

Annex 35.1

South Killingsholme Phase 1
Ecology Report Cherry Cobb
Sands

(Applied Ecology)



**SOUTH KILLINGHOLME
PHASE 1 ECOLOGY REPORT**

CHERRY COBB SANDS

Report for

Able UK Ltd

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 Applied Ecology Ltd (AEL) was appointed by Able UK Ltd to undertake an extended Phase 1 habitat survey of a land area adjacent to the north shore of the River Humber estuary in an area known as Cherry Cobb Sands, in Yorkshire (central OS grid reference TA 224 209). The survey was requested to help inform the potential ecological impact of a managed realignment of the Humber flood embankment to create new inter-tidal habitats on farm land as compensation for the future loss of similar habitats on the opposite side of the river in association with a proposed Marine energy Park development.
- 1.1.2 The options being considered for inter-tidal habitat creation including location and land take are provided in **Appendix 1** (Area A & B) and helped define the Phase 1 habitat survey boundary.



2 HABITATS

2.1 SURVEY APPROACH

- 2.1.1 The Phase 1 Habitat survey¹ was completed by an experienced AEL ecologist (Rob Hutchinson BSc MSc MIEEM) on the 10 September 2010, during fine and dry weather conditions.
- 2.1.2 The entire land area, apart from small areas occupied by private residential properties, was surveyed and mapped in the field. All habitats present were classified according to standard Phase 1 categories. Target notes were written where explanation of habitat features was deemed necessary and where important features, too small to map accurately in the field, were present. Areas where access was difficult/not possible were observed with binoculars and mapped as accurately as possible in the field, or checked while producing a final habitat map against Google Earth aerial images.

2.2 SURVEY FINDINGS

- 2.2.1 The Phase 1 habitat map is shown by **Figure 1**, and associated target notes are provided in **Appendix 2**. The accompanying photo-sheet provides a range of representative habitat photographs, and a descriptive summary of the habitat types present is provided below.
- 2.2.2 In summary, the survey area comprised a northwest-southeast orientated wedge of land bordering the Humber estuary to the west, and Keyingham Drain to the east. Cherry Cobb Sands Road bisected the site along its length, with a drainage ditch running parallel to the road on its western side. The entire survey area was dominated by large fields of intensive arable land, each divided by drainage ditches, with occasional sections of species-poor hedgerow. A raised earth flood embankment of unmanaged semi-improved grassland ran the length of western boundary, adjacent to the Humber estuary, together with a soke dyke and a line of hawthorn *Crataegus monogyna* scrub. A narrow strip of salt marsh vegetation dominated by sea couch *Elytrigia atherica*, which widened at its northern end, was present on the seaward side of the embankment.

¹ JNCC (1993) *Handbook for Phase 1 Habitat Survey – A technique for Environmental Audit*. JNCC. Peterborough.

