

## TECHNICAL APPENDIX 5.1

# **Hatston Pier Terrestrial Ecology & Ornithology – Preliminary Ecological Appraisal**



**November 2020**

# Hatston Pier

## Terrestrial Ecology & Ornithology – Preliminary Ecological Appraisal

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## EXECUTIVE SUMMARY

EnviroCentre Limited was commissioned by Orkney Islands Council Harbour Authority (OICHA) to conduct a Preliminary Ecological Appraisal (PEA) for terrestrial ecology and ornithology at Hatston Pier. This proposed development involves improvements and expansion to the existing harbour infrastructure.

A desk study and fieldwork was undertaken during September 2020 to inform this PEA.

There are several statutory designated sites in close proximity to the site - Orkney Mainland Moors Special Protection Area (SPA) comprises four areas of moorland on Mainland, at its closest point, it lies within 5km of Hatston Pier; the North Orkney proposed SPA (pSPA) is afforded the same level of protection as a designated site and is located to the north of Mainland with Hatston Pier included within its boundaries; and the Scapa Flow pSPA lies approximately 3km from Hatston Pier to the south of Mainland.

The site consisted predominantly of intertidal habitats and urban features. Prior to any on-site works commencing, it is recommended that further habitat surveys be undertaken to ensure the protection of notable floral species and to better understand the site.

No mammal activity or field signs were recorded, although there is suitable habitat for otter (*Lutra lutra*) along the shoreline, so a pre-construction otter survey is recommended to ensure that no otter resting place will be impacted by the proposed works.

The ornithological appraisal noted the potential for a range of species afforded additional legal protection to be present on site. A suite of surveys has been recommended to ascertain the numbers, locations and behaviour of the main target species (the qualifying species of the pSPAs and protected terrestrial species such as raptors).

A range of mitigation measures have also been recommended which aim to minimise any impact or effects on the general ecology of the area from the proposed development.

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# 1 INTRODUCTION

## 1.1 Terms of Reference

EnviroCentre Limited was commissioned by Orkney Islands Council Harbour Authority (OICHA) to conduct a Preliminary Ecological Appraisal (PEA) for terrestrial ecology and ornithology at Hatston Pier. This proposed development involves improvements and expansion to the existing harbour infrastructure.

The 'site' is defined as the proposed future layout of the harbour and formal access roads demarcated as the red line boundary shown in Appendix A. The 'survey area' constitutes the areas of works (the 'site') plus appropriate buffers as detailed in Section 2.

The results and recommendations in this document relate to the site boundary and design as provided by the client at the time of the survey.

## 1.2 Scope of Report

The aim of the PEA was to establish a terrestrial ecology and ornithology baseline and identify the relevant constraints to the proposed development at the site. The main objectives of the study were as follows:

- Conduct a desk study to gather pre-existing biological data relating to the site;
- Identify and map the broad habitats present within the survey area;
- Search for field evidence of a range of protected or notable faunal species which may frequent the survey area;
- Identify suitable habitat for protected or notable faunal species in the survey area;
- Evaluate the site based on the habitats and faunal species;
- Identify potential impacts to protected or notable faunal species, vegetation and habitats;
- Advise on additional surveys that may be required to inform further site assessment and protected species licensing;
- Recommend mitigation measures likely to be required to avoid, minimise and compensate for the predicted negative ecological effects of the proposed development; and
- Highlight opportunities for ecological enhancement.

## 1.3 Site and Project Description

For full site and project descriptions for the site, please refer to the Orkney Harbours Masterplan Phase 1 (2020)<sup>1</sup>, and for the site boundary, please refer to Appendix A.

The Hatston proposal involves extending the existing outer quay by 300m (with water depth of -10m CD), creating a 125m inner berth. There will be substantially more quayside available both for the existing pier and the extension.

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<sup>1</sup> <https://www.orkneyharbours.com/port-authority/info/brochures>

Circa 7.5 hectares of additional land would be made available for harbour-related operations through reclamation, and there will also be an ex-pipe fuel supply and fuel storage facility in close proximity to the pier.

The area currently comprises of inshore marine habitats, intertidal foreshore and existing harbour infrastructure.

## **1.4 Legislation, Policy and Guidance**

European and national legislation, planning policies, conservation initiatives and general guidance relevant to this terrestrial ecology appraisal include:

- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended);
- The Water Framework Directive (2000/60/EC);
- The Wildlife and Countryside Act 1981 (as amended) (WCA);
- The Nature Conservation (Scotland) Act 2004;
- The Wildlife and Natural Environment (Scotland) Act 2011 (WANE);
- The British Standard for Biodiversity;
- The UK Biodiversity Action Plan (UK BAP);
- The Orkney Local Biodiversity Action Plan (LBAP) (2018);
- The Scottish Biodiversity Strategy;
- Scottish Planning Policy (2014); and
- The Orkney Local Development Plan (2017).

