

Phase 1 Habitat Survey and Otter Survey at 'Brims Sheep Skerry'

For Aquatera Ltd

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SUMMARY

A Phase 1 habitat survey found a site dominated by degraded dunes and dune grassland, with a variety of other habitats present in much smaller proportion. The site was quarried for sand over a long period and is now used as a livestock wintering and feeding station, with the result that there is little remaining semi-natural habitat. However the coastline retains a partially intact dune ridge, a storm beach and coastal grassland. In contrast, peatland is present at the far western end of the site and here there are small areas of bog, heath and related habitats.

A single notable plant species was found, the 'Locally Scarce' Whorl-grass *Catabrosa aquatica*.

An otter survey found some potential otter habitat but no signs of otters. No other protected species or signs of any were found and it is improbable that the site has potential to support any protected species, apart from passing otters from an assumed local population.

Those Phase 1 habitats listed on European, UK, Scottish and local legislative and biodiversity lists have been identified. Some brief comment on the sensitivity of habitats and species present and possible mitigation measures have been provided. It is considered that:

- Much of the habitat covering the eastern and central part of the site, comprising improved grassland, weedy, ephemeral vegetation and modified dune grassland, all much altered from former semi-natural habitats by sand quarrying followed by grazing and eutrophication, are of low or negligible ecological importance.
- There remain some habitats and features within the eastern and central parts of the site with some level of importance and these should be conserved and/or re-instated in the event of development. They comprise the boulder beach; the open dune ridge, especially the part named Melberry, where disturbance is likely to cause further erosion; and the burn/burn mouth (with Whorl-grass). Whorl-grass will rapidly re-colonise after disturbance, but in the event of works being carried out in that area it will be necessary to ensure that plants are not destroyed and that sufficient appropriate habit is conserved.
- A variety of habitats and features present at the western end of the site have some level of importance including blanket bog, wet heath and flush. In the event of these being affected by development further advice should be sought as to how to minimise adverse impacts and appropriately re-instate.

It is considered that further baseline survey of terrestrial habitats, vascular plants and otter will not be necessary.

1 INTRODUCTION

1.1 Terms of Reference

John Crossley (MCIEEM) was commissioned by Aquatera Ltd to undertake a Phase 1 habitat survey and an Otter *Lutra lutra* survey at the site referred to as 'Brims, Sheep Skerry' at the southern extremity of the island of Hoy, Orkney, a potential cable landfall location for the 200MW Brims Tidal Array Ltd development off the south coast of Hoy. This report presents the results of the surveys carried out on 25 June 2015.

The findings of these surveys will be used to inform the Environmental Impact Assessment (EIA) for the proposed development.

1.2 Objectives

1. Description of the main habitats found, and any notable or sensitive species, habitats or features with accompanying habitat map and photographs;
2. Description of the findings of an otter survey with accompanying map and photographs;
3. Comments on the suitability of site for protected species and their potential to occur on the site;
4. Recommendations for mitigation if appropriate and/or further survey work.

1.3 Methods – Phase 1

The area of Phase 1 habitat survey comprised a single fenced enclosure north of Sheep Skerry, about 14 hectares in area, as outlined on the accompanying map with key (base map provided by Aquatera Ltd) (see Annex 2a and 2b).

The Phase 1 habitat survey was carried out following standard methodology (JNCC, 2010). All areas of vegetation within the study area were walked over, classified, mapped and their particular character and condition at the site noted. Photographs representative of the site and its various habitats and significant features were taken.

A previous National Vegetation Classification (NVC) report on the site, included in the *Sand dune vegetation survey of Scotland* (Dargie, 1998) was afterwards consulted.

This is mainly a baseline survey report. Evaluation of the site and recommendations for mitigation and/or further survey are confined to brief comments and a tabulated summary.

2 SITE DESCRIPTION

2.1 Overview

Most of the site is a worked-out sand quarry, now used as a livestock wintering and feeding station and with little remaining semi-natural habitat. Nutrient enrichment and ground disturbance from livestock have contributed to a vegetation cover of ephemeral weedy vegetation and improved grassland over much of the sand substrate. There has been some dumping of rubble and other farm rubbish. Patches of habitat less modified by this history of management can be found away from the main feeding areas, especially at the western end of the site, furthest from the access road from Melsetter Farm. The chief remnant of semi-natural habitat is a fringe of fixed sand dunes along much of the seaward edge, though even these are badly eroded in places.

