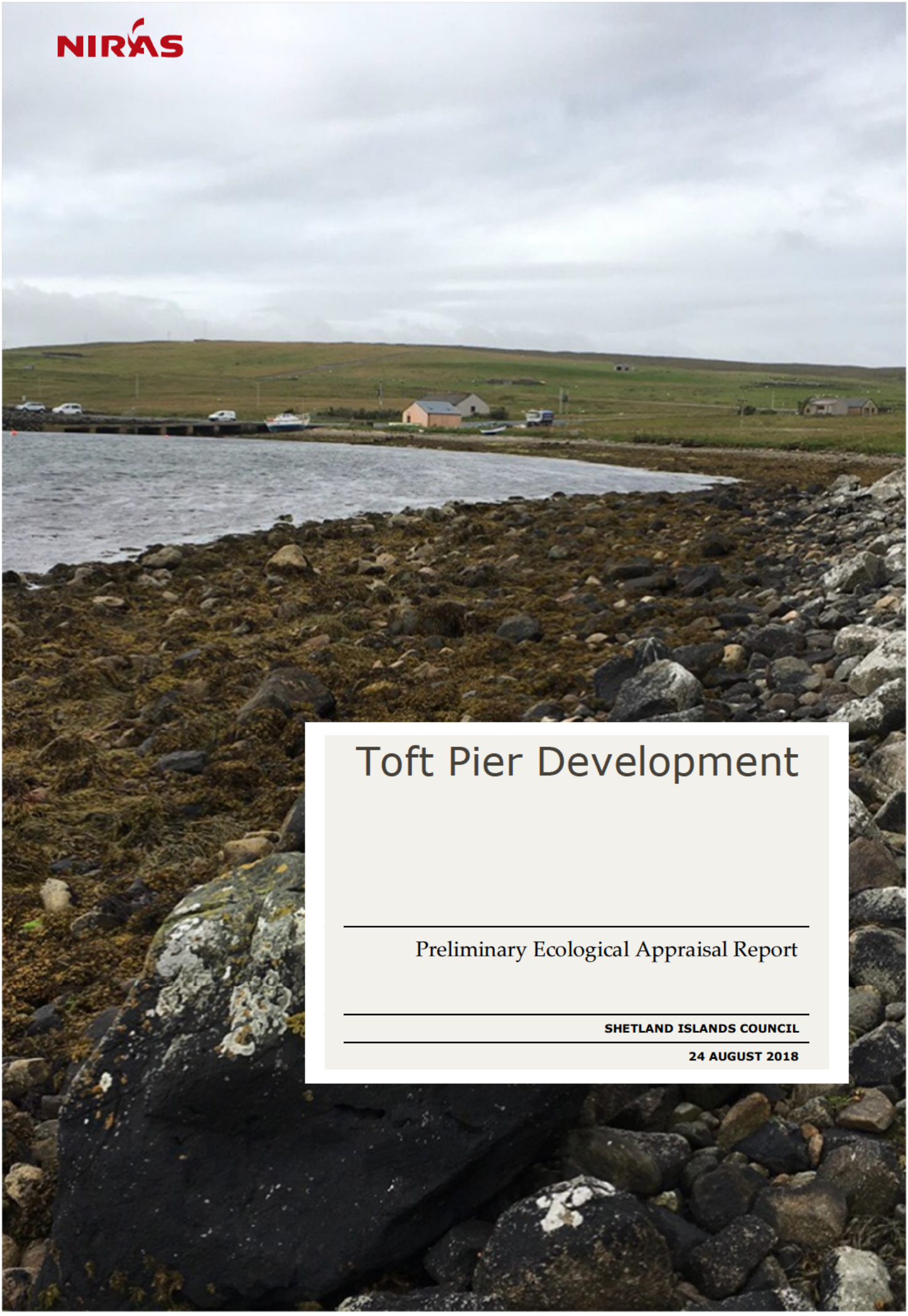

Toft Pier Development

Preliminary Ecological Appraisal Report

SHETLAND ISLANDS COUNCIL

24 AUGUST 2018

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1 Executive Summary

This Preliminary Ecological Appraisal Report (PEAR) has been produced to inform the Shetland Islands Council (SIC) about the key ecological constraints and ecological opportunities associated with the proposed development of Toft Pier.

The aims of the Preliminary Ecological Appraisal (PEA) were achieved by undertaking a desk study and walkover survey.

Potential ecological constraints in Working Area A include the presence of non-native plants, i.e. Lady's mantle (*Alchemilla acutiloba*) and Italian Rye-grass x Perennial Rye-grass *Lolium multiflorum* x *L. perenne*, as well as the potential for breeding birds in the adjacent ferry terminal building. The constraint posed by non-native plant species should be managed by the application of best practice and the Scottish Government's 'Code of Practice on Non-Native Species'. If buildings are to be demolished or covered during the breeding season the contractor will ensure that no nesting birds are present.

Potential ecological constraints in Working Area B and C include the presence of otter and marine mammals as well as the potential for breeding birds in buildings. An otter protection plan and marine mammal mitigation plan will be required. Where pile driving is required, the Contractor is responsible for ensuring that no significant numbers of wetland birds are disturbed. The subtidal habitats within Working Area B and C are unknown. The Contractor is required to put in place appropriate mitigation measures to avoid damage or disturbance to sensitive receptors if present. Further pre-construction surveys (otter and dredge disposal zones) are recommended to inform the need for appropriate mitigation.

Scottish Natural Heritage has advised that the proposals to use the marine disposal sites are likely to affect the Yell Sound SAC and East Coast Mainland, Shetland pSPA and that the use of the disposal sites can only go ahead following an appropriate assessment in accordance with Article 6(3) of the EU Habitats Directive and the Conservation (Natural Habitats, &c.) Regulations 1994. Additional survey work in relation to the marine disposal sites may be identified following the Stage 1 Screening phase of the appropriate assessment process.

Opportunities for ecological enhancement were identified in Working Area A and B in accordance with the Scottish Government's strategy for the conservation and enhancement of biodiversity.

2 Introduction

This Preliminary Ecological Appraisal Report (PEAR) has been produced to inform the Shetland Islands Council (SIC) about the key ecological constraints and ecological opportunities associated with the proposed development of Toft Pier. This report outlines possible mitigation requirements and any detailed further surveys required to inform the environmental requirements of the contractor in relation to the works described in the 'Toft Pier Development Tender Document, Section 3 – Works Information' (NIRAS Fraenkel, 2018).

