



# **Brims**

## Otter Survey

Scottish and Southern Energy Renewables and  
OpenHydro

V2: 21<sup>st</sup> July 2014

Final Report

PB2561



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## **SUMMARY**

Royal HaskoningDHV has been commissioned by Scottish and Southern Energy renewables (SSER) and OpenHydro to undertake an otter survey in relation to the proposed Brims Tidal Array Ltd (BTAL) project. The purpose of this study was to map otter activity in and near to the development site.

An otter survey was undertaken by two Royal HaskoningDHV ecologists on 21<sup>st</sup> – 25<sup>th</sup> August 2012. This was preceded by a desk study of the area and its surrounds, drawing on a number of sources.

The survey aimed to record field signs for otter, as well as any suitable habitat present within the study area, make recommendations with regard to the planned work and identify any further surveys that may be necessary. The findings of the survey will be used to inform the EIA process for the project.

The survey identified otter field signs to indicate the presence of otter in Aith Hope, however no otter holts were observed. Elsewhere suitable habitat was limited and no otter field signs were found.

Large areas of the coast were inaccessible for health and safety reasons, therefore these could not be surveyed for otter.

Recommendations for further surveys and preliminary mitigation advice are provided.

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## **1 INTRODUCTION**

### **1.1 Purpose of report**

Brims Tidal Array Ltd (BTAL) intends to install a tidal energy conversion array off the south coast of Hoy, Orkney, Scotland. Royal HaskoningDHV has been commissioned by BTAL to assist in applications for consent and is conducting an Environmental Impact Assessment (EIA) for the proposed development. This document reports the results of an otter survey conducted by Royal HaskoningDHV which will be used to inform the EIA.

The aim of the survey was to record any evidence that the study area supports or may support otters, make recommendations with regard to the planned work's potential to affect otters and identify any further surveys that may be necessary. The findings of the survey will inform the EIA process.

### **1.2 The proposed development**

BTAL is a 50-50 partnership between SSE Renewables UK Limited (SSER) and OpenHydro to jointly develop the Brims tidal site with the aim of harnessing tidal energy to generate clean, renewable electricity from a specific site within the Pentland Firth and Orkney Waters on a commercial scale.

BTAL were awarded an Agreement for Lease by the Crown Estate in November 2010, which gives exclusive rights to develop the Brims site to the south of Hoy, Orkney.

An array of tidal turbines, providing up to 200 megawatts of renewable energy could potentially be installed.

Installation will require associated electrical infrastructure including an export cable coming ashore, landfall and onshore cable corridor to an onshore substation. BTAL's consent application will not include the onshore substation or onward connection to the grid, which is the responsibility of SHE-T and will be subject to its own application. The onshore substation is, however, likely to be located in the footprint of the onshore cable corridor area of search.

### **1.3 Scope of works**

The scope of works for the otter survey included the following:

- A search of all freshwater bodies within the onshore study area for signs of otters;
- A search the coastal margin for any signs of otters; and
- The production of a map with associated target notes detailing the findings of the survey.

### **1.4 Conditions of survey**

The survey was completed by two experienced Royal HaskoningDHV ecologists from the 21<sup>st</sup> – 24<sup>th</sup> of August 2012. The weather was warm and sunny throughout, with some patches of cloud and a gentle breeze. The conditions were favourable other than

a couple of days where it rained overnight and into the early morning. Some access was restricted in the study area and is discussed in the Limitations (section 1.7).

## 1.5 Study area

The otter survey was conducted over the area outlined in purple in **Figure 1.1**. Hereafter, this area shall be referred to as the 'study area'.

## 1.6 Legislation

The European otter *Lutra lutra* is a semi-aquatic mammal, common around the freshwater and coastal areas of Scotland. UK populations are internationally important, especially since their widespread decline across much of their western European range (JNCC, 2004). Populations in coastal areas utilise shallow, inshore marine habitats for feeding and require fresh water for bathing and terrestrial areas for resting and breeding holts (JNCC, 2004). Where otters live in coastal areas (particularly in Scotland) they tend to have a largely diurnal habit, live in group territories, and have home ranges below 5km (Kruuk, 1996).

