



Appendix D.1:
Technical Report Otter, Water Vole &
Badger Survey



Co-financed by the European Union
Connecting Europe Facility

NorthConnect KS
Serviceboks 603, Lundsiden
N-4606 Kristiansand
Norway

Phone +47 38 60 70 00
Mail: post@northconnect.no
Web: www.northconnect.no

VERSION 1.2
MARCH 1, 2017

TECHNICAL REPORT

NORTH CONNECT ECOLOGICAL SURVEYS

OTTER, WATER VOLE & BADGER SURVEY

REPORT REF: 16/008/AFF/R01

JAMES BUNYAN

TRACKS ECOLOGY

7 HILLHEAD, INVERFARIGAIG, INVERNESS, IV2 6XS

www.tracksecology.com - info@tracksecology.com

CLIENT

Affric Limited
Lochview Office
Loch Duntelchaig
Farr
Inverness
IV2 6AW

DOCUMENT HISTORY

Version	Date	Issue Notes
1.1	12 th October 2016	Draft for Client review
1.2	1 st March 2017	Final – no alterations

CONTENTS

1	Introduction	3
1.1	Terms of Reference	3
1.2	Objectives of Study	3
1.3	Site Description	3
2	Legislative Context	3
2.1	Otter	3
2.2	Water Vole.....	4
2.3	Badger	4
3	Methodology.....	4
3.1	Otter	5
3.2	Water Vole.....	5
3.3	Badger	5
3.4	Limitations.....	5
4	Results	6
4.1	Existing Information	6
4.2	Habitat Assessment.....	6
4.2.1	Otter	6
4.2.2	Water Vole.....	7
4.2.3	Badger	8
4.3	Surveys	8
4.3.1	Otter	8
4.3.2	Water Vole.....	8
4.3.3	Badger	9
5	Discussion.....	9
5.1	Otter	9
5.2	Water Vole.....	9
5.3	Badger	10
6	References.....	11
	Appendix A – Figures.....	12
	Appendix B – Photographs.....	14

1 INTRODUCTION

1.1 TERMS OF REFERENCE

Tracks Ecology was commissioned by Affric Limited to undertake an ecological survey focusing on otter, water vole and badger at the site of the North Connect scheme; a joint venture project involving the construction of a high voltage direct current (HVDC) power interconnector between Norway and the United Kingdom. The 'Site' consists of the locations of the converter station at Fourfields and the HVDC consenting boundary.

The survey is required to support a planning application and Environmental Impact Assessment (EIA) of the onshore works and was identified as necessary through an initial extended Phase 1 survey and subsequent Scoping Report.

For the purposes of this survey the 'Survey Area' for otter and water vole includes all watercourses and waterbodies within a buffer of 200m to infrastructure and for badger all land within a buffer of 200m to infrastructure. Figure 1 outlines the Survey Area. An additional component of the project is the high voltage alternating current (HVAC) cable linking the Converter Station to the existing sub-station at Millbank approximately 1km north of the current Survey Area. This area was surveyed for protected species in 2014 (Tracks Ecology 2014) and consequently this survey updates some areas where the respective survey areas overlap.

1.2 OBJECTIVES OF STUDY

This report seeks to document the likely presence or absence of otter *Lutra lutra*, water vole *Arvicola amphibious* and badger *Meles meles* from within the respective Survey Areas. Otter, water vole and badger are all afforded some level of protection under UK law.

The report details the results of the surveys with the following details:

- legislative context;
- field survey methodology;
- field survey results; and
- discussion.

1.3 SITE DESCRIPTION

The Site is located approximately 2km south of Peterhead, Aberdeenshire with the HVDC cable route running from the Converter Station at Fourfields (NK 120414) to beneath the coastline south of Long Haven Bay. The Fourfields location is within a number of large agricultural fields with simple post and wire or stone wall boundaries. The wider area supports intensive agricultural, minor roads, scattered dwellings and farm complexes. The HVDC route is largely beneath pasture and remnants of semi-natural vegetation along the coast. Further information on the habitats present is detailed within the extended Phase 1 report (Atmos Consulting Ltd 2014).