## **1.5 Report Usage**

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre.

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## 2 METHODS

### 2.1 Desk Study

In order to anticipate the potential ecological sensitivities at the site, a desk study was conducted in advance of the field survey, in September 2020. The following sources were checked:

- NatureScot (formerly Scottish Natural Heritage (SNH)) Sitelink website<sup>2</sup> for statutory designated sites up to 10km from the site;
- Orkney Local Development Plan (LDP)<sup>3,4,5</sup> for non-statutory designated sites up to 1km from the site;
- Records of ancient woodland and Scottish native woodland available through Scotland's Environment Web<sup>6</sup> within or adjacent to the site;
- Online records from the Orkney Field Club<sup>7</sup>;
- The UK BAP for Priority Habitats<sup>8</sup> and Species<sup>9</sup>;
- The LBAP<sup>10</sup>; and
- The Scottish Biodiversity List (SBL)<sup>11</sup>.

### 2.2 Field Study

The field survey was undertaken by EnviroCentre Principal Ornithologist Mike Coleman, a highly experienced ecologist across The Highlands and Islands, who is also a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The surveys were undertaken on 15<sup>th</sup> and 16<sup>th</sup> September 2020 when conditions were bright with a light breeze, the average air temperature was 14°C, and cloud cover was between four and eight oktas, but with a cloud base of over 600m, allowing for excellent lateral visibility at all times.

The surveys were designed using the guidelines endorsed by NatureScot and CIEEM<sup>12</sup>. The surveys focussed on plants and habitats on the site and those faunal species that are most likely to be found in the habitats which make up the landscape in and around the site. Due to the paucity of terrestrial mammals on Orkney, extra care was taken to record any field signs of mammal activity to inform local records of potentially unknown areas of presence, or of any invasive species. This section provides details of the methods adopted in the survey areas described in Table 2-1, below.

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<sup>2</sup> <https://sitelink.nature.scot/map> (Accessed 10/09/2020)

<sup>3</sup> [https://www.orkney.gov.uk/Files/Planning/Development-and-Marine-Planning/Local-Plan/OLDP\\_2017/Orkney\\_Local\\_Development\\_Plan\\_2017\\_2022.pdf](https://www.orkney.gov.uk/Files/Planning/Development-and-Marine-Planning/Local-Plan/OLDP_2017/Orkney_Local_Development_Plan_2017_2022.pdf) (Accessed 10/09/2020)

<sup>4</sup> [https://www.orkney.gov.uk/Files/Planning/Development-and-Marine-Planning/Adopted\\_PPA\\_and\\_SG/Natural\\_Environment\\_SG/Nat\\_Env\\_SG.pdf](https://www.orkney.gov.uk/Files/Planning/Development-and-Marine-Planning/Adopted_PPA_and_SG/Natural_Environment_SG/Nat_Env_SG.pdf) (Accessed 10/09/2020)

<sup>5</sup> <https://www.arcgis.com/apps/MapJournal/index.html?appid=273d8d6359ae451cbe16f3a867297276#> (Accessed 10/09/2020)

<sup>6</sup> <https://map.environment.gov.scot/sewebmap/> (Accessed 10/09/2020)

<sup>7</sup> <http://www.orkneycommunities.co.uk/fieldclub/index.asp> (Accessed 10/09/2020)

<sup>8</sup> <https://jncc.gov.uk/our-work/uk-bap-priority-habitats/> (Accessed 10/09/2020)

<sup>9</sup> <https://jncc.gov.uk/our-work/uk-bap-priority-species/> (Accessed 10/09/2020)

<sup>10</sup> [https://www.orkney.gov.uk/Files/Planning/Biodiversity/Orkney\\_LBAP\\_2018\\_2022\\_FINAL\\_Oct\\_2018.pdf](https://www.orkney.gov.uk/Files/Planning/Biodiversity/Orkney_LBAP_2018_2022_FINAL_Oct_2018.pdf) (Accessed 10/09/2020)

<sup>11</sup> <https://www.nature.scot/scottish-biodiversity-list> (Accessed 10/09/2020)

<sup>12</sup> CIEEM PEA Guidance available at: <https://cieem.net/wp-content/uploads/2019/02/Guidelines-for-Preliminary-Ecological-Appraisal-Jan2018-1.pdf> (Accessed 10/09/2020)



**Table 2-1: Survey areas**

Habitat/Species/Species Group	Survey Area
Phase 1 Habitat Survey	Proposed area of works (plus any wetland within 250m)
Ground Water Dependent Terrestrial Ecosystems (GWDTE)	Proposed area of works (plus any wetland within 250m)
Invasive Non Native Species	Recorded throughout the proposed area of works and all surveyed areas for the Phase 1 Habitat Survey
Otter	Proposed area of works plus up to 250m up and down stream along any watercourses (where accessible)
Birds	Proposed area of works (plus a buffer of approximately 100m)
Brown Hare	Recorded throughout the proposed area of works and all surveyed areas for the Phase 1 Habitat Survey
Other Species	Recorded throughout the proposed area of works and all surveyed areas for the Phase 1 Habitat Survey

### 2.2.1 Phase 1 Habitat Survey

A Phase 1 Habitat Survey is a method that rapidly records vegetation and wildlife habitat over large areas. The information is used to identify ecologically sensitive features, inform additional species surveys and, ultimately, recommend mitigation and enhancement measures in connection with a proposed development.

