Biological Environment

Appendix 6B: Updated Ecological Surveys (2017)

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Glossary

Application Site	The area within the red line planning boundary comprising the Onshore Transmission Works (OnTW), as defined.
Consented Offshore Transmission Works (OfTW)	Offshore substation platforms and their foundations and substructures, interconnector cables and offshore export cables, as consented by the Scottish Ministers on 10 October 2014.
Consented Offshore Wind Farm	Wind turbine generators and their foundations and substructures, and inter-array cables, as consented by the Scottish Ministers on 10 October 2014.
Construction Compound	An indicative area within the Application Site used to accommodate the temporary work site including; construction parking, construction welfare facilities, construction meeting room, construction laydown and storage area, construction security facilities (fenced area/gate and security access) and construction security lighting.
Crepuscular	Derived from the Latin *crepusculum*, meaning "twilight". Crepuscular animals are those that are active primarily during twilight (i.e. dawn and dusk).
ICOL's Offshore Transmission Works (OfTW)	Offshore substation platforms (OSPs) and their foundations and substructures, interconnector cables and Offshore Export Cables. This refers to either the Consented OfTW or Revised OfTW, as defined.
ICOL's Offshore Wind Farm	This includes proposed wind turbine generators, foundations and substructures and inter-array cables. This refers to either the Consented Offshore Wind Farm or Revised Offshore Wind Farm, as defined.
Judicial Review	Court proceeding in which a judge reviews the lawfulness of a decision or action made by a public body.
Landfall	Point where up to two Offshore Export Cables from ICOL's Offshore Wind Farm will be brought ashore.
Offshore Export Cable	The subsea, buried or protected electricity cables running from ICOL's Offshore Wind Farm offshore substation to the Landfall and from the Landfall to the Onshore Substation.
Onshore Export Cables	Electricity cables from the Onshore Substation to the grid connection point.
Onshore Export Cable Corridor	The area within the Application Site where the proposed Onshore Export Cables will be laid.
Onshore Substation	The electrical substation comprising of all the equipment and associate infrastructure required to enable connection to the electrical transmission grid.
Onshore Substation Site/Substation Site	The indicative area within the Application Site where the Onshore Substation and screening will be located.
Onshore Transmission Works (OnTW)	All proposed works within the Application Site, typically including the Onshore Substation, cables transition pits, cable jointing pits, underground electricity transmission cables connecting to the Onshore Substation and further underground cables required to facilitate connection to the national grid. This includes all permanent and temporary works required. See *Chapter 5: Description of Development* for full details.
Original Application Site	The area within the red line planning boundary comprising the Original OnTW, as defined.
Original Onshore Substation	The electrical substation comprising of all the equipment and associate infrastructure required to enable connection to the electrical transmission

	grid as was granted planning permission in principle in September 2014, under ELC reference 14/00456/PPM.
Original OnTW	The OnTW, as was granted planning permission in principle in September 2014, under ELC reference 14/00456/PPM.
Original OnTW EIA	The Environmental Impact Assessment (EIA) that was prepared to support the planning application for the Original OnTW and reported in the Original OnTW ES, as defined.
Original OnTW ES	The Environmental Statement (ES) that was submitted to support the application for the Original OnTW in 2014.
Revised Offshore Transmission Works (OfTW)	Offshore substation platforms and their foundations and substructures, interconnector cables and Offshore Export Cables, as per the scoping report submitted to Marine Scotland Licensing Operations Team on behalf of the Scottish Ministers in April 2017.
Revised Offshore Wind Farm	Wind turbine generators and their foundations and substructures, and inter-array cables, as per the scoping report submitted to Marine Scotland Licensing Operations Team on behalf of the Scottish Ministers in April 2017.
Scoping Report	Report prepared as the first stage of the EIA process in support of a request for a Scoping Opinion from East Lothian Council, under Regulation 17 of the EIA Regulations. The Report was submitted in July 2017.

Abbreviations and Acronyms

GIS	Geographic Information System
ICOL	Inch Cape Offshore Ltd.
JNCC	Joint Nature Conservation Committee
OnTW	Onshore Transmission Works
SNH	Scottish Natural Heritage

6B Ecological Surveys

6B.1 Introduction

1 A programme of habitat and protected species surveys was undertaken in 2012 to inform the ecological assessment for the Original Onshore Transmission Works (OnTW), which are presented in Appendix 6A. However, the 2012 surveys did not cover the site of the former Cockenzie Power Station within which the OnTW Application Site is located. The decision to exclude the power station from that original survey area was based on its built up, industrial nature and negligible nature conservation importance, as well as the fact that the Original Application Site did not include the site of the former Cockenzie Power Station.