Other features and habitats include a boulder beach, with large stones deposited well above high water mark, and at the far western end of the site, beyond the area of sand deposition that otherwise characterises the site, a variety of non-sandy habitats. These chiefly comprise blanket bog, wet heath and marsh/marshy grassland.

The NVC survey (Dargie, 1998), of the sandy area only, classified much of it as improved grassland/weeds (MG7/Ruderal) and a form of semi-improved damp pasture (MG11). Whilst NVC and Phase 1 methodologies and classifications differ, Dargie's findings bear out a characterisation of

the main part of the site as a highly modified and degraded dune system with little of its original character remaining.

2.2 Phase 1 Habitats

Table 1. Summary Phase 1 habitat at the site

Phase 1 Habitat	Condition (applies to semi-natural habitats only)	Approximate area (hectares)
H.4 Boulders/rocks above high water mark	Unmodified	0.4
H.6.8 Open dune	Partially eroding/damaged.	1.8
H.6.5 Dune grassland	Mainly modified/damaged	4
H.6.4 Dune slack	Modified/damaged	0.7
H.8.4 Coastal grassland	Grazed/unmodified	< 0.1
B.1.2 Semi-improved acid grassland	Grazed/modified	0.1
B.4 Improved grassland	N/A	0.8
B.5 Marsh/marshy grassland	Variable, mainly grazed but otherwise unmodified	0.7
D.2 Wet heath	Grazed but otherwise unmodified	0.7
M. 1.6.1 Blanket Bog	Grazed but otherwise unmodified	0.6
M.2.1 Acid/neutral flush	Unmodified	< 0.1
G.2 Running water	Unmodified. Supports one Locally Scarce species.	–
J.3 Ephemeral/short perennial	N/A	4.5

2.2.1 Coastland

H.4 Boulders/rocks above high water mark (Photo 1)

Boulders up to 1 metre in diameter have been cast above high water mark along a 200m section of the shore towards the western end of the site. There is little or no vegetation among them.

H.6.4 Dune slack (Photo 2)

Two hollows in the sand substrate have some of the character of dune slack, with Sedges *Carex* spp and Northern Marsh Orchids *Dactylorhiza purpurella*, but the effect of eutrophication is apparent in the lush growth of competitive plants including Marsh Horsetail *Equisetum palustre* and Watercress *Nasturtium officinale*.

H.6.5 Dune grassland (Cover photo)

Grassland on consolidated and flattened dunes. Most of the grassland classified as dune grassland at this site is semi-improved, i.e. it retains some of the quality of typical dune grassland with abundant Red Fescue *Festuca rubra* grass but with only occasional presence of characteristic species such as Lady's-bedstraw *Galium verum*; and it is generally species-poor and includes improved grassland species such as Ryegrass *Lolium perenne*, Meadow-grass *Poa* spp and weeds. Patches of more-or-

less unimproved dune grassland persist on the back-slopes of open dune along the seaward edge of the site.

H.6.8 Open dune. (Photo 3)

Dunes not fully consolidated, with semi-fixed vegetation of Marram grass *Ammophila arenaria* interspersed with shorter turf and small patches of bare sand. This is Phase 1 'Grey' dune. It forms a narrow band between an eroding seaward slope of unvegetated sand and the dune grassland behind. There is no intervening zone, between grey dune and beach, of mobile dune with pioneer vegetation, indicating that this is an eroding coast with little or no new sand deposition. There are sand blow-outs, probably exacerbated by the trampling of livestock. The steep banks named Melberry, where sand is deposited over an exposed rocky foreshore, are in a more favourable condition than the rest of this habitat at the site.

H.8.4 Coastal grassland (No photo)

A strip no more than 3m wide for a short distance along the western shore: short, dry grassland with Spring Squill *Scilla verna* and Sea Plantain *Plantago maritima*. Grazed short but in favourable condition.

2.2.2 Grassland and Marsh

B.1.2 Semi-improved acid grassland (No photo)

A small patch of dry grassland on sand is present near the western end of the site, where sand deposition abuts peatland. Probably derived from what was originally dry heath, where heavy grazing has eliminated dwarf shrubs.