The Phase 1 Habitat Survey was undertaken at Hatston Pier according to the standard Joint Nature Conservation Committee (JNCC) method<sup>13</sup> and was used to determine the potential presence of any European Annex I, National UKBAP or Regional SBL priority habitats.

### 2.2.2 Ground Water Dependent Terrestrial Ecosystems (GWDTEs)

The Functional Wetland Typology<sup>14</sup> was used to aid identification of wetland habitats that derive their water from groundwater and surface water. This information is useful in identifying if and where further surveys are required to identify the presence and potential sensitivity of Groundwater Dependent Terrestrial Ecosystems (GWDTEs). To help assess ground water dependency, observations of local topography, underlying geology, and features such as springs, diffuse ground water emergence and floristic indicators of base enrichment were made.

### 2.2.3 Invasive Non-Native Species (INNS)

The surveys included a check for the presence of any INNS including but not limited to the following:

- Japanese knotweed (*Reynoutria japonica*);
- Giant hogweed (*Heracleum mantegazzianum*); and
- Himalayan balsam (*Impatiens glandulifera*).

<sup>13</sup> JNCC (2010) Handbook for Phase 1 Habitat Survey A Technique for Environmental Audit.

<sup>14</sup> Wetland Typology for Scotland document available at: <http://www.fwr.org/environw/wfd95.htm> (Accessed 10/09/2020)

## 2.2.4 Otter

The otter surveys performed for this PEA followed best practice guidelines<sup>15</sup>, and aimed to identify suitable otter habitat and field signs, including:

- Spraints (otter faeces/droppings used as territorial signposts. Often located in prominent positions and can be placed on deliberate piles of soil or sand). Three categories are used for describing otter spraint: Dried fragmented (Df); Dried intact (Di); and Not fully dry (Nd);
- Footprints;
- Feeding remains (can often be a useful indication of otter presence);
- Paths/slides (otter can often leave a distinctive path from and into the watercourse);
- Holts (underground shelter) are generally found:
  - Within trees roots at the edge of the bank of a river;
  - Within hollowed out trees;
  - In naturally formed holes in the river banks that can be easily extended;
  - Or preferably in ready-made holes created by other large mammals such as badger setts, rabbit burrows or outlet pipes; and
- Couches/lay-ups (couches or lay-ups are places for lying up above ground are usually located near a watercourse, between rocks or boulders, under dense vegetation).

In order to assess their importance, the status of otter resting sites was assigned from Low to High according to Table 2-2, below<sup>16</sup>.

**Table 2-2: Status of Otter Resting Sites**

Resting Site Status	Definition
Low	Feature with limited evidence of otter activity – low number of spraints, not all age classes present. Insufficient seclusion to be a breeding site or key resting site, unlikely to have links to the key otter requirements. Most likely to provide a temporary 'stop off' for otters when moving through their territory. Loss/disturbance of such a feature is unlikely to be significant in terms of the individual or population.
Moderate	Feature containing sprainting with a range of age classes, but not in significant quantities. Availability may be limited by season, tides or flow. Unlikely to be suitable as a breeding/natal site but will be a key resting site and may be linked to other important features within the territory. The impact arising from a loss or disturbance of such a feature will be determined by the availability of more suitable or well used sites within the otter's territory.
High	Feature has a high level of otter activity, including an abundance of sprainting of all age classes, large spraint mounds, well used grooming hollows, paths and slides. Affords a high degree of cover and is linked to key features such as fresh water and abundance of prey. May be suitable as a breeding area (spraints may be absent from natal holts). The site is usually available at all times of year and at high and low tide/flow. The loss/disturbance of such as feature will often be considered significant in terms of the individual or population.

<sup>15</sup> Chanin, P. (2003). Monitoring the Otter Lutra Lutra. Conserving Natura 2000 Rivers, Monitoring Series (No. 10). Peterborough: EN, CCW, EA, SEPA, SNH & SNIFFER

<sup>16</sup> Bassett, S., & Wynn, J. (2010). Otters in Scotland: How Vulnerable Are They to Disturbance? CIEEM In Practice, (70), 19–22.

## **2.2.5 Birds**

Habitats within the survey area were assessed for their suitability to support breeding and overwintering birds.