Otters are protected under the Conservation (Natural Habitats, &c) Regulations 1994 (as amended) in respect of:

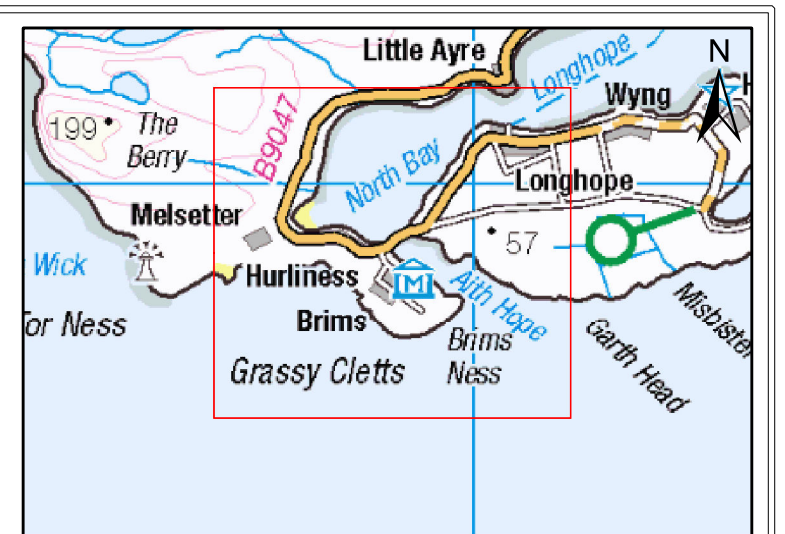
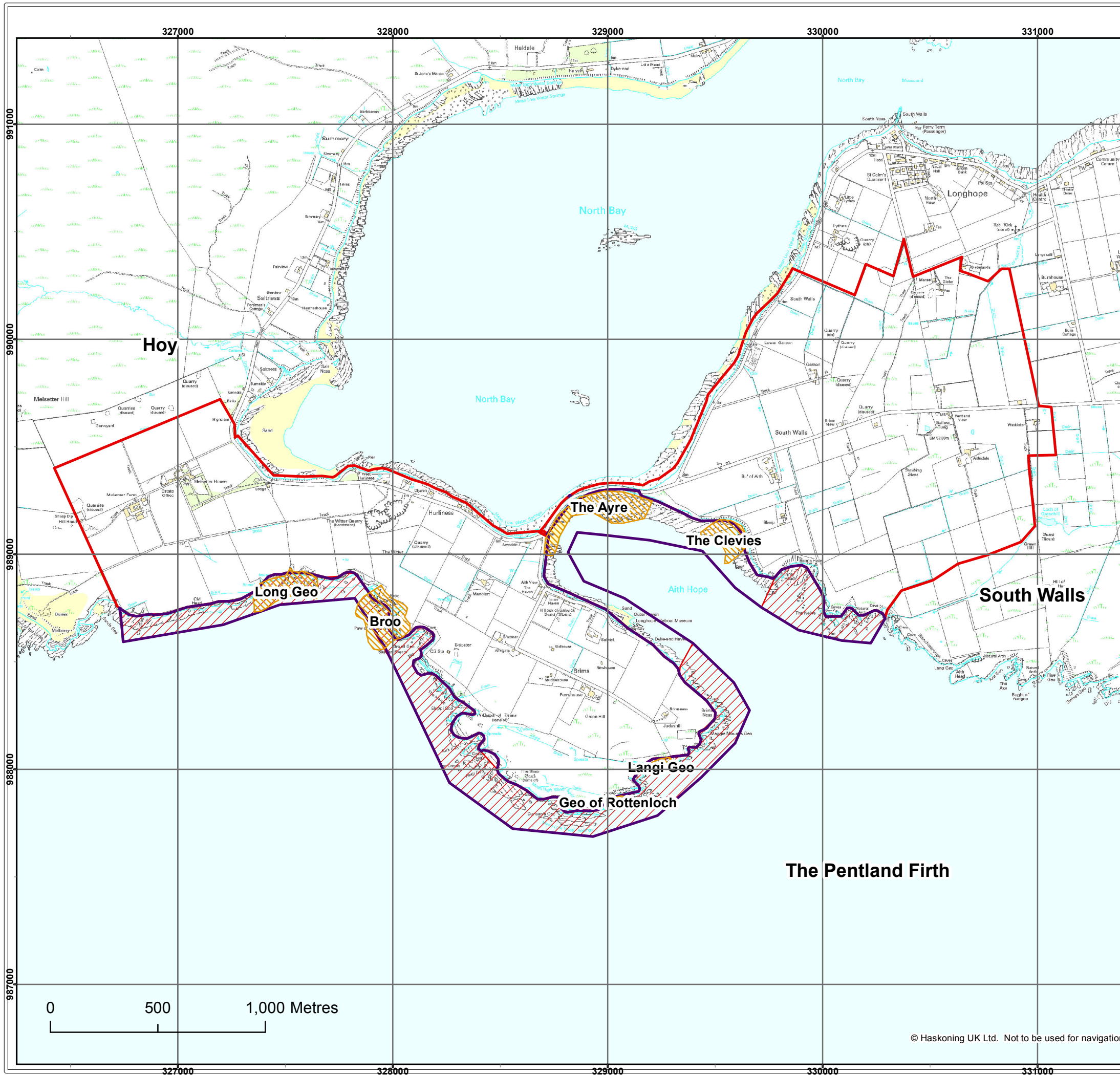
- Deliberately or recklessly:
  - capturing, injuring or killing an animal;
  - disturbing an animal\*;
  - harassing an animal(s);
  - obstructing access to a breeding site or resting place of an animal;
  - taking or destroying the eggs of such an animal; and
- Damaging or destroying a breeding site or resting place of such an animal;