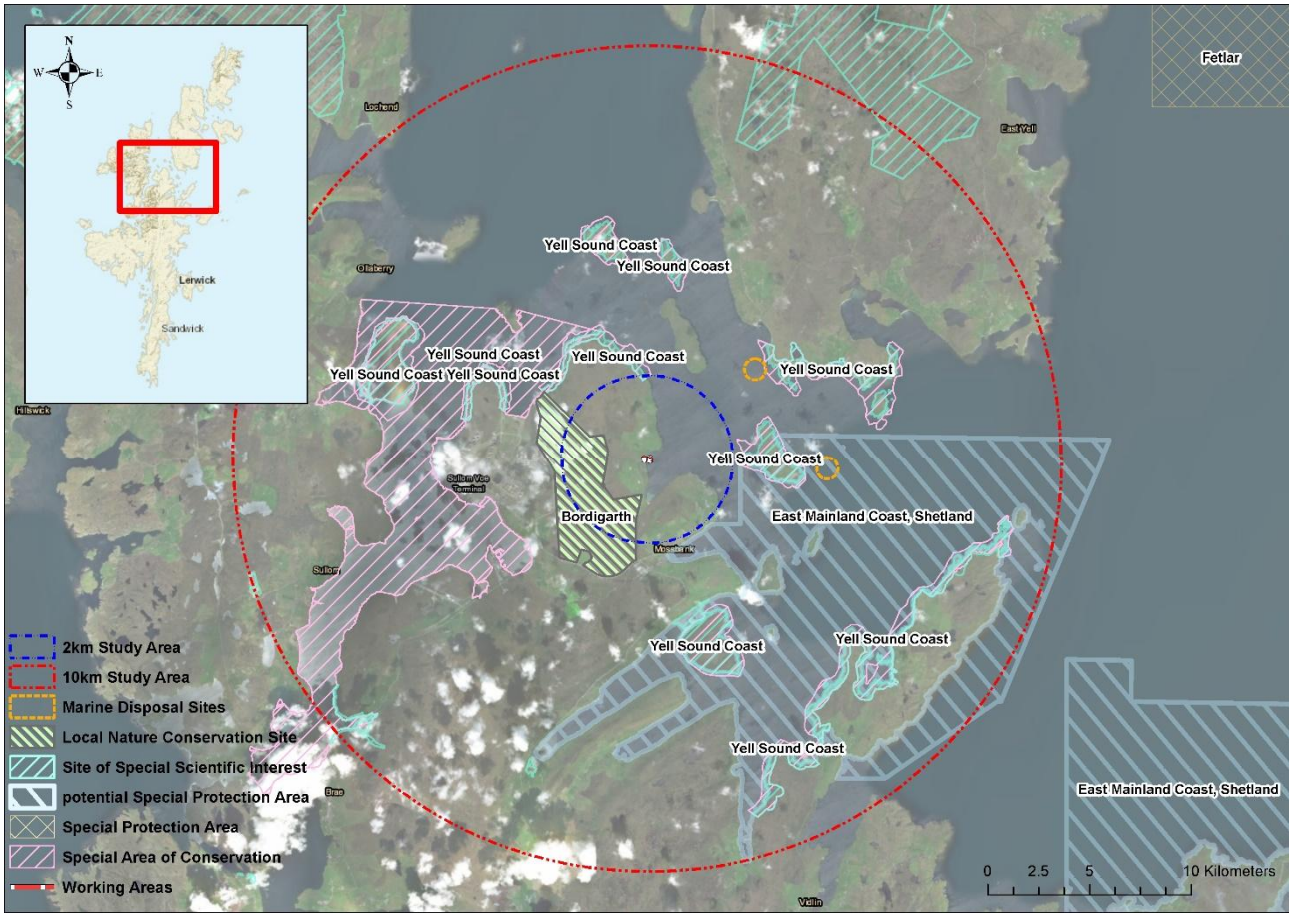
Toft Pier is located within Toft Voe at Ordnance Survey (OS) National Grid reference HU 43626 76166 (Figure 1.1). For the purposes of this Preliminary Ecological Appraisal (PEA) the existing Toft Pier infrastructure includes:

- The existing Toft Pier and structures thereon;
- The ferry terminal building; and
- The existing hard standing previously used for the construction of Toft Pier.

The associated road network includes:

- The A968 to the junction with the minor road to Toft;
- The road verges to existing boundary fences or walls; and
- The car parking area at the ferry terminal building (Figure 2.1).

Figure 2 1: The location of Toft Pier Development



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

The aims of this PEA are to:

- Identify the potential ecological constraints associated with a proposed works;
- Identify where the mitigation hierarchy can be applied in a way that is proportionate to the ecological constraints of the proposed works;
- Identify any additional surveys that may be required to inform the environmental requirements of the contractor; and
- Identify the opportunities offered by the proposed works to deliver ecological enhancement that are proportionate to the nature and scale of the proposed works.

Following 'Guidelines for Preliminary Ecological Appraisal' (Chartered Institute of Ecology and Environmental Management [CIEEM], 2017), the aims of the PEA were achieved by undertaking the desk study and field survey which are described below.

The desk study provides basic contextual information about the ecological importance of the proposed work sites and surrounding area, identifying statutory and non-statutory designated sites for nature conservation and the potential presence of protected or priority habitats and species.

Within the context of access and seasonal limitations, the field survey provides more detailed information about the ecological importance of the proposed work site and surrounding area in relation to habitats and species. Field surveys focused upon protected and priority habitats and/or species.

3 Methodology

3.1 Desk study

The desk study included the following sources of information:

- Yell Sound Ferry Terminals Environmental Statement (Peter Fraenkel & Partners, 2001);
- Biological records search (Shetland Amenity Trust, 2018);
- Scotland's environment (Environment and Economy Leaders Group [EELG], 2018); and
- Marine Scotland MAPS NMPi (National Marine Plan interactive) (Marine Scotland, 2018).

A biological records search from the Shetland Amenity Trust was commissioned by NIRAS Consulting Ltd. on 12 July 2018. The records search was based on the following parameters:

- Timeframe (2000 to present).
- Location (radius centre).
  - Ordnance Survey grid reference HU 43626 76166.
- Search Area.
  - Habitats (1km radius);
  - Protected species, invasive species and designated sites (2km radius); and
  - Marine mammals, basking shark and migratory fish (10km radius).

The biological records search is limited in the following aspects:

- The records search area does not include systematic survey data for birds or marine mammals except for some seal haul-out surveys. Toft Voe is not covered by the British Trust for Ornithology (BTO) Non-esturine Waterbird Survey (NEWS) (British Trust for Ornithology, 2018a) or the Wetland Bird Survey (WeBS) (British Trust for Ornithology, 2018b).
- The records search area contains no migratory fish records although these are likely to occur within 10km of the proposed works; and
- The records search area contains no information on marine habitats.