2 LEGISLATIVE CONTEXT

2.1 OTTER

The otter is a European Protected Species (EPS) and is protected by the Conservation (Natural Habitats &c.) Regulations 1994 as amended in Scotland which transpose into Scottish law the European Community's Habitats Directive (92/43/EEC). This means that it is an offence to:

- deliberately or recklessly capture, injure or kill, harness, damage or destroy a breeding site or resting place of an EPS or a group of EPS;
- disturb an EPS while it is occupying a structure or place which it uses for shelter or protection;
- disturb an EPS while it is rearing or otherwise caring for its young;
- obstruct access by an EPS to a breeding or resting place;
- disturb an EPS in a manner that is, or circumstances which are, likely to significantly affect the local distribution or abundance of that particular species; and,
- to disturb an EPS 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.

In addition to the above, otter is listed in the Scottish Biodiversity List, the UK Biodiversity Action Plan (BAP) and although the new North East Scotland LBAP is not individual species focused they feature within the ecosystem groups.

2.2 WATER VOLE

Water vole is afforded protection in Scotland under section 9(4) of the Wildlife and Countryside Act 1981, as amended by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011, with the protection extended to include 'reckless' acts (continuing with an action in the knowledge of the consequences of that action) and acts of 'interference', as an addition to destructive acts cited in the 1981 Act.

Under the terms of section 9(4) it is an offence to "intentionally or recklessly":

- Damage, destroy or obstruct access to any structure or place which a water vole uses for shelter or protection; and
- Disturbance while in a place of shelter.

However, it should be noted that under present legislation the animals themselves are not otherwise protected in Scotland although recent proposals to extend the protection to the animals is proposed.

In addition to the above, water vole are also listed in the Scottish Biodiversity List, the UK BAP and feature within the ecosystem approach of the North East Scotland LBAP.

2.3 BADGER

Eurasian badgers and their setts are protected under the Protection of Badgers Act 1992 and by Section 11 (Schedule 6) of the Wildlife and Countryside Act 1981 (as amended in Scotland). It is illegal to kill, injure, take, possess or cruelly ill-treat a badger, or attempt to. Badger setts are protected from interference and it is an offence to obstruct access to, or any entrance of, a badger sett. In addition it is illegal to disturb a badger when it is occupying a sett.

The Protection of Badgers Act 1992 was amended by the Nature Conservation (Scotland) Act 2004 to make it illegal to knowingly cause or permit an act which would interfere with a badger sett, and included recklessly killing, injuring or taking a badger.

In addition to the above, the badger is listed in the Scottish Biodiversity List.

3 METHODOLOGY

All surveys were undertaken on 6th and 7th July 2016 by James Bunyan MCIEEM, a suitably qualified and experienced ecologist. All accessible areas within the Survey Area which extended to 200m from proposed infrastructure were surveyed with coastal areas, watercourses and ditches examined where access was possible and safe.

3.1 OTTER

The otter survey was undertaken in broad accordance with the approach detailed by Scottish Natural Heritage "Otters and Development" guidance document (Scottish Natural Heritage 2010) and Chanin (2003). The survey concentrated on watercourses present within the Survey Area and included a thorough check for otter resting places including holts and couches and was undertaken by an ecologist experienced in otter survey.

Due to the often elusive nature of otter surveys predominantly rely on the interpretation of field signs rather than direct observation of the animals themselves. However, in remote locations where human disturbance is low direct observations may be possible. During the survey the following field signs were sought, with those which can be regarded as definitive, i.e. they provide certain confirmation of the presence of this species, marked with an asterisk:

- otter spraint (faeces)*;
- otter holt (den);
- footprint*;
- couch (resting place above ground); and
- pathways and slides into water.

All evidence identified during the surveys was recorded using an iPad mini running mapping software with the feature of interest target noted and photographed.

3.2 WATER VOLE

The methodology employed during the survey follows that of an adapted version of the "Water vole Conservation Handbook" (Strachan and Moorhouse, 2011) with additional reference to other publications (e.g. Ryland & Kemp 2009). Further field sign guidance was also used (Corbet & Southern 1977; Macdonald & Barrett 1993).

