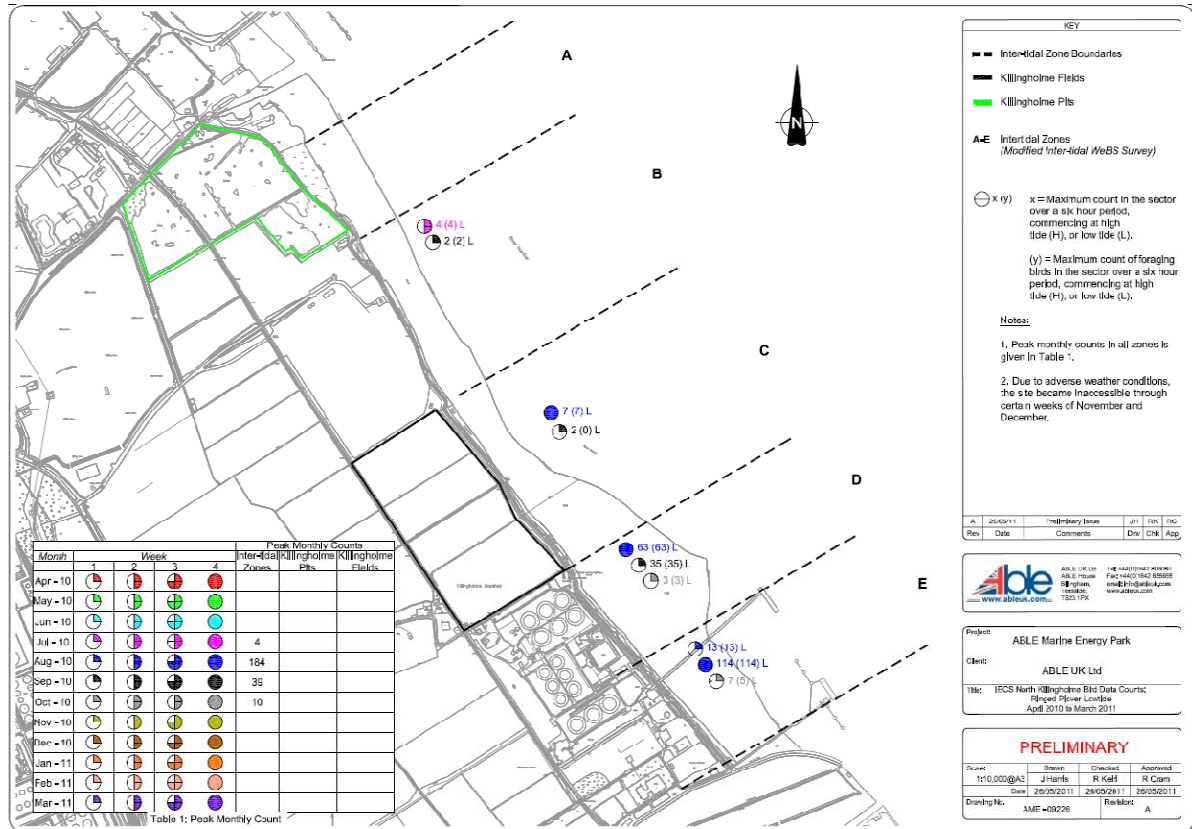


Figure 22: Ringed Plover Low-tide Counts

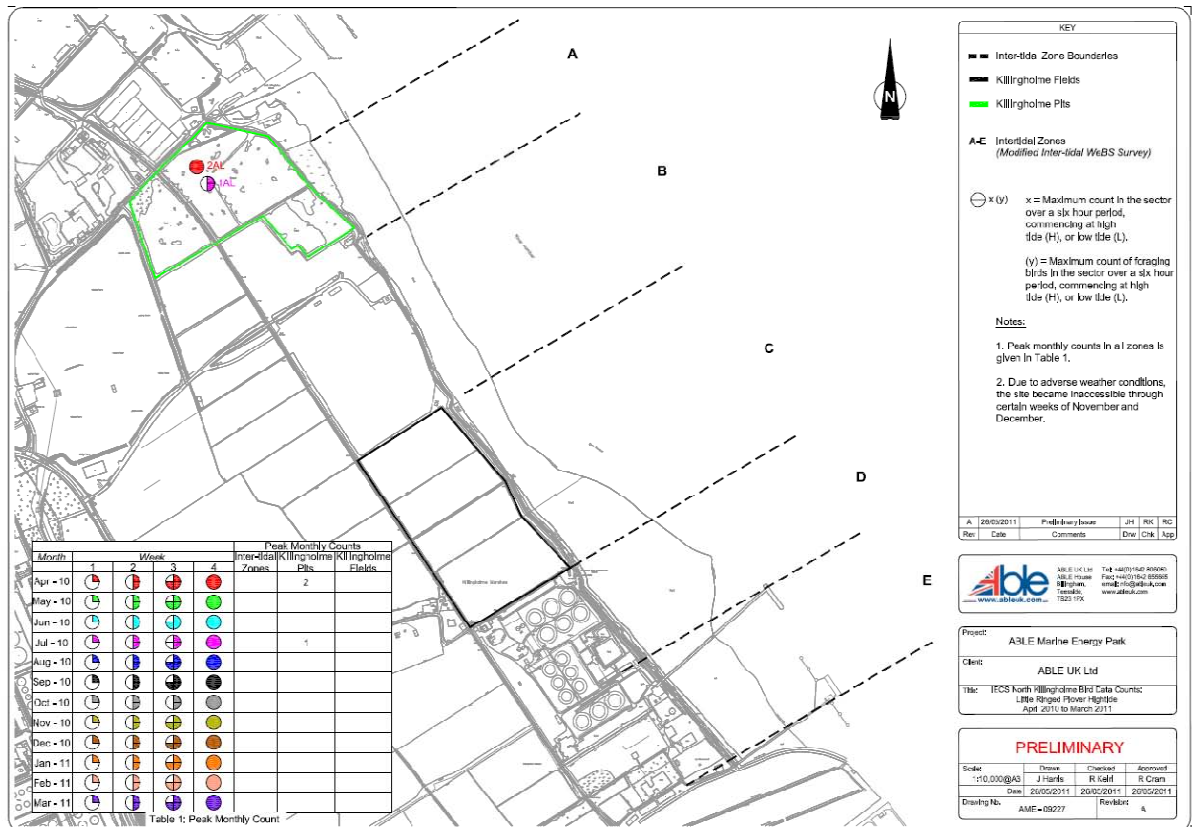


Figure 23 Ringed Plover High-tide Counts

### **3.18 Little Ringed Plover (*Charadrius dubius*)**

#### **3.18.1 PROTECTION & CONSERVATION STATUS**

3.18.1.1 The Little Ringed Plover is protected under Schedule I Part I of the UK by Wildlife and Countryside Act 1981 and is listed on Appendix II of the Bern Convention and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement.

#### **3.18.2 BACKGROUND INFORMATION**

3.18.1.1 Little Ringed Plovers are casual passage birds around the Humber Estuary with small numbers noted on adjacent water-bodies. The Little Ringed Plover is sporadic breeder in the Humber and small numbers breed at North Cave Wetlands, the Alkborough realignment site and perhaps other sites close to the estuary (Authors pers. obs. 2011).

#### **3.18.3 FINDINGS**

3.18.1.1 The Little Ringed Plover was a scarce passage migrant and a possible breeder at the North Killingholme Haven Pits where two sightings were made. A pair was seen on spring passage (pair-bonding and displaying was observed) which suggests a possible breeding pair at the site. However, the birds had moved on by the following month. A single bird was seen on return passage in early July.

### **3.19 Golden Plover (*Pluvialis apricaria*)**

#### **3.19.1 PROTECTION & CONSERVATION STATUS**

3.19.1.1 The Golden Plover is protected under Schedule II Part I and Schedule III Part III of the Wildlife and Countryside Act 1981. It is also listed in Annex I, II and III of the Birds Directive, Appendix III of the Bern Convention and Appendix IV of the Bonn Convention. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.19.2 BACKGROUND INFORMATION**

3.19.2.1 The Humber Estuary is currently of international importance for Golden Plover, and is the most important wintering site for the species in the UK. The latest Wetland Bird Survey (WeBS) estimates that on average a total of 46,926 individuals wintered in the Humber (2004/05 to 2008/09) (Calbrade *et al.*, 2010).

3.19.2.2 Golden Plover predominantly forage on inland pasture and other grassland, with the intertidal areas of the estuary used primarily for non-foraging i.e. roosting and loafing activities. Intertidal roost site preference tends to be for wide mudflats where predator approach can be readily discerned.

#### **3.19.3 FINDINGS**

3.19.3.1 A casual visitor to the area surveyed, Golden Plover were recorded twice on passage. A single was recorded in the intertidal zone in July with an additional single bird at high tide in the North Killingholme Haven Pits in late August.

### **3.20 Grey Plover (*Pluvialis squatarola*)**

#### **3.20.1 PROTECTION & CONSERVATION STATUS**

3.20.1.1 The Grey Plover is listed on Annex II of the Wild Birds Directive, Appendix III of the Bern Convention and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.20.2 BACKGROUND INFORMATION**

3.20.2.1 On the Humber, the Grey Plover is primarily a species of the outer estuary, often found in well dispersed loose flocks feeding across a mudflat, with feeding activity largely undertaken from the upper to mid shore. The estuary is of international importance for Grey Plover with a five-year mean of 2,916 birds (Calbrade *et al.*, 2010). On the Humber, birds are typically concentrated on the outer estuary on both the north and south banks (Allen *et al.*, 2003; Mander and Cutts, 2005).

#### **3.20.3 FINDINGS**

3.20.2.1 Grey Plover was a rare winter visitor to the survey area. Birds were recorded on the intertidal zone at low water in November and December (**Figure 24** and **Figure 25**). The peak count of two birds reflected the low importance of the site in the context of the Humber population. This is somewhat expected as Grey Plovers rarely penetrate upstream beyond the middle estuary to forage.

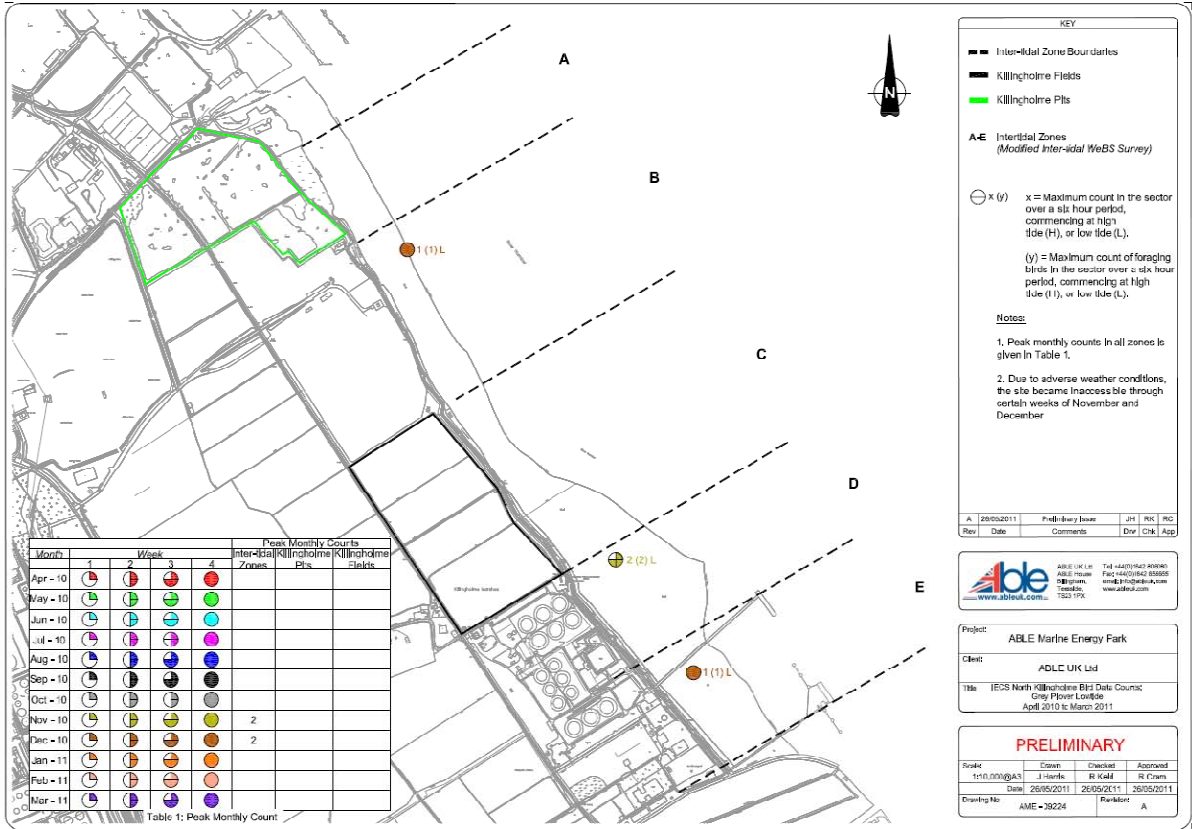


Figure 24: Grey Plover Low-tide Counts

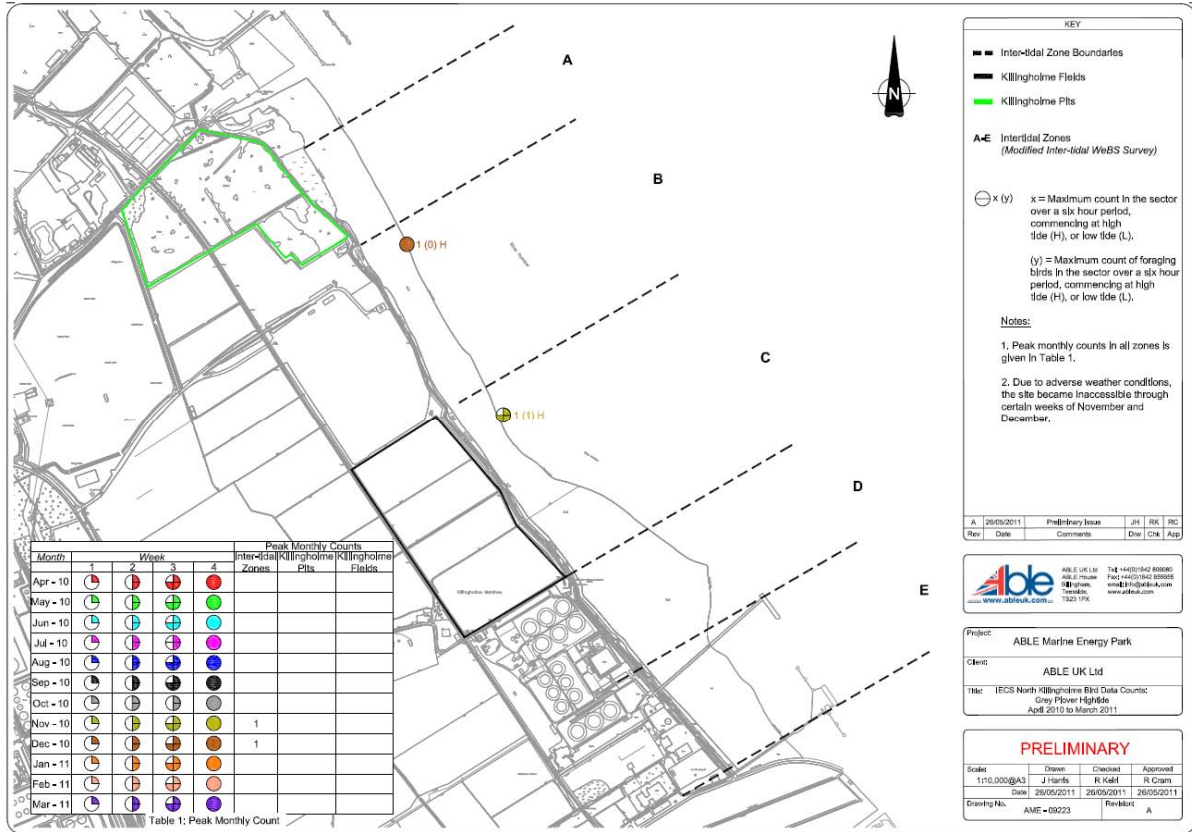


Figure 25: Grey Plover High-tide Counts

## **3.21 Lapwing (*Vanellus vanellus*)**

### **3.21.1 PROTECTION & CONSERVATION STATUS**

3.21.1.1 The Lapwing is listed on Annex II of the Wild Birds Directive, Appendix III of the Bern Convention and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement. This species is a Red List Species of Conservation Concern (UK).

### **3.21.2 BACKGROUND INFORMATION**

3.21.2.1 Wintering Lapwings utilise the intertidal mudflat habitats as a feeding resource less extensively than most other wader species on the Humber, with the majority of foraging activity undertaken inland. In the breeding season, the species prefers spring sown cereals, root crops, permanent unimproved pasture, meadows and fallow fields. The Lapwing has recently seen large national declines in the breeding population hence its Red List Status in the UK (Eaton *et al.*, 2009).

3.21.2.2 The Humber is of national importance for wintering Lapwings and the latest WeBS data provides a five-year mean estimate of 18,756 birds on the Humber Estuary (Calbrade *et al.*, 2010).

### **3.22.3 FINDINGS**

3.22.3.1 Lapwings were a common winter and passage bird on the intertidal zone. The North Killingholme Haven Pits were not used as high tide roost. The maximum count in the Pits only reached five birds in October.

3.22.3.2 By contrast, Lapwings were present on the intertidal zone during autumn and winter with the bulk of the birds arriving in October. Numbers built up across the winter to peak at 325 in January. Numbers dropped off quickly as birds left the estuary throughout February with no birds present by March. The overall peak of 325 birds accounted for 1.7% of the Humber population.

3.22.3.3 Birds were regularly noted feeding on the intertidal zone throughout the winter. This was possibly an unusual occurrence as it has previously been postulated that birds only feed on the estuary in July-September (Allen *et al.*, 2003). Birds were concentrated at the south of the intertidal zone with the highest numbers found in Zone E and D at both low and high water (**Figure 26** and **Figure 27**). Birds also congregated on a groyne between Zones A and B in smaller numbers. Very few birds were recorded in Zone C.