The Habitat Map of Scotland (Environment and Economy Leaders Group, 2018) was used to gain initial terrestrial habitat information and EUSeaMap2 was used to gain initial marine habitat information (Marine Scotland, 2018).

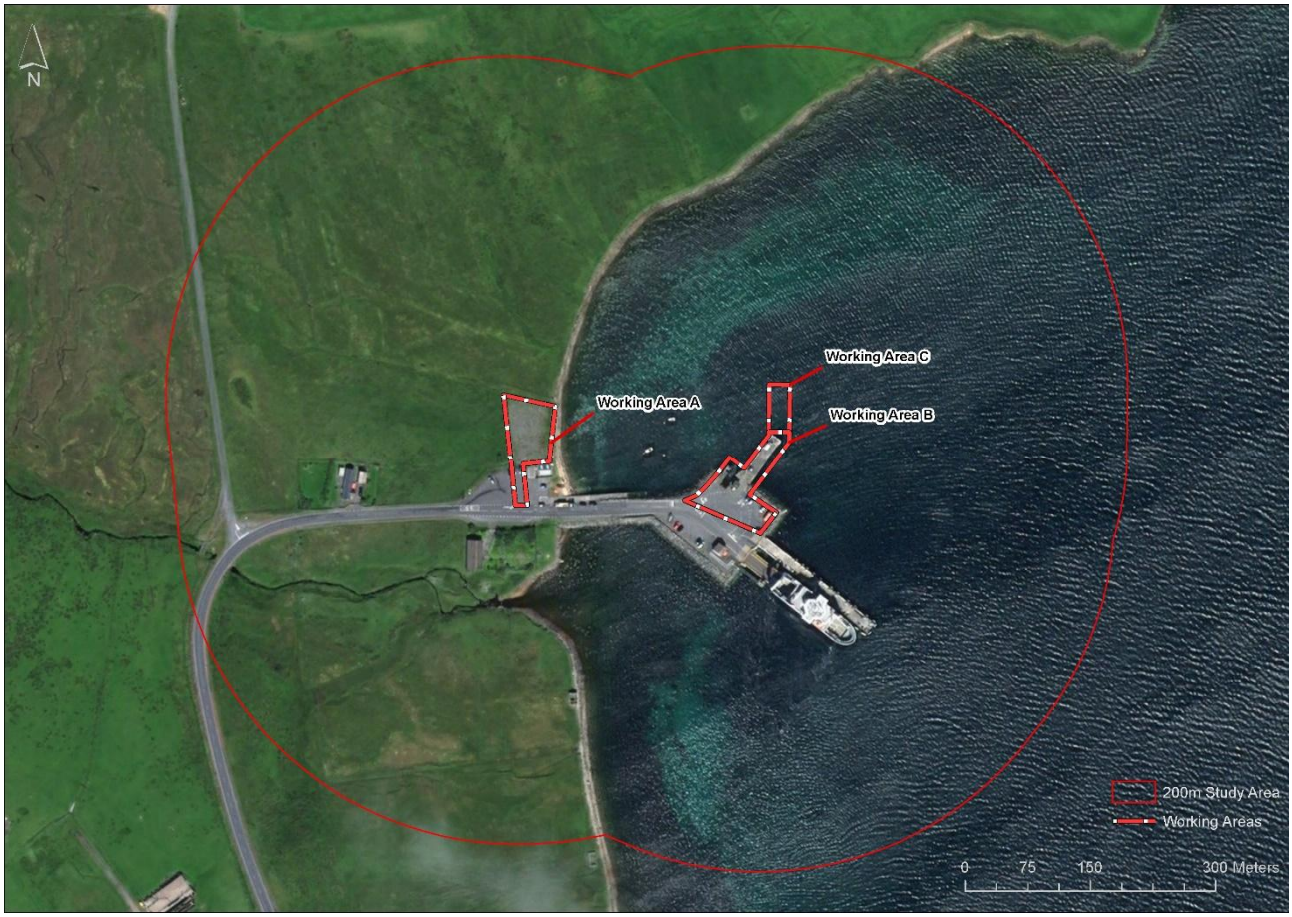
Consultation with Scottish Natural Heritage and Marine Scotland was undertaken regarding potential ecological constraints (Scottish Natural Heritage, 2018).

3.2 Field Survey

A walkover survey was conducted on 1 August 2018 by Tristan Folland MRSB CBiol, Senior Ecologist with NIRAS Consulting Ltd, part of the NIRAS group. with over 10 years of experience as a consultant ecologist. The walkover included all accessible areas within 200m of the proposed works (Figure 3.1). The field survey included the following activities:

- The validation of the Habitat Map of Scotland and detailed mapping of the habitat types following the European nature information system (EUNIS) habitat classification system;
- With reference to available desk study information, the determination of presence or likely absence of protected or priority species;
- Where relevant, an assessment of the likely importance of habitat features present for protected or priority species;
- Mapping of any stands of non-native invasive plant species; and
- Recording of any incidental sightings of priority or protected species, or the field signs of such species.

Figure 3 1: Toft Pier Development field survey area



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

4 Preliminary Ecological Appraisal

4.1 Designated nature conservation sites (statutory and non-statutory)

There are no designated sites for nature conservation within one kilometre of Toft Pier. The nearest designated site is Bordigarth Local Nature Conservation Site (LNCS), an area of blanket bog designated for breeding birds located two kilometres to the south-southwest (Figure 2.1).

The proposed marine disposal sites are located in proximity to Yell Sound and Coast Special Area for Conservation (SAC) and in East Mainland Coast, Shetland proposed Special Protection Area (pSPA) (Figure 2.1). Habitats

For the purposes of this PEA protected and notable habitats are those that are protected by one or more statutory instruments and/or those for which the SIC, in accordance with the Nature Conservation (Scotland) Act (2004), are required to further their conservation when carrying out their responsibilities. The habitats present within the study area are described below and mapped in Figure 4.1 with Target Notes provided in Appendix 1.

4.2 Habitats

The presence of habitats in relation to project locations, together with their legal status and conservation duty requirements, are summarised in Table 3.1. Likely ecological importance is also presented and considered qualitatively in relation to the total extent and rarity of the habitat type.