B.4 Improved grassland (In cover photo)

A strip close to the eastern end of the site, with established cover of grasses and white clover *Trifolium repens*, adjacent to arable and temporary grassland fields.

B.5 Marsh/marshy grassland (Photo 4)

Three areas identified, all towards the western end of the site, quite species-rich and characterised by an abundance of sedges *Carex* spp.

2.2.3 Heathland

D.2 Wet dwarf shrub heath (Photo 5)

The extreme western end of the site is peatland. Shallow peat here has a cover of Heather *Calluna vulgaris*, Deer-grass *Trichophorum germanicum*, Purple Moor-grass *Molinia caerulea* and Heath-rush *Juncus squarrosus*. It is heavily grazed and the heather very short, but is not otherwise modified or damaged.

2.2.4 Mire

M.1.6.1 Blanket bog (Photo 5)

Deeper peat associated with a large area of blanket bog off-site to the north-west. *Sphagnum* is abundant. Condition similar to wet heath.

M.2.1 Acid/neutral flush (No photo)

A shallow, sloping depression in wet dwarf shrub heath, dominated by Common Sedge *Carex nigra* and *Sphagna*. A minor feature on the site.

2.2.5 Open Water

G.2 Running water (Photo 6)

Water draining from the central dune slack issues onto the sand beach via a break in the dune ridge. Water quality appears to be good, but there is much rubbish – plastic containers, etc, wind-blown and sea-cast – in the channel.

2.2.6 Miscellaneous

J.3 Ephemeral/short perennial (in cover photo)

A large area of disturbed ground occupying much of the central and eastern part of the site. No doubt mainly bare sand and mud in winter, at the time of survey it had a sparse cover of annual and other grasses, mainly Annual Meadow Grass *Poa annua* and Creeping Bent *Agrostis stolonifera* and weeds such as Greater Plantain *Plantago major* and Pineapple Weed *Matricaria discoidea*.

No code (Target noted). Rubbish dump (Photos 7 & 8)

Piles of building waste, defunct machinery etc, in several places

2.2.7 Species

Vascular plants recorded comprise 130 species, a typical list for these habitats as encountered in the Orkney Islands. They include one notable species, Whorl-grass *Catabrosa aquatica*, a few plants growing at the mouth of the burn where it emerges onto the sandy beach at National Grid Reference ND26278877. This species is listed as 'Locally Scarce' (less than 11 recorded sites in the Orkney Islands) (Meek & Crossley, 2015) but has no higher conservation designation.



Photo 1 H.4 Boulders/rocks above high water mark



Photo 2 H.6.4 Dune slack (modified)



Photo 3 H.6.8 Open dune



Photo 4 B.5 Marsh/marshy grassland at west end of site



Photo 5 D.2 Wet dwarf shrub heath and M.1.6.1 Blanket bog at west end of site



Photo 6 G.2 Running water/burn emerging on beach



Photo 7 Dump at eastern entrance to site



Photo 8 Dump at shore

3. OTTER SURVEY

3.1 Methods

The area of survey consisted of the landfall area plus a buffer of 250m, in effect the same as that of the Phase 1 habitat survey. The survey was conducted by established methods for basic survey (RSPB *et al.* 1994; SNH 2015). These consisted of an assessment of habitat suitability and a thorough examination of the area for holts, couches and other signs comprising spraints, footprints and paths used by otters. Particular attention was paid to potentially favourable otter habitat. Photographs were taken to illustrate the findings.

3.2 Survey

The area and habitats are as described in the Phase 1 survey report. The open vegetation habitats described – dune and dune grassland, other grassland types, ephemeral/short perennial, mire and wet heath – provide no significant cover or other attraction for otters and no signs of them were seen. However, two features, the burn and the boulder beach, might be expected to attract otters.

The burn, draining a dune slack wetland and emerging onto the Sand of the Links (see photo 6), provides little or no cover along its banks nor route to potential otter habitat anywhere nearby. No signs of otters were found here.

The boulder beach (see photo 1) forms a lattice of gaps and tunnels between the large stones and provides potential cover for otters either as couch or holt. The area was searched but no signs of otters were found here either.

