

## Appendix 11 - Detailed Desk Study Results

### European designated sites within 10km of the application site

The Sefton Coast SAC is considered to be one of the best areas in the United Kingdom for embryonic shifting dunes, shifting dunes along the shoreline with marram grass (*Ammophila arenaria*), dunes with creeping willow (*Salix repens* ssp. *argentea*) (Salicion arenariae), humid dune slacks and fixed dunes with herbaceous vegetation. The site also supports a significant presence of Atlantic decalcified fixed dunes (Calluno-Ulicetea), a rare vegetation type in the United Kingdom. The area is considered to support a significant presence of great crested newt (*Triturus cristatus*) and is considered to be one of the best areas in the United Kingdom for petalwort (*Petalophyllum ralfsii*).

The Sefton Coast SSSI totals an area of 4,605.32ha and is located 3.7km to the south west, west and north west of the application site at nearest its nearest point extending for over 20km between Southport and Crosby. The Sefton Coast is of special interest for intertidal mud and sandflats, embryonic shifting dunes, mobile dunes, dunes with creeping willow (*Salix arenaria*), humid dune slacks, fixed dunes, dune grasslands and dune heath. Small areas of saltmarsh are also present. Its assemblages of vascular and non-vascular plants, in particular the nationally rare grey hair grass (*Corynephorus canescens*), nationally scarce liverwort (*Petalophyllum ralfsii*) and nationally rare moss (*Bryum neodamense*), are also of special interest. The Sefton Coast is of special interest for its populations of internationally important wintering waterfowl and its nationally and, in some cases, internationally important populations of individual waders. Its populations of sand lizard (*Lacerta agilis*), natterjack toad (*Bufo calamita*) and great-crested newt are also of special interest, along with the populations of the Red Data Book species, sandhill rustic moth (*Luperina nickerlii gueneei*). The Sefton Coast is also of special interest for coastal geomorphology, in particular for the large, mobile dune system and the multiple sand bars that occur on the foreshore. Relatively stable bar features occur in the intertidal zone and many different bedforms are represented on the foreshore.

The Ribble and Alt Estuaries SPA, Ramsar site and SSSI is located 3.8km to the south west, west and north west of the application site. The Ribble and Alt Estuaries SPA qualifies under Article 4.1 of the EC Birds Directive (79/409/EEC) by supporting populations of European importance of species listed on Annex I of the Directive: during the breeding season, common tern (*Sterna hirundo*) and ruff (*Philomachus pugnax*); over winter, bar-tailed godwit, Bewick's swan (*Cygnus columbianus bewickii*), golden plover and whooper swan (*Cygnus cygnus*). The Estuaries are also important for migratory species, most notably pink-footed geese (*Anser brachyrhynchus*, wintering) utilise feeding areas on agricultural land outside the SPA boundary. The Ribble and Alt Estuaries qualify as they regularly support at least 20,000 seabirds and waterfowl.

The Ribble and Alt Estuaries Ramsar site qualifies under Ramsar criterion 2 in supporting up to 40% of the Great Britain population of natterjack toads. The site qualifies under Ramsar criterion 5 in supporting 222,038 waterfowl in winter (5 year peak mean 1998/99-2002/2003) and Ramsar criterion 6 in supporting a range of bird species/populations occurring at levels of international importance.

The Ribble Estuary SSSI totals 9226.3ha between Southport and Lytham St. Annes extending inland to Longton. It has extensive intertidal sand-silt flats with one of the largest areas of grazed greenmarsh in Britain and includes small areas of recently reclaimed saltmarsh (in 1984). The estuary is of international importance for the passage and wintering waterfowl it supports, being a major link in the chain of estuaries down the west coast of Britain used by birds on migration between the breeding grounds in the far north and their wintering grounds further south. There is an area of reclaimed unimproved grazing marsh, an uncommon habitat in NW England. This still supports a variety of saltmarsh plants in the more brackish parts nearer the sea and along the creeks. Plants such as cord-grass, thrift, sea aster and the

brackish water crowfoot (*Ranunculus baudotii*), a particularly scarce plant in NW England, occur here.