Habitat (EUNIS code)	WA: A	WA: B	WA: C	WSA	MDS	Legal Status/ Conservation Priority	Likely importance
Littoral rock and other hard substrata (A1)				x		LBAP (Strandline)	Local
Surface running waters (C2)				x		UK BAP (Standing and running waters) LBAP (Freshwater)	Local
Temporary running waters (C2.5)	x					LBAP (Freshwater)	Local
Grasslands and lands dominated by forbs, mosses or lichens' (E)	x			x		None	Local
Agriculturally-improved, re-seeded and heavily fertilised grassland…' (E2.4)				x		None	Local
Transport networks and other constructed hard-surfaced areas' (J4)	x					None	Local
Road network (J4.2)	x	x		x		None	Local
Unidentified subtidal habitats		?	?	?	?	Not known	Not Known

Table 4 1: Likely ecological importance of the habitats present (WA = Working Area; WSA = Wider Study Area; MDS = Marine Disposal Sites; ? = uncertain)

Figure 4 1: Habitats

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

4.2.1 Working Area A

Working Area A consists of an area of gravel hard standing previously used as a laydown area for the construction of the current operational ferry pier (Target Note 1). The laydown area is classified as 'Transport networks and other constructed hard-surfaced areas' (EUNIS code: J4) and is dominated by broad-leaved dock (*Rumex obtusifolius*) with non-native Lady's mantle (*Alchemilla acutiloba*) and wild anglica (*Angelica sylvestris*). A drainage ditch (Target Note 2) runs between the terminal building and road and the former laydown area. The ditch (Temporary running waters [EUNIS code:C2.5]) was partially dry at the time of survey. The former laydown area is fringed by grassland habitat encroaching from the surrounding agricultural fields.

The agricultural fields surrounding Working Area A are classified as 'Grasslands and lands dominated by forbs, mosses or lichens' (EUNIS code: E) and 'Agriculturally-improved, re-seeded and heavily fertilised grassland…' (EUNIS code: E2.4). Sheep were present at the time of the survey and grazing the fields. Field drains (Surface running waters [EUNIS code: C2]) are present and discharge onto the foreshore (Target Note 3) but the presence of species characteristic of wet grasslands such as rushes (*Juncus*), marsh thistle (*Circium palustre*) and meadowsweet (*Filipendula ulmaria*) remain. Dandelion (Taraxacum spp) and/or hawkweed species (Hieracium spp.) were observed at distance. It should be noted that there are 21 species and one subspecies of dandelions and hawkweeds that are endemic to Shetland (Nature Shetland, undated[a]) and that the hawksweeds have a Grouped Species Action Plan under the Local Biodiversity Action Plan (LBAP) (Swale, 2004).

A small, pitched roof, brick built ferry terminal building and wall is located on the shore next to Working Area A. Some small areas of sandy littoral sediments are located by the terminal building where a stand of Italian Rye-grass x Perennial Rye-grass *Lolium multiflorum* x *L. perenne* is established at the landward end of foreshore (Target Note 4).

4.2.2 Working Area B

Within Working Area B the Toft Pier infrastructure is classified as part of the road network (EUNIS code: J4.2) and consists of hard-surfaced areas with the perimeter supporting narrow, discontinuous patches of grassland communities dominated by red fescue (*Festuca rubra* agg.) and Yorkshire fog (*Holcus lanatus*). Characteristic species of disturbed ground such as curled dock (*Rumex crispus*), pineappleweed (*Matricaria discoidea*) and groundsel (*Scenecio vulgaris*) are also present. A metal framed bus shelter and a small, wooden, single storey flat roof building are also located on the pier within Working Area B.

Toft Pier is surrounded by a discontinuous band of rock armour (Littoral rock and other hard substrata [EUNIS code: A1]), part of which is present in Working Area B. The rock armour is colonised by several seaweed species below the water line. Subtidal areas were not accessed during the walkover survey.

4.2.3 Working Area C

No priority marine features are known to occur in Toft Voe (Marine Scotland, 2018) however no areas below mean low water have been surveyed.

4.2.4 Habitats in the Wider Study Area

In addition to the habitats described above in relation to the Working Areas other habitats are present in the wider study area.

In the wider Toft Voe no priority marine features are known to occur (Marine Scotland, 2018), however no areas below mean low water have been surveyed. The Burn of Toft (EUNIS code: C2) discharges onto the foreshore of Toft Voe 300m south of Toft Pier (Target Note 5). The foreshore of Toft Voe around Toft Pier is rocky and dominated by bladder wrack (*Fucus vesiculosus*) forming an accumulation of seaweed dominated material at the high water mark (Littoral rock and other hard substrata [EUNIS code: A1]). It should be noted that the 'strandline', the mobile accumulation of natural material defining the high water mark on a foreshore, has a Habitat Action Plan under the LBAP.

Sheep were observed to graze the grassland beyond the field boundary on the elevated ledge above the foreshore, i.e. 'Rock cliffs, ledges and shores, including supralittoral' (EUNIS code: B3). The species composition was similar to that of the agricultural fields (EUNIS code: E/E2.4) with a less diverse composition of annuals. Agricultural fields were not accessed during the walkover survey.

The verges of the associated road network (EUNIS code: J4.2) consist of grassland habitat (EUNIS code: E) encroaching from beyond the field boundary fences of the surrounding agricultural fields.

4.2.5 Marine Disposal Sites

An appraisal of the proposed marine disposal sites is beyond the scope of this PEA. Both the proposed sites are located close to Yell Sound Coast Special Area of Conservation (SAC) with one site within East Mainland Coast, Shetland proposed Special Protection Area (pSPA) (Figure 2.1).

There is limited information on the seabed habitats in the two proposed marine disposal sites (Scottish Natural Heritage, 2018). It is likely that the habitats will mainly comprise of kelp forest on rock or coarse sediment, a priority marine feature (PMF). Other PMFs may be present such as horse mussel (*Modiolus modiolus*) beds, maerl beds and soft sediment communities.

4.3 Protected and priority species

For the purposes of this PEA protected and notable species are those that are protected by one or more statutory instruments and/or those for which the SIC, in accordance with the Nature Conservation (Scotland) Act (2004), are required to further their conservation when carrying out their responsibilities.

The presence of species in relation to project locations, together with their legal status and conservation duty requirements, are summarised in Table 3.2. Likely ecological importance is also presented and considered qualitatively in relation to the total population size.