\*Deliberate disturbance of animals includes in particular any disturbance which is likely to:

- Disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;
- Disturb such an animal while it is rearing or otherwise caring for its young;
- Disturb such an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; and
- Disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.

Otter is also listed as priority species for conservation on the UK Biodiversity Action Plan (UKBAP) and is listed on the Orkney Local Biodiversity Action Plan and places of shelter are legally protected whether or not an otter is present. As a result of the Nature Conservation (Scotland) Act 2004, the Scottish Biodiversity List was compiled which identifies the habitats and species that should be taken account of in decision making, particularly in delivery by public bodies of their biodiversity duty. Otter have been selected for inclusion on the Biodiversity List. Otter is also listed on the SNH draft list of Priority Marine Features .





- Legend:
-  Potential landfall options
  -  Inaccessible areas
  -  Other study area
  -  Onshore study area

|         |                   |
|---------|-------------------|
| Client: | Project:          |
| BTAL    | Brims Tidal Array |

|        |                         |
|--------|-------------------------|
| Title: | Other Survey Study Area |
|--------|-------------------------|

|             |             |
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## 1.7 Limitations

The following limitations applied to the survey.

The existing species records collated during the desk study phase is predominantly derived from the National Biodiversity Network (NBN) Gateway. Some of these records have been provided at a low resolution (i.e. accuracy may only be to within 10km grid square). Additionally, many records are submitted by members of the public and volunteer groups. This data should not be taken as definitive for occurrence in the local area, with the lack of records for a species not precluding the presence of a species within the locale.

A large stretch of the coast was inaccessible, with high, steep sided cliffs, and no safe access to the shore (**Figure A1, Appendix A**).

Rain occurred overnight on a number of days' survey, which may have washed away recent field signs for otter, and thus it is possible field signs went undetected.