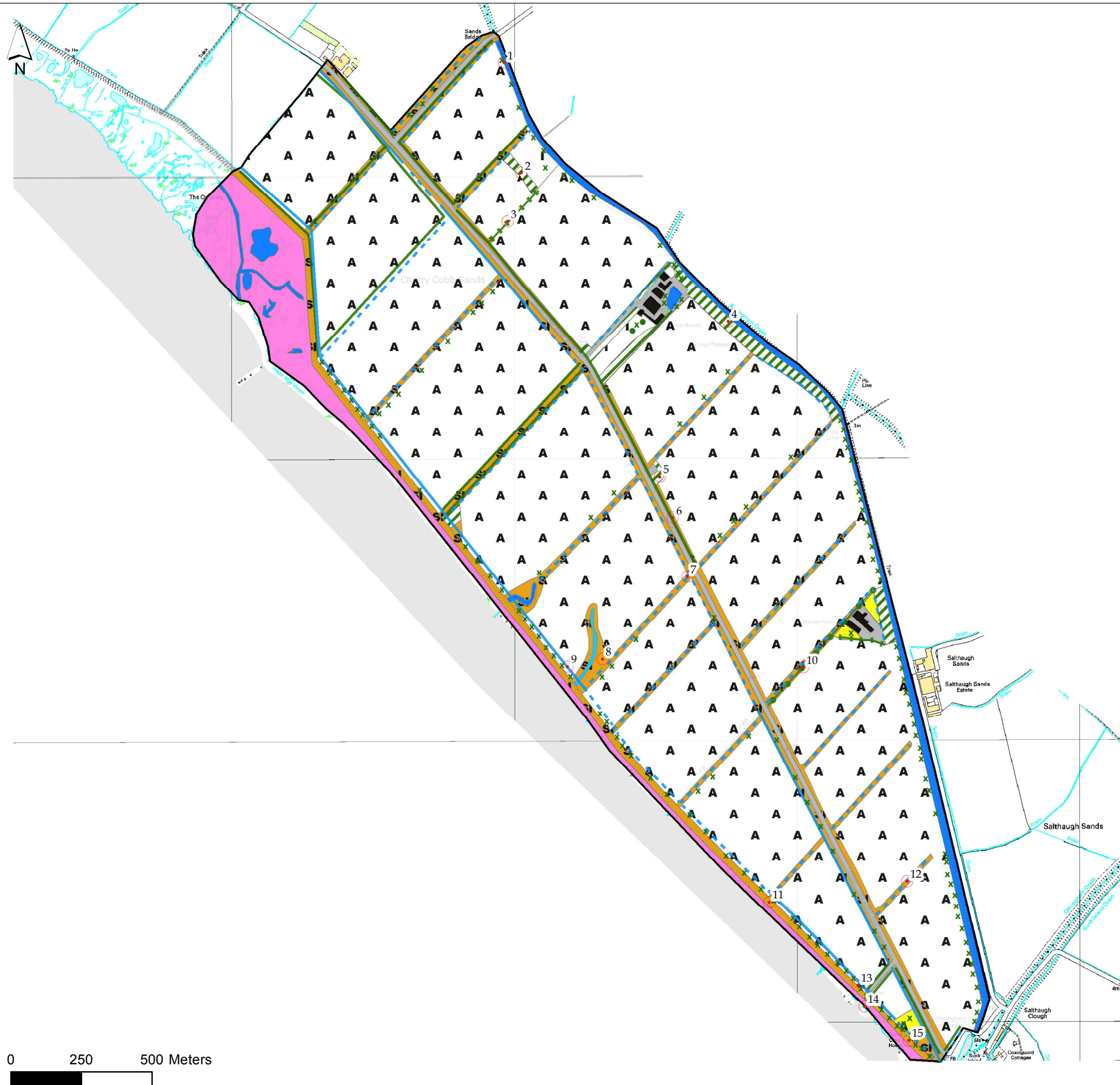


Figure 2
Cherry Cobb Sands site, Hull

Key:

- Broadleaved plantation woodland
- Semi-improved neutral grassland
- Improved grassland
- Amenity grassland
- Arable
- Hardstanding and roads
- Building
- Standing water
- Swamp
- Continuous saltmarsh
- Species-poor hedge with trees
- Species-poor intact hedge
- Line of trees
- Running water/wet ditch
- Dry ditch
- Individual tree (approximate location and number only)
- Scattered scrub
- Target note
- Survey boundary

Date of survey:
10 August 2010

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306

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Drawn by:
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RH





Arable Land

- 2.2.3 The survey area was entirely dominated by intensive arable land, which was comprised mostly of recently ploughed ground and cereal stubble (**Photo 1**). Arable weeds were very sparse and were represented by a few common species, including common field-speedwell *Veronica persica*, nettle *Urtica dioica*, charlock *Sinapis arvensis*, cleavers *Galium aparine*, common orache *Atriplex patula*, common chickweed *Stellaria media*, and scentless mayweed *Tripleurospermum inodorum*.