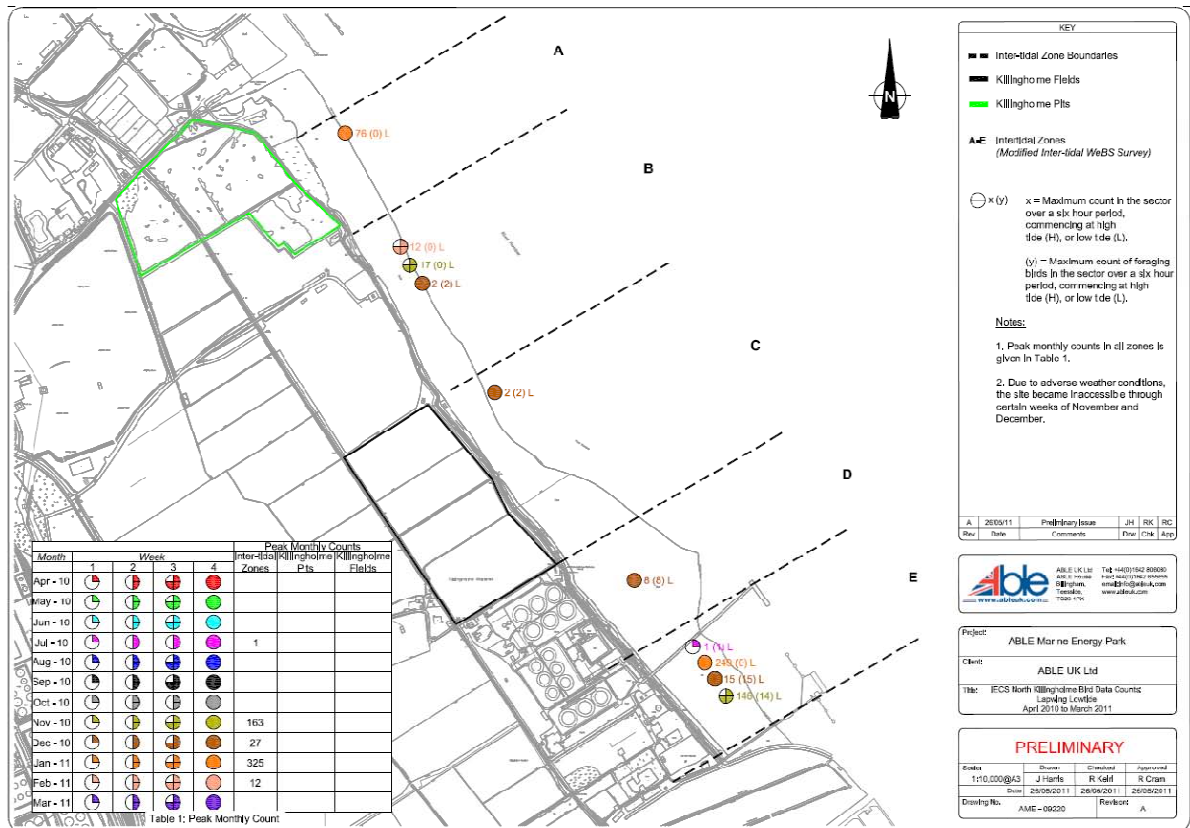


Figure 26: Lapwing Low-tide Counts

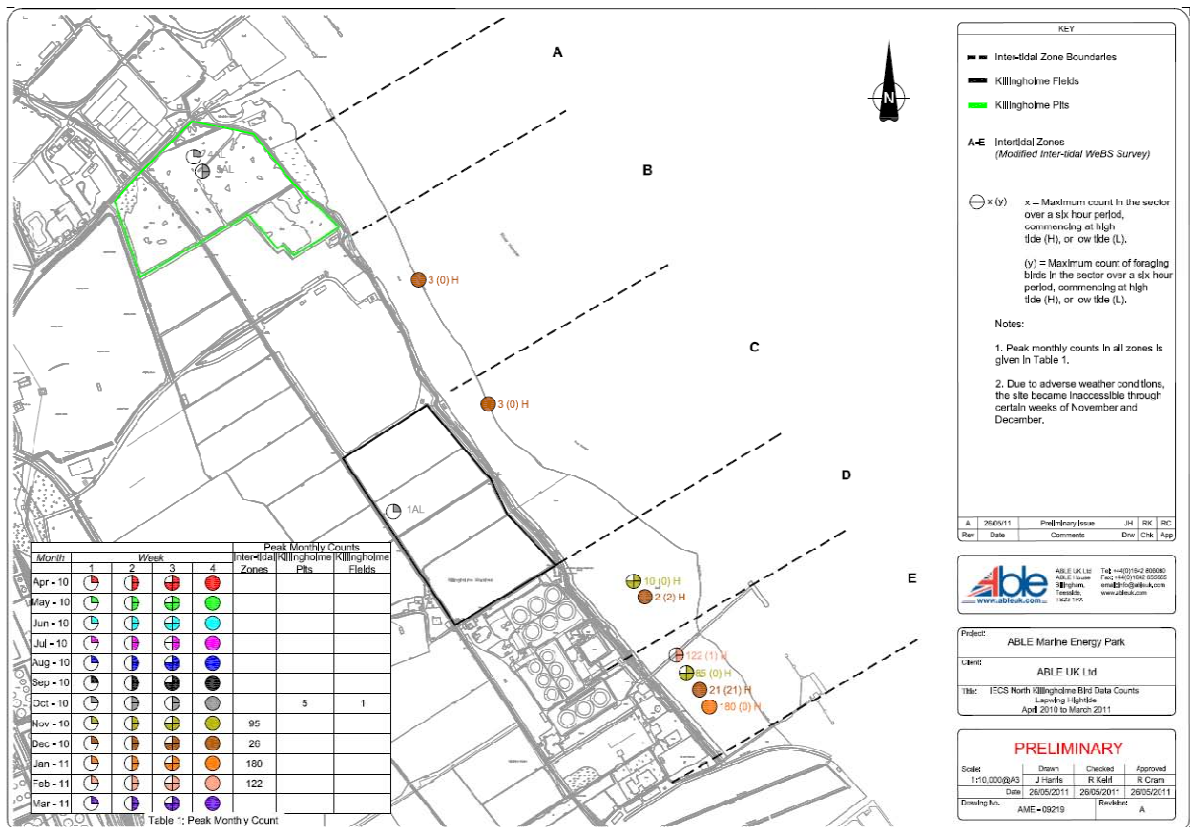


Figure 27: Lapwing High-tide Counts

### **3.22 Knot (*Calidris canuta*)**

#### **3.22.1 PROTECTION & CONSERVATION STATUS**

3.22.1.1 The Knot is included in Annex II of the Wild Birds Directive, Appendix II of the Bonn Convention, and Appendix III of the Bern Convention and is listed in the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.22.2 BACKGROUND INFORMATION**

3.22.2.1 The Humber Estuary is an internationally important site for Knot with a 5-year mean of 41,772 birds making it the third most important site for this species in the UK (Calbrade *et al.*, 2010) with a peak in numbers in December.

3.22.2.2 Knot distribution tends to be concentrated in the outer estuary, although small flocks can move further into the estuary, generally as far as Saltend on the north bank and the Pyewipe mudflat on the South Bank. Knots are found in extremely large numbers on Spurn Bight and between Cleethorpes and Grainthorpe Haven (Allen *et al.*, 2003; Mander and Cutts, 2005). The largest roosts on the north bank for this species are between Sunk Island and Spurn with the Welwick saltmarsh and the realignment site at Patrington Haven holding large numbers (Authors pers. obs. 2011).

#### **3.22.3 FINDINGS**

3.22.3.1 Knots were scarce at the site. The species was present in early to mid summer with a small flock of summering birds (non-breeders) associated with Bar-tailed Godwits in June and returning birds present in August with a peak count of three birds on the intertidal zone at low water (Figure 27).

3.22.3.2 Birds were recorded in the North Killingholme Haven Pits roost in late July and both August surveys with a peak count of 12 birds in the late August (Figure 28). The lack of records is reasonable in light of the distribution of Knot within the estuary where they are present in much greater numbers in the outer estuary (Allen *et al.*, 2003).

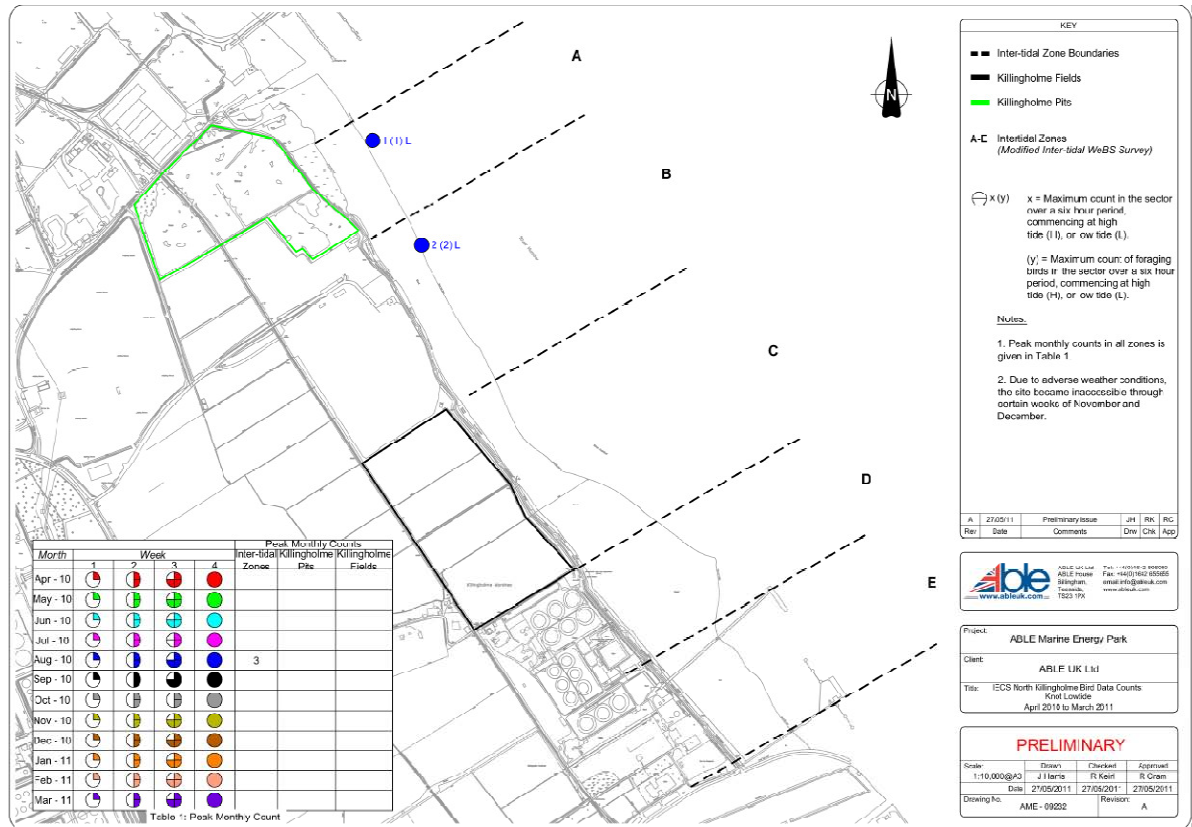


Figure 28: Knot Low-tide Counts

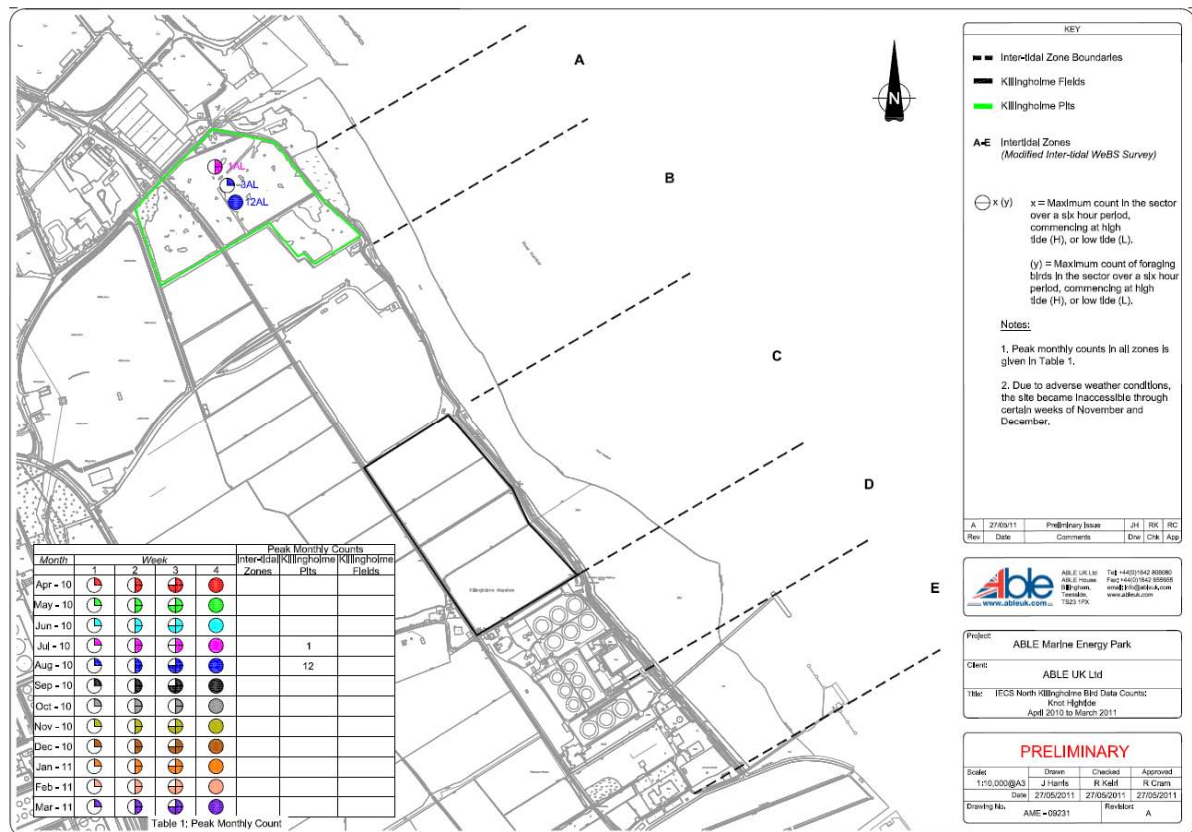


Figure 29: Knot High-tide Counts



### **3.23 Sanderling (*Calidris alba*)**

#### **3.23.1 PROTECTION & CONSERVATION STATUS**

3.23.1.1 The Sanderling is listed on Appendix III of the Bern Convention and Appendix II of the Bonn Convention and the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.23.2 BACKGROUND INFORMATION**

3.23.2.1 The Humber Estuary is a nationally important site for Sanderlings with a 5-year mean of 706 birds despite incomplete counts for the period (Calbrade *et al.*, 2010). Occasional birds are found on the inner and middle estuary on passage but in general Sanderlings are a bird of the outer estuary and are largely restricted to two sites: Spurn and Cleethorpes. Sanderlings only winter in low numbers with peaks during passage, in May and August (Allen *et al.*, 2003).

#### **3.23.3 FINDINGS**

3.23.3.1 Sanderling was a rare passage visitor to North Killingholme. A single returning migrant Sanderling was seen associated with Dunlins in Zone E in September at low water plus five hours. No birds were recorded in the North Killingholme Haven Pits roost at high water.

### **3.24 Dunlin (*Calidris alpina*)**

#### **3.24.1 PROTECTION & CONSERVATION STATUS**

3.24.1.1 The Dunlin is listed on Annex I of the Wild Birds Directive, Appendix III of the Bern Convention and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement. This species is also a Red List Species of Conservation Concern (UK).

#### **3.24.2 BACKGROUND INFORMATION**

3.24.2.1 The Dunlin is a widespread wader recorded around most intertidal reaches of the Humber at low water. Dunlins are highly site-faithful to their winter roost sites, both within and between years (Wernahm *et al.*, 2002). The 2003/4 low tide count programme identified two main concentrations of Dunlin on the estuary during the autumn period; the inner estuary south bank around Read's Island, and the middle to outer estuary north bank between Saltend and Spurn Point.

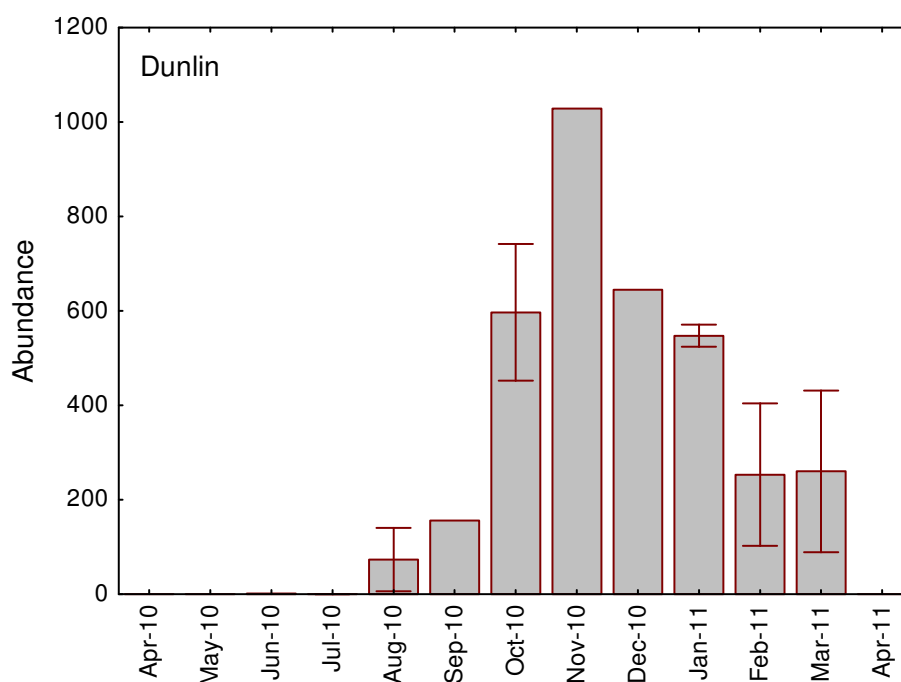
#### **3.24.3 FINDINGS**

3.24.3.1 Dunlins were a passage and winter visitor to the intertidal zone. Dunlin were largely absent in spring and early summer with no birds recorded between April and early August with the exception of a single bird in June and six birds in early August. Numbers increased subsequently with a peak of 1,029 in November (**Figure 30**). Counts of over 400 birds were also recorded in early and late October, December, early and late January, late February and early March. Numbers quickly decreased in late March to 89 birds.