Liverpool Bay / Bae Lerpwl SPA covers an area of c. 252,800ha, located off the coast of Formby 5.8km at the nearest point to the application site and encompasses marine areas supporting large aggregations of wintering red-throated diver and common scoter as well as important marine foraging areas of little terns breeding within The Dee Estuary SPA, and foraging areas of common terns breeding at the Mersey Narrows & North Wirral Foreshore SPA. The boundary of Liverpool Bay / Bae Lerpwl SPA extends beyond 12 nautical miles and therefore lies partly in Welsh and English territorial waters and partly in offshore waters.

The Martin Mere SPA, Ramsar site and SSSI totals an area of approximately 119ha located 11.1km to the north east of the application site. The Martin Mere SPA qualifies under Article 4.1 of the EC Birds Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: Over winter; Bewick's swan and whooper swan. This site also qualifies under **Article 4.2** of the Directive by supporting populations of European importance of the following migratory species: over winter; pink-footed goose and pintail (*Anas acuta*). Over winter, the area regularly supports 46,196 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: pochard (*Aythya farina*), mallard (*Anas platyrhynchos*), teal (*Anas crecca*), wigeon (*Anas Penelope*), pintail, pink-footed goose, whooper swan and Bewick's swan.

The Martin Mere Ramsar site qualifies under Ramsar criterion 5 - Assemblages of international importance: Species with peak counts in winter: 25,306 waterfowl (5 year peak mean 1998/99-2002/2003). The site also qualifies under Ramsar criterion 6 – species/populations occurring at levels of international importance for Species with peak counts in spring/ autumn (pink-footed goose) and species with peak counts in winter (tundra (Bewick's) swan, whooper swan, Eurasian wigeon and northern pintail.

The Martin Mere SSSI is a low-lying wetland complex of open-water, marsh and grassland habitats overlying deep peat. The principal interest of the site lies in the numbers of migrant birds which it supports during the winter months, with overall numbers of wildfowl regularly in excess of 10,000 and over 100 different species using the Mere as a wintering ground. Of particular importance are the wintering populations of pink footed geese (up to 18,000), teal (5,000–10,000) and pintail (1,000–2,500) which, by representing more than 1% of their total north-west European populations, reinforce the international status of this site. Martin Mere also supports nationally important numbers of Bewick's swan, gadwall, mallard, whooper swan and shoveler with numbers regularly in excess of 1% of the total British wintering population. Nationally exceptional numbers of snipe, lapwing and black-tailed godwit have been recorded, and the wintering flock of ruff is believed to be the largest in Britain. Martin Mere, although over 11.1km from the application site is included here due to birds potentially moving over the application site between their roosts at Formby Point and Simonswood Moss to reach feeding areas at Martin Mere.

### **Nationally designated sites within 10km of the application site**

The closest national designation to the application site is Downholland Moss SSSI, located 60m to the north. As stated within the citation, Downholland Moss SSSI totals an area of 21.2ha situated approximately 2km east of Formby, at a height of about 3m AOD and consists of an arable field and a small birch woodland. The SSSI is designated for its geological interest.

The Ribble Estuary SSSI, one of the component SSSIs of the Ribble and Alt Estuaries SPA and Ramsar site, totals an area of 9,226.3ha located 10km to the north of the proposed development site. The estuary has extensive intertidal sand-silt flats with one of the largest areas of grazed greenmarsh in Britain and includes small areas of recently reclaimed saltmarsh. The estuary is of international importance for the passage and wintering waterfowl it supports, being a major link in the chain of estuaries down the west coast of Britain used by

birds on migration between the breeding grounds in the far north and their wintering grounds further south. The estuary supports internationally important numbers of the following waterfowl: Bewick's swan, pink-footed goose, shelduck, wigeon, oystercatcher, knot, sanderling, dunlin, black-tailed and bar-tailed godwit as well as smaller populations of lapwing, curlew, grey plover and golden plover. The total numbers of waterfowl are also of international importance.

### **Locally designated sites within 2km of the application site**

Downholland Moss BHS, located 60m to the north of the application site, encompasses Downholland Moss SSSI and land beyond, but the reasons for its local designation are not the same. Downholland Moss BHS comprises 170ha of arable farmland and is locally designated for its ornithological interest, specifically relating to the winter feeding grounds of pink-footed geese with bird numbers exceeding 0.5% of the British wintering population.