Species/Species Groups	WA: A	WA: B	WA: C	WSA	MDS	Legal Status/ Conservation Priority	Likely importance
Fungi, Lichen, Liverwort, Moss and Vascular Plants	x	x	-	x	-	None	Local
Terrestrial and Aquatic Invertebrates	x	-	-	x	-	None	Local
Fish	-	x	x	x	?	None	Local ? (MDS)
Amphibians and Reptiles	-	-	-	-	-	-	-
Breeding birds	x	-	-	x	-	Wildlife & Countryside Act (Part 1) UK BAP LBAP	Local
Migratory and Wintering Birds	-	-	-	x	?	Wildlife & Countryside Act (Part 1) UK BAP LBAP	Local ? (MDS)
Bats	-	-	-	-	-	-	-
Terrestrial Mammals (i.e. otter)	-	x	x	x	?	Habitats Regulations 1994 (as amended)	Local
Marine Mammals	-	x	x	x	?	Habitats Regulations 1994 (as amended) Marine (Scotland) Act 2010	Local ? (MDS)

Table 4 2: Likely ecological importance of the species present (WA = Working Area; WSA = Wider Study Area; MDS = Marine Disposal Sites; ? = uncertain)

4.3.1 Working Area A

4.3.1.1 Fungi, Lichen, Liverworts, Mosses and Vascular Plants

The desk study and walkover survey provided no evidence of the presence of protected or notable fungi, lichen, liverwort, moss or vascular plant species in Working Area A. It is therefore likely that protected and notable species are absent from Working Area A.

Non-native Lady's mantle (*Alchemilla acutiloba*) is present within Working Area A with a stand of Italian Rye-grass x Perennial Rye-grass *Lolium multiflorum* x *L. perenne* also present next to the ferry terminal building (Target Note 3).

4.3.1.2 *Terrestrial and Aquatic Invertebrates*

The desk study and walkover survey provided no evidence of the presence of protected or notable terrestrial and aquatic invertebrate species in Working Area A. It is therefore likely that protected and notable terrestrial and aquatic invertebrates are absent from Working Area A. Suitable freshwater habitat for aquatic invertebrates will be directly impacted be the proposed works in respect of the ditch identified in Working Area A (Target Note 2). It is however considered likely that the modified habitats within Working Area A are not suitable in terms of quality and size to support significant numbers of terrestrial and aquatic invertebrates species.

4.3.1.3 *Amphibians and Reptiles*

There are no native amphibians or reptiles in Shetland (Shetland Islands Council, 2018). The desk study and walkover survey provided no evidence of the presence of protected or notable amphibian or reptile species in Working Area A. It is therefore likely that protected and notable amphibian or reptile species are absent from Working Area A.

4.3.1.4 *Breeding birds*

No evidence of breeding was recorded in Working Area A. The ferry terminal building adjacent to Working Area A provides potential nesting opportunities for house sparrow (*Passer domesticus*) and starling (*Sturnus vulgaris*). Both these species were present on the walkover survey and are listed under the LBAP Grouped Species Action Plan 'Arable birds' (Ellis, 2004).

4.3.1.5 *Migratory and Wintering Birds*

It is considered likely that the modified habitats within Working Area A are not suitable in terms of quality and size to support significant numbers of migratory or wintering birds.

4.3.1.6 *Bats*

There are no resident or migratory bat populations in Shetland, the only records of bats relate to vagrants (Bat Conservation Trust, 2012). The desk study and walkover survey provided no evidence of the presence of bat species in Working Area A. It is therefore likely that bat species are absent from Working Area A.

4.3.1.7 *Terrestrial Mammals*

There are no native land mammals in Shetland (Shetland Islands Council, 2018). The desk study and walkover survey provided no evidence of the presence of protected or notable terrestrial mammal species in Working Area A. It is therefore likely that protected and notable terrestrial mammal species are absent from Working Area A.

4.3.2 Working Area B

4.3.2.1 *Fungi, Lichen, Liverworts, Mosses and Vascular Plants*

The desk study and walkover survey provided no evidence of the presence of protected or notable fungi, lichen, liverwort, moss or vascular plant species in Working Area B. It is therefore likely that protected and notable species are absent from Working Area B.

4.3.2.2 *Fish*

The walkover survey provided no evidence of the presence of protected or notable fish species however fish were regularly observed being caught in marine waters by otter (*Lutra lutra*) and Arctic tern (*Sterna paradisaea*) within or adjacent to Working Area B. It is therefore likely that protected and notable species are absent from Working Area B.

4.3.2.3 *Breeding birds*

No evidence of breeding was recorded in Working Area A. The wooden building within Working Area B provides potential nesting opportunities for house sparrow and starling. Both these species were present on the walkover survey and are listed under the LBAP Grouped Species Action Plan 'Arable birds' (Ellis, 2004).

Small numbers (2-3 individuals) of arctic tern, herring gull (*Larus argentatus*) and great black-backed gull (*L. marinus*) and kittiwake (*Rissa tridactyla*) were observed perching briefly or roosting within Working Area B. No evidence of breeding seabirds on the existing Toft Pier was recorded.

4.3.2.4 Migratory and Wintering Birds

The desk study and walkover survey provided no evidence of the presence of protected or notable. The habitats within Working Area B is not likely to support significant numbers of migratory of wintering birds compared to the habitats in the wider Toft Voe. A winter gull roost may form on the existing pier structure within Working Area B. Taking into account the size of the existing pier structure and surrounding waters in Working Area B it is likely that significant numbers of protected and notable species are absent from Working Area B.

4.3.2.5 Bats

There are no resident or migratory bat populations in Shetland, the only records of bats relate to vagrants (Bat Conservation Trust, 2012). The desk study and walkover survey provided no evidence of the presence of bat species in Working Area B. It is therefore likely that bat species are absent from Working Area B.

4.3.2.6 Terrestrial Mammals

There are no native land mammals in Shetland (Shetland Islands Council, 2018). Otter was the only protected terrestrial mammal recorded in the desk study and observed on the walkover survey. A single otter was observed fishing close to Working Area B.

4.3.2.7 Marine Mammals

Grey seal are known to be present within 10km of Toft Pier, one individual was observed briefly in waters close to Working Area B during the walkover survey.

4.3.3 Working Area C

4.3.3.1 Fish

The walkover survey provided no evidence of the presence of protected or notable fish species however fish were regularly observed being caught in marine waters by otter and Arctic tern within or adjacent to Working Area C. It is therefore likely that protected and notable species are absent from Working Area C.

4.3.3.2 Breeding Birds

Arctic tern were also observed foraging within Working Area C. No evidence of breeding seabirds on the existing Toft Pier was recorded.

4.3.3.3 Migratory and Wintering Birds

The desk study and walkover survey provided no evidence of the presence of protected or notable. The habitats within Working Area C are not likely to support significant numbers of migratory of wintering birds compared to the habitats in the wider Toft Voe. Taking into account the size of Working Area C it is likely that significant numbers of protected and notable species are absent from Working Area C.

4.3.3.4 Terrestrial Mammals

There are no native land mammals in Shetland (Shetland Islands Council, 2018). Otter was the only protected terrestrial mammal recorded in the desk study and observed on the walkover survey. A single otter was observed fishing close to Working Area C.