These limitations aside, the results of the ecological survey are considered to allow a sufficient evaluation of potential constraints and the potential for negative impacts from the proposed development.

## 2 METHODOLOGY

All place names within this document are taken from Ordnance Survey maps, either 1:25000 scale or 1:10000.

### 2.1 Desk study

The NBN Gateway ([www.nbngateway.co.uk](http://www.nbngateway.co.uk)) website was reviewed for any existing records of otter within 1km of the survey area.

### 2.2 Field survey

A dedicated otter survey was conducted along the coastline and watercourses within the onshore study area. The survey methodology used conformed to SNH guidance (Scottish Wildlife Series: Otters and Development) and was designed to inspect potential resting site locations (i.e. coastal fringe, burn banks, exposed peat faces or rock piles) throughout the survey area and to note any additional otter related features.

The surveyors searched for any other signs of otter and also recorded the presence of otters when sighted during the survey. These included:

- Paw-prints;
- Spraint (otter faeces);
- Anal jelly (jelly-like secretion);
- Pathways;
- Couches /lie-ups (above ground resting place); and
- Holts (below-ground resting places).

These field signs were noted alongside more general descriptions of the surrounding habitats.



Field signs were mapped and are shown in **Appendix A**. Accompanying target notes (TN) are provided in **Appendix B** and provide additional information for each record.

### 3 RESULTS

#### 3.1 Desk study

NBN records showed otter throughout Orkney, however, there were no records within 1km of the study area.

#### 3.2 Field survey

##### 3.2.1 Habitat suitability

###### *Inland*

All otter signs were found within the coastal area, just above the mean high water mark.

No running burns were found within the study area and the predominant water bodies were man-made drains adjacent to agricultural fields. These drains tended to be stagnant, if not dry, and were generally overgrown with species typical of fertile soil (such as broad-leaved dock, nettle, and rank grasses).

A couple of ponds were recorded but the connectivity of the ponds to watercourses in the surrounding landscape was poor, and no field signs were expected here nor were any found.

###### *Coast*

The coast varied along the study area, including high, steep cliffs to shallow pebble, shingle and sandy beach. Further information on the intertidal habitats can be found in the accompanying Intertidal Survey Report (Royal HaskoningDHV, 2012).

The coastline within Aith Hope had the greatest concentration of otter field signs (see **Appendix A and B**). This area was shallow with sand and pebble beach. The beach had sparsely vegetated areas to tall and densely vegetated areas. Shallow, inshore marine habitats are considered to be preferred by otters, and dense seaweed for hunting is also preferred (SNH 2007). However, there were no running burns leading to the coast other than a drain (TN 10), which are necessary for bathing (SNH 2007) in fresh water, used by coastal otters to maintain the waterproof qualities of their fur.

Sparser areas occurred between the sand and pebble, supporting lyme grass, hawk's-beard, *Atriplex prostrate agg*, mayweed and sea plantain. Areas of taller vegetation included rank grasses such as false oat grass as well as curled and broadleaved-dock, and dense shrubs, particularly Japanese rose.

Dense vegetation was found along the western side of Aith Hope towards Brims Ness, along with regular rock piles from either natural boulders or concrete from sea defences. These were considered to provide a good resource to otters for lie-ups or holts.

### 3.2.2 Field signs

Spraint, potential pathways and lie-ups were found during survey, predominantly around the shore of Aith Hope. Otter field signs have been mapped and are provided in **Figure A1, Appendix A**, and are accompanied by target notes provided in **Appendix B**.

## 4 OVERVIEW OF DEVELOPMENT OPTIONS AND IDENTIFICATION OF POTENTIAL CONSTRAINTS

### 4.1 Brims landfall development options

The potential landfall development options were evaluated for their value to otters, and are detailed in **Table 4.1**.

Most of the landfall sites were inaccessible, and characterised by high, steep cliffs, that were difficult to access and view.