4. DISCUSSION

4.1 Protected species

No protected species or signs of them were found on the site.

Absence of signs of otters in the survey area indicates that it is at present of negligible importance for them. Anecdotal evidence indicates that an otter population is present in the wider area of coast and moorland nearby; it is probable that this wider area provides habitat and resources more favourable to otters than the proposed development site.

4.2 Habitats

Some of the Phase 1 habitats identified correspond with types listed on European, UK, Scottish and local legislative and biodiversity lists. A table showing this correspondence is given in Annex 1. These listings provide a basis for further evaluation and assessment of the potential importance of each type, the actual importance to be determined with regard to local factors at this particular site, these principally including condition and size of the habitats, their local context and any species of importance that they support. However, some brief comment on the sensitivity of habitats present and possible mitigation measures are provided.

1. Much of the habitat covering the eastern and central part of the site, comprising improved grassland, weedy, ephemeral vegetation and modified dune grassland, all much altered from former semi-natural habitats by sand quarrying followed by grazing and eutrophication, are of low or negligible ecological importance.
2. A variety of habitats and features present at the western end of the site have some level of importance and these should be conserved and/or re-instated in the event of development.
3. Within the eastern and central parts of the site there remain some habitats and features with a level of importance and these should be conserved and/or re-instated in the event of development. They comprise the boulder beach; the open dune ridge, especially the part named Melberry, where disturbance is likely to cause further erosion; and the burn/burn mouth (with Whorl-grass). Whorl-grass will rapidly re-colonise after disturbance, but in the event of works being carried out in that area it will be necessary to ensure that plants are not destroyed and that sufficient appropriate habit is conserved.

Further baseline survey of terrestrial habitats and vascular plants is not considered necessary.

7. REFERENCES

Dargie, T. 1998. *Sand Dune Vegetation Survey of Scotland: Orkney: Main report, Volume 1 and NVC maps, Volume 3*. Scottish Natural Heritage

JNCC. 2010. *Handbook for Phase 1 habitat survey – a technique for environmental audit*. JNCC

Meek, E., and Crossley, J. 2015. *Orkney Vice County 111. Scarce, Rare and Extinct Vascular Plant Register*. Privately published and online at http://bsbi.org.uk/Orkney_RPR_2015.pdf