Improved Grassland

- 2.2.4 Three small areas of improved grassland occurred within the survey area. These included a small enclosed sheep grazed pasture field to the north, immediately northeast of **Target Note 2**, a small field in the south corner close to Stone Creek House, and a small field immediately south of Sands House.

Semi-Improved Neutral Grassland

- 2.2.5 Semi-improved neutral grassland was confined to narrow strips along field, road and ditch edges (**Photo 2**), and along the flood embankment (**Photo 3**). The majority of this grassland was unmanaged and of similar species composition, most characteristically forming rank and species-poor swards dominated by either false oat-grass *Arrhenatherum elatius* and/or common couch *Elytrigia repens*. A range of other grasses and forbs were present in variable abundance, including for example, cock's-foot *Dactylis glomerata*, red fescue *Festuca rubra*, rough meadow-grass *Poa trivialis*, creeping thistle *Cirsium arvense*, hogweed *Heracleum sphondylium*, cow-parsley *Anthriscus sylvestris*, ribwort plantain *Plantago lanceolata*, tansy *Tanacetum vulgare*, perennial sow-thistle *Sonchus arvensis*, wild teasel *Dipsacus fullonum*, and tall fescue *Festuca arundinacea*.

Amenity Grassland

- 2.2.6 Small areas of amenity grassland occurred in association with residential properties e.g. at Stone Creek House and Sands Farm.

Plantation Woodland

- 2.2.7 A few small woodland plantations occurred within the survey area (e.g. **Photo 4**). They included a linear broadleaved plantation dominated by oak *Quercus robur* and beech *Fagus sylvatica* trees (**Target Note 2**), and a small area of mixed plantation consisting of Scot's pine *Pinus sylvestris*, grey alder *Alnus incana*, and



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



horse chestnut *Aesculus hippocastanum* (**Target Note 5**). These woodlands were considered to be of relatively limited ecological value due to their small size and lack of ancient and/or semi-natural woodland character.

- 2.2.8 The largest woodland block within was Long Plantation that was located along Keyingham Drain to the east of Sands House (**Target Note 4**). It was a broadleaved plantation shelter belt, dominated by various mixtures of horse chestnut, ash *Fraxinus excelsior*, beech, Scot's pines and poplar hybrids. The under storey was dominated by hawthorn *Crataegus monogyna* and elder *Sambucus nigra*, with a patchy nettle *Urtica dioica* dominated ground layer.

Ditches, Open Water and Swamp

- 2.2.9 The survey area supported a network of drainage ditches, which included a soke dyke running along the landward side of the flood embankment (the majority of which supported standing open water), a large drainage channel along the western side of Cherry Cobb Sands Road (around 50% of which supported standing open water) and intersecting drainage ditches that formed boundaries between arable fields (which were all dry at the time of survey).
- 2.2.10 The soke dyke was 2 metres wide and partly shaded by hawthorn scrub along its western margin (**Photo 5**). Some sections had been recently excavated, but the majority supported significant silt accumulation. Aquatic vegetation was sparse with occasional patches of common reed *Phragmites australis* and sea club-rush *Bolboschoenus maritimus*. A single extensive stand of sea club-rush occurred in a drain adjoining the dyke (**Photo 6**).
- 2.2.11 The roadside drainage ditch was un-shaded for most of its length and comprised a steep sided channel (1.5-2 metres wide at its base) with rough grassland banks of semi-improved character (**Photo 7**). In addition to the plant species associated with semi-improved grassland elsewhere within the site, occasional plants of wild celery *Apium graveolens* were present at the base of the channels bank in some sections of the roadside ditch, and more rarely in other ditches elsewhere within the survey area. This plant species is specifically associated with coastal sites, including brackish ditches and tidal river banks in England and Wales. Although it is not a scarce or rare plant species (and has no specific conservation status in the UK), its widespread occurrence within the site is of botanical note due to its local occurrence nationally and it's specific habitat requirements.
- 2.2.12 Some sections of the roadside ditch possessed standing open water, with rare