Active searches were conducted for water vole sign, including:

- droppings;
- burrows;
- latrines;
- feeding stations;
- lawns; and
- footprints and pathways.

All evidence identified during the surveys was recorded using an iPad mini running mapping software with the feature of interest target noted and photographed.

3.3 BADGER

The survey for badger was undertaken concurrently with the otter and water vole survey and covered all accessible areas of the Survey Area which extended to 200m from proposed infrastructure. The badger survey comprised a search for setts and other signs of badger activity, e.g. latrines, dung pits, pathways, snagged hair and signs of foraging. All evidence identified during the surveys was recorded using an iPad mini running mapping software with the feature of interest target noted and photographed.

3.4 LIMITATIONS

The timings of surveys were suitable for all target species, although badger surveys are generally best undertaken when vegetation is at a minimum during winter months to

maximise chances of identifying sett structures, however across agricultural habitats with the majority of cover vegetation from European gorse *Ulex europaeus* an evergreen species it is not considered a significant constraint. As a result there is no significant limitation with respect to timing of the surveys although the water vole survey was at the very end of the recognised survey window.

The coast within the Survey Area is formed largely of high steep rocky cliffs with a number of small inlets which are inaccessible from land. As such only a small number of safely accessible beach areas were searched for signs of otter. The coastline is very exposed at this location and although some potential opportunities for places of shelter exist these are thought to be very limited within inaccessible areas.

A number of sections of the Survey Area supported dense gorse scrub preventing comprehensive access. Surveys including a thorough search of the perimeter of these areas for evidence of use by the focal species. However, a minor limitation was experienced due to the lack of access with areas of restricted access identified on Figure 1.

Three further areas were inaccessible to survey due to access restrictions. These included the Ministry of Defense base in the south west of the Survey Area, the operational quarry in the north east of the Survey Area and the Highfields property located in the north.

4 RESULTS

4.1 EXISTING INFORMATION

A number of ecological surveys have been undertaken during 2013 and 2014 to inform the site selection process for the HVDC route and converter building location. The latest surveys undertaken in 2014 included an extended Phase 1 survey over part of the Site (Atmos Consulting 2014).

During September 2014 Tracks Ecology undertook a protected species survey focusing on otter, water vole and badger covering approximately half of the current Site (Tracks Ecology 2014). The results of this survey confirmed that water vole are present within the area with a population present outwith the current Survey Area to the north.

The previous reports also review existing records held by the North East Scotland Biological Records Centre (NESBReC) and findings of all surveys to date across the Survey Area. No records for otter, water vole or badger were reported although the habitat was identified as being suitable for all three species.

4.2 HABITAT ASSESSMENT

4.2.1 OTTER

No significant watercourses are present within the Survey Area which extends from the coast inland to a mix of mainly agricultural habitats. However, there are numerous small ditches with fast flowing water, small waterbodies, areas of scrub and the coastline which may provide opportunities for places of shelter, commuting links and limited foraging.

Waterbody 1 was a large man made fishing or waterfowl pond within the grounds of the Highfield property. The pond was approximately 175m long and 75m wide with a small vegetated island present. As a result of restricted access the pond was not subject to a detailed survey but it was assessed that the pond is likely to offer some suitability for otter in terms of foraging (especially if stocked with fish) and above ground shelter opportunities.

The quarry area supported a series of settlement lagoons (Waterbody 2) which were presently in used for water treatment from the operational quarry. All of the lagoons were

steep sided and appeared to be lined with coarse rock armour which has subsequently been colonised by vegetation. The southernmost three lagoons were heavily clouded with silt and unsuitable for use by otter, the remaining two lagoons although supporting clearer water offered very little in the way of shelter or foraging resources other than the potential for supporting populations of amphibians during the spring.

Waterbody 3 was an inline pond associated with agricultural drains and was approximately 20m long by 8m wide with a drain entering the pond in the southeastern corner. Extensive tall herb with grassland habitat dominated the immediate vicinity along with a number of sycamore *Acer pseudoplatanus* trees along the eastern banks which had been pollarded in the past. The pond and surrounding habitat may offer suitable locations for an otter couch as vegetation cover was good along with limited foraging potential.