Altcar Withins BHS is located 180m to the south west of the application site and shares its designation criteria with Downholland Moss BHS but encompasses 906ha of predominantly arable land extending from the River Alt and Downholland Brook in the west to the Cheshire Lines Railway in the east.

Moss Heath and Wood BHS encompasses 23.6ha of habitat located 0.5km to the east of the application site and is designated for bog habitats and flowering plants and ferns.

Cheshire Lines and Moss Lane Ditches BHS encompasses 17ha of habitat located 0.6km to the north east of the application site. The BHS is designated for artificial habitats, flowering plants and ferns, bryophytes and mammals, namely water vole.

Downholland and Associated Brooks BHS encompasses the canalised Downholland Brook and its tributaries, Barton Brook and Chisnall Brook. In total, this amounts to 30.7ha of habitat located 0.8km to the north and west of the application site. The BHS is designated for artificial habitats and their botanical value and also birds, namely shelduck, which use the riparian habitat for breeding.

Formby Moss BHS encompasses 4.43ha of habitat located 1.8km to the north of the application site and is designated for bog habitats and flowering plants and ferns.

### **Desktop Study Results**

Relevant species records from the 2km desktop study provided by the Lancashire Environment Record Network (LERN) during February 2018 considered to potentially occur within the application site are detailed below.

### **Rare or protected plant species potentially occurring within the application site**

The following records were excluded:

- Records greater than 50 years old;
- Records of species identified as being Regionally Extinct in National Red Lists;
- Species listed as Least Concern on national red lists; and
- Records of species not commonly associated with arable land or associated ditches.

By assessing the habitat requirements of the flora species identified in the desktop study, the plant species potentially occurring within the application site are listed below:

**Schedule 8 WCA** – Bluebell (*Hyacinthoides non-scripta*)

**NERC S41 & Lancashire BAP** - Purple rampion fumitory

**Lancashire BAP Provisional long list** - Slender parsley piert (*Aphanes australis*), whorl grass (*Catabrosa aquatica*), corn marigold (*Glebionis segetum*), purple ramping fumitory, water violet (*Hottonia palustris*), field pepperwort (*Hottonia palustris*), Smith's pepperwort (*Lepidium heterophyllum*), early forget-me-not (*Myrica gale*), bog-myrtle, (*Myrica gale*), golden dock (*Rumex maritimus*), bird's foot and common meadow-rue (*Thalictrum flavum*).

**IUCN Red List** - Large-flowered hemp-nettle (*Galeopsis speciosa*), corn marigold, yellow vetchling (*Lathyrus aphaca*), corn spurrey (*Spergula arvensis*), field woundwort (*Stachys arvensis*) and wild pansy (*Viola tricolor*).

**Nationally scarce** - Scots pine (*Pinus sylvestris*), purple ramping fumitory, bindweed (*Calystegia sepium* subsp. *roseata*) and yellow vetchling.

### Rare or protected fauna species potentially occurring within the application site

The following records were excluded:

- Records greater than 50 years old;
- Records of species identified as being Regionally Extinct in National Red Lists;
- Species of Least Concern on national red lists; and
- Records of species not commonly associated with arable land or associated ditches or where habitats are not sufficiently developed to support such species.

Following this rationale, there was determined to be potentially suitable habitat for a number of species, which are listed in the species Table below:

### Rare or protected fauna species potentially occurring within the application site

Common name	Scientific name	Legally Protected at all times	Birds Directive Annex 1	NERC S41	LBAP	Lancs Key Species	BoCC Red
Skylark	<i>Alauda arvensis</i>			✓	✓		✓
White fronted goose	<i>Anser albifrons</i>						✓
Greater white fronted goose	<i>Anser albifrons subsp. albifrons</i>		✓	✓			✓
Greylag goose	<i>Anser anser</i>						
Pink-footed goose	<i>Anser brachyrhynchus</i>		✓				
Meadow pipit	<i>Anthus pratensis</i>					✓	
Long-eared owl	<i>Asio otus</i>					✓	
Bittern	<i>Botaurus stellaris</i>	✓		✓		✓	
Barnacle goose	<i>Branta leucopsis</i>						
Ruff	<i>Calidris pugnax</i>	✓				✓	✓
Western marsh harrier	<i>Circus aeruginosus</i>	✓	✓			✓	
Hen harrier	<i>Circus cyaneus</i>	✓	✓	✓	✓	✓	✓
Quail	<i>Coturnix coturnix</i>	✓					
Cuckoo	<i>Cuculus canorus</i>			✓		✓	✓
Bewick's swan	<i>Cygnus columbianus</i>	✓		✓		✓	