3.24.3.2 Largest numbers were recorded in Zone D with similar numbers in Zone E (**Figure 32** and **Figure 33**). Numbers decreased further north along the intertidal zone.

3.24.3.3 The maximum count of 1,029 birds on the intertidal zone represented c. 5% of the Humber Estuary population (Calbrade *et al.*, 2010). Despite the large numbers recorded, these are not above the nationally important threshold.

3.24.3.4 Birds were recorded on five occasions in the North Killingholme Haven Pits roost with a peak of 270 birds in late October survey although the only other double figure count was in early October (25 birds). Small numbers were also recorded in April, early August and January (**Figure 33**).



**Figure 30: Monthly variation in the mean numbers of Dunlin on the intertidal zone ( $\bar{x} \pm SE$ )**

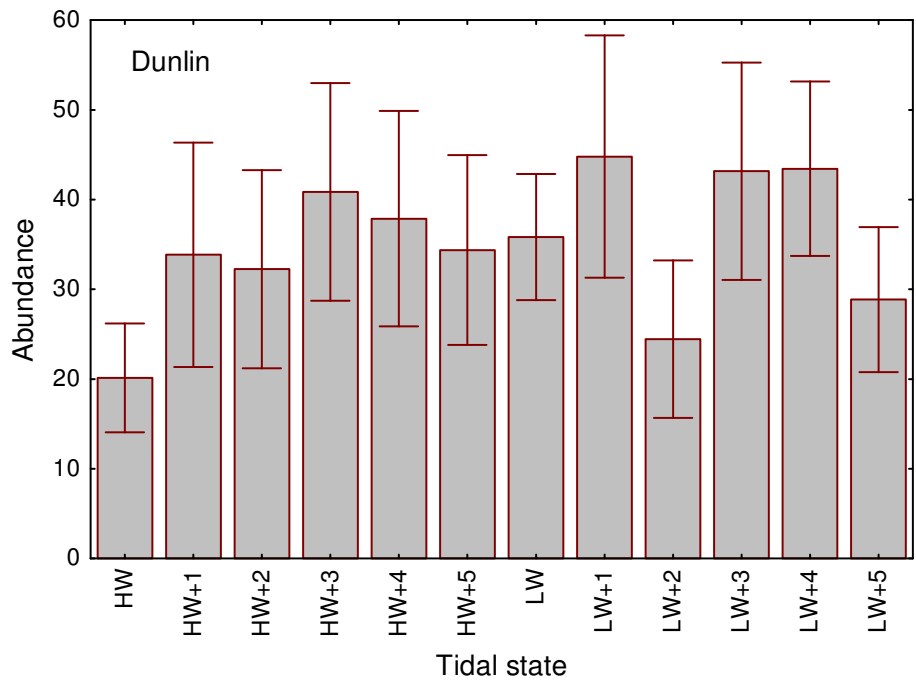


Figure 31: Tidal variation in the mean numbers of Dunlin on the intertidal zone ( $\bar{x} \pm SE$ )

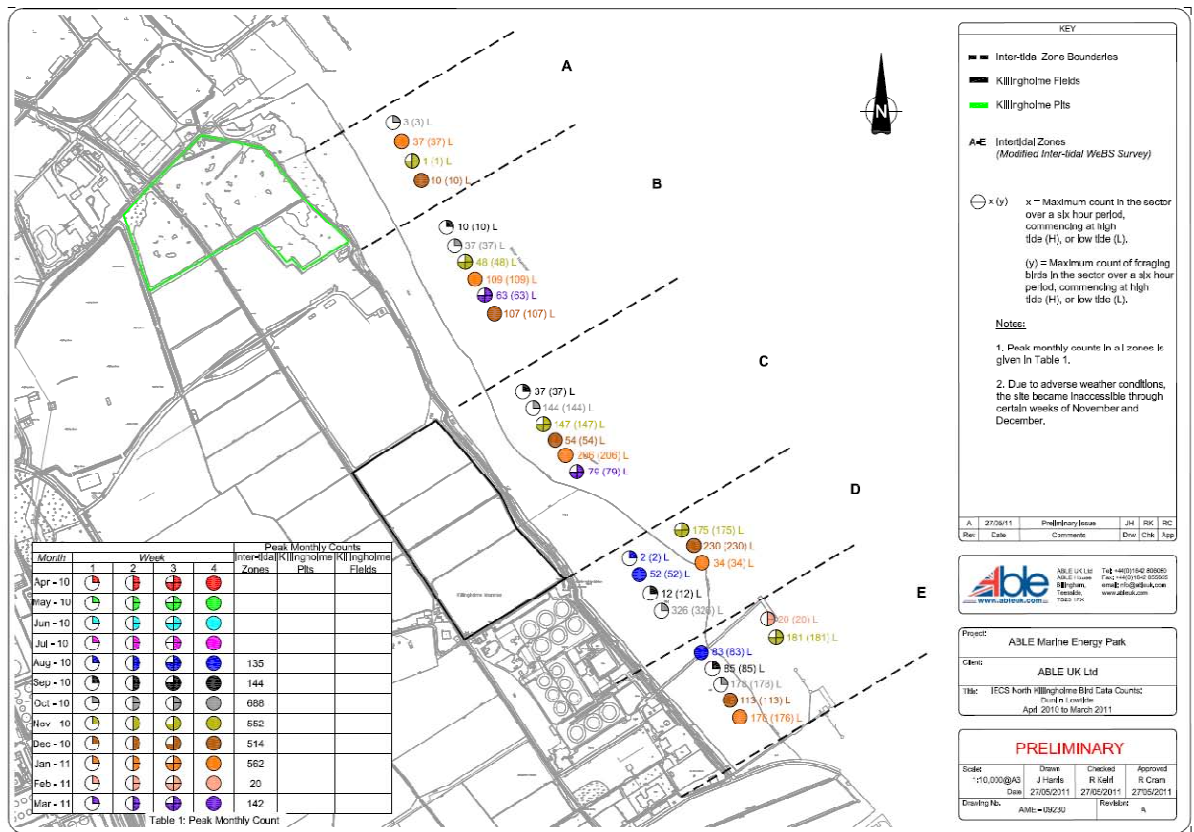


Figure 32: Dunlin Low-tide Counts

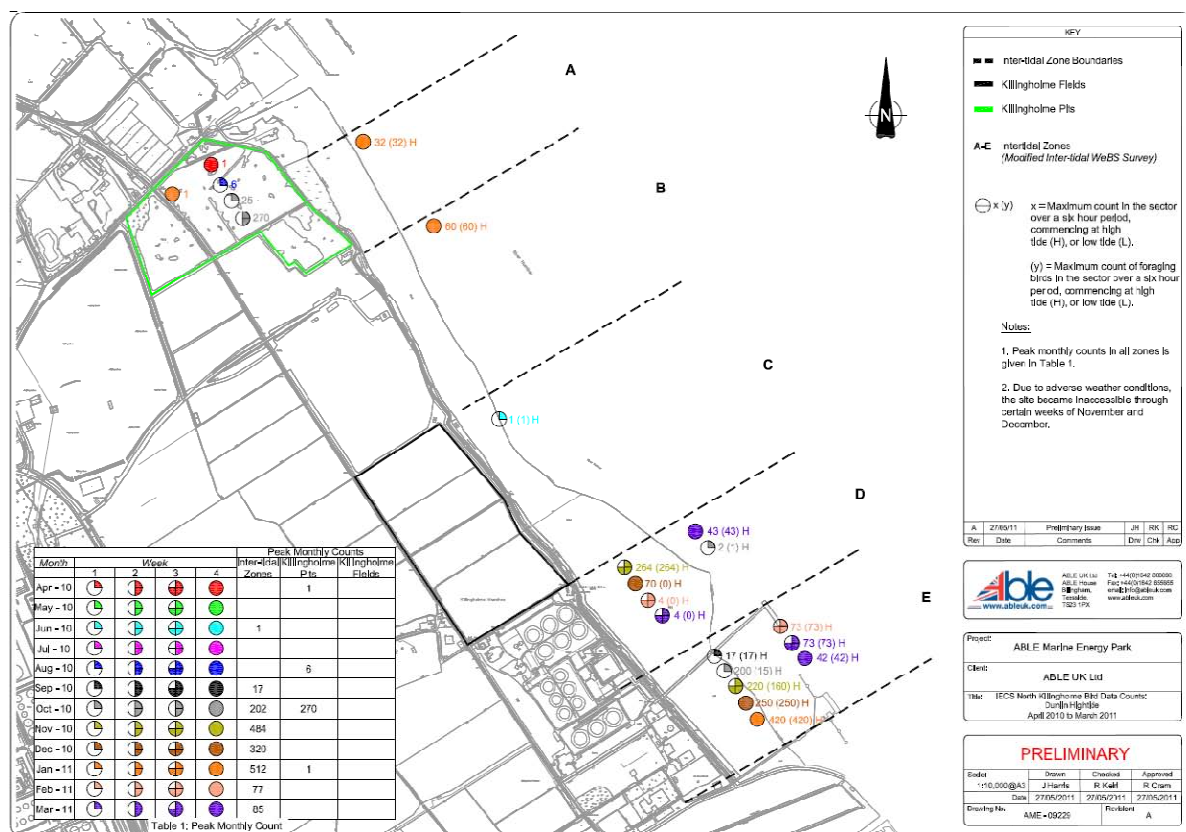


Figure 33: Dunlin High-tide Counts

### 3.25 Ruff (*Philomachus pugnax*)

#### 3.25.1 PROTECTION & CONSERVATION STATUS

3.25.1.1 The Ruff is protected under Schedule I Part I of the Wildlife and Countryside Act 1981, Annexes I and II of the Wild Birds Directive and the Appendices of the Bern (III) and Bonn (II) Conventions. It is also listed in the African-Eurasian Waterbird Agreement. This species is a Red List Species of Conservation Concern (UK).

#### 3.25.2 BACKGROUND INFORMATION

3.25.2.1 The Humber Estuary is a nationally important site for Ruff with a 5-year mean of 64 birds, with the counts peaking in October during the passage period (Calbrade *et al.*, 2010).

3.25.2.2 Birds are thinly distributed around the estuary on passage with the largest concentrations at Blacktoft Sands, where flocks of 100 plus are not uncommon (Allen *et al.*, 2003). Occasional birds over-winter.

#### 3.25.3 FINDINGS

3.25.3.1 Ruff was a scarce passage migrant to the survey site. Two birds were recorded on the intertidal zone in late August and September.

3.25.3.2 No birds were recorded in the North Killingholme Haven Pits.

### **3.26 Snipe (*Gallinago gallinago*)**

#### **3.26.1 PROTECTION & CONSERVATION STATUS**

3.26.1.1 The Snipe is protected under Schedule II Part I and Schedule III Part III of the Wildlife and Countryside Act 1981, Annexes I and II of the Wild Birds Directive and the Appendices of the Bern (III) and Bonn (II) Conventions. It is also listed in the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

#### **3.26.2 BACKGROUND INFORMATION**

3.26.2.1 Snipe are widely distributed on wet meadows and saltmarsh throughout the estuary during passage periods and may winter in small numbers, but there has been little effective surveying for this species in the recent past.

#### **3.26.3 FINDINGS**

3.26.3.1 No birds were recorded on the intertidal zone and the Snipe was a scarce passage migrant at the North Killingholme Haven Pits.

3.26.3.2 The species was recorded on passage in both April (both surveys) and October with a peak count of six birds. Due to their elusive nature they may have been under-recorded but this pattern is typical for a species that does not breed or winter at the site.

### **3.27 Black-tailed Godwit (*Limosa limosa*)**

#### **3.27.1 PROTECTION & CONSERVATION STATUS**

3.27.1.1 The Black-tailed Godwit is protected under Schedule I Part I of the Wildlife and Countryside Act 1981. It is listed in Annex II of the Wild Birds Directive, Appendix II of the Bonn Convention, Appendix III of the Bern Convention. This species is also a Red List Species of Conservation Concern (UK).

#### **3.27.2 BACKGROUND INFORMATION**

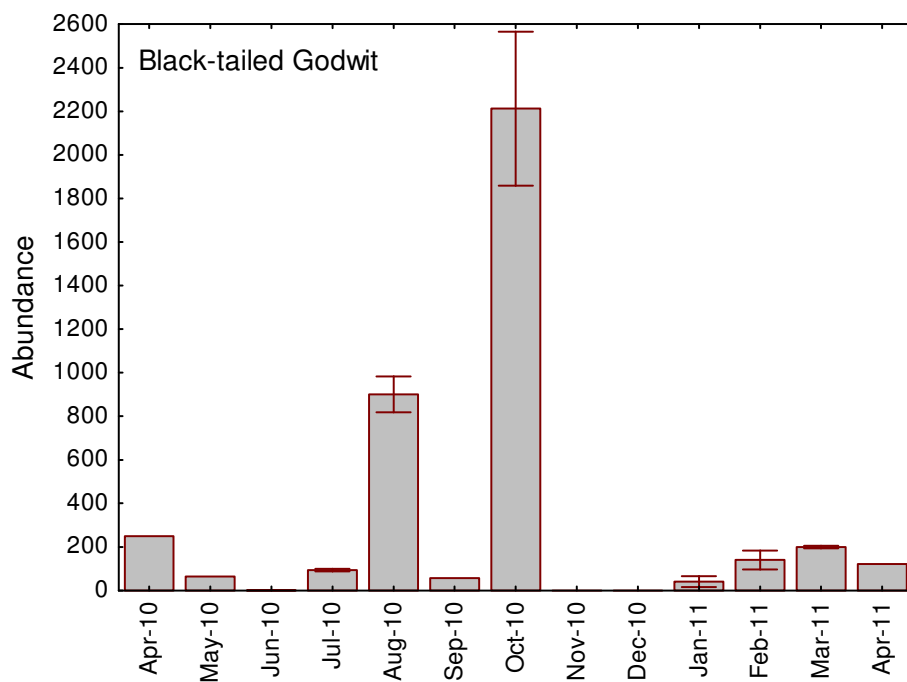
3.27.2.1 Since the mid-1990s and up to 2004/05, the UK wintering numbers of the species have been increasing in line with those of the flyaway population, a rise considered partly attributable to higher productivity achieved on the Icelandic breeding grounds, combined with the high quality of stop-over sites in Portugal where Godwits feed primarily on buried rice kernels in flooded ploughed fields (Lourenco and Piersma, 2008).

3.27.2.2 The Humber population has mirrored the national increase over the last 10 years. The Humber is the fourth most important site for this species in the UK with a 5-year average of 3,887 birds (Calbrade *et al.* 2010).

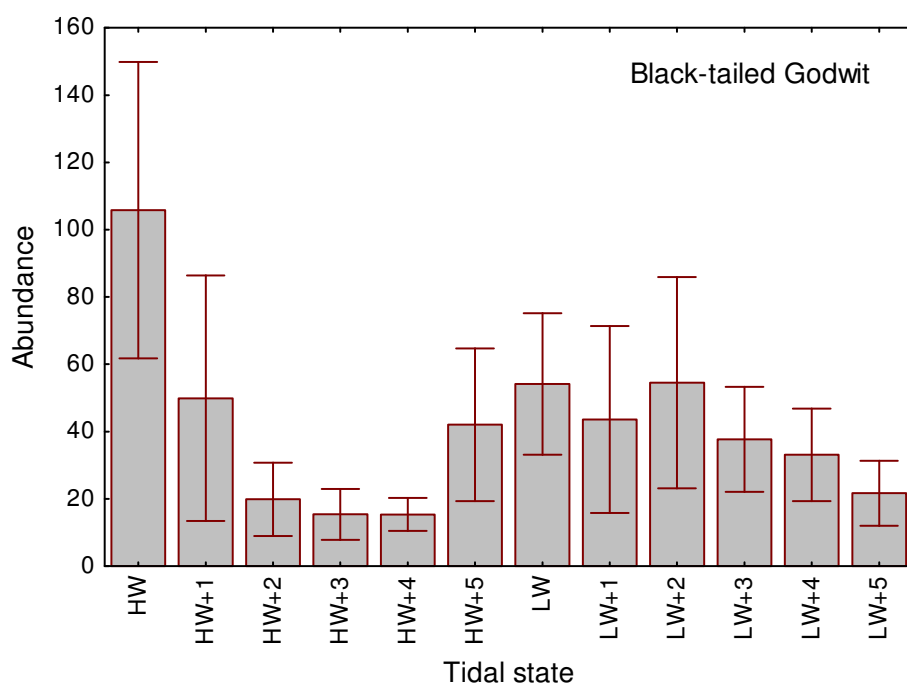
3.27.2.3 The population on the Humber Estuary is reliant on a few sites, especially during the winter months. In autumn, large flocks can occur between Paull and Spurn and the realignment site at Paull Holme Strays has become a stronghold for roosting and loafing Black-tailed Godwits in early autumn i.e. August and September. An important roost site has become established for the species on the North Killingholme Pits wetland.