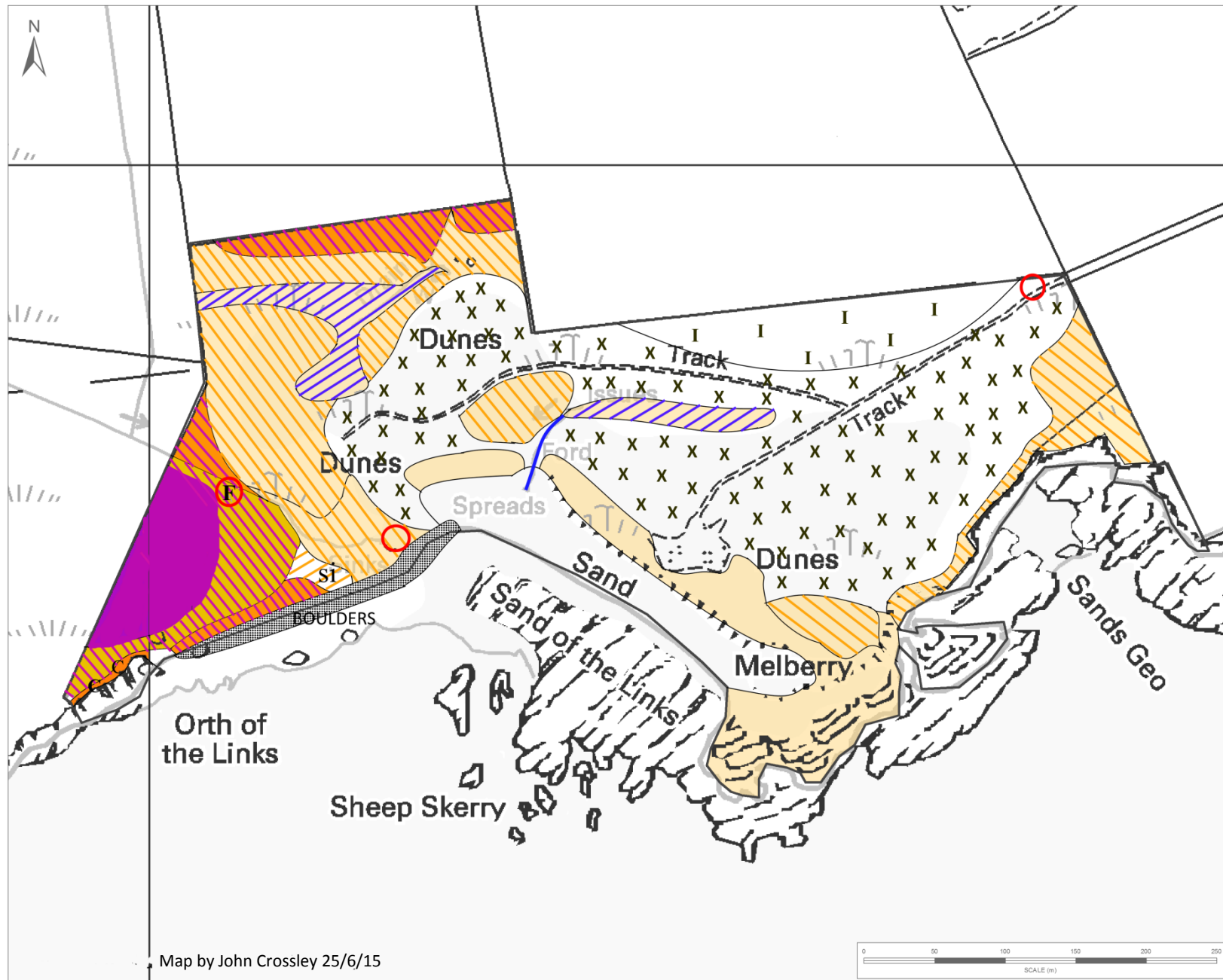
RSPB, NRA & RSNC. 1994. *The New Rivers & Wildlife Handbook*. RSPB

SNH, 2015. Otters [Online] Available at: <http://www.snh.gov.uk/about-scotlands-nature/wildlife-and-you/otters>

Annex 1. Relation of Phase 1 Habitat types at the site to legislative and biodiversity lists




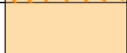




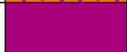





Phase 1 Habitat	EU Habitats Directive Annex 1	UKBAP priority habitat	Scottish Biodiversity List	Orkney LBAP
H.6.8 Open dune & H.6.5 Dune grassland	Fixed dunes with herbaceous vegetation	Coastal sand dunes	✓	✓
H.6.4 Dune slack	Humid dune slacks	Coastal sand dunes	✓	✓
H.8.4 Coastal grassland	Vegetated sea cliffs of the Atlantic and Baltic coasts	Maritime cliff and slope	✓	✓
H.4 Boulders/rocks above high tide mark	-	-	-	Storm beach
D.2 Wet heath	Northern Atlantic wet heaths with <i>Erica tetralix</i>	Upland heathland	✓	✓
M. 1.6.1 Blanket Bog	Blanket bogs	Blanket bog	✓	✓
M.2.1 Acid/neutral flush	-	Upland flushes, fens and swamps	✓	✓
G.2 Running Water	-	-	-	Burns and canalised burns
B.5 Marsh/marshy grassland	-	-	-	Wet meadow
B.1.2 Semi-improved acid grassland	-	-	-	-
B.4 Improved grassland	-	-	-	-
J.3 Ephemeral/short perennial	-	-	-	-

Annex 2a. Phase 1 habitats map



Annex 2b

BRIMS SHEEP SKERRY – Phase 1 map key

H.4		Boulders/rocks above high water mark
H.6.4		Dune slack
H.6.5		Dune grassland
H.6.8		Open dune
H.8.4		Coastal grassland
B.1.2		Semi-improved acid grassland
B.4		Improved grassland
B.5		Marsh/marshy grassland
M.1.6.1		Blanket bog
M.2.1		Acid/neutral flush
D.2		Wet dwarf shrub heath
G.2		Running water
J.3		Ephemeral/short perennial
		Target note

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