## **2.2.6 Other Species**

Notes on general habitat suitability was recorded, as were any other species observed during the surveys, including Orkney vole (*Microtus arvalis orcadensis*). These animals are common and are not protected, but are a remnant population from Neolithic times when they were introduced to Orkney. They are the only population of common vole (*Microtus arvalis*) in the British Isles, apart from a similar subspecies found on Guernsey, and provide an important source of food for raptors across eight of the Orkney islands.

## **2.3 Constraints**

### **2.3.1 Desk Study**

Desk studies are limited by the reliability of third party information and the geographical availability of biological and/or ecological records and data. This emphasises the need to collate up-to-date, site-specific data based on field surveys by experienced surveyors. The absence of a species from biological records cannot be taken to represent actual absence. Species distribution patterns should be interpreted with caution as they may reflect survey/reporting effort rather than actual distribution.

### **2.3.2 Field Survey**

The Phase 1 Habitat Survey was completed late in the optimum survey season (May to September), so early-flowering or non-flowering individual plant species are likely to have been missed. However the dominant habitats and species were discernible.

## **2.4 Evaluation of Ecological and Ornithological Features**

European, national and local governments, and specialist organisations have together identified a large number of sites, habitats and species that provide the key focus for biodiversity conservation in the UK and Ireland, supported by policy and legislation. These provide an objective starting point for identifying the important ecological features that need to be considered. A geographical level of importance, as described in Appendices B and C, has been assigned to the designated sites, habitats and species identified on the site and in the survey area. Where a feature is important at more than one level in the table, its overriding importance is that of the highest level. Usually only the highest level of legal protection is listed.

## 3 BASELINE CONDITIONS

### 3.1 Designated Sites

#### 3.1.1 Statutory Designated Sites

Orkney Mainland Moors Special Protection Area (SPA) comprises four areas of moorland on Mainland Orkney. At its closest point it lies within 5km of Hatston Pier. The predominant habitats include extensive areas of blanket bog, heaths and mires. These upland areas support 5.9% of the UK's breeding and 2% of the UK's overwintering Hen Harrier (*Circus cyaneus*) population, 2% of the UK's breeding Short-eared Owl (*Asio flammeus*) population, in both cases one of very few sites to support such dense and significant numbers. The area also supports 2% of the UK's breeding Red-throated Diver (*Gavia stellata*) population. This site's boundaries also correspond to Keelylang Hill and Swartaback Burn Site of Special Scientific Interest (SSSI), which is designated for breeding Hen Harrier.

The North Orkney proposed SPA (pSPA) is afforded the same level of protection as a designated site. This pSPA is located to the north of Mainland Orkney and encompasses 227km<sup>2</sup> of the waters between the islands of Shapinsay, Rousay, Egilsay and Wyre, including Deer Sound, Shapinsay Sound and Wide Firth. Hatston Pier is therefore included within the boundaries of the North Orkney pSPA. The area included within the pSPA supports populations of European importance of the following Annex 1 species: Great Northern Diver (*Gavia immer*), Slavonian Grebe (*Podiceps auritus*) and Red-throated Diver. It also supports migratory populations of European importance of the following species: Common Eider (*Somateria mollissima*), Long-tailed Duck (*Clangula hyemalis*), Velvet Scoter (*Melanitta fusca*), Red-breasted Merganser (*Mergus serrator*) and European Shag (*Phalacrocorax aristotelis*).

The Scapa Flow pSPA comprises a total area of 371km<sup>2</sup> located within Scapa Flow - an enclosed sea area, sheltered by Mainland Orkney to the north, Hoy, South Walls and Flotta to the west and south, and Burray and South Ronaldsay to the east. The Flow is linked to the Pentland Firth in the south through the Sound of Hoxa, and to the Atlantic Ocean in the west through Hoy Sound. The site also includes nearshore waters to the east of Orkney, extending from South Ronaldsay to Deerness, and including the sheltered shallow waters of Holm Sound, between Burray and East Mainland. Prior to construction of the Churchill Barriers in World War II, there were openings between Scapa Flow and Holm Sound to the North Sea. lies within 3km of the Scapa Flow pSPA. The area included within the pSPA supports populations of European importance of the following Annex 1 species: Great Northern Diver, Red-throated Diver, Black-throated Diver (*Gavia arctica*), and Slavonian Grebe. It also supports migratory populations of European importance of the following species: European Shag, Common Eider, Long-tailed Duck, Common Goldeneye (*Bucephala clangula*) and Red-breasted Merganser.

#### 3.1.2 Habitats

The Phase 1 Habitat map can be found in Appendix D and photographic record in Appendix E. The habitat types and boundary features within the site are:

- B2.2 Semi-improved neutral grassland;
- C3.1 Other tall herb / fern – tall ruderal;
- H1.3.2 Intertidal boulders and rocks with green algal beds;
- H1.3.3 Intertidal boulders and rocks with brown algal beds;
- H3 Shingle above high tide mark;
- H5 Strandline vegetation;
- H8.1 Hard maritime cliff;

- I2 Artificial rock exposures;
- J2.4 Fence; and
- J4 Bare ground.