Otters could potentially swim around these landfall options, to commute across the coastal area of South Walls. Use would be most likely to occur around Aith Hope, where suitable habitat was found, and which is relatively shallower and calmer in comparison to the headland, which is subject to fast tides and exposed. All of the landfall options had poor freshwater resources available in their vicinity, being mostly dried out or stagnant drains and limiting their value to otters and providing few incentives to come inland.

**Table 4.1 Potential constraints to landfall options posed by otters**

| Landfall Option   | Importance to otter   | Potential constraints  |
|-------------------|---|--|
| Long Geo          | Direct access to these geos was not possible and so they were viewed from the cliff tops. However, it is considered unlikely essential habitats for otter are present, (due to poor freshwater resources available in their vicinity, such as dried out drains) and no field signs were observed. | <ul style="list-style-type: none"> <li>Steep cliffs, very uneven boulder and bedrock shore.</li> <li>Unlikely to be constrained by the presence of otter due to otter tending to prefer shallow inshore marine habitats.</li> </ul>  |
| Geo of Rottenloch |   |  |
| Langi Geo         |   |  |
| The Ayre          | A number of field signs for otter and suitable habitat for shelter and foraging were found.   | <ul style="list-style-type: none"> <li>This area had the highest level of activity for otter within the study area.</li> <li>Potential damage, destruction or obstruction of resting or breeding places, and potential injury or killing, or disturbance to this species is highest here.</li> </ul> |
| The Clevies       | Although no field signs were recorded within this landfall option, a number of field signs for otter and suitable habitat were recorded within 100m of it.  | <ul style="list-style-type: none"> <li>Otters appear to also be in the vicinity of this area, therefore there is potential for damage, destruction or obstruction of resting or breeding places, injury or killing, or disturbance.</li> </ul>   |

## 5 RECOMMENDATIONS

The field survey found presence of otter and suitable otter habitat in Aith Hope. However, no holts were identified.

Where possible, construction works should be designed to avoid areas identified as in use by otters as detailed in **Figure A1, Appendix A**. This includes watercourse and water bodies (including the coastal area). SEPA recommends leaving a strip of riparian vegetation at least 10m along either side of a watercourse for wildlife benefit. The exact size will depend on:

- The site situation;
- The wildlife that exists at that location;
- The management of the existing land and vegetation; and
- The existing links to the wider countryside or other buffer zones.

Therefore, a suitable buffer distance between construction activities and these sensitive areas will be established with guidance from SNH and SEPA.

Where this is not possible, construction activities should maintain a strict footprint of works, and construction vehicles and equipment should not be active on, or stored by, the coastline for longer than is essential.

A pre-construction survey at least 8 weeks prior to the commencement of works is recommended. This will allow for the propensity for change to occur in the use of the area by otters between this survey and works commencing. This provides time to obtain a licence to disturb EPS, should this be necessary. The survey should be undertaken by a suitably qualified ecologist and include the area of the proposed construction footprint as well as a buffer zone of 250m (SNH 2007). The survey should be designed to determine, with greater certainty, whether or not resting or breeding sites are present. If otter shelters are located within 50m or, breeding area within 250m of potential development, a European Protected Species licence must be applied for from the Scottish Government, and a working method statement to implement mitigation will be appropriate. The statement should be prepared by suitably qualified ecologist and agreed with SNH. Beyond 250m disturbance is unlikely to be an issue (SNH 2007).

The following mitigation measures are based on standard best practice. All mitigation measures will be agreed with SNH prior to construction.

Construction should adhere to The Scottish Wildlife Series publication 'Otters and Development' (SNH 2007).

During construction, any temporarily exposed open pipe system should be capped in such a way as to prevent otters gaining access at the end of each working day.

Open trenches should have a ramp constructed in at least one place, especially if water filled, to provide an escape route.

If any otter fatalities occur during construction, carcasses should be retained and SNH should be notified, if non-fatal injuries occur as a result of construction than SNH should be notified immediately.