Waterbody 4 appeared to be a former quarry on the cliff edge and had limited accessibility with only the eastern side open to safe access. Limited vegetation in the form of tall herbs and grasses and some scrub was present where the waterbody edges were not exposed rock. The depth of the waterbody is unknown and no emergent vegetation was present. This waterbody did have good sheltered links to the coastal areas and may provide shelter for coastal otters.

The other watercourses within the Survey Area (Watercourses A, B, E, F, G, H and I) were essentially agricultural drains and often supported very low water levels. The majority of these were heavily choked with vegetation and unlikely to offer significant resource for otter other than sheltered commuting routes or seasonal foraging for amphibians.

4.2.2 WATER VOLE

As discussed above the watercourses are essentially agricultural drains supporting often low levels of water. Watercourse A flows alongside the plantation woodland to the north and arable fields to the south with a narrow rank grassland buffer strip. The drain channel was approximately 2m wide and 1m deep and heavily choked with vegetation (predominantly grasses). No open water was present although the ditch was still suitable to support water vole as adjacent vegetation cover was thick offering good shelter. Winter food was also available in the form of a strip of deciduous trees including willows.

As Watercourse A passes under the public road through a culvert it enters a pasture field of improved grassland and follows the line of the track (Watercourse B) along the eastern edge of the Fourfields site. Water depth was very low, generally less than 10cm with steep sides at 45° and banks extending to 2.5m in places. They were typically overgrown with rosebay willowherb *Chamerion angustifolium*, scrub and ephemeral species from adjacent field boundaries encroaching. The section south of the small culvert was more open and shows evidence of ditch clearance in the past, but now offers some suitability for use by water voles. Water levels throughout are relatively low, but connectivity to the pond (Waterbody 3) increases the suitability of the watercourse.

Watercourse C was dry at the time of survey and banks were formed by thinly vegetated gravel substrates which were becoming increasingly colonised by ephemeral and perennial species where substrate stability allowed. As a result the watercourse was again suboptimal for water voles as a place of shelter as cover was very limited with little or no water.

Watercourse D was a section of agricultural drain extending south out of the Survey Area. The ditch flowing south was relatively deep at 1m and approximately 1m wide although the entire length of the ditch was choked with grass dominated vegetation resulting in no visible open water although the ditch offers suitable habitat for water voles with extensive foraging opportunities, although suitable banks for burrow construction may be limited. The section

flowing from the west was less suitable and in many places does not form a formal channel with cattle poaching impacting upon the watercourse.

Watercourse E and G were heavily vegetated field drains. Although water was present and slow flowing the level of vegetation present made surveys difficult. The ditches supported a mix of neutral grassland and marshy grassland species often dominated by soft rush *Juncus effusus*, with some areas supporting scattered European gorse scrub with others significant coverage of water cress *Rorippa nasturtium-aquaticum*.

Watercourse F was another field drain with limited flow of water present and only a very small section falling within the Survey Area. The banks were heavily vegetated with neutral grassland species, rushes and areas of European gorse and offered some suboptimal water vole habitat.

Watercourse H was a short section of newly installed or cleared field drain with a small collection area at the eastern end. Although *Juncus* vegetation and grasses were beginning to colonise the disturbed ditch banks, significant cover remained absent and was unsuitable for use by water vole.

Watercourse I included two small sections linking field drains to the small pond. These were generally unsuitable for use by water vole as evidence of frequent drying up and also drain clearance was present.

A number of the waterbodies also offered some suitability for water voles with Waterbody 1 offering the highest potential but access restrictions prevented a detailed survey of the area. Waterbody 3 was also suitable for use by water voles with connectivity to the wider site through the drain network. The other waterbodies generally offered no suitability for water vole due to water quality (Waterbody 2), absence of suitable habitats or burrowing substrates (Waterbody 4) or significantly fluctuating water levels (Waterbody 5).