patches of common reed and the submerged aquatic plant fennel pondweed *Potamogeton pectinatus*. Other sections were dry at the time of survey and supported a range of damp ground and brackish plant species, such as red goosefoot *Chenopodium rubrum*, spear-leaved orache *Atriplex prostrata* and sea aster *Aster tripolium* and probably hold standing water on a temporary basis during the winter and after periods of heavy rainfall at other times of the year.

- 2.2.13 The drainage ditches located between arable fields were all dry at the time of survey, but were similar in general structure and appearance to the roadside drain.
- 2.2.14 According to the 1:10,000 OS map, two additional water bodies occur within the survey area. The first was located within the grounds of Sands House and appeared (from distance) to comprise a large triangular farm pond (50 x 30 metres) with turbid water conditions, and locally abundant emergent bulrush *Typha latifolia*. The second was a small, heavily shaded pond located within woodland plantation just to the north of Cherry Cobb Sands Road (see **Target Note 5** for location, and **Photo 8**). This pond was almost dry and lacked aquatic vegetation.

Hedgerows and Scrub

- 2.2.15 Occasional sections of species-poor hawthorn dominated hedgerow without trees were present along the roadside, and as field boundaries (**Photo 9**). A single section of species-poor hedgerow with trees, which included elm *Ulmus* sp., horse chestnut *Aesculus hippocastanum*, hawthorn and sycamore *Acer pseudoplatanus* occurred at **Target Note 3 (Photo 10)**, and a single line of trees occurred along the drive to Sands Farm at **Target Note 10 (Photo 11)**
- 2.2.16 Scattered woody scrub, that was almost exclusively hawthorn, occurred as an almost continuous line of bushes along the base of the flood embankment, and along Keyingham Drain.

Salt Marsh

- 2.2.17 Only a preliminary inspection of land to the west of the flood embankment was undertaken due to time constraints. The narrow band of salt marsh vegetation that was present appeared to consist almost entirely of sea couch *Elytrigia atherica* (**Photo 12**). A number of other coastal and salt marsh species were present along the strandline and in areas subject to more frequent saltwater inundation. These



included sea-purslane *Atriplex portulacoides*, common cord-grass *Spartina anglica*, red fescue *Festuca rubra*, sea plantain *Plantago maritima*, sea wormwood *Seriphidium maritimum*, common sea-lavender *Limonium vulgare* and spear-leaved orache *Atriplex prostrata*.



3 ANIMAL SPECIES

3.1 SURVEY APPROACH

- 3.1.1 During the Phase 1 habitat survey, a watching brief was maintained for field evidence of animal species protected by wildlife law and or species of high biodiversity interest e.g. water vole, and for habitats potentially suitable for such animals.
- 3.1.2 The presence of badger is being assessed by other consultants and all badger sett records picked up by the current survey have been forwarded to Penny Lewns of the Badger Consultancy.

3.2 SURVEY FINDINGS

Water Vole

- 3.2.1 A few field signs of water vole *Arvicola amphibius* were seen along some of the permanently wet drainage channels within the survey area during the Phase 1 survey. In light of this finding and reflecting that ditches could be lost as a result of the habitat creation that is proposed, a more detailed survey of the drainage network is recommended to confirm the distribution and abundance of this protected species within the site.

Bats

- 3.2.2 The residential housing, plantation woodland and main drain that occur along the northern boundary of the survey area are likely to be of local value to foraging/commuting bats. Buildings within the site may also be of value to roosting bats.
- 3.2.3 On balance, however, the site is dominated by arable land that is unlikely to be of particular importance to bats, and further survey work to assess use of the site by bats is not considered necessary provided all woodland areas and built structures within the site are retained.