2 Since then, the most substantial change between the baseline conditions of the Original OnTW and the expected current baseline conditions associated with the Application Site is the demolition of the former Cockenzie Power Station. Fundamentally, the ecological value of the demolished site, which now exists as a partially restored brownfield site, is expected to be little different to the industrial building and concrete hardstandings which existed when the former Cockenzie Power Station was operational (i.e. of negligible nature conservation importance). As such, it is unlikely that the habitat conditions and presence of protected species associated with the Application Site will have changed substantially since the Original OnTW ES. However, as SNH typically consider that habitat and protected species survey data only remains valid for a period of 18 months to two years, the original survey data is considered to be out of date.

3 Consequently, an updated habitat and protected species survey was carried out to establish the current ecological baseline conditions associated with the Application Site. Based on the previously identified habitat conditions within and immediately surrounding the Application Site, it is considered that the only protected species which could potentially occur there would be otter (*Lutra lutra*) (along the adjacent seashore), bats (*Chiroptera spp*.) (in any buildings immediately adjacent to the Application Site) and badgers (*Meles meles*) (in the surrounding scrub and grassland habitats), although there was no evidence of any of these species being present during the surveys for the Original OnTW. The surveys also included an assessment of habitat suitability for common reptiles such as common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*).

4 The following details the methods and results of these surveys, all of which were undertaken by an experienced RPS ecologist on 14 July 2017. It should be noted that while access to the site of the former Cockenzie Power Station was not permitted for the surveys due to safety issues associated with the active demolition site, it was still surveyable to relatively close proximity (i.e. to within approximately 125 m of all points) through the surrounding perimeter fence, aided also by using binoculars. Consequently, it was still possible for the surveyor to adequately identify habitat types and assess the potential for protected species to be present within the Application Site. Residential areas in the wider survey area were excluded from the surveys based on privacy/access issues.

6B.2 Phase 1 Habitat Survey

6B.2.1 Methods

5 The Phase 1 Habitat Survey followed the Joint Nature Conservation Committee's (JNCC) Phase 1 Habitat Survey guidelines (JNCC, 2010) and aimed to identify the broad habitat types and dominant floral communities within the Application Site and a surrounding buffer of 250 m, as shown on Figure 6B.1.

6 All distinct habitats within the survey area were identified and mapped onto a 1:5000 OS map using Phase 1 Habitat codes. The dominant plant species were recorded and habitats classified according to their vegetation types and presented in the Phase 1 Habitat survey format, accompanied by habitat descriptions, a habitat map and Target Notes (TN).

7 The survey also aimed to identify the presence of invasive plant species subject to legal control such as Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*).

6B.2.2 Results

8 The results of the Phase 1 Habitat Survey are presented on Figure 6B.1.

9 The Phase 1 Habitat Survey identified that the majority of the Application Site is comprised of hardstanding consisting of either concrete or compacted hardcore following the demolition of the former Cockenzie Power Station and the clearance of material from the site (Photo 01). Hardstanding is also present around the Cockenzie Substation.

Photo 01: Hardstanding and semi-improved neutral grassland of the site of the former Cockenzie Power Station.

Photo 02: Intertidal rock and boulder habitat and sea wall in front of the site of the former Cockenzie Power Station.

10 Semi-natural habitats within the Application Site are limited to small patches of managed amenity grassland, semi-improved neutral grassland and species poor semi-improved grassland as well as very occasional scattered scrub (predominantly dog rose (*Rosa canina*)) and standard broad-leaved trees (predominantly sycamore (*Acer pseudoplatanus*)). These small patches of semi-natural habitat are located within the site of the former Cockenzie Power Station and along the margins of the B1348 Edinburgh Road.

11 Also within the Application Site boundary is a small area of intertidal habitat comprising rocks and boulders associated with the Firth of Forth shoreline, as well as the artificial sea wall which run in front of the site of the former Cockenzie Power Station (Photo 02).

12 Outwith the Application Site in the wider surrounding survey area, the habitat is dominated by publicly accessible amenity and semi-improved neutral grasslands. These grassland areas are interspersed with: occasional small stands of scrub (predominantly sea buckthorn (*Hippophae rhamnoides*) and hawthorn (*Cratageus monogyna*)); trees (including sycamore, alder (*Alnus glutinosa*), rowan (*Sorbus aucuparia*), silver birch (*Betula pendula*), willows (*Salix sp.*) and Scots pine (*Pinus sylvestris*)); and tall ruderal (i.e. early successional) vegetation (Photo 03).

Photo 03: Grassland with scattered scrub and trees typical of the habitats surrounding the Application Site.

Photo 04: Intertidal rock and boulder habitat shoreline open coastal waters of the Firth of Forth.

13 There are also substantial areas of hardstanding associated with the parts of the former Cockenzie Power Station and the Cockenzie Substation which fall outside of the Application Site boundary.

14 The wider survey area also includes an extension of the narrow intertidal rock and boulder habitat which occurs within the Application Site boundary, as well as the open coastal waters of the Firth of Forth beyond (Photo 04).

15 No plant species which are subject to legal control were identified within the Application Site or surrounding 250 m buffer during the survey.