4.3.3.5 Marine Mammals

Grey seal are known to be present within 10km of Toft Pier, one individual was observed briefly in waters close to Working Area C during the walkover survey.

4.3.4 Species in the Wider Study Area

4.3.4.1 Fungi, Lichen, Liverworts, Mosses and Vascular Plants

The desk study and walkover survey provided no evidence of the presence of protected or notable fungi, lichen, liverwort, moss or vascular plant species. It is therefore likely that protected and notable species are absent from the wider study area.

It is possible that grassland surrounding the Working Area A may support hawkweeds (*Hieracium* spp.) that are endemic to Shetland (Nature Shetland, undated[a]) and have a Grouped Species Action Plan under the LBAP. The fields were not directly accessed during the walkover survey therefore the identification of hawkweeds could not be secured to species level.

4.3.4.2 Terrestrial and Aquatic Invertebrates

Protected or notable terrestrial and aquatic invertebrates species were not identified in the desk study or the field survey. Suitable freshwater habitat was identified at Target Note 2, 3 and 5.

No freshwater habitats will be directly impacted be the proposed works except for the ditch identified in Working Area A.

4.3.4.3 Fish

No protected or notable fish species were identified during the field survey however fish were regularly observed being caught in marine water by otter (*Lutra lutra*) and Arctic tern (*Sterna paradisaea*) within 200m of Toft Pier. A dead male lumpsucker (*Cyclopterus lumpus*) was recorded in the strandline north of Toft Pier.

Burn of Toft (Target Note 5) is likely, at the very least, to be suitable for eel (*Anguilla anguilla*) which is common and widespread in Shetland (Nature in Shetland, undated[b]).

Basking shark have been recorded off Toft Pier and surrounding waters in small numbers (1–2) between July and September.

4.3.4.4 Amphibians and Reptiles

There are no native amphibians or reptiles in Shetland (Shetland Islands Council, 2018). The desk study and walkover survey provided no evidence of the presence of protected or notable amphibian or reptile species in wider study area. It is therefore likely that protected and notable amphibian or reptile species are absent from the wider study area.

4.3.4.5 Breeding birds

The only evidence of breeding was the observation of a single family group of wren (*Troglodytes troglodytes zetlandicus*) outside the working areas along the field boundary fence and ledge north of Toft Pier.

Extensive areas of grassland surrounding Working Area A are likely to support ground nesting birds such as the skylark (*Alauda arvensis*), a national conservation priority species and the meadow pipit (*Anthus pratensis*), a local conservation priority. Both these species are listed under the LBAP Grouped Species Action Plan ‘Arable Birds’. Several individual snipe (*Gallinago gallinago*), a local conservation priority under the LBAP Grouped Species Action Plan ‘Breeding Waders’, were observed in flight over grassland fields which are potentially suitable breeding locations. Oystercatcher (*Haematopus ostralegus*), another local conservation priority under the LBAP Grouped Species Action Plan ‘Breeding Waders’, were observed on the foreshore and roosting on inland fields at high tide. The grassland fields adjacent to the foreshore also present potential nesting opportunities for oystercatcher.

In the wider Toft Voe relatively small numbers of foraging seabirds such as red-throated diver (*Gavia stellata*) (2 individuals), gannet (*Morus bassanus*) (<25 individuals), Arctic tern (<50 individuals) and black guillemot

(*Cepphus grylle*) (2 individuals) were observed. The nearest suitable habitat for breeding red-throated diver is over 2km away at Bordigarth LNCS.

4.3.4.6 Migratory and Wintering Birds

Field surveys were conducted at a time of year where only small numbers of migratory birds were likely to be present in Shetland. The foreshore in Toft Voe is relatively narrow and is generally not likely to support large numbers of migratory waterbirds. The importance of the Toft Voe in relation to wintering birds, when winter roosting sensitive may occur in adjacent fields, could not therefore be determined by direct observation.

Toft Voe is not covered in the British Trust for Ornithology's NEWS or WeBS schemes. The coastline south of Toft Voe at Mossbank indicates that small numbers of seabirds and wetland birds may be present in winter, this includes cormorant (*Phalacrocorax carbo*), shag (*Phalacrocorax aristotelis*), turnstone (*Arenaria interpres*), purple sandpiper (*Calidris maritima*), snipe, black-headed gull (*Chroicocephalus ridibundus*), common gull (*Larus canus*), herring gull and great black-backed gull.

During the workover survey a high tide roost consisting of 23 oystercatcher was observed at Target Note 6. There is often a strong element of site fidelity related to high tide roost site location and therefore such roosts may persist into winter and migratory periods. Turnstone and redshank (*Tringa totanus*) were recorded in small numbers (1-3 individuals) during the field survey which indicates that the site will likely support these species.

4.3.4.7 Bats

There are no resident or migratory bat populations in Shetland, the only records of bats relate to vagrants (Bat Conservation Trust, 2012). The desk study and walkover survey provided no evidence of the presence of bat species in the wider study area. It is therefore likely that bat species are absent from the wider study area.

4.3.4.8 Terrestrial Mammals

There are no native land mammals, in Shetland (Shetland Islands Council, 2018). Otter was the only protected terrestrial mammal recorded in the desk study and observed on the walkover survey. A small number of rabbit (*Oryctolagus cuniculus*) droppings indicative of a relatively low density of animals was recorded outside the working areas, along the elevated ledge above the foreshore.

The Toft Voe is known to support otter. A single otter was observed fishing in Working Area C and another or the same individual was seen fishing south of Toft Pier during the walkover survey. Field signs and potential resting sites/holts were also identified (presented in a confidential appendix, Appendix 2). The area beneath the Pier at the landward end consists of a void filled with rock armour. This feature has potential for the location of otter resting places or holts. Otters were known to have had a holt in the breakwater prior to the construction of the current ferry pier structure (Peter Fraenkel & Partners, 2001) and not the older pier that will be extended as part of this work.

4.3.4.9 Marine mammals

Grey seal are known to be present within 10km of Toft Pier. Aggregations of grey seals are known to be present at Swarta Skerry (13.3km, southeast), Sand Skerry (8.9km, east-southeast) and Lunna Holm (9.0 km east-southeast). Common seal is more regularly recorded within 10km of Toft Pier although none were recorded on the walkover survey.

Many Common porpoise sightings will not be submitted but they are regular in winter in the Little Roe – Mio Ness – Swarta Taing triangle (OS National Grid reference HU4078).

Killer whale and minke whale are more regularly reported in summer (April-September) but are known to be present at other times of the year.