### **Semi-improved neutral grassland**

This category encompasses a wide range of communities occurring on more neutral soils (pH 5.5-7.0). There is a strip of this grassland between the agricultural land in the south east of the site and the shingle and strandline vegetation. Although covering a small area, it is dominated by perennial ryegrass and *Carex* species, but it also contains species such as devil's bit scabious, marsh marigold, buttercup species (*Ranunculus* spp.), meadowsweet, *Valeriana* species and *Juncus* species, and it remains well-drained. Semi-improved grassland is a transition category made up of grasslands which have been modified by artificial fertilisers, slurry, intensive grazing, herbicides or drainage, and consequently have a range of species which is less diverse and natural than unimproved grasslands.

### **Other tall herb / fern – tall ruderal**

This category comprises stands of tall perennial or biennial dicotyledons, usually more than 25cm high, of species such as rosebay willowherb and common nettle. Mixed with many grass species and tall *Rumex* species, these two species were found in a strip between the road and the sea cliffs / shingle beach in the north of the site, and across a former grazing field in the south east of the site which borders the beach at Hatston.

### **Intertidal boulders and rocks with green algal beds**

A small section of the exposed rocky shore on the east side current Hatston Pier access road has a green algal growth covering at low tide, consisting of sea lettuce (*Ulva lactuca*).

### **Intertidal boulders and rocks with brown algal beds**

The exposed intertidal rocky shore on both sides of the current Hatston Pier access road is covered in brown algal growth, dominated by bladderwrack.

### **Shingle**

There is a narrow strip of exposed shingle between the algae-covered sandstone and the sea cliffs and high tide strandline. Much of this strip remains clear of vegetation and lichen, although there is some spear-leaved orache present in the transition to the cliffs and boulder sea defences.

### **Strandline vegetation**

There is a narrow strip between the exposed shingle and the sea cliffs and sea defences which contains spear-leaved orache and several grass species (dominated by red fescue) and *Rumex* species.

### **Hard maritime cliff**

These are cliffs formed of rock with less than 10% vascular plant cover. There are steep, but short, well-weathered sandstone cliffs facing north with no vegetation cover which have the rock exposed.

### **Artificial rock exposures**

Generally this category includes quarries, spoil heaps or mines. In this instance, it denotes the line of riprap rock armouring that has been positioned along the current access road to Hatston Pier. There is some vegetation from the adjacent grassland and tall ruderals growing through some of the more exposed gaps, and several lichen species on the rocks.

### **Fence**

A fenceline runs between the road and the strip of tall ruderals above the cliffs.

### Bare ground

The access road to the current Hatston Pier, and the perimeter road around the port area to the west of the access road, demarcate the boundary of the proposed works.

### 3.1.3 Invasive Non-Native Species

No INNS were identified during the survey.

### 3.1.4 Groundwater Dependent Terrestrial Ecosystems

Due to the marine, built-up, and intertidal locations of the proposed works, there are no GWDTEs present on site.

### 3.1.5 Faunal Species

#### Otter

Otter is a EPS of international importance.

No field signs of otter were recorded during the survey. However, it is likely that this stretch of coastline forms part of an otter territory as it is relatively undisturbed and the algae and seaweed-covered rocky foreshore and vegetated margins around this area of coastline provide suitable habitat for foraging otter with access to freshwater for washing.

#### Other Species

No field signs of any mammal species were recorded at Hatston Pier, and apart from the strip of vegetation above the cliffs, there is limited habitat for any terrestrial mammal to reside.

The habitats and species above have been listed in the order of their geographical importance in Table 3-1, below.

**Table 3.1: Levels of Protection and Geographical Importance – Habitats and Species at Hatston Pier**

Species / Habitat	Level of Protection	Level of Importance
Otter	Annex IV EPS, Schedule 6, Near Threatened on the global IUCN Red List	International
Semi-improved neutral grassland	None	Site
Other tall herb / fern – tall ruderal	None	Site
Intertidal boulders and rocks with green algal beds	None	Site
Intertidal boulders and rocks with brown algal beds	None	Site
Shingle above high tide mark	None	Site
Strandline vegetation	None	Site
Hard maritime cliff	None	Site
Artificial rock exposures	None	Site
Fence	None	Site
Bare ground	None	Site

## Birds

The habitats on site provide suitable foraging and roosting habitats for a range of species, including passerines, gulls, terns and waders, many of which are afforded both national and international protection.

During the survey, 13 species were recorded along the foreshore, and on the water around Hatston Pier. The species are presented in alphabetical order below, and in order of their geographical level of importance in Table 3-2.

Black-headed Gull, Common Gull, Cormorant, Curlew, Eider, Golden Plover (*Pluvialis apricaria*), Great Black-backed Gull, Herring Gull, Lapwing (*Vanellus vanellus*), Oystercatcher, Redshank, Shag, Turnstone (*Arenaria interpres*).