Common name	Scientific name	Legally Protected at all times	Birds Directive Annex 1	NERC S41	LBAP	Lancs Key Species	BoCC Red
Whooper swan	<i>Cygnus cygnus</i>	✓	✓			✓	
Little egret	<i>Egretta garzetta</i>		✓			✓	
Corn bunting	<i>Emberiza calandra</i>			✓	✓		✓
Reed bunting	<i>Emberiza schoeniclus</i>			✓	✓		
Yellowhammer	<i>Emberiza citrinella</i>			✓	✓		✓
Merlin	<i>Falco columbarius</i>	✓	✓			✓	✓
Kestrel	<i>Falco tinnunculus</i>					✓	
Snipe	<i>Gallinago gallinago</i>					✓	
Peregrine	<i>Falco peregrinus</i>	✓				✓	
Oystercatcher	<i>Haematopus ostralegus</i>					✓	
Swallow	<i>Hirundo rustica</i>						
Black tailed godwit	<i>Limosa limosa</i>	✓		✓	✓		✓
Linnet	<i>Linaria cannabina</i>				✓		✓
Yellow wagtail	<i>Motacilla flava</i>			✓	✓		✓
Curlew	<i>Numenius arquata</i>			✓		✓	✓
Grey partridge	<i>Perdix perdix</i>			✓	✓		✓
Golden plover	<i>Pluvialis apricaria</i>		✓			✓	
Shelduck	<i>Pluvialis apricaria</i>					✓	
Turtle dove	<i>Streptopelia turtur</i>			✓			✓
Woodcock	<i>Scolopax rusticola</i>						
Dunnock	<i>Prunella modularis</i>			✓		✓	
Song thrush	<i>Turdus philomelos</i>			✓	✓		✓
Mistle thrush	<i>Turdus viscivorus</i>						✓
Starling	<i>Sturnus vulgaris</i>			✓		✓	✓
Barn owl	<i>Tyto alba</i>	✓					
Lapwing	<i>Vanellus vanellus</i>			✓	✓		✓
Dark green fritillary	<i>Argynnis aglaja</i>					✓	
Speckled wood	<i>Pararge aegeria</i>						
Latticed heath	<i>Chiasmia clathrata</i>			✓			
Small square spot	<i>Diarsia rubi</i>			✓			

Common name	Scientific name	Legally Protected at all times	Birds Directive Annex 1	NERC S41	LBAP	Lancs Key Species	BoCC Red
Cinnabar	<i>Tyria jacobaeae</i>			✓			
Minor shoulder knot	<i>Brachylomia viminalis</i>			✓			
Crescent	<i>Celaena leucostigma</i>			✓			
Silver hook	<i>Deltote uncula</i>						
Small square-spot	<i>Diarsia rubi</i>			✓			
Valerian pug	<i>Eupithecia valerianata</i>						
Powdered quaker	<i>Orthosia gracilis</i>			✓			
Forester	<i>Adscita statices</i>			✓		✓	
Water vole	<i>Arvicola amphibius</i>	✓		✓		✓	
Hedehog	<i>Erinaceus europaeus</i>			✓		✓	
Brown hare	<i>Lepus europaeus</i>			✓	✓		
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	✓			✓		
Noctule bat	<i>Nyctalus noctula</i>	✓		✓	✓		
Red squirrel	<i>Sciurus vulgaris</i>	✓		✓	✓		

### Legally controlled species potentially occurring within the application site

The following legally controlled species identified within the desktop study with potential to occur within the application site are listed below.

- American mink (*Neovison vison*)
- Butterfly-bush (*Buddleja davidii*)
- Canadian waterweed (*Elodia canadensis*)
- Nuttall's waterweed (*Elodia nuttallii*)
- Japanese knotweed (*Fallopia japonica*)
- Giant hogweed (*Heracleum mantegazzianum*)
- Indian (Himalayan) balsam (*Impatiens glandulifera*)
- Least duckweed (*Lemna minuta*)
- Rhododendron (*Rhododendron ponticum*)
- Shrimp (*Crangonyx pseudogracilis*)