4.2.3 BADGER

The agricultural landscape with extensive improved and semi-improved grassland along with arable fields offers highly suitable habitat for foraging badgers. In addition the dense areas of gorse scrub offer suitability for sheltered commuting routes and potential sett building locations. The coastal regions of the Site are somewhat less suitable although areas of arable crops will provide good foraging habitat.

4.3 SURVEYS

4.3.1 OTTER

Signs of otter were restricted to only a single location within the Survey Area. This was on the eastern edge of Waterbody 4 (Figure 1). Large rocks and boulders at this location supported significant sprainting and feeding remains. Waterbody 4 was linked to the coastal habitats by a well vegetated slope to the beach at Heathery Haven. From the evidence identified it was highly likely that a coastal otter was using this location as a holt with the actual holt located within the cavities associated with the large boulders. This location also represents one of the few areas along this section of coast where access from the sea to the inland areas past the tall cliffs was relatively sheltered. From a single survey it was not possible to confirm whether or not this is a natal holt, however, the amount of evidence present at the location would suggest that it is not used for breeding.

4.3.2 WATER VOLE

Evidence of water vole being present was identified in a number of locations including Watercourse B, C and G (Figure 1). Along Watercourse B and C there were a significant number of latrines identified with a small number of burrows confirming a small population

of the species. Waterbody 3 also supported signs of water vole on the small southern feeder channel.

Evidence along Watercourse G included a small number of burrows and latrines and also included a brief sighting of an individual. The evidence at this location was consistent with a very small population, potentially a single dispersing individual looking to establish a territory.

4.3.3 BADGER

Limited evidence to suggest that badger are present within the Survey Area was identified at the time of survey. Only a single field sign confirming the presence was recorded in the form of snagged hair on barbed wire fence in the north east of the Survey Area adjacent to the quarry. No evidence of setts or latrines were identified from within the Survey Area although the dense scrub and areas of restricted access may support such signs. A number of enlarged rabbit burrows were present but these were consistent with use by fox and not badger with a narrow vertical profiled entrance.

5 DISCUSSION

5.1 OTTER

The surveys identified a single area that supported both sprainting evidence and a holt located close to the cliff tops south of the A90. It is understood that all works south of the A90 will be subterranean in nature and as such surface features such as this holt will remain unaffected. If any significant works are proposed within 250 of this location on the southern side of the A90 then further assessments as to whether or not disturbance may occur will need to be undertaken prior to works commencing. If disturbance cannot be avoided through a carefully designed mitigation plan involving sensitive timing of works and/or redesign then there may be the need to apply for a derogation licence under the Conservation (Natural Habitats &c.) Regulations 1994 as amended in Scotland from Scottish Natural Heritage for the works to proceed lawfully.

5.2 WATER VOLE

Although the precise location of the cable route is unknown at the time of writing the current outline design will result in no damage, destruction or obstruction of water vole structures or places of shelter, or disturbance of water voles while in a place of shelter is expected to occur as part of the proposed works.

The proposed site of the Converter Station is adjacent to existing agricultural drains that presently support water voles. The precise nature of any mitigation strategy to ensure that there is no breach in wildlife legislation with respect to disturbance of water vole burrows and the population is maintained at a favourable conservation status, will depend on the design process. In particular the access route to the site will require careful consideration to ensure that impacts are minimised and water vole burrows are protected.

It is recommended that a species protection plan is developed for water vole in close consultation with the project design team. Further surveys during late spring/early summer prior to extensive vegetation being present would provide up to date information on the distribution of water vole in this location.

A series of mitigation approaches are outlined below at this stage to provide guidance, but detailed plans will be required as part of the Species Protection Plan.

- Pre-construction checks of all areas to be directly disturbed (plus 200m buffer) prior to works commencing. Immediately prior to works this should include a destructive

search of vegetation at any locations identified as not supporting water voles to ensure that no burrows are present;

- Best practice methodology with respect to preventing any pollution of watercourses (including sediment) should be maintained through a Construction Environmental Management Plan.
- Duration and footprint of works within proximity to the watercourse should be minimised.
- If at any point the potential for significant disturbance to water voles cannot be ruled out then a licence may be required.
- Avoidance of additional habitat fragmentation should be attempted at all ditch crossings. This is best achieved by undertaking any crossing perpendicular to ditch minimising footprint and duration of disturbance.