**Table 3.2: Levels of Protection and Geographical Importance – Birds at Hatston Pier**

Species	Level of Protection and Level of Importance	Bird of Conservation Concern (BoCC <sup>17</sup> ) status
Golden Plover	Annex 1 & SBL – International Importance	Amber
Herring Gull	SBL & UKBAP – National (UK) Importance	Red
Lapwing	SBL & UKBAP – National (UK) Importance	Red
Curlew	SBL & UKBAP – National (UK) Importance	Amber
Black-headed Gull	LBAP – Regional Importance	Amber
Common Gull	LBAP – Regional Importance	Amber
Eider	LBAP – Regional Importance	Amber
Great Black-backed Gull	LBAP – Regional Importance	Amber
Oystercatcher	LBAP – Regional Importance	Amber
Redshank	LBAP – Regional Importance	Amber
Shag	LBAP – Regional Importance	Amber
Turnstone	LBAP – Regional Importance	Amber
Cormorant	LBAP – County Importance	Green

In addition to the species recorded during the survey, it should be noted that summer visitors and congregations of migrating birds may also be impacted by the proposed development, particularly those which choose to roost or forage within the proposed area of development. Some of these species are likely to appear on the BoCC Amber and Red lists, or may have been afforded additional levels of legal protection.

<sup>17</sup> BoCC list available from: <https://www.bto.org/our-science/publications/psob> (Accessed 24/09/2020)

## **4 POTENTIAL IMPACTS**

### **4.1 Potential Impacts**

#### **4.1.1 Construction Phase Impacts**

The following potential negative impacts on terrestrial ecology habitats and species, and bird features, could occur during the construction phase of the proposed development:

- Habitat loss which will lead to a loss of potential foraging, roosting, commuting and nesting opportunities for a range of species;
- Accidental spills from vessels, plant and on-site storage of fuels and chemicals leading to pollution of habitats and potential harm to a range of species and habitats;
- Increased noise through construction activities (dredging, piling, blasting, plant movement, etc.) leading to disturbance and displacement of foraging, roosting or nesting species;
- Increased visual stimuli through construction activities (personnel and plant movement, etc.) leading to disturbance and displacement of foraging, roosting or nesting species;
- Increased, un-natural lighting leading to disturbance and displacement of foraging, roosting or nesting species;
- Presence of temporary new structures creating potential collision risk for a range of bird species; and
- A potential change of hydrological flow which may alter the composition of the habitats present.

#### **4.1.2 Operational Phase Impacts**

The following potential negative impacts on terrestrial ecology habitats and species, and bird features, could occur during the operational phase of the proposed development:

- Accidental spills from vessels, plant and on-site storage of fuels and chemicals leading to pollution of habitats and potential harm to a range of species;
- Increased visual stimuli through operational activities (personnel and plant movement, etc.) leading to disturbance and displacement of foraging, roosting or nesting species;
- Increased, un-natural lighting leading to disturbance and displacement of foraging, roosting or nesting species;
- Presence of new structures creating potential collision risk for a range of bird species; and
- A potential change of hydrological flow which may alter the composition of the habitats present.



## **5 RECOMMENDATIONS FOR FURTHER SURVEY, MITIGATION AND OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT**

### **5.1 Further Survey**

#### **5.1.1 Protected Species Survey**

No further survey work is required.

#### **5.1.2 Ornithological Surveys**

It is recommended that monthly low-tide counts at Hatston Pier are undertaken throughout a calendar year to gauge the composition of species and the numbers of birds present within (and immediately adjacent to) the proposed areas of development.

### **5.2 Mitigation**

#### **5.2.1 Construction Measures**

The following broad mitigation measures should be employed to minimise the effects on protected and notable habitats, mammal species and breeding birds during the construction phase of the proposed development:

- Appoint a fully trained and certified Ecological Clerk of Works (ECoW) to audit and advise works;
- Prepare and implement a Construction Environmental Management Plan (CEMP);
- SEPA Pollution Prevention Guidelines (PPGs) and Guidance for Pollution Prevention (GPPs) should be adhered to at all times to reduce risk of a pollution incident occurring;
- Design and implement a sensitive temporary lighting scheme fitted with shades to prevent light spillage outside the working area. Lighting should minimise illuminating the adjacent habitats as this can affect commuting and foraging success for crepuscular and nocturnal species;
- Minimise the duration of sudden noise (rock blasting, etc);
- Where relevant, plant and equipment will be fitted with silencers;
- A pre-construction otter check is recommended prior to the commencement of construction at Hatston to ensure that no otter resting sites are present in areas that will be affected by the proposed construction activities. Should the presence of otter resting sites be confirmed, a Species Protection Plan (SPP) and a EPS licence from NatureScot will be required prior to any works commencing;
- Vegetated margins and stone walls should be maintained where possible to retain existing wildlife corridors;
- Any vegetation clearance to facilitate extraction works or any extraction works of vegetated habitats should be scheduled to commence between September to February inclusive to avoid nesting bird constraints; and

- Any further exploratory digging or trial pits should not be left open for mammals to fall into and become trapped. A shallow sloping edge should be created within any pits to allow any mammals to escape.