Reptiles

- 3.2.4 The arable land that makes up the majority of the site is of low value as habitat for reptiles on account of the fact that it is regularly disturbed by ploughing and lacks suitable permanent cover. Rank semi-natural grassland (but particularly the



grassland along the flood embankment along the southern boundary of the site) has the potential to support reptile species such as grass snake *Natrix natrix*.

- 3.2.5 Further survey work to confirm reptile presence/absence is recommended if large areas of flood embankment habitat are to be lost.

Great Crested Newt

- 3.2.6 The pond within Sands House and the adjoining plantation woodland could theoretically support breeding great crested newt (GCN), and further survey during the GCN breeding season (April-May) would be required if adverse impacts on GCN are considered likely to occur as a result of the habitat creation operations on this protected species.
- 3.2.7 Significant adverse impacts on GCN may be expected to occur if the ponds are to be lost and/or if any area of woodland, hedgerow or scrub within 300m of these water bodies is to be lost or damaged as a result of the proposed habitat creation work, and survey to assess the presence/absence of GCN would be necessary in such circumstances.
- 3.2.8 It would appear from the figure in **Appendix 1** that all habitat loss impacts within Areas A & B are likely to occur at distances beyond the typical range of GCN (>370m) on arable land to the south of Cherry Cobb Sands road. On this basis, significant adverse impacts on GCN are not anticipated to occur as a result of the development, and further GCN survey is not considered necessary in our opinion.

Birds

- 3.2.9 The survey area appears to be of local importance to farmland birds, and would also appear to be of importance as a high tide roosting/loafing/feeding area for wading estuarine birds from the Humber.
- 3.2.10 Further bird survey during the winter and spring/summer breeding season is recommended to assess the sites ornithological value.



4 CONCLUSIONS AND RECOMMENDATIONS

4.1 HABITATS

4.1.1 The Phase 1 habitat survey has confirmed that the survey area is dominated by arable land of low relative botanical importance. In contrast, salt marsh habitat of high botanical value is present and is of biodiversity importance at a local and regional level.

4.1.2 Broadleaf plantation woodland is a scarce habitat type within the survey area and although it is a widespread and common habitat of relatively low botanical importance, it has ecological value for a range of wildlife within the site as a place of shelter and forage in an otherwise barren landscape.

4.2 ANIMAL SPECIES

4.2.1 The Phase 1 survey has verified that the ditch network may support water vole – a protected amphibious mammal that is also a national Biodiversity Action Plan (BAP) target species. Given the importance of this species, it is recommended that additional specialist survey work is completed to confirm the distribution and abundance of water vole within the survey area in order to help inform future mitigation and habitat compensation measures associated with proposed habitat creation.

4.2.2 A survey of the flood embankment for the presence of reptiles is recommended if large areas of this habitat type are to be lost.

4.2.3 In addition, a survey of the site's breeding and wintering bird assemblage is also recommended moving forward.



APPENDIX 1



APPENDIX 2



Target note 1 – Large (7-10 metre wide) man-made drainage channel known as Keyingham Drain. The channel banks are steeply sloping and support rank grassland, with patches of bramble *Rubus fruticosus* and scattered woody scrub, mostly of hawthorn *Crataegus monogyna*.

Target note 2 – Broadleaved plantation woodland composed of semi-mature oak *Quercus robur*, beech *Fagus sylvatica*, and some self sown sycamore *Acer pseudoplatanus*. Numerous hawthorn *Crataegus monogyna* were present around the edges of the woodland block. The ground layer was very sparse, with occasional patches of nettle *Urtica dioica*.

Target note 3 – Species-poor hedgerow with trees supporting elm *Ulmus* sp., horse chestnut *Aesculus hippocastanum*, hawthorn *Crataegus monogyna* and sycamore *Acer pseudoplatanus*.