Small numbers of other marine mammals have been recorded less frequently, including sei whale (*Balaenoptera borealis*), humpback whale (*Megaptera novaeangliae*), pilot whale (*Globicephala* sp.), long-finned pilot whale (*Globicephala melas*), common dolphin (*Delphinus delphis*), Risso's dolphin (*Grampus griseus*), white-sided dolphin (*Lagenorhynchus acutus*) and white-beaked dolphin (*Lagenorhynchus albirostris*).

4.3.5 Marine Disposal Sites

Information regarding the biodiversity of the marine disposal sites is currently limited however from consultation the proximity to Yell Sound Coast SAC and East Mainland pSPA indicates that otter, common seal as well as wintering great northern diver (*Gavia immer*), long-tailed duck (*Clangula hyemalis*), eider (*Somateria mollissima*) and red-throated diver are likely to be present (Swale, 2018).

5 Ecological Constraints

Based upon the level of information known about the project at the time of this PEA, the identification of the ecological constraints described below allows likely significant effects to be avoided through engineering design and programing and to identify the potential for mitigation and licensing.

5.1 Working Area A

5.1.1 Non-native Plants

Under the Wildlife and Countryside Act 1981 (as amended by the Wildlife and Natural Environment (Scotland) Act 2012) it is an offence to cause to grow in the wild any plant outwith its native range, i.e. “the plant becomes present in the wild as a direct result of someone’s actions, even though they did not specifically plant it there” (The Scottish Government, 2012). Two non-native plant species were identified in or close to Working Area A during the walkover survey:

- Lady’s mantle (*Alchemilla acutiloba*); and
- Italian Rye-grass x Perennial Rye-grass *Lolium multiflorum* x *L. perenne* is established at the landward end of foreshore (Target Note 3).

In order to avoid and minimise the risk of introducing or spreading non-native species the contractor will ensure preventative, control and monitoring measures will be implemented with regard to the following aspects of the development:

- Packaging and movement of materials
  - Minimise traffic and the distance it has travelled;
  - Source goods/materials locally where possible; and
  - Contain, remove and dispose of safely any non-native species and report the presence of non-native species to contractor’s environmental manager.
- Vehicles and plant
  - Clean all vehicles and plant immediately before deployment to the site;
  - Train and raise awareness of staff and contractors regarding non-native species;
  - Record and report the presence of any non-native species to the contractor’s environmental manager.
- Soil and vegetation
  - Minimise disturbance to, or movement of, soil and vegetation;
  - Prevent soil damage and erosion;
  - Ensure imported soil/other materials are safe and free of non-native species (source from a reputable supplier, request information on the soil’s origin and certification of invasive species-free status if possible); and
  - Ensure infested material is disposed of safely

The risk and actual measures to be implemented will be included in the contractor’s risk assessment.

5.1.2 Breeding Birds

The ferry terminal building next to Working Area A may support nesting birds. All birds, their eggs, nests and young are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally or recklessly:

- Kill, injure or take a bird;
- Take, damage, destroy or interfere with a nest of any bird while it is in use or being built;
- Obstruct or prevent any bird from using its nest; and
- Take or destroy an egg of any bird.

The nesting sites of birds protected from disturbance under Schedules 1 are not known to be present in the study area.

Where the permanent or temporary footprint of the works, including vehicle access and laydown areas, requires the alteration, removal or covering of buildings during the bird breeding season (1 March to 31 August inclusive) and the contractor observes nesting birds within the proposed work area a suitably qualified and experienced ecologist must be consulted to confirm the absence of breeding birds from the potential nesting habitat.

5.2 Working Area B and C

5.2.1 Subtidal Habitats

The subtidal habitats within Working Area B and C are unknown. The Contractor is required to put in place appropriate mitigation measures to avoid damage or disturbance to sensitive receptors if present. Further surveys are recommended (see Section 6 below) to inform the need for appropriate mitigation.

5.2.2 Breeding Birds

The wooden buildings in Working Area B may support nesting birds. Birds, their eggs, nests and young are protected under the Wildlife and Countryside Act 1981 (as amended).

Where the permanent or temporary footprint of the works, including vehicle access and laydown areas, requires the alteration, removal or covering of buildings during the bird breeding season (1 March to 31 August inclusive) and the contractor observes nesting birds within the proposed work area a suitably qualified and experienced ecologist must be consulted to confirm the absence of breeding birds from the potential nesting habitat.

5.2.3 Otter

Otter, present in Working Area B and C, the wider study area and possibly the marine disposal sites, is a European protected species (EPS), individuals and their resting places are fully protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended).

In accordance with the Scottish Natural Heritage protected species advice for developers in relation to otter (Scottish Natural Heritage, 2017), an otter protection plan should be prepared and include:

- Details of how the development is likely to affect otters;
- Mitigation measures to be employed to avoid any offence and minimise impacts on otters; and
- A summary of any residual impacts once mitigation measures have been taken into account.

The otter protection plan must be agreed with SIC and approved by Scottish Natural Heritage. If the development cannot avoid an offence a EPS licence will be required from Scottish Natural Heritage to allow work to proceed.

5.2.4 Marine Mammals

Marine mammals are likely to be present within 10km of Toft Pier. All whale and dolphin species found in Scottish territorial waters are classed as European protected species under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). Seals in Scottish waters are protected under the Marine (Scotland) Act 2010.

A marine mammal mitigation plan will be prepared to ensure that the risks to marine mammals associated with the proposed construction are appropriately managed. The need to minimise the production of underwater noise will be the primary aim.

Where pile driving is required the Contractor is responsible for ensuring that applicable best practice guidelines are followed to minimise the risk of injury and disturbance from underwater noise to marine mammals and other noise sensitive marine environmental receptors.

The marine mammal mitigation plan must be agreed with Shetland Islands Council and approved by statutory consultees (Marine Scotland/Scottish Natural Heritage).

5.2.5 Wintering Birds

The current construction programme for the project starts on the 1st April 2019 and is due to be completed on the 16th October 2019. This programme of work therefore is planned to miss the wintering birds that potentially use the local area. If the programme slips significantly an additional winter bird survey will be discussed with the MS LOT and also the local SNH office to ensure impacts are minimised.

5.3 Marine Disposal Sites

Scottish Natural Heritage has advised that the proposals to use the marine disposal sites are likely to affect the Yell Sound SAC and East Coast Mainland, Shetland pSPA and that the use of the disposal sites can only go ahead following an appropriate assessment in accordance with Article 6(3) of the EU Habitats Directive and the Conservation (Natural Habitats, &c.) Regulations 1994 (Swale, 2018).

6 Further Surveys

Further ecological surveys to ensure that Shetland Islands Council meets its legal duty under the Nature Conservation (Scotland) Act 2004 to consider the impact on biodiversity of all its activities are outlined below.