### 3.27.3 FINDINGS

- 3.27.3.1 Black-tailed Godwit is an extremely common passage migrant and common winter visitor to the area surveyed.
- 3.27.3.2 The North Killingholme Haven Pits and the intertidal zone hold internationally important numbers of Black-tailed Godwits during the return passage period (August to October) with the Pits also holding internationally important numbers during the spring migration (April).
- 3.27.3.3 The peak counts of 3,800 birds in the Pits and 2,566 birds on the intertidal zone represent 25.3% and 17.1% of the UK population respectively. This suggests that most, if not all, Black-tailed Godwits within the Humber Estuary at peak times roost at the North Killingholme Haven Pits and that a large proportion of these also use the intertidal zone.
- 3.27.3.4 Birds were only absent in November and December on the intertidal zone although this may be due to adverse weather conditions. The species may be present throughout during a more typical winter. Small numbers returned to the intertidal zone in January. As well as internationally important numbers throughout August and October, nationally important numbers were present on the intertidal zone during the spring passage i.e. February to April with a peak of 250 birds in late April. (Figure 34). Usage across the tidal cycle was the highest at high water (Figure 35).
- 3.27.3.5 At low and high tides, birds were more frequently distributed in Zones D and E and to a lesser extent Zone C (**Figure 36** and **Figure 37**). Zones A and B are the least frequently used at low water but still held flocks of 90 and 267 birds respectively .
- 3.27.3.6 Usage of the Pits was similar to that of the intertidal zone but with internationally important numbers in April (500 birds) and nationally important numbers in July (250 and 270 birds). Aside from November and December which have already been mentioned, June and January were the only months with no birds roosting on the Pits.



**Figure 34: Monthly variation in the mean numbers of Black-tailed Godwit on the intertidal zone ( $\bar{x} \pm SE$ )**



**Figure 35: Tidal variation in the mean numbers of Black-tailed Godwit on the intertidal zone ( $\bar{x} \pm SE$ )**



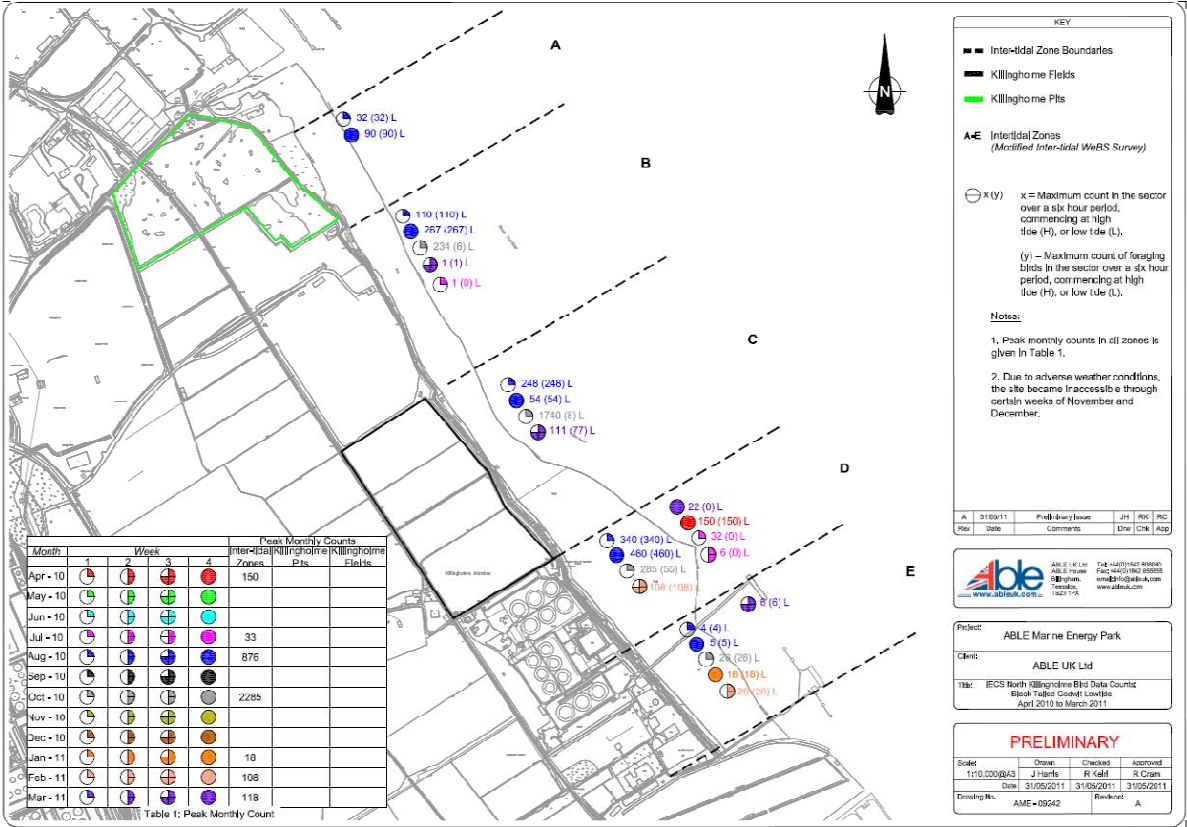


Figure 36: Black-tailed Godwit Low-tide Counts

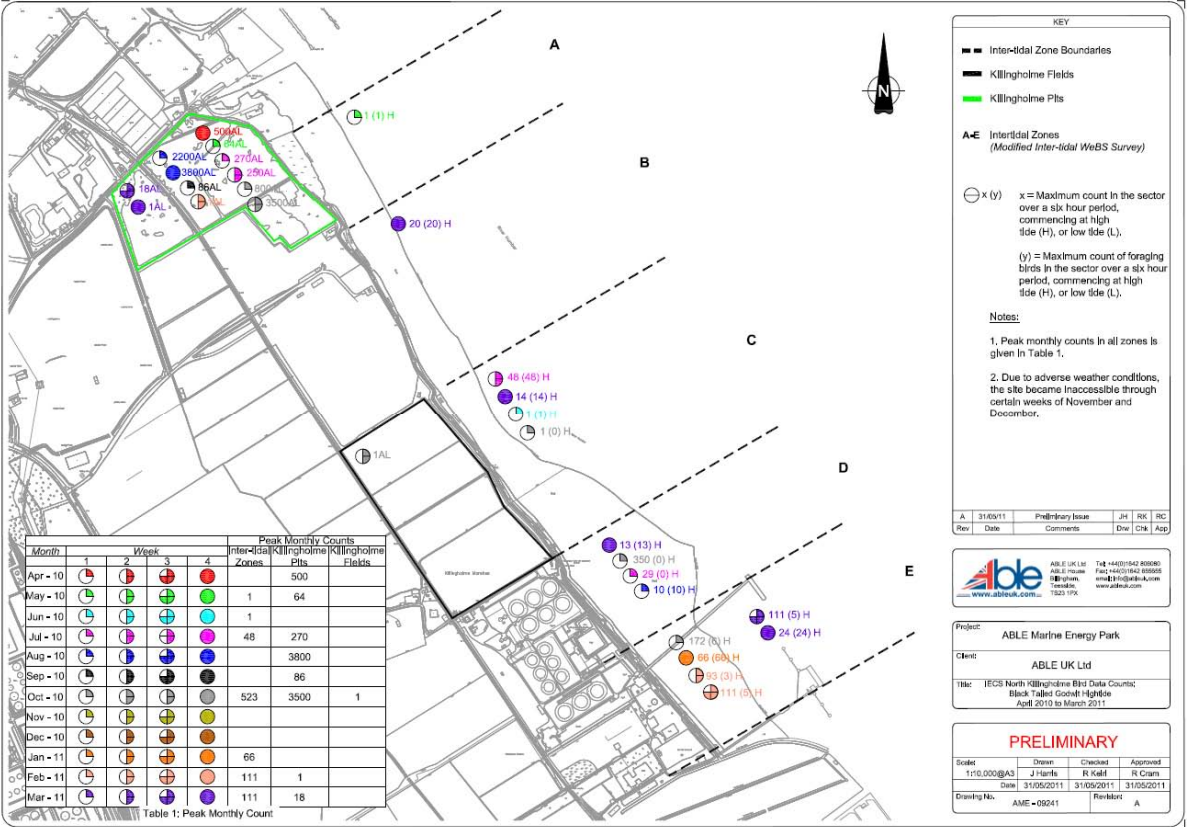


Figure 37: Black-tailed Godwit High-tide Counts

### **3.28 Bar-tailed Godwit (*Limosa lapponica*)**

#### **3.28.1 PROTECTION & CONSERVATION STATUS**

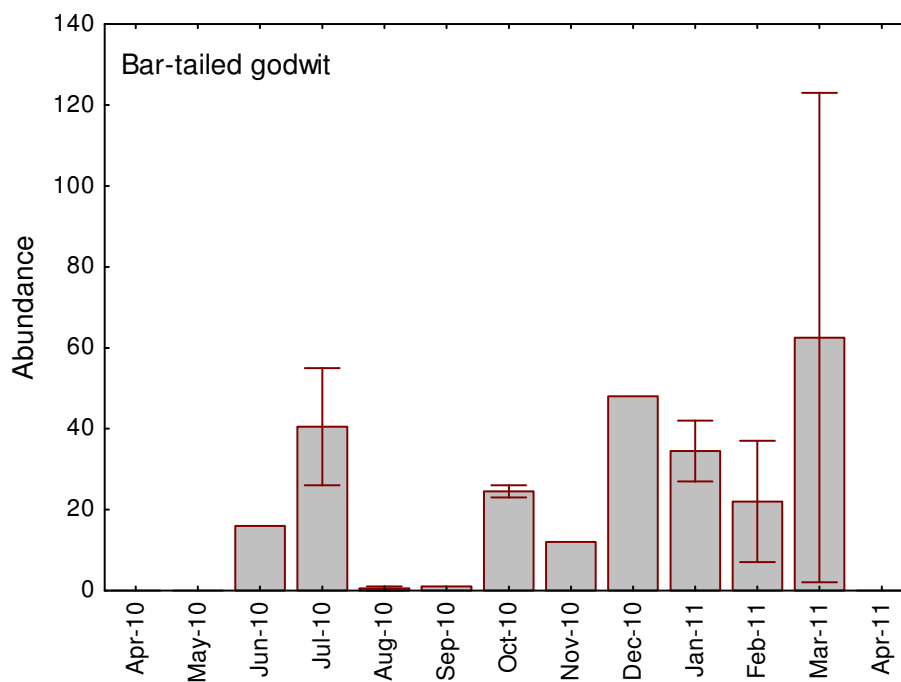
- 3.28.1.1. The species is listed in Annex I and II of the Wild Birds Directive, Appendix II of the Bonn Convention and Appendix III of the Bern Convention. This species is an Amber List Species of Conservation Concern (UK).

#### **3.28.2 BACKGROUND INFORMATION**

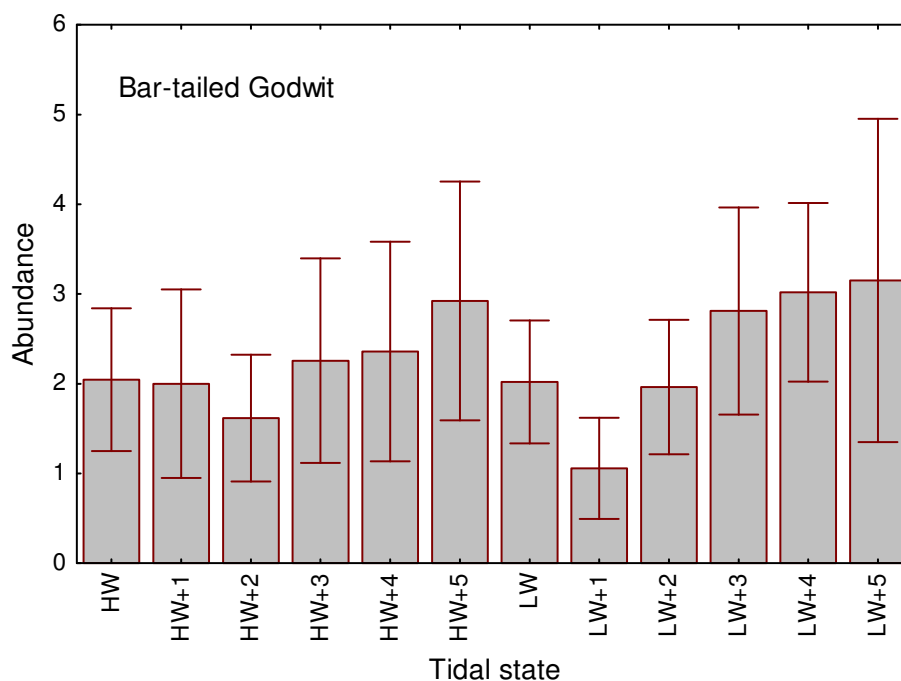
- 3.28.2.1. Paull Holme Strays / Saltend on the north bank and Immingham docks on the south bank generally mark the upstream boundary of key usage by the species as, on the Humber, the majority of records are concentrated around the extensive muddy sand flats of the outer estuary. Peak usage on the Humber Estuary occurs in the mid winter period (Mander & Cutts, 2005; Catley, 2000).

#### **3.28.3 FINDINGS**

- 3.28.2.1. Bar-tailed Godwits were a common winter and passage visitor to the survey area with a small summering population (non-breeders).
- 3.28.2.2. Bar-tailed Godwits were present on the intertidal zone in all months with the exception of April and May (**Figure 38**). The intertidal zone was not nationally important for this species with a maximum count of 123 birds in late March. However, the maximum count represented 2% of the Humber population. The peak in March reflected the passage as birds begin to leave the estuary towards their breeding grounds in February, peaking in March (Allen *et al.*, 2003). A second peak in late July would suggest the return passage of Bar-tailed Godwits. Numbers fell again in late summer before increasing with wintering birds increasing to a peak of 48 birds in December (**Figure 38**).
- 3.28.2.3. Bar-tailed Godwits favoured Zones D and E with smaller numbers using Zone C. Very few birds used Zones A and B (**Figure 39** and **Figure 40**).
- 3.28.2.4. Bar-tailed Godwits were present in the North Killingholme Haven Pits at high water in late summer in small numbers amongst very large numbers of Black-tailed Godwits. A peak of four birds was recorded in mid October with birds also present in August and September (**Figure 41**).



**Figure 38: Monthly variation in the mean numbers of Bar-tailed Godwit on the intertidal zone ( $\bar{x} \pm \text{SE}$ )**



**Figure 39: Tidal variation in the mean numbers of Bar-tailed Godwit on the intertidal zone ( $\bar{x} \pm \text{SE}$ )**