Target note 4 – Mixed broadleaved plantation woodland of horse chestnut *Aesculus hippocastanum*, ash *Fraxinus excelsior*, beech *Fagus sylvatica*, occasional Scot's pine *Pinus sylvestris* and poplar hybrids. The understorey was dominated by hawthorn *Crataegus monogyna* and elder *Sambucus nigra*, with a patchy nettle *Urtica dioica* dominated ground layer.

Target note 5 – Small stand of mature mixed plantation woodland consisting of Scot's pine *Pinus sylvestris*, grey alder *Alnus incana*, horse chestnut *Aesculus hippocastanum*, Leyland Cypress (x *Cupressocyparis leylandii*) and poplar *Populus* species. Occasional mature crack willow *Salix fragilis* also occurred, together with some elder *Sambucus nigra* in the understorey. A small, almost dry and heavily shaded pond was present within the woodland.

Target note 6 – Managed species-poor hedgerow with no trees, dominated by hawthorn *Crataegus monogyna*, together with some dogwood *Cornus sanguinea* and ash *Fraxinus excelsior*.

Target note 7 – Dry section of main drainage channel along road, supporting occasional spear-leaved orache *Atriplex prostrata* and sea aster *Aster tripolium*. The banks supported coarse semi-improved grassland dominated by common couch *Elytrigia repens*, together with creeping thistle *Cirsium arvense*, tansy *Tanacetum vulgare*, perennial sow-thistle *Sonchus arvensis*, ribwort plantain *Plantago lanceolata*, and wild teasel *Dipsacus fullonum*.

Target note 8 – Rank semi-improved neutral grassland dominated by false oat-grass *Arrhenatherum elatius*, cock's-foot *Dactylis glomerata*, tall fescue *Festuca arundinacea*, red fescue *Festuca rubra*, and creeping thistle *Cirsium arvense*.



Target note 9 – Soak dyke at bottom of sea wall embankment with shallow water (5cm deep) and deep silt. The channel supported occasional patches of sea club-rush *Bolboschoenus maritimus*.

Target note 10 – Line of semi-mature whitebeam *Sorbus* species along driveway, together with wet ditch with abundant in-channel common reed *Phragmites australis*.

Target note 11 – North-facing bank of sea wall embankment supporting semi-improved grassland dominated by common couch *Elytrigia repens*, together with cock's-foot *Dactylis glomerata*, nettle *Urtica dioica*, creeping thistle *Urtica dioica*, hogweed *Heracleum sphondylium*, cow-parsley *Anthriscus sylvestris*, bramble *Rubus fruticosus* agg., red fescue *Festuca rubra* and scattered hawthorn *Crataegus monogyna*.

Target note 12 – Dry ditch with banks supporting semi-improved neutral grassland. The channel bottom supported species indicative of permanently dry or damp ground conditions, including common couch *Elytrigia repens*, cock's-foot *Dactylis glomerata*, hogweed *Heracleum sphondylium*, red fescue *Festuca rubra*, nettle *Urtica dioica*, creeping thistle *Cirsium arvense*, cleavers *Galium aparine*, bristly oxtongue *Picris echioides* and sea club-rush *Bolboschoenus maritimus*.

Target note 13 – Hawthorn *Crataegus monogyna* dominated hedgerow along bottom of sea wall embankment, with rarely occurring elder *Sambucus nigra* and wild plum *Prunus domestica*.

Target note 14 – Upper salt-marsh at bottom of sea wall embankment dominated almost entirely by sea couch *Elytrigia atherica*. Other species present in the middle marsh area included sea-purslane *Atriplex portulacoides*, common cord-grass *Spartina anglica*, red fescue *Festuca rubra*, sea plantain *Plantago maritima*, sea wormwood *Seriphidium maritimum*, common sea-lavender *Limonium vulgare* and spear-leaved orache *Atriplex prostrata*.

Target note 15 – Residential house with back lawn of amenity grassland and unmanaged semi-improved neutral grassland.