Further mitigation measures may be required following the results of the recommended further survey work.

### **5.3 Opportunities for Ecological Enhancement**

The following measures could be implemented to enhance the site for biodiversity as a result of the proposed development:


- Within the proposed development area, if possible the design could incorporate a planting scheme creating features from locally-sourced, native shrubs and trees. These are best planted along boundaries of building features or in areas of bare ground; and
- Where practicable a permeable surface could be used for any parking, laydown or area of hardstanding, creating additional SuDS features.

# APPENDICES

## **A LOCATION PLANS**



**Legend**

 Approximate Capital Project Location

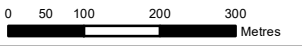
Do not scale this map  
**Client**  
 Orkney Islands Council Harbour Authority

**Project**  
 OICHA Capital Projects Screening Exercise

**Title**  
 Capital Project Locations:  
 Hatston

**Status**  
 FINAL

<b>Drawing No.</b> 673702-005	<b>Revision</b> 1	<b>Date</b> 28 May 2020
<b>Drawn</b> JP	<b>Checked</b> CF	<b>Approved</b> CF

**Scale**  
 1:10,000 @A3 

Rev	Date	Amendment	Initials
1	17/06/20	Minor change to location	FC

  
 Craighall Business Park, Eagle Street, Glasgow, G4 9XA  
 T: 0141 341 5040 E: info@envirocentre.co.uk W: www.envirocentre.co.uk

## B GEOGRAPHICAL LEVEL OF IMPORTANCE OF ECOLOGICAL FEATURES

Level of Importance	Sites	Habitats	Species
<b>International</b>	Designated, candidate or proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; UNESCO (Ecological) World Heritage Sites; UNESCO Biosphere Reserves; Biogenetic Reserves.	A viable area of habitat included in Annex I of the EC Habitats Directive; a habitat area that is critical for a part of the life cycle of an internationally important species.	A European Protected Species; an IUCN Red Data Book species that is globally Vulnerable, Endangered or Critically Endangered; a Category A internationally important bryophyte assemblage <sup>18</sup> .
<b>National (UK)</b>	Sites of Special Scientific Interest/Areas of Scientific Interest; National Nature Reserves; Nature Conservation Review Sites; Marine Conservation Zones (UK offshore).	A viable area of priority habitat listed in the UK Biodiversity Action Plan; an area of habitat fulfilling the criteria for designation as an SSSI/ASSI or MCZ; a habitat area that is critical for a part of the life cycle of a nationally important species.	An IUCN Red Data Book species that is Vulnerable, Endangered or Critically Endangered in the UK; a species that is Rare in the UK (<15 10km grid squares); a priority species in the UKBAP; a Schedule 5 (animal) or Schedule 8 (plant) species included in the Wildlife and Countryside Act 1981; any species protected under national (UK) legislation where there is the potential for a breach of the legislation; a Category A nationally important bryophyte assemblage <sup>19</sup> .
<b>National (England, Scotland, Wales, Northern Ireland, Ireland)</b>	National Parks (England, Scotland, Wales); Natural Heritage Areas (Ireland); Marine Conservation Zones (England and Wales inshore); Marine Protected Areas (Scotland offshore); Marine Consultation Areas (Scotland); Marine Nature Reserves (Wales, Northern Ireland); Sensitive Marine Areas (England); Heritage Coasts (England and Wales).	Habitats of principal importance for biodiversity in the relevant countries <sup>20</sup> , including Priority Marine Features (PMFs) <sup>21</sup> .	Species of principal importance for biodiversity in the relevant countries <sup>22</sup> , including PMFs.

<sup>18</sup> Averis, A.B.G, Genney, D.R, Hodgetts, N.G, Rothero, G.P. & Bainbridge, I.P. 2012. Bryological assessment for hydroelectric schemes in the west highlands – 2<sup>nd</sup> edition. Scottish Natural Heritage Commissioned Report No. 449b

<sup>19</sup> Averis, A.B.G, Genney, D.R, Hodgetts, N.G, Rothero, G.P. & Bainbridge, I.P. 2012. Bryological assessment for hydroelectric schemes in the west highlands – 2<sup>nd</sup> edition. Scottish Natural Heritage Commissioned Report No. 449b

<sup>20</sup> These are all the habitats that were identified as requiring action in the UKBAP and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework, including any additions.

<sup>21</sup> In July 2014, Scottish Ministers adopted a list of 81 priority marine features (PMFs) – many of which are features characteristic of the Scottish marine environment. Most are on other conservation status lists so may be valued higher than this.

<sup>22</sup> These are all the species that were identified as requiring action in the UKBAP and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework, including any additions.