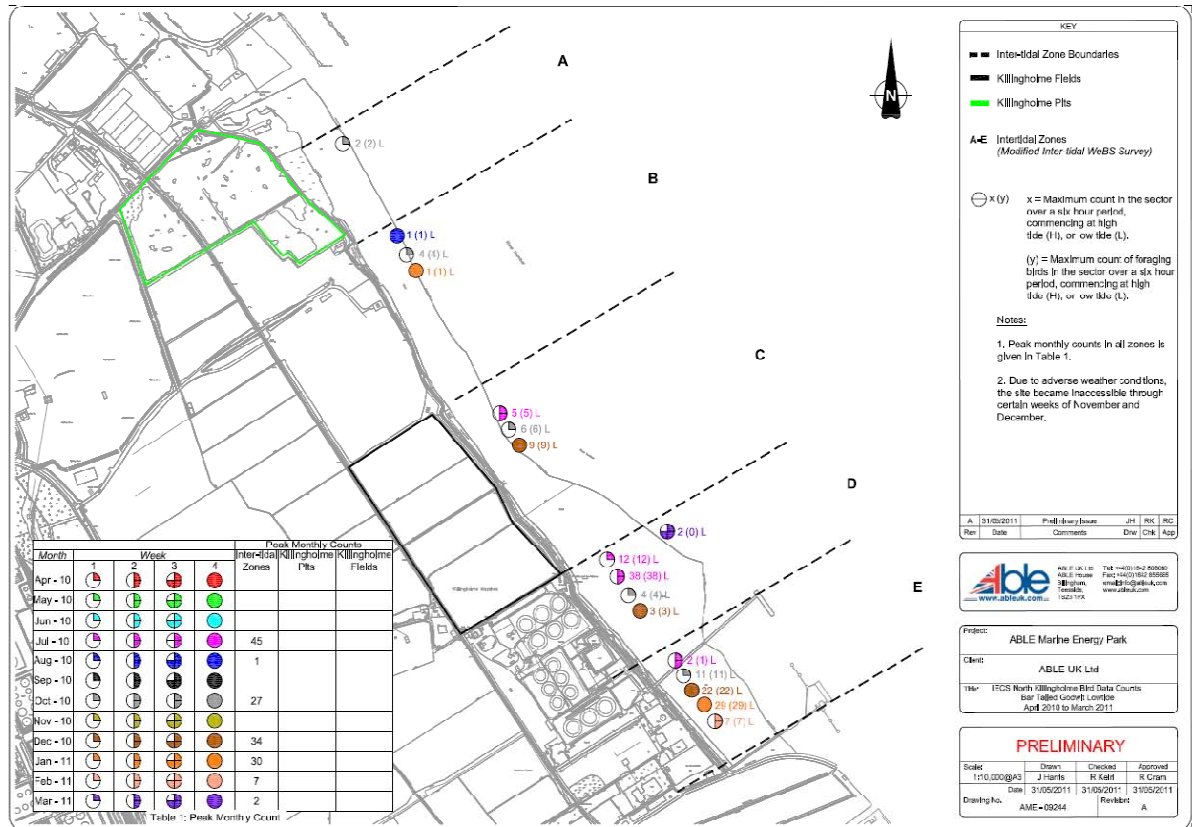


Figure 40: Bar-tailed Godwit Low-tide Counts

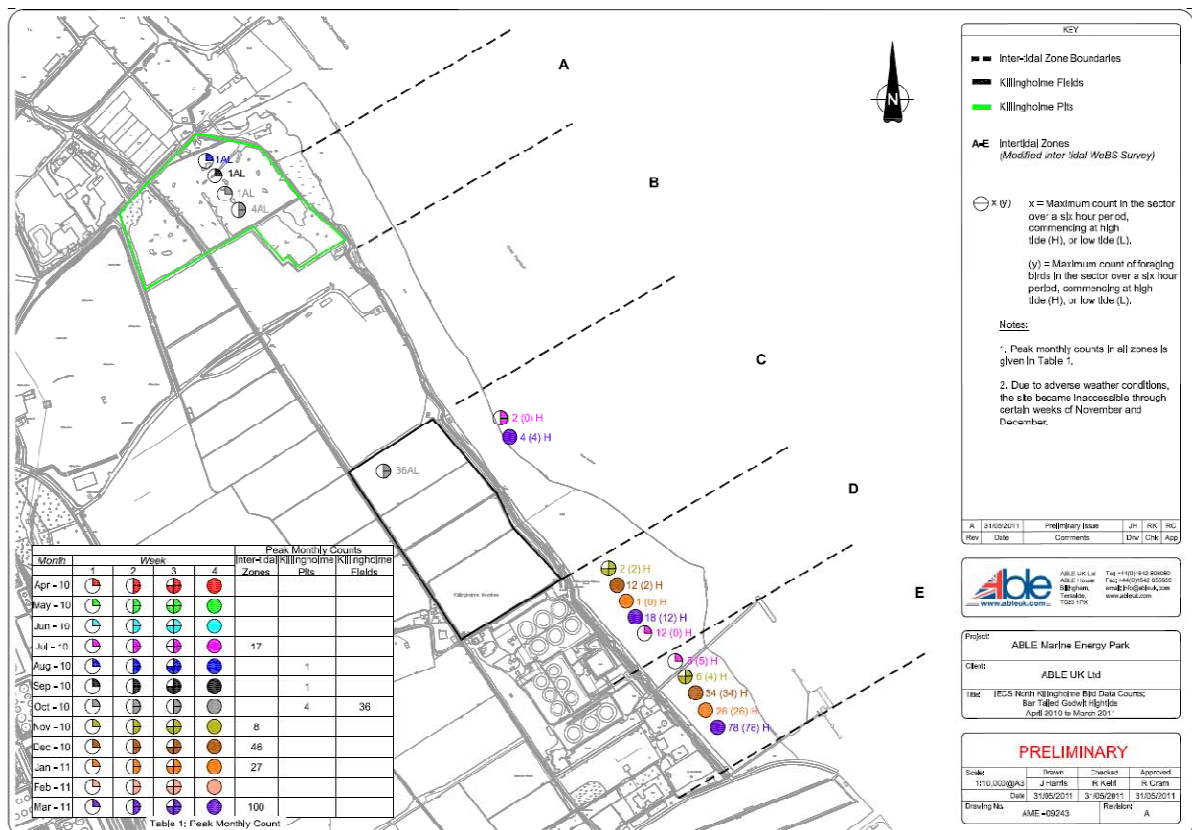


Figure 41: Bar-tailed Godwit High-tide Counts

### **3.29 Curlew (*Numenius arquata*)**

#### **3.29.1 PROTECTION & CONSERVATION STATUS**

3.29.2.1. The Curlew is listed on Annex II of the Wild Birds Directive, Appendix III of the Bern Convention and Appendix II of the Bonn Convention. It is also listed in the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.29.2 BACKGROUND INFORMATION**

3.29.2.1. Curlew features a widespread distribution over the Humber area during the autumn and winter period, with large flocks feeding on the intertidal habitats. However, they are also widely found in inland fields, feeding on adjacent arable and pasture land around the estuary, as well as further inland in some areas.

#### **3.29.3 FINDINGS**

3.29.3.1. Curlews were a common non-breeding, passage and wintering birds on the intertidal zone. Although the species was frequently recorded at the North Killingholme Haven Pits, the numbers were very low at high water.

3.29.3.2. Curlews were present on the intertidal zone during all surveys with a minimum of 26 birds in late April and a maximum of 158 birds in late March (**Figure 42**). The site was not of national importance for Curlew but supported c. 3.5% of the Humber population in March. Over 100 birds were recorded in July, August, January, February and March.

3.29.3.3. Birds used all zones on the intertidal area with peak numbers in the south of the site principally in Zone D. Numbers decreased further north on the site although birds were recorded in Zones A and B regularly (**Figure 44** and **Figure 45**).

3.29.3.4. Birds were recorded on the roost at North Killingholme Haven Pits on 15 out of 19 surveys, with a peak count of seven in early October and early March.

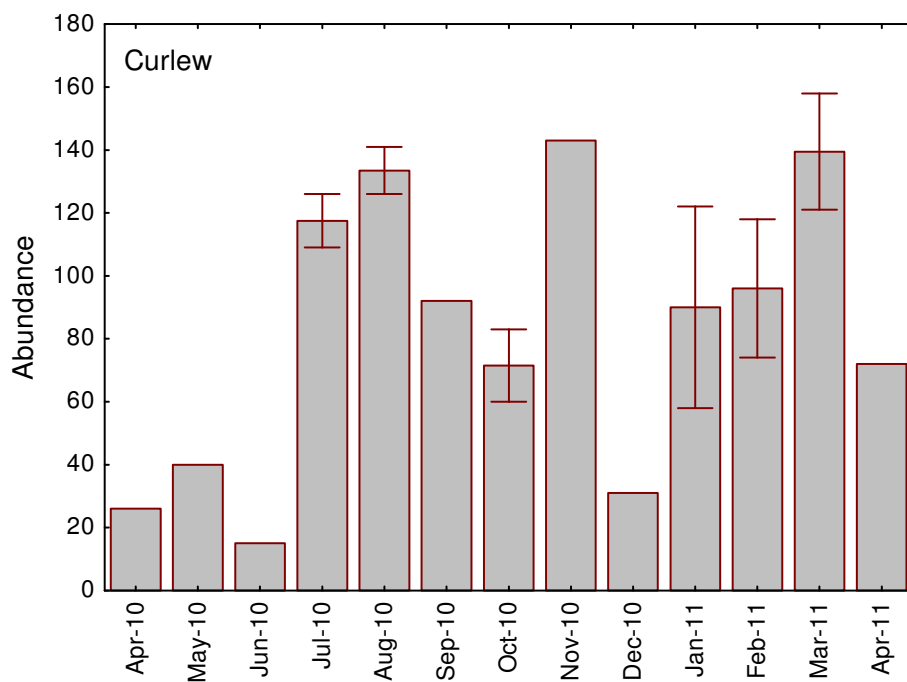


Figure 42: Monthly variation in the mean numbers of Curlew on the intertidal zone ( $\bar{x} \pm SE$ )

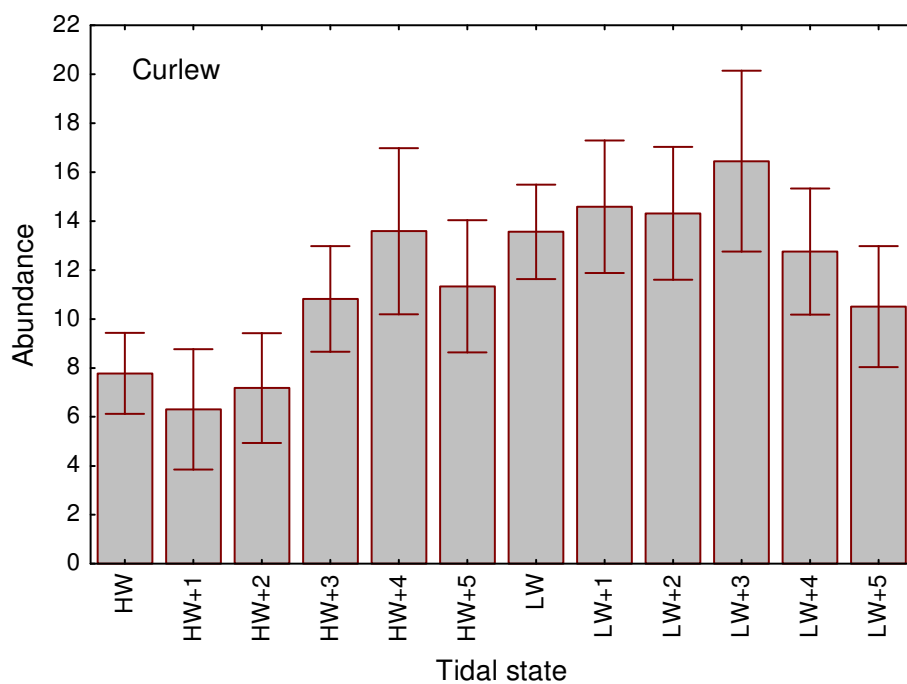


Figure 43: Tidal variation in the mean numbers of Curlew on the intertidal zone ( $\bar{x} \pm SE$ )



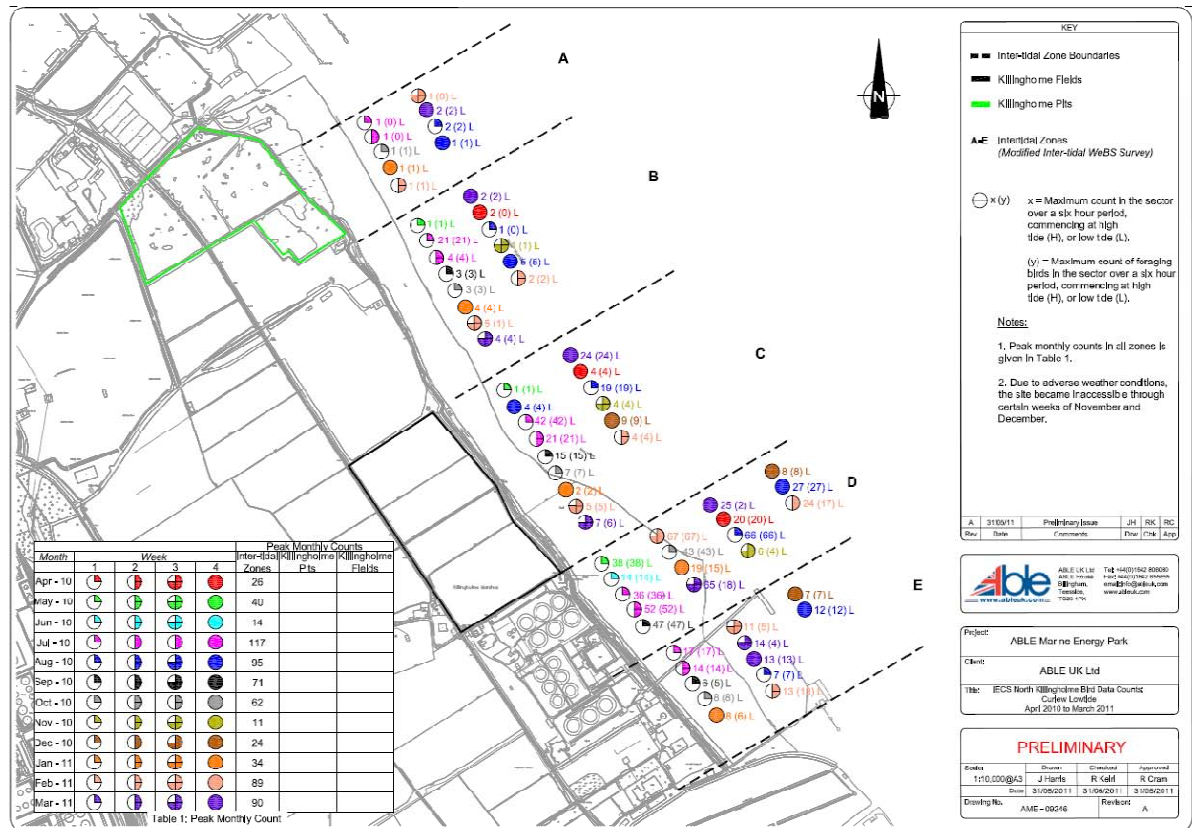


Figure 44: Curlew Low-tide Counts

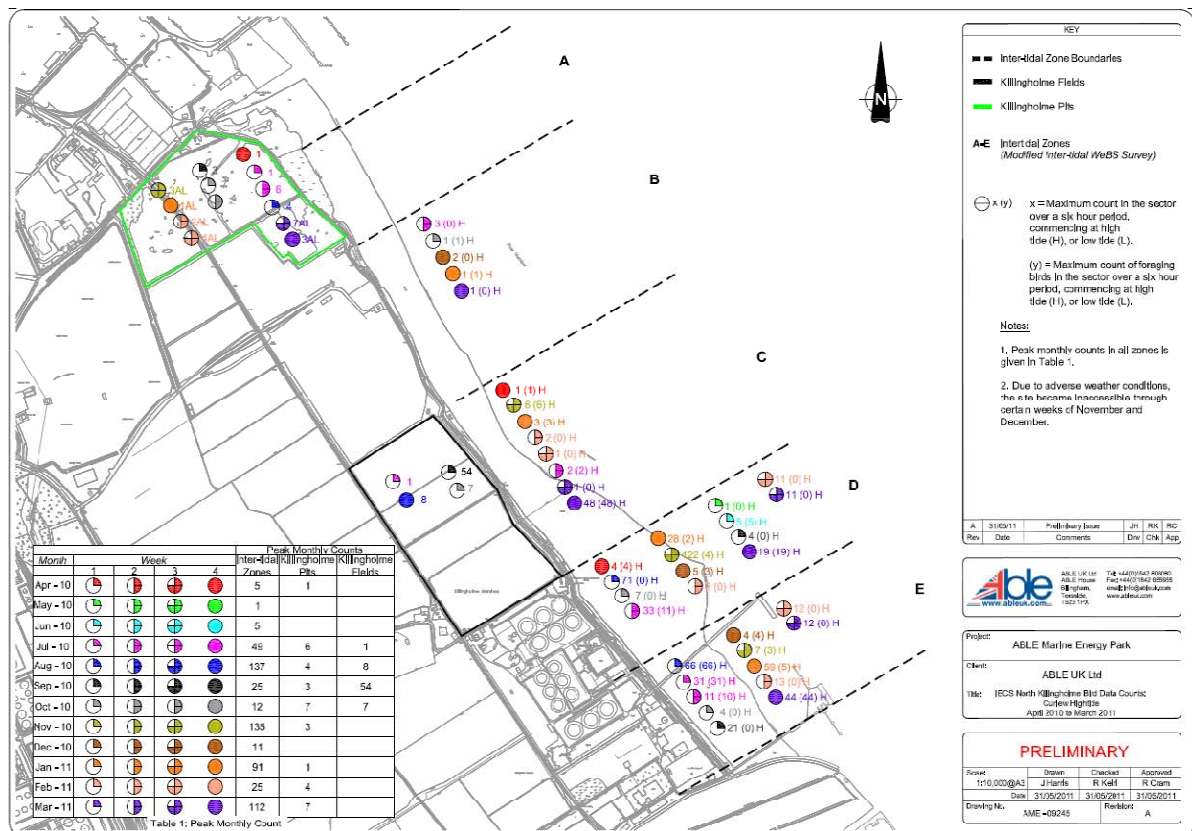


Figure 45: Curlew High-tide Counts



### **3.30 Common Sandpiper (*Actitis hypoleucos*)**

#### **3.30.1 PROTECTION & CONSERVATION STATUS**

3.30.1.1. The Common Sandpiper is listed Appendix III of the Bern Convention and Appendix II of the Bonn Convention and the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.30.2 BACKGROUND INFORMATION**

3.30.2.1. The Common Sandpiper is a casual passage migrant on the Humber. The estuary is not nationally important for this species which often favours freshwater wetlands. However, the Common Sandpiper may be encountered throughout the estuary during passage periods, chiefly August (Authors pers. obs. 2011).

#### **3.30.3 FINDINGS**

3.30.3.1. Common Sandpipers were scarce autumn migrants at the site.

3.30.3.2. Small numbers of Common Sandpipers were seen on return passage in July and August across the intertidal zone. The latter month featured a peak maximum of three birds in late August.

3.30.3.3. Singles were recorded in the North Killingholme Haven Pits during early July and both August surveys. In a national context August is the peak month for passage Common Sandpiper (Calbrade *et al.*, 2010).

### **3.31 Redshank (*Tringa totanus*)**

#### **3.31.1 PROTECTION & CONSERVATION STATUS**

3.31.1.1. The Redshank is listed in Annex II of the Wild Birds Directive and Appendix III and II of the Bern and Bonn Conventions respectively. The Redshank is also listed in the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### **3.31.2 BACKGROUND INFORMATION**

3.31.1.1. The Redshank is one of the most widespread species in the Humber Estuary. The Humber Estuary is an internationally important site for Redshank and the fourth most important site for this species in the UK (Calbrade *et al.*, 2010).

3.31.1.2. The species shows a preference for the upper shore of the intertidal habitat, in particular creek networks and saltmarsh fringes. Outside the breeding season, the 2003/04 low tide counts found the intertidal areas between Saltend and Spurn to support over 70% of the Redshank present on the Humber (Mander and Cutts, 2005). Redshank are very site faithful to their wintering site and relatively sedentary within the estuary, feeding close to their roosting habitats i.e. saltmarsh.

3.31.1.3. Allen *et al.* (2003) mentions that Redshanks are a widely distributed breeding bird around the Humber estuary with Tetney marshes the key site with 41 pairs in 2002. Data for the Humber population is incomplete but breeding is suspected on most areas of saltmarsh.

### 3.31.3 FINDINGS

3.32.3.1. Redshank was a very common passage and wintering species at MEP site.

3.32.3.2. A peak count of 540 birds was recorded on the intertidal zone in late August. This was the highest count achieved for the species by a considerable margin with 226 birds in early October the next highest count. The intertidal zone is not of national importance for this species (Threshold of 1,200 birds, Calbrade *et al.*, 2010). Counts of over 100 birds were recorded between August and February with the exception of December (when there was snow covering on the foreshore and temperatures around -10C). 55 birds in late April were the only sign of spring migration and the species was absent during the breeding zone on the intertidal zone (May, June and July).

3.32.3.3. Birds were recorded on the North Killingholme Haven Pits roost on 17 out of 19 occasions with an absence in December and June. A maximum count of 249 birds recorded in late August coincided with the largest Black-tailed Godwit roost. Other counts of over 100 birds occurred in early August, September and late October.