No water voles were identified at this location during the 2014 surveys indicating a mobile metapopulation which is dispersing through the suitable agricultural drain network on an annual basis. It is therefore important to stress that pre-construction surveys must be undertaken at a suitable time of year and subsequent findings should be incorporated into the Species Protection Plan.

The small populations present south of the A90 along Watercourse G will remain unaffected by the proposed works. However, inclusion of water vole distribution within any constraints drawings will ensure that no accidental disturbance occurs as part of any minor works south of the A90.

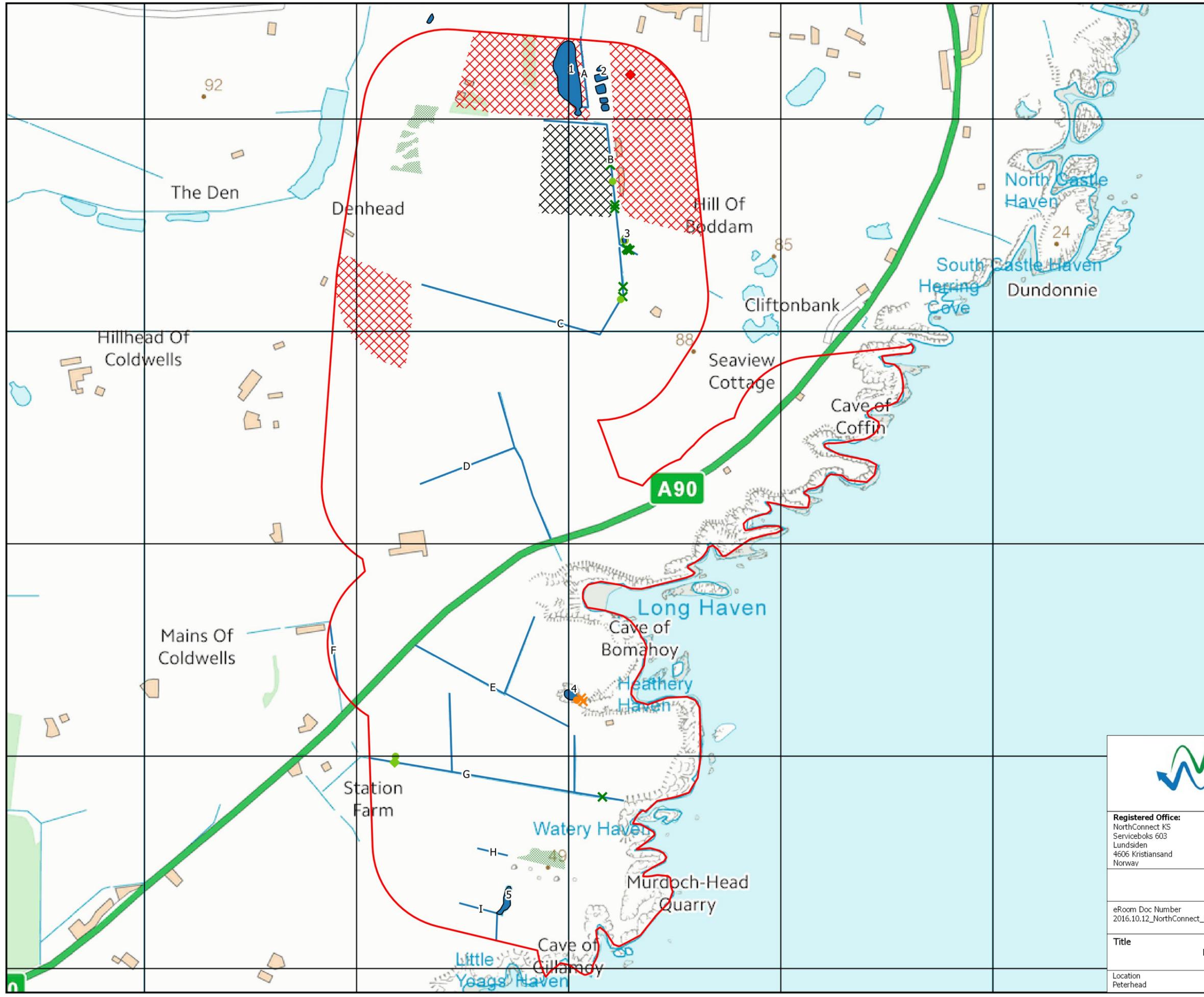
5.3 BADGER

No evidence to suggest badger are using the Survey Area as a place of shelter (sett) was identified during the survey and as such no recommendations with respect to this species are made. However, as the habitats are suitable for use by badger and evidence of badger passing through the Survey Area were recorded, it is recommended that as well as pre-construction surveys, all scrub clearance is undertaken with caution and with hand tools. If any large mammal burrows are identified then works should cease and a suitably experienced ecologist contacted.

6 REFERENCES

- Atmos Consulting Ltd. (2014) *North Connect Converter Building, Peterhead: Extended Phase 1 Survey*.
- Chanin, P. (2003) *Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10*. Peterborough.
- Corbet, G.B. & Southern, H.N. (eds). (1977) *The Handbook of British Mammals*, 2nd ed. Blackwell Scientific, Oxford.
- Macdonald, D.W. & Barrett, P. (1993) *Field Guide to Mammals of Britain and Europe*. Collins, London.
- Ryland, K. & Kemp, B. (2009) Using Field Signs to Identify Water Voles - Are We Getting It Wrong? *In Practice*.