<b>Level of Importance</b>	<b>Sites</b>	<b>Habitats</b>	<b>Species</b>
<b>Regional</b>	Regional Parks (Scotland).	Regional Local Biodiversity Action Plan habitats noted as requiring protection.	A species that is Nationally Scarce in the UK (present in 16-100 10km grid squares); a species that is included in the Regional LBAP; an assemblage of regionally scarce species.
<b>County / Metropolitan</b>	Local Nature Reserves; Wildlife Trust Reserves (England and Wales); Woodland Trust Sites; Royal Society for the Protection of Birds Sites; Local Wildlife Sites (Scotland).	County LBAP habitats noted as requiring protection; semi-natural, ancient woodland >0.25ha in extent.	A species that is included in the County LBAP; an assemblage of species that are scarce at the county level.
<b>Local</b>		Semi-natural, ancient woodland <0.25ha in extent; diverse or ecologically valuable hedgerow network; semi-natural habitats that are unique or important in the local area; flushes, springs and base rich rock that support bryophyte assemblages that are widespread but localised to these habitats.	Species as defined by Local Authority lists (if available).
<b>Site</b>		Common and widespread habitats not covered above.	Common and widespread species not covered above.
<b>Negative</b>			An Invasive Non-Native Species (INNS) as defined by the GB Non-Native Species Secretariat (NNSS) and supported by the GB Invasive Non-native Species Strategy (2015); legally controlled species under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended by the relevant country legislation).

## C GEOGRAPHICAL LEVEL OF IMPORTANCE OF ORNITHOLOGICAL FEATURES

Level of Importance	Assessment Criteria		
	Legal Protection	Conservation Status	Population Size
<b>International</b>	Any species within Annex 1 of the EU Birds Directive	Any species which is listed as Critically Endangered or Endangered on the IUCN Red List	Supporting greater than 1% of the EC population
<b>National (UK)</b>	Any species within Schedule 1 of the Wildlife and Countryside Act	Any species that is listed as a Priority Species in the UKBAP; any species on the BoCC Red List	Supporting greater than 1% of the UK population
<b>National (Scotland)</b>		Any species on the Scottish Biodiversity List	Supporting greater than 5% of the Scottish population
<b>Regional</b>		Any species on the BoCC Amber List	Supporting greater than 0.5% of the UK population
<b>County</b>		Any species that is listed as a Priority Species in the LBAP	Supporting greater than 0.05% of the UK population
<b>Local</b>		BoCC Green List; or species with no conservation concern; common and widespread throughout the UK	Supporting less than 0.05% of the UK population



## **D PHASE 1 HABITAT MAPS**



**Legend**

- Survey Area
- JNCC Code**
- B2.2 Neutral Grassland - Semi-improved
- C3.1 Other - Tall Ruderal
- H1.3.2 Intertidal Green Algal Beds
- H1.3.3 Intertidal Brown Algal Beds
- H3 Shingle Above High Tide Mark
- H5 Strandline Vegetation
- H8.1 Maritime Cliff and Slope - Hard Cliff
- I2 Rock Exposure & Waste - Rock Armouring
- J2.4 Fence
- J4 Bareground

Do not scale this map  
**Client**  
 Orkney Islands Council Harbour Authority

**Project**  
 Hatston Pier Terrestrial Ecology & Ornithology PEA

**Title**  
 Hatston Pier Phase 1 Habitat Plan

**Status**  
**FINAL**

<b>Drawing No.</b> 673702-012	<b>Revision</b> -	<b>Date</b> 26th Oct 2020
<b>Drawn</b> GW	<b>Checked</b> MM	<b>Approved</b> MC





**Scale**  
 1:2,000 @A3


Rev	Date	Amendment	Initials
-	-	-	-

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Contains OS data © Crown Copyright and database right 2020



## E PHOTOGRAPHIC RECORD

<b>HATSTON PIER</b>	
	<p><b>Photograph 15</b></p> <p>Looking SE from the end of the pier access road at HY 43789 12981 along the proposed area of development, showing the intertidal habitats with both green and brown algal growth</p>
	<p><b>Photograph 16</b></p> <p>Looking NE from the end of the pier access road at HY 43779 12909 across to the proposed extension of the current pier, showing the intertidal habitat</p>
	<p><b>Photograph 17</b></p> <p>Looking NW from the end of the pier access road at HY 43779 12909 across the proposed area of development, showing the intertidal habitats, the maritime hard cliff habitat, and the strip of tall ruderals between the road and the artificial rock sea defences</p>
	<p><b>Photograph 18</b></p> <p>Looking N from the end of the pier access road at HY 43779 12909 across the proposed area of development, showing the intertidal habitats with brown algal growth and the artificial rock sea defences</p>

	<p><b>Photograph 19</b></p> <p><b>Looking ENE from HY 43626 12972 from above the cliff across the area of proposed development towards the area of the proposed pier extension</b></p>
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