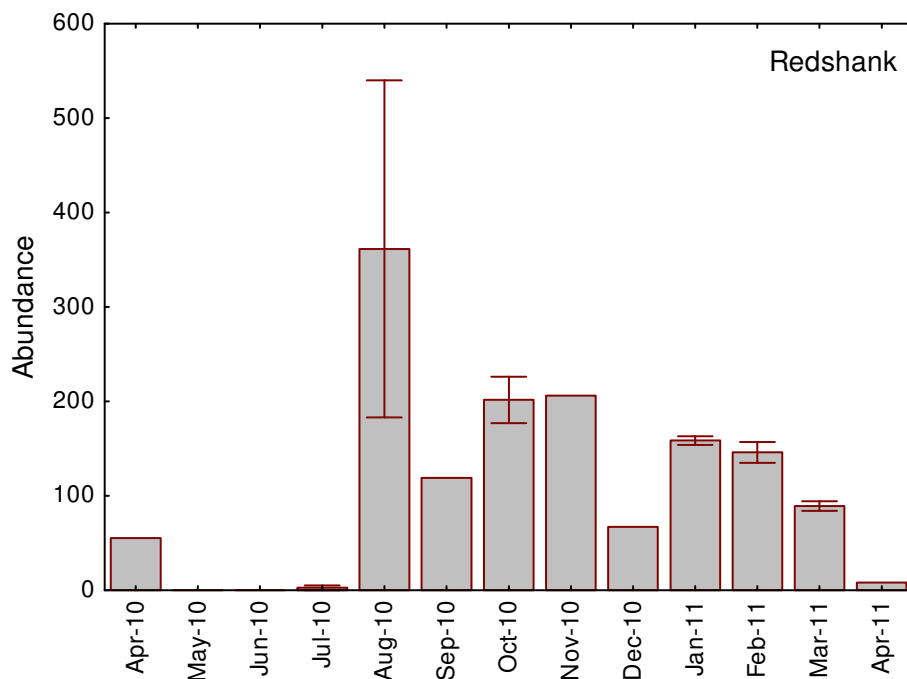


Figure 46: Monthly variation in the mean numbers of Redshank on the intertidal zone ( $\bar{x} \pm SE$ )

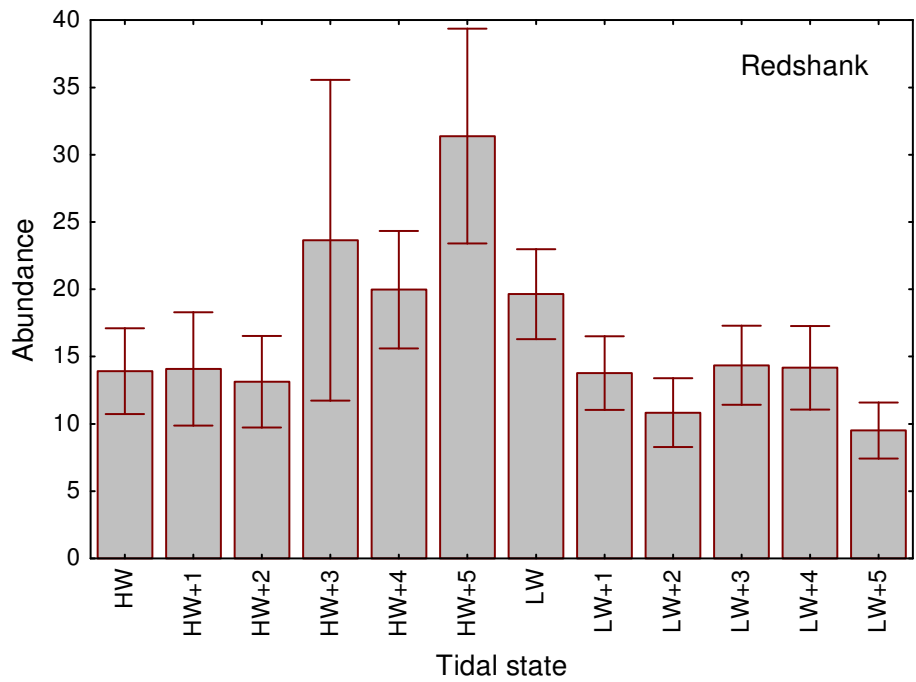


Figure 47: Tidal variation in the mean numbers of Redshank on the intertidal zone ( $\bar{x} \pm SE$ )

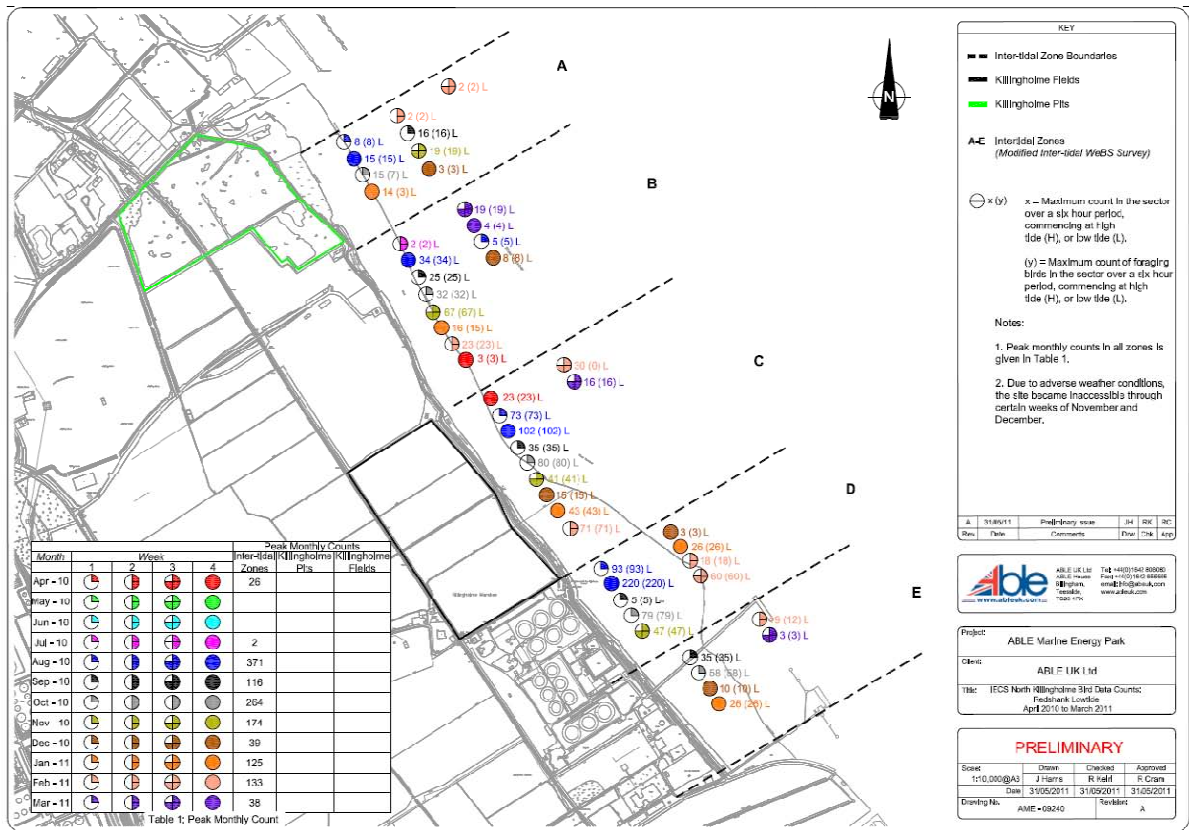
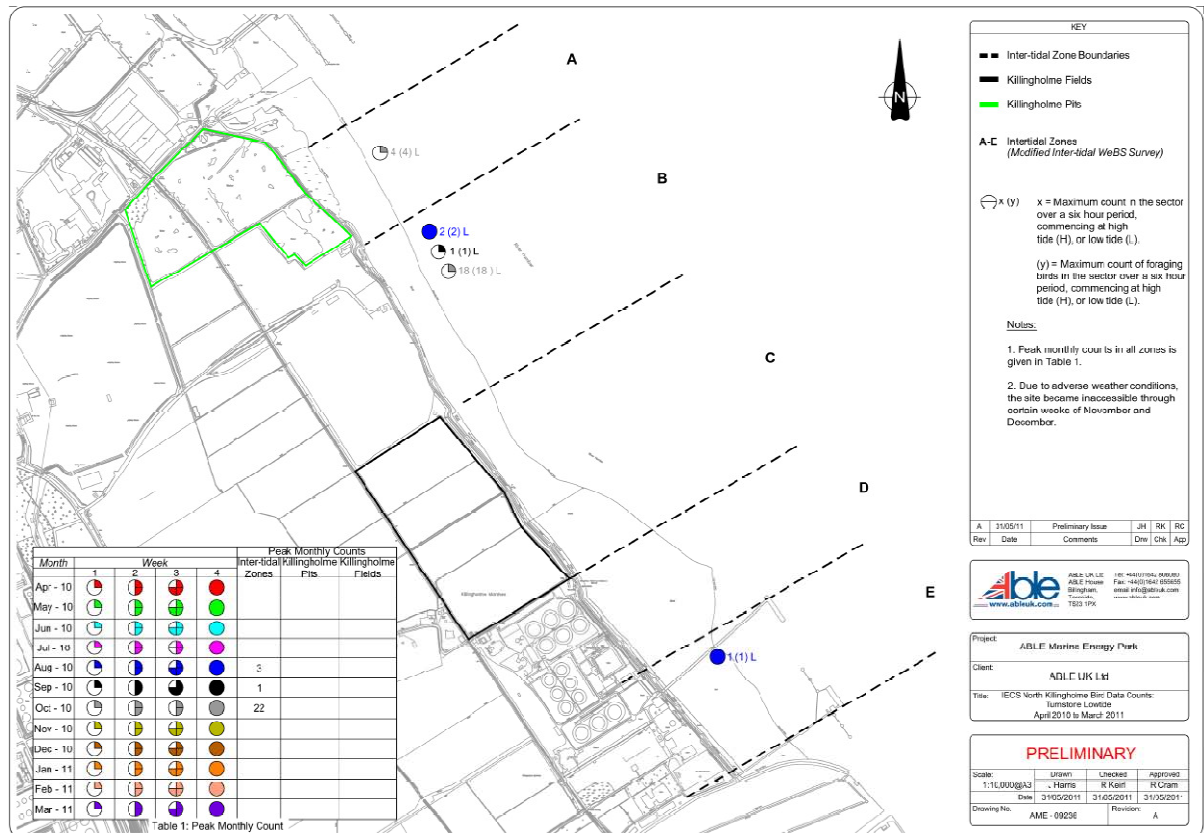


Figure 48: Redshank Low-tide Counts



3.32.3.2. A maximum of 22 birds were recorded in early October (**Figure 50**). No birds were recorded in the high tide roost in the North Killingholme Haven Pits.



**Figure 50: Turnstone Low-tide Counts**

### 3.33 Black-headed Gull (*Chroicocephalus ridibundus*)

#### 3.33.1 PROTECTION & CONSERVATION STATUS

3.33.1.1. The Black-headed Gull is listed on Annex II of the Wild Birds. This species is on the UK Amber List of Species of Conservation Concern.

#### 3.33.2 BACKGROUND INFORMATION

3.33.2.1. The Black-headed Gull remains the most abundant species of gull on the Humber. The species is found to occur in highest numbers during the autumn passage whilst the spring period features the least numbers of birds (Mander and Cutts, 2005). The Humber Estuary no longer meets the national importance threshold for this species but this is likely to be due to poor reporting as no full counts have been submitted for 5+ years. Despite this 7,865 were recorded in 2008/9 (Calbrade *et al.*, 2010).

#### 3.33.3 FINDINGS

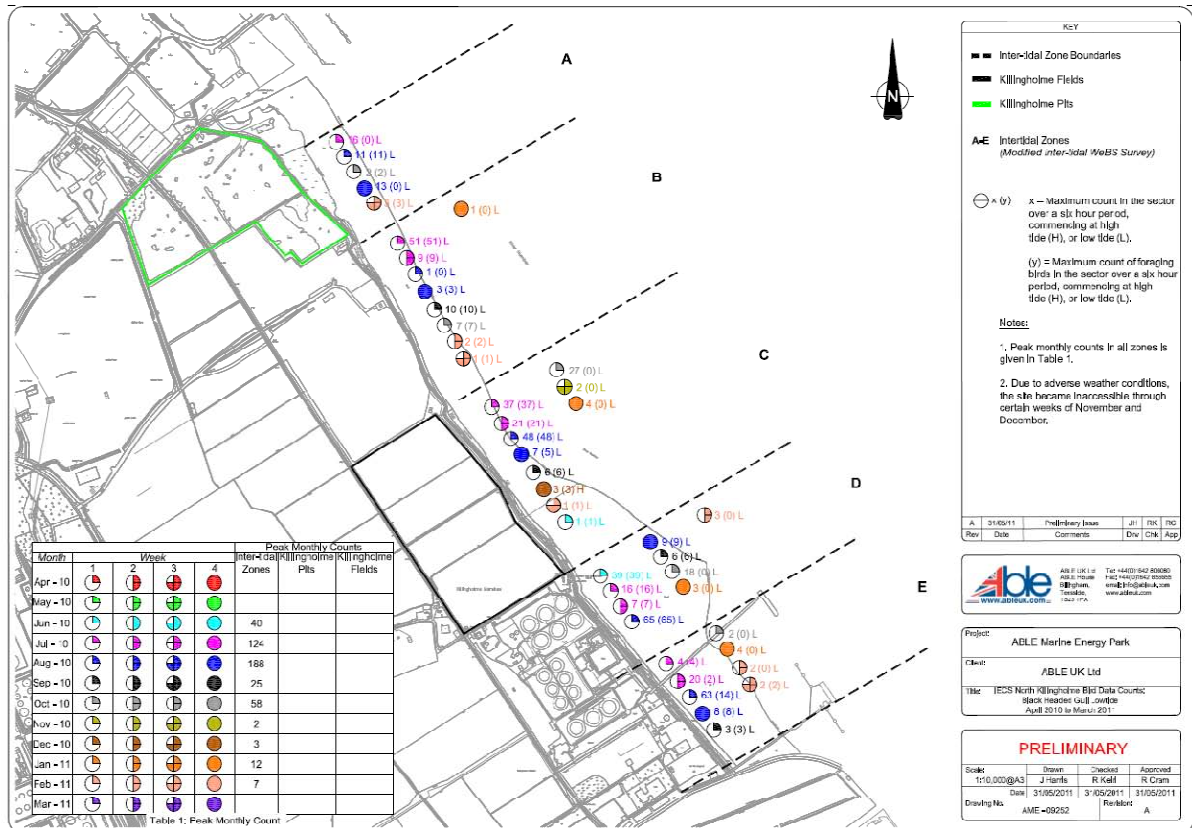
3.33.3.1. A common non-breeding, passage and winter visitor to the site, Black-headed Gulls were recorded in all surveys except for the spring. A low tide peak count of 188 birds was recorded in early August with counts of over 100 birds in early July until



late August. The mid-summer increase would be attributable to post-breeding dispersal.

3.33.3.2. Birds were widely distributed at low tide (**Figure 51**) but with the greatest concentrations found in Zones D and E at high tide (**Figure 52**).

3.33.3.3. The species was recorded seven times in the North Killingholme Haven Pits at high water with double figure counts in late July, early August and late February. The peak count of 41 birds was recorded in late August.



**Figure 51: Black-headed Gull Low-tide Counts**

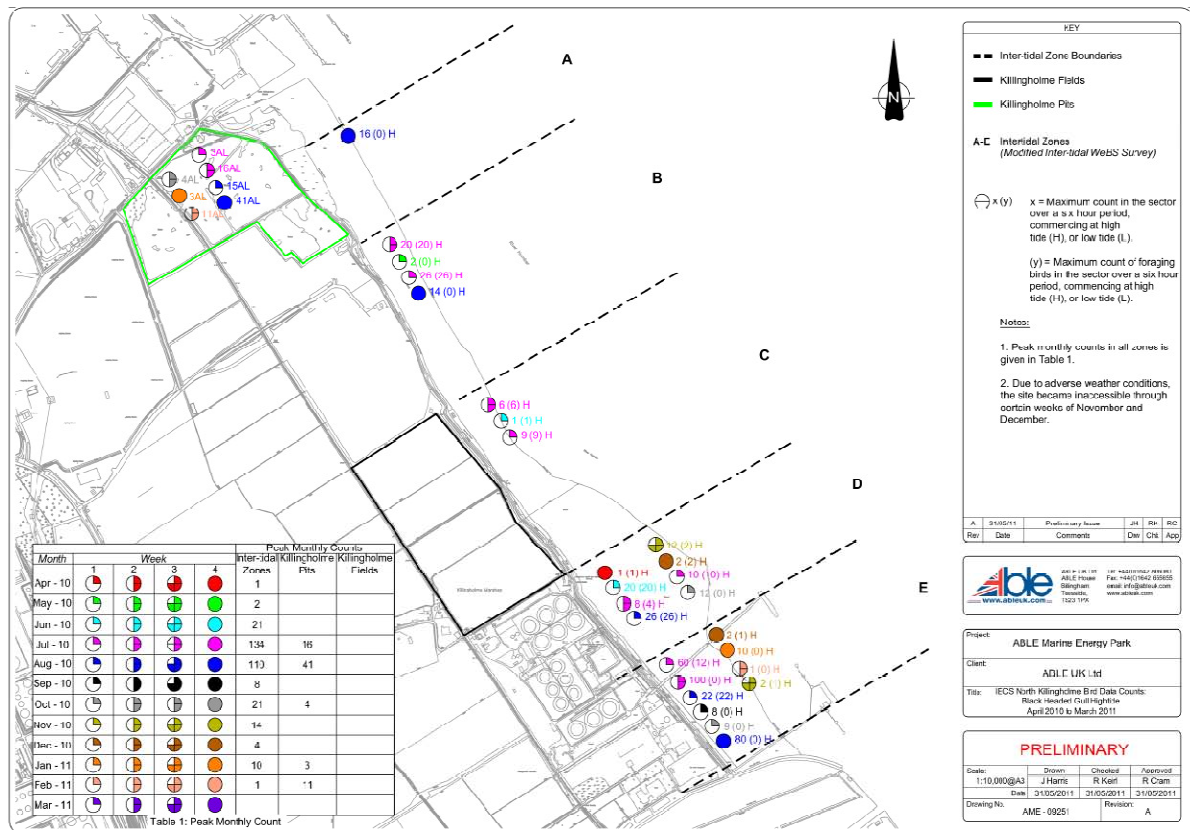


Figure 52: Black-headed Gull High-tide Counts

### 3.34 Mediterranean Gull (*Ichthyaeetus melanocephalus*)

#### 3.34.1 PROTECTION & CONSERVATION STATUS

3.34.1.1. The Mediterranean Gull is protected under Schedule I Part I of the Wildlife and Countryside Act 1981, Annex I of the Wild Birds Directive and the Appendices of the Bern (III) and Bonn (II) Conventions. It is also listed in the African-Eurasian Waterbird Agreement. This species is an Amber List Species of Conservation Concern (UK).