6.1 Subtidal Habitats

The client will undertake sufficient investigations to confirm the ecological importance of the sub-tidal habitats in Toft Voe. Collected samples will be processed through an approved (MS LOT) laboratory and an analysis will be included in the marine licence application.

Proposed survey and analysis methods must be agreed by MS LOT, including the guidelines to be followed in relation to interpretation of samples collected.

6.2 Otter

To inform the otter protection plan a detailed otter survey should be conducted sufficiently in advance of construction enabling works to allow for a potential EPS licence to be applied for and granted. The detailed survey will include the identification and checking of holts within 200m of the proposed works. This survey should focus specifically on potential areas within the existing structure of Toft Pier which were inaccessible at the time of this survey.

6.3 Migratory and Wintering Birds

Wetland bird surveys following the British Trust for Ornithology's NEWS methodology should be undertaken once a month within 500m of the development footprint between November and March prior to construction if piling activity is proposed or likely during this period in the following winter.

6.4 Marine Disposal Sites

The requirement for additional surveys in relation to the marine disposal sites will be determined following the Stage 1 Screening phase of the appropriate assessment process, i.e. the test of likely significant effect on the qualifying interests. It is anticipated that suitable survey techniques will include drop down camera and, where seabed conditions permit, sampling using a suitable grab (areas of soft sediment). Analysis and reporting should be undertaken by a suitably skilled and experience marine biologist who will be expected to characterise the local benthic environmental and confirm the presence or absence of benthic ecological sensitivities at the disposal sites.

7 Opportunities for Ecological Enhancement

The Scottish Government's strategy for the conservation and enhancement of biodiversity in seeks "to restore and enhance biodiversity in all our urban, rural and marine environments through better planning, design and practice" (Scottish Executive, 2004).

To that end, the following ecological enhancement opportunities were identified during the walkover survey. Other opportunities may arise during the course of the development.

7.1 Working Area A

The laydown area in Working Area A currently supports non-native plant species. The development should seek to follow the 'Code of Practice on Non-Native Species - Made by The Scottish Ministers Under Section 14C of The Wildlife and Countryside Act 1981' (The Scottish Government, 2012) to responsibly manage Working Area A to remove or at the very least prevent the spread of non-native plants into the wild.

The ferry terminal immediately adjacent to Working Area A is a suitable location for the provision of bird nest boxes suitable for house sparrow and starling. Nest boxes fitted with video camera would provide additional environmental education opportunities regarding the wildlife of Shetland. Video from the boxes could be relayed directly into the ferry terminal building for public viewing, to other educational facilities within the island or generally on the internet. The ferry terminal also provides the opportunity to the use native climbing plants of local provenance to provide additional shelter and foraging opportunities for terrestrial invertebrates and birds.

Opportunities should be sort to enhance the ditch that cross Working Area A (Target Note 2) and include, the removal of introduced materials related to the hard standing and where practicable, promoting retention of water and increasing the water depth.

7.2 Working Area B

Where rock armour is used, the development design should seek to maximise ecological potential by material choice and its smart positioning (Naylor *et al*., 2017). Enhancement should seek to enable good recruitment of as wide a range of marine subtidal and intertidal species found within Toft Voe as is practically and financially viable.

Within the footprint of the proposed development opportunities for the creation of an artificial otter holt could be created within any new and suitable structures. The location of such an artificial holt should be carefully considered given the legal protection afforded to otter and the potential constraint this may have on future construction, operation/maintenance activities. The artificial holt could be used to manage such a risk by cre-ating a holt at a known location that can be easily accessed for future licenced survey work. In addition to this, a video camera installed in the holt would provide additional environmental education opportunities regarding the wildlife of Shetland. Video from the holt could be relayed directly into the ferry terminal building for public viewing, to other educational facilities within the island or generally on the internet.

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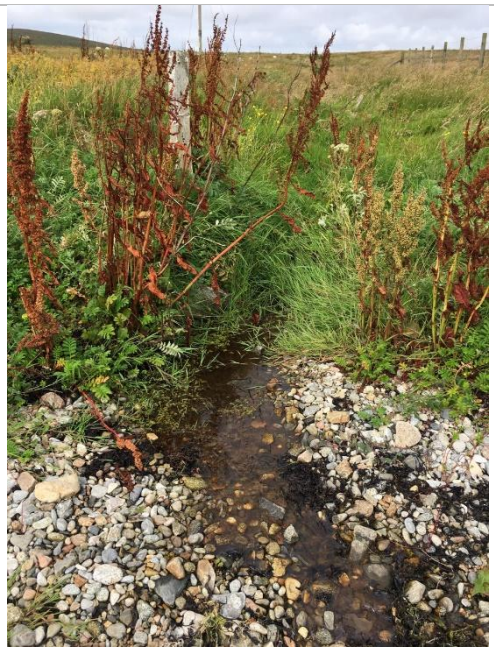
Appendix 1: Target Notes

Target Note	Description	Photograph
1	Working Area A Transport networks and other constructed hard-surfaced areas' (EUNIS code: J4), dominated by broad-leaved dock (*Rumex obtusifolius*) with non-native Lady's mantle (*Alchemilla acutiloba*) and wild anglica (*Angelica sylvestris*)	
2	Working Area A Temporary running waters (EUNIS code: C2.5), partially dry ditch. Potentially suitable habitat for terrestrial and aquatic invertebrates.	

2	Working Area A Temporary running waters (EUNIS code: C2.5), partially dry ditch. Potentially suitable habitat for terrestrial and aquatic invertebrates.	
3(a)	Wider Study Area Surface running waters (EUNIS code: C2), field drain discharging onto the foreshore. Potentially suitable habitat for aquatic invertebrates.	

3(b)	Wider Study Area Surface running waters (EUNIS code: C2), field drain discharging onto the foreshore. Potentially suitable habitat for aquatic invertebrates.	
3(c)	Wider Study Area Surface running waters (EUNIS code: C2), field drain discharging onto the foreshore. Potentially suitable habitat for aquatic invertebrates.	
4	Working Area A/ Wider Study Area A stand of Italian Rye-grass x Perennial Rye-grass *Lolium multiflorum* x *L. perenne*.	No photograph

5	Wider Study Area Surface running waters (EUNIS code: C2), Burn of Toft discharging onto the foreshore of Toft Voe 300m south of Toft Pier. Potentially suitable habitat for aquatic invertebrates and protected and notable fish species.	
6	Wider Study Area High tide roost consisting of 23 oystercatcher (*Haematopus ostralegus*).	No photograph

Appendix 2: Otter records within 200m of working areas [CONFIDENTIAL]