Construction work will be undertaken during agreed daylight working hours. Where artificial light is required, lights should be directed away from the coastal area and watercourses to allow otters to migrate through the area undisturbed.

In Aith Hope, it may be necessary to install otter fencing around the construction area depending on the final design and location of the electrical infrastructure. Further information and advice is available from SNH (2007) Otters and Development, Nature Conservation and Roads: advice in relation to otters (2001), by A Grogan, C Philcox and D Macdonald, and the Design Manual for Roads and Bridges (DMRB) particularly volume 10 section 4, part 4.

## 6 REFERENCES

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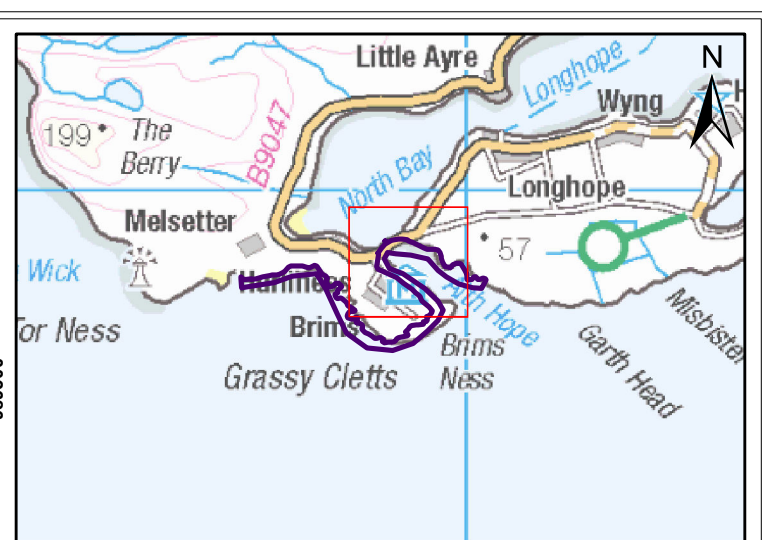
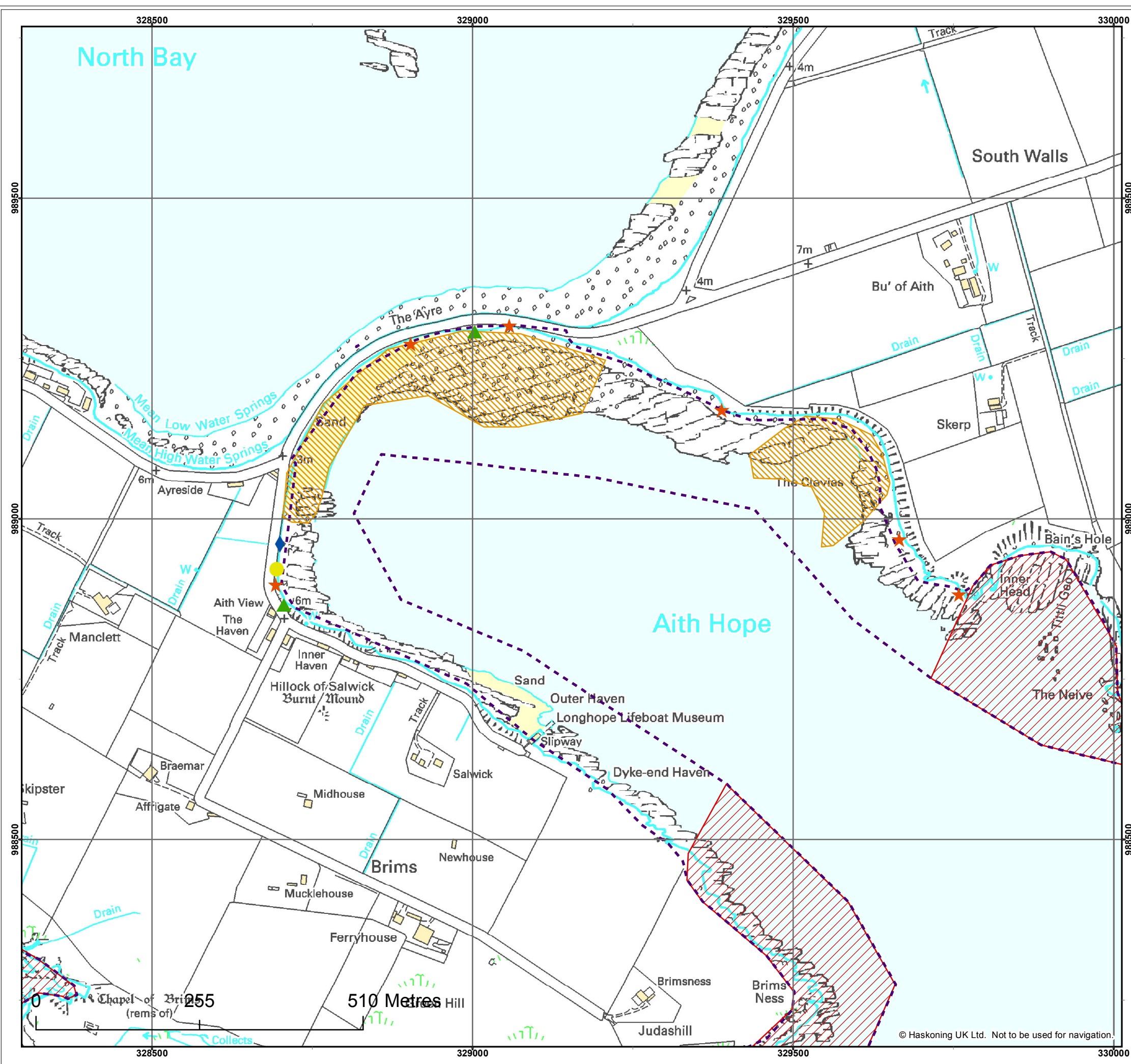
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## 7 APPENDICES