#### 3.34.2 BACKGROUND INFORMATION

3.34.2.1. Casual observations suggest that Mediterranean Gull is an increasing post-breeding visitor to the Humber, especially at Far Ings in mid-summer amongst mixed flocks of gulls (Authors pers. obs. 2011) but the estuary-wide status is unclear.

3.34.2.2. The status of the Mediterranean Gull is increasing as a UK breeding bird and it has recently gained a tenuous foothold in Yorkshire. Mediterranean Gulls regularly winter in Yorkshire in small numbers and passage birds can be expected to pass through the estuary.

#### 3.34.3 FINDINGS

3.34.3.1. A rare passage migrant to the site. Mediterranean Gulls were recorded on a single survey with a maximum count of two birds in late August. There were no birds recorded in the North Killingholme Pits.



### 3.35 Great Black-backed Gull (*Larus marinus*)

#### 3.35.1 PROTECTION & CONSERVATION STATUS

3.35.1.1. The Great Black-backed Gull is listed on Annex II of the Wild Birds Directive. This species is on the UK Amber List of Species of Conservation Concern.

#### 3.35.2 BACKGROUND INFORMATION

3.35.2.1. The species is present throughout the year, although over the spring and summer Great Black-backed Gull sightings are less numerous.

3.35.2.2. The latest published WeBS data provides a five-year mean of 226 birds on the Humber Estuary (Calbrade *et al.*, 2010).

#### 3.35.3 FINDINGS

3.35.3.1. Whilst Great Black-backed Gulls were regularly recorded on the intertidal zone, the species was absent from the North Killingholme Haven Pits (Figure 53 and Figure 54).

3.35.3.2. The population peaked in September with 36 birds at low tide.

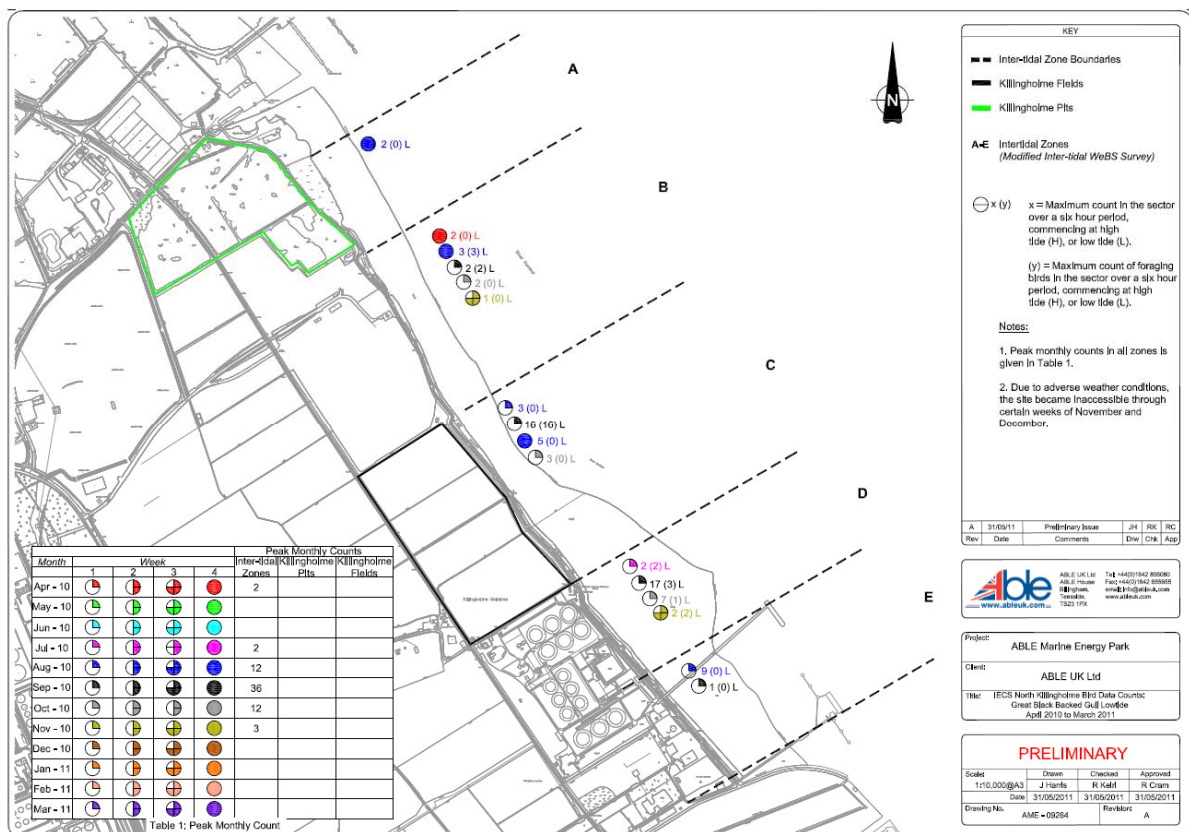


Figure 53: Great Black-backed Gull Low-tide Counts

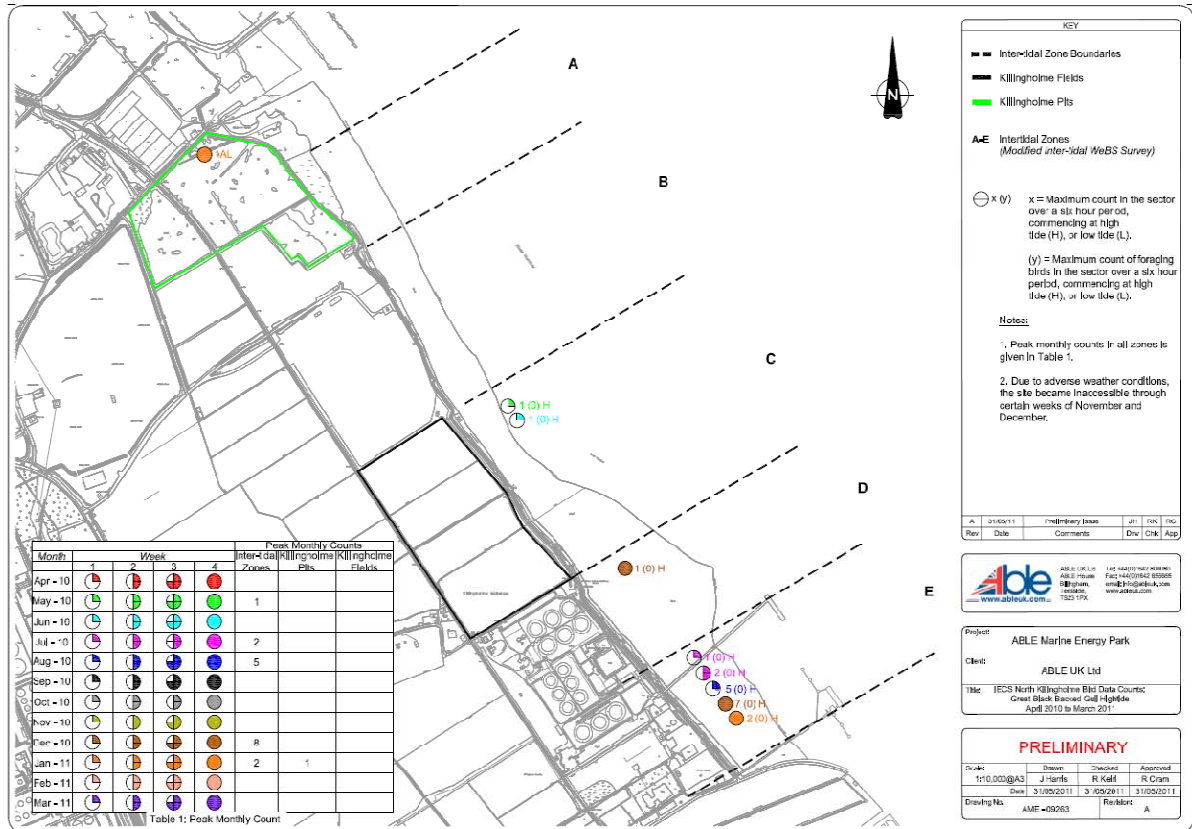


Figure 54: Great Black-backed Gull High-tide Counts

### 3.36 Common Gull (*Larus canus*)

#### 3.36.1 PROTECTION & CONSERVATION STATUS

3.36.1.1. The Common Gull is listed in Annex II of the Wild Birds Directive, Appendix III of the Bern Convention and in the African-Eurasian Waterbird Agreement. This species is also an Amber List Species of Conservation Concern (UK).

#### 3.36.2 BACKGROUND INFORMATION

3.36.2.1. The Humber Estuary does not meet the national importance threshold for this species but this may be due to poor reporting as gull numbers for the Humber have not been fully recorded in WeBS data for a number of years (Calbrade *et al.*, 2010), with 2,005 birds recorded in 2004. Birds are widely distributed around the estuary, feeding on mudflats and in adjacent fields and other habitats.

#### 3.36.3 FINDINGS

3.36.2.1. Common Gulls were a regular passage migrant and winter visitor to the survey area.

3.36.2.2. The early January survey produced a peak count of 73 birds at high water plus two hours. Double figure counts were also recorded in late February, early April, May, late July and early August at different tidal states. This pattern of occurrence is consistent with the timing of spring and autumn migration. The peak count at low water was of 17 birds in August (Figure 55).

3.36.2.3. Two birds were recorded from the high tide roost in late February in the North Killingholme Haven Pits (Figure 56).

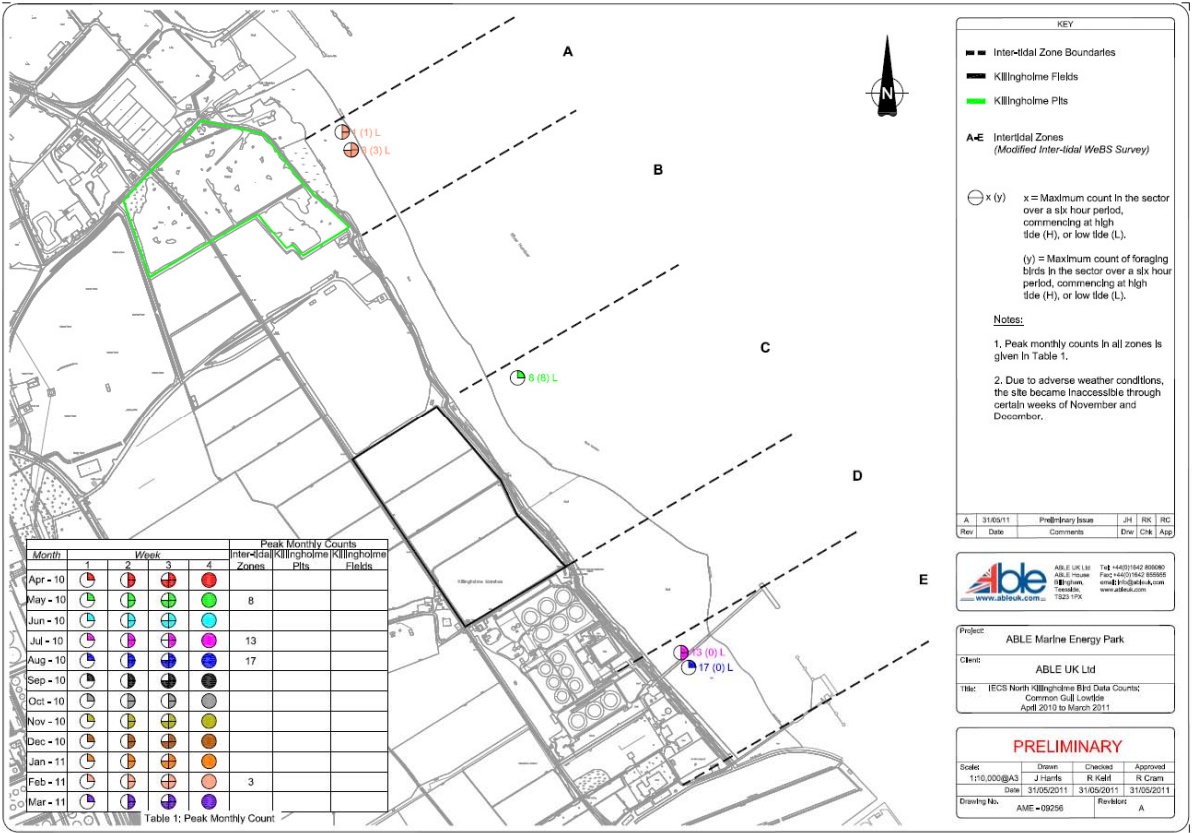


Figure 55: Common Gull Low-tide Counts

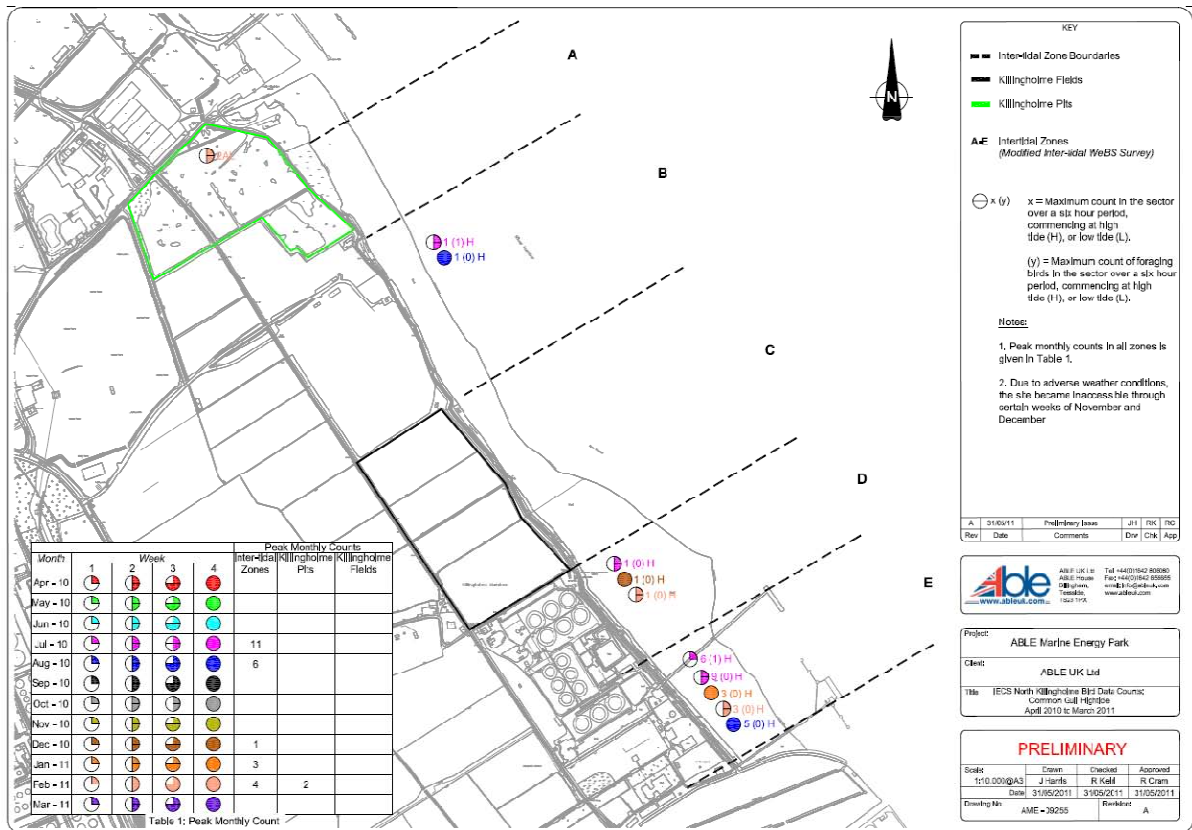


Figure 56: Common Gull High-tide Counts

### 3.37 Lesser Black-backed Gull (*Larus fuscus*)

#### 3.37.1 PROTECTION & CONSERVATION STATUS

3.37.1.1. The Lesser Black-backed Gull is listed on Annex II of the Wild Birds Directive. This species is on the UK Amber List of Species of Conservation Concern.

#### 3.37.2 BACKGROUND INFORMATION

3.37.2.1. Lesser Black-headed Gulls have only recently established a breeding status around the Humber Estuary. There is passage of birds in autumn and very few birds winter on the Humber estuary Estuary (Mander and Cutts, 2005). Birds which breed around the estuary generally winter in western Britain and Iberia. The species is most commonly recorded in the inner estuary in summer.

#### 3.37.3 FINDINGS

3.37.2.1. The Lesser Black-backed Gull is an uncommon post-breeding visitor to the intertidal zone. No birds were recorded in the North Killingholme Haven Pits.

3.37.2.2. All birds were recorded during the post-breeding period between July and September (Figure 57 and Figure 58Figure 54). A peak count of 12 birds was recorded in Zone E in September at high tide.