- Scottish Natural Heritage. (2010) *Scottish Wildlife Series: Otters and Development*.
- Tracks Ecology. (2014) *North Connect Ecological Surveys: Otter, Water Vole and Badger Survey. Report Ref: 14/021/AFF/R01*.

APPENDIX A – FIGURES



Legend

- Survey Area
- Waterbody
- Watercourse
- Dense Scrub
- Proposed Converter Station
- Restricted Access

Otter

- × Sprainting Site
- Holt

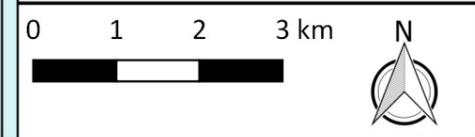
Water Vole

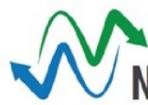
- Burrow
- Feeding station
- × Latrine
- ◆ Sighting

Badger

- ◆ Hair

Copyright Scottish Natural Heritage
Contains Ordnance Survey data (c)
Crown copyright and database right
(2016)





NORTHCONNECT
CONNECTING RENEWABLES

<p>Registered Office: NorthConnect KS Serviceboks 603 Lundsiden 4606 Kristiansand Norway</p>	<p>Telefon +47 38 60 70 00 Fax +47 38 60 70 01 E-post post@northconnect.no www.northconnect.no</p>		
<p>eRoom Doc Number 2016.10.12_NorthConnect_PER_DRA_Protected_Species_Results_2016</p>			
<p>Title Protected Species Survey Results 2016</p>			
<p>Location Peterhead</p>	<p>Drawing Number 3199</p>	<p>Sht No 1/1</p>	<p>Rev No A</p>

APPENDIX B – PHOTOGRAPHS



Plate 1: View south along coastline which forms southern boundary of Survey Area.



Plate 2: Boulders leading to otter holt location. Extensive sprainting identified (open circle).



Plate 3: Waterbody 4 with approximate location of holt marked.



Plate 4: Further significant sprouting in close proximity to open areas beneath boulders (holt).



Plate 5: Typical overgrown agricultural drain offering good water vole habitat (Watercourse E).



Plate 6: Section of recently cleared agricultural ditch (Watercourse H)



Plate 7: View of scrub colonised ditch in south of site (Watercourse G).



Plate 8: Watervole latrine on Watercourse G.



Plate 9: Watervole latrine on Watercourse C.



Plate 10: Watervole burrow on Watercourse C.