### 7.1 Appendix A: Otter Survey Map



Legend:

- ▲ Lie-up
- ◆ Lie-up, pathway
- Pathway
- ★ Spraint
- Study Area
- Inaccessible areas
- Potential landfall locations

|         |                   |
|---------|-------------------|
| Client: | Project:          |
| BTAL    | Brims Tidal Array |

Title:  
Otter Survey - Results

|            |             |        |          |       |         |
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Co-ordinate system: British National Grid

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## 7.2 Appendix B: Target Notes

| Target Note Number | Target Note  |
|--------------------|--|
| 1                  | <p data-bbox="379 465 1310 548">Bank of beach composed of large concrete boulders. Looks to have rained overnight, very difficult to detect any prints. Boulders appear to offer opportunities for shelter and resting places.</p>  |
| 2                  | <p data-bbox="379 1249 1310 1279">Multiple recent spraints on sea-defence concrete boulders and fishbone remains</p>   |





|   |  |
|---|--|
|   |    |
|   |  |
| 3 | Possible lie-up, however near pathway used by people to access the shore             |
| 4 | Possible spraint with very small fishbones   |



|   |  |
|---|--|
|   |                            |
| 5 | Possible spraint   |
| 6 | Possible old spraint<br> |
| 7 | Recent spraint   |



|    |  |
|----|--|
|    |    |
| 8  | <p>Tall vegetation including lyme grass, hawksbeard, mayweed, common cat's-ear with many opportunities for otters to lie-up</p>  |
| 9  | Possible pathway and lie-up from coast to road   |
| 10 | Possible pathway over road towards drain. No clear slip into drain. Drain overgrown little, shallow running water, no field signs seen.  |



|    |  |
|----|--|
|    |    |
| 11 | Possible spraint and pile of boulders offering places to lie-up and view beach       |
|    |  |
| 12 | Possible lie-up, however near pathway used by people to access the shore             |