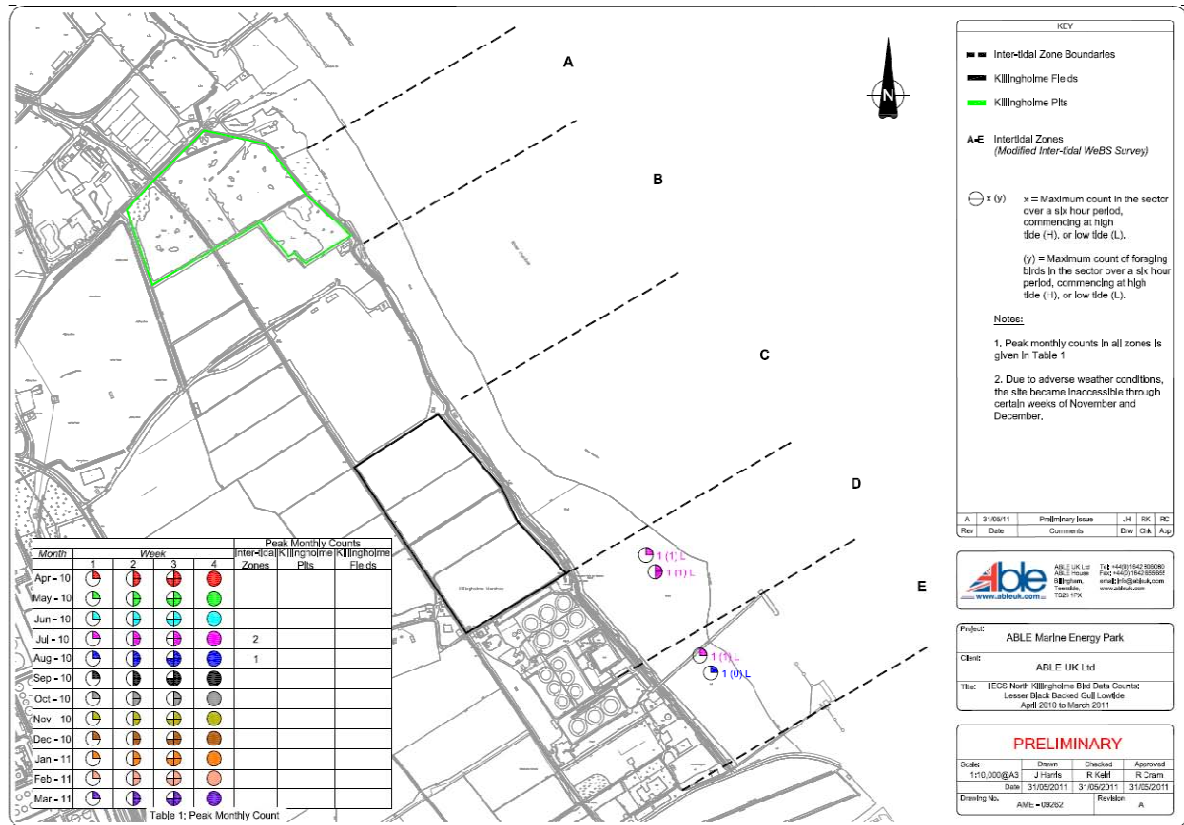


Figure 57: Lesser Black-backed Gull Low-tide Counts

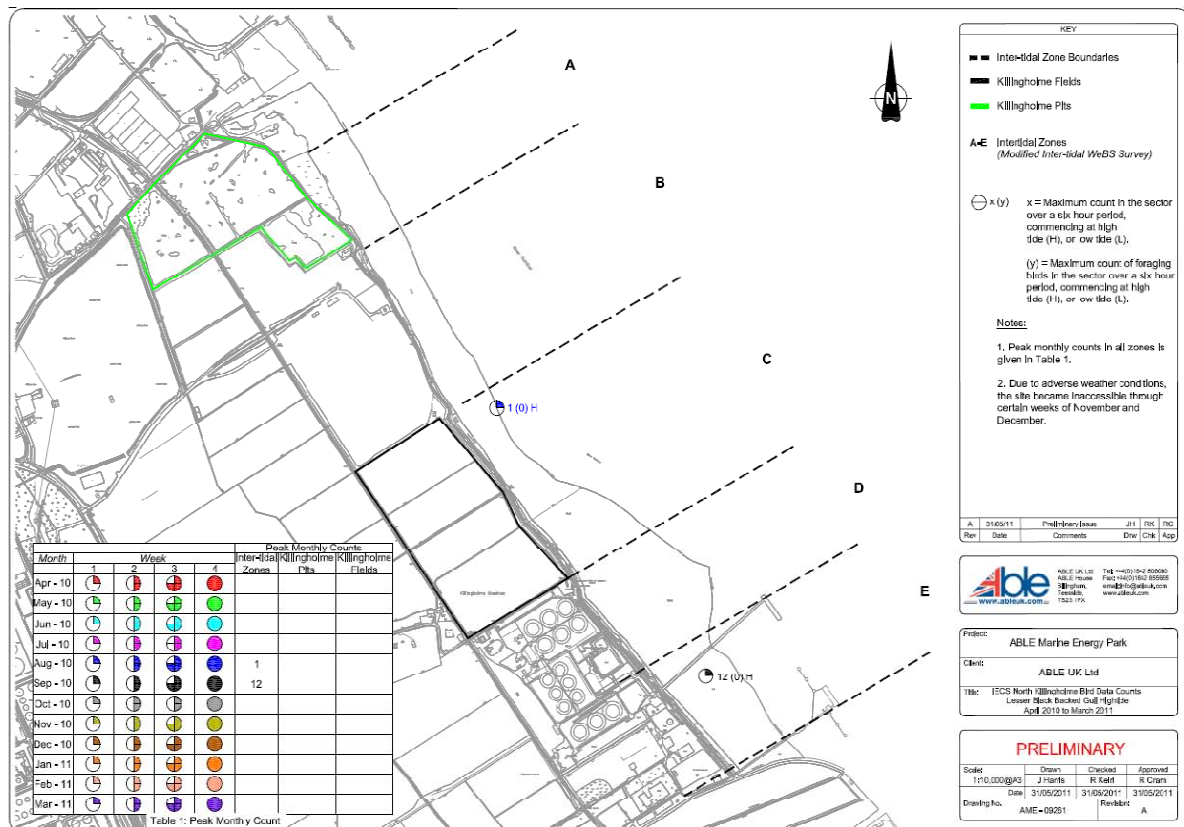


Figure 58: Lesser Black-backed Gull High-tide Counts

### 3.38 Herring Gull (*Larus argentatus*)

#### 3.38.1 PROTECTION & CONSERVATION STATUS

3.38.1.1. The Herring Gull is listed on Annex II of the Wild Birds Directive. This species is on the UK Red List of Species of Conservation Concern.

#### 3.38.2 BACKGROUND INFORMATION

3.38.2.1. The majority of Herring Gulls breed on or close to the coast and breeding habitats includes cliffs, beaches, moorland and urban roof tops. When not breeding, Herring Gulls can be found anywhere around and off the coast. While the Herring Gull has catholic tastes in food, its speciality if any, is for feeding in the intertidal zone.

3.38.2.2. There is no WeBS population estimate for the Humber Estuary for the species. The 2003/04 low tide count programme recorded a peak of 535 birds in October 2003 (Mander and Cutts, 2005). The data indicated a dip in usage during the mid-winter months with less than 30 birds reported in December, January and February on the Humber Estuary.

#### 3.38.3 FINDINGS

3.38.2.1. Non-breeding Herring Gulls were regularly recorded on the intertidal zone between May and October (albeit in very low numbers). Aside from a peak of three birds in October, at low tide there was no discernable pattern of occurrences.

3.38.2.2. There were no records in the North Killingholme Haven Pits.

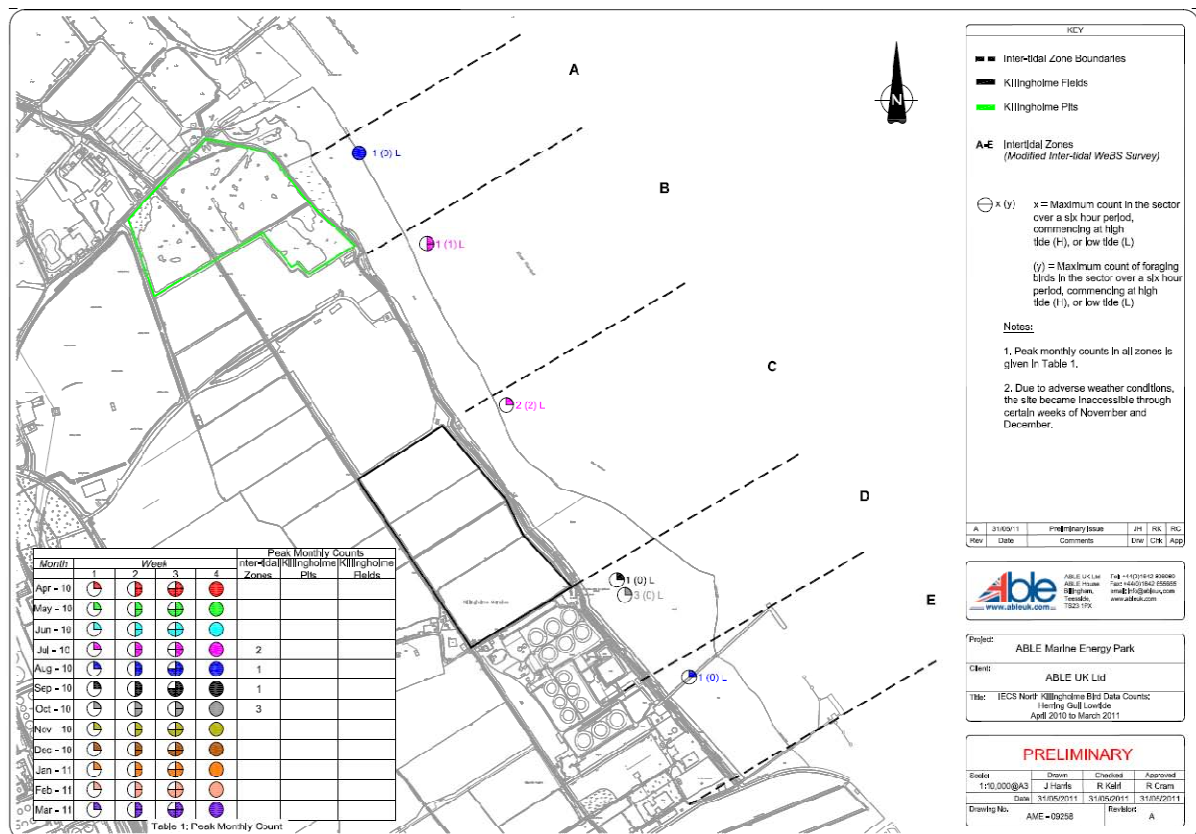


Figure 59: Herring Gull Low-tide Counts

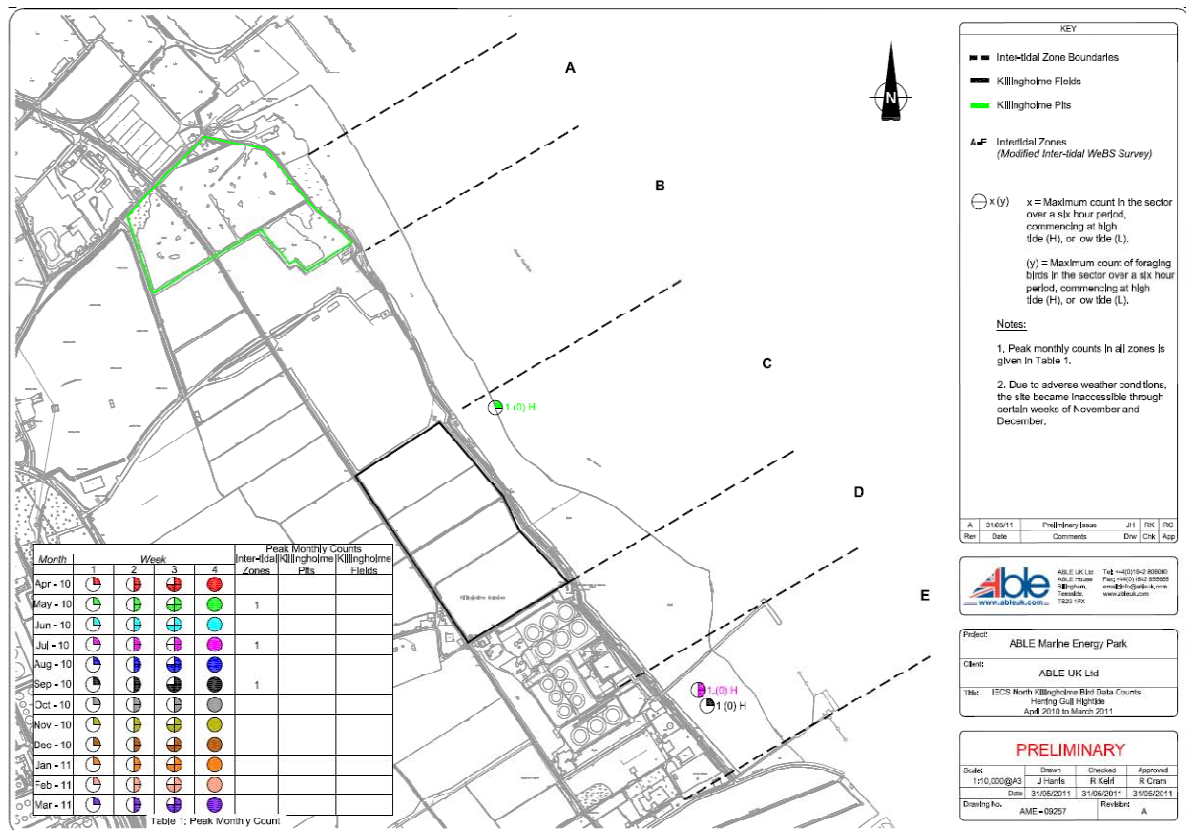


Figure 60: Herring Gull High-tide Counts

### 3.39 Yellow-legged Gull (*Larus michahellis*)

#### 3.39.1 PROTECTION & CONSERVATION STATUS

3.39.1.1. The Yellow-legged Gull is listed in Annex II of the Wild Birds Directive and the African-Eurasian Waterbird Agreement (both under its former scientific name of *L. cachinnans* when it was considered conspecific with Caspian Gull).

#### 3.39.2 BACKGROUND INFORMATION

3.39.2.1. Casual observations suggest that the Yellow-legged Gull is an increasing post-breeding visitor to the Humber, especially Patrington Haven in mid-summer amongst flocks of Lesser Black-backed Gulls although the estuary-wide status is unclear. Calbrade *et al.* (2010) suggest that numbers peak in August in the UK but that the status of the species is clouded by under-recording.

#### 3.39.3 FINDINGS

3.39.3.1. A rare post-breeding visitor to the survey area, a single bird was recorded on the intertidal zone in the second July survey.



## 4. DISCUSSION AND CONCLUSIONS

- 4.1. The data collected between April 2010 and April 2011 are considered to provide adequate baseline information required to assess the value of the intertidal zone and the adjacent North Killingholme Haven Pits site in the context the Humber SPA assemblage. The findings have also been placed into the context of international, national and local (Humber Estuary) populations derived from the WeBS core counts (Calbrade *et al.*, 2010) where appropriate.
- 4.2. The survey programme illustrated the seasonal, monthly and diurnal (tidal) fluctuations in usage by species that occur on the intertidal zone. There can be a high degree of variability between counts, in particular during spring and autumn. Indeed, during this period, there is rapid turnover of waterbirds on the estuarine system, with birds staying on a single site for between only a few days and a few weeks before moving on to the next staging wetland (Davidson *et al.*, 1991). In contrast, during the winter period, populations are more stable, although short distance movements can occur between sites in response to a variety of stimuli such as weather and prey availability (Davidson *et al.*, 1991). It should be noted that the late autumn and early winter of 2010 featured a prolonged hard weather period within the region, and to a large extent nationally. This undoubtedly had some influence on the population size of a number of species using the Humber Estuary over that period.
- 4.3. The surveys highlighted the importance of the intertidal zone for and number of wader species such as Dunlin, Curlew, Redshank and Ringed Plover, but most importantly for Black-tailed Godwit. The surveys confirmed the status of the intertidal zone as a key feeding site for this species on the Humber Estuary, quite probably due to the proximity of the site to the Black-tailed Godwit's high tide roost at the North Killingholme Haven Pits. The peak count of 2,566 Black-tailed Godwit on the intertidal zone of the survey area represented 17.1% of the UK population and 66% of the Humber population. Underlining the importance of this section of the estuary for the species, and this localised importance considered to be primarily being driven by the location of the preferred roost site at North Killingholme Haven Pits. As well as the presence of internationally important numbers of Black-tailed Godwits throughout August and October, nationally important numbers were present on the intertidal zone during the spring passage. The absence of birds in November and December was considered partly due to the adverse weather, although only a low level of usage is expected on the Humber Estuary at this time with the wintering population generally falling to below 500 birds (Allen *et al.*, 2003; Mander and Cutts, 2005).
- 4.4. Clearly the hard weather period during much of November and December created conditions that were unlike those that had been experienced for decades, and as such, usage patterns may not have been representative of a typical winter. However, it remains uncertain as to the level of effect that the hard weather had on waterbird populations using the Humber. The effect of adverse weather conditions on waterbirds is complex and the response often species specific. The cold weather possibly resulted in a net drop in the number of Black-tailed Godwit in the early part of the winter and conversely contributed to a sudden influx of Dunlin during the same period. Indeed, the two largest counts of Dunlin on the intertidal zone were coincident with the adverse weather conditions in November and December. Curlew

and Redshank also appear to have been somewhat affected by the harsh weather conditions with both species showing a clear reduction in numbers in December.

4.5. Despite the inter-monthly fluctuations, it is clear that the intertidal zone present within the MEP development site is important in the context of the Humber population of several waterbird species, with the relatively narrow intertidal zone capable of supporting peak counts of up to 5% of the Humber population of Curlew, Redshank and Dunlin. In addition, the area was found to support large flocks of Ringed Plover during the autumn migration representing up to 28% of the Humber population.

4.6. The Killingholme Haven Pits site, located adjacent to the MEP development was also undoubtedly a very important site for roosting Black-tailed Godwit at high water. The peak count for North Killingholme Haven Pits was 3,800 birds representing 25.3% of the UK population and the entire Humber population. This would suggest that most if not all Black-tailed Godwit using the Humber Estuary at peak periods, using the roost at the North Killingholme Haven Pits.

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