6B.3 Protected Species Surveys

6B.3.1 Methods

Otters

16 Searches for evidence of the presence of otters focussed on the shoreline habitats of the Firth of Forth up to 200 m either side of the Application Site boundary. The full extent of the otter survey area is presented in Figure 6B.2.

17 The shoreline was inspected for field signs indicating the species' presence as well as features which may be used as resting sites. Otter field signs are described in Bang and Dahlstrøm (2001) and SNH (2008) and include resting sites (e.g. holts and couches), spraints, prints and feeding remains. Descriptions of these and other field evidence terms are provided below:

- **Holts** - these are underground features where otters live. They can be tunnels within banksides, underneath root-plates or boulder piles and man-made structures such as disused drains. Holts are used by otters to rest up during the day due to the crepuscular nature of their foraging activities and may be used as natal or breeding sites. Otters may use holts permanently or temporarily;
- **Couches** - these are above ground resting sites. Couches can be difficult to identify, sometimes consisting of no more than an area of flattened grass or earth, and are best identified by the presence of other field signs (e.g. spraints);
- **Prints** - otters have characteristic footprints that can be found in soft ground and muddy areas;
- **Spraints** - otter faeces can be used to mark territories, often on in-stream boulders. They can be present within or outside the entrances of holts and couches. Spraints have a characteristic smell and often contain fish remains;
- **Feeding signs** - the remains of prey items may be found at preferred feeding stations. Remains of fish, crabs or skinned amphibians can indicate the presence of otter;
- **Paths** - these are terrestrial routes that otters take when moving between resting-up sites and watercourses, or at high flow conditions when they will travel along bank sides in preference to swimming; and
- **Slides and play areas** - slides are typically worn areas on steep slopes where otters slide on their bellies, often found between holts/couches and entry points to watercourses.

18 Any of these field signs are diagnostic of the presence of otters although spraints are the most reliably identifiable evidence of the species' presence. In the event that any resting sites were discovered, then an indication of their importance was recorded. This would be undertaken by evaluating spraint freshness, prints and paths or niche availability and quality of the feature.

19 Otters are active all year and so there is no optimal time of year in which to undertake otter surveys. However periods following heavy rainfall should be avoided as such events could wash away field evidence, potentially leading to under-recording or failure to confirm the species presence. Searches along the intertidal habitats of the Firth of Forth were conducted at low tide, when any otter field signs which might have been laid within the intertidal zone could have been detected.

Badgers

20 All areas of potentially suitable badger habitat within 100 m of the Application Site boundary were inspected for signs indicating the presence of badgers, particularly their setts. Habitats of note within the survey area were considered to be woodland and scrub, particularly those

surrounding cultivated areas, and grass-covered embankments. The full extent of the badger survey area is presented in Figure 6B.2.

21 Badger field signs are described in Bang and Dahlstrøm (2001), Natural England (2011) and SNH (2001) and include:

- **Setts** - den's used by badgers which can be sub-categorised into the following;

  Main setts: several holes (sometimes up to 30) with large spoil heaps and obvious paths emanating from and between sett entrances;

  Annex setts: Normally less than 150 m from the main sett, comprising several holes and usually with well defined runs connecting it to the main sett;

  Subsidiary setts: Normally fairly close to the main sett (at least 50 m away), typically comprising three to five entrances, generally with no tracks connecting them to other setts and only signs of occasional use; and

  Outlier setts: Typically consisting of just one or two entrances with little spoil outside the entrance holes, often with no obvious paths connecting them to other setts.

- **Latrines** - dung pits used as territorial markers;
- **Prints** - distinctive in shape;
- **Guard hairs** - these are distinctive in shape and colour and are often found snagged on wire fencing; and
- **Foraging signs** - snuffle holes and excavated wasp/bee nests.

22 Any of the above signs (with the exception of foraging signs) can be taken as diagnostic evidence of the presence of badger.

23 Badgers are active all year, but the optimal time to conduct surveys is November to April when vegetation is in senescence and has died back, thus making badger field signs more detectable. The timing of the survey in July is however not considered to be a limitation due to the largely managed nature of the grassland within the survey area.

Bat Roost Potential

24 All buildings and any mature trees within the Application Site and a surrounding buffer of 100 m were assessed for their potential to support roosting bats. The full extent of the bat roost assessment survey area is presented in Figure 6B.2. Any such features were assessed from ground level using binoculars to determine their suitability to support roosting bats in line with the Bat Conservation Trust's (BCT) good practice survey guidelines (Collins, 2016). The survey comprised a systematic inspection of all accessible areas of buildings, where possible, to look for evidence and likelihood of use by bats. Bat presence may be indicated by:

- Droppings or urine splashes;
- Staining at regularly used access points;
- Live specimens or corpses; and,

- Scratches.

25 Potential roost features in trees may include:

- Woodpecker holes;
- Rot holes;
- Vertical or horizontal cracks and splits in stems or branches;
- Partially detached platy bark;
- Knot holes arising from naturally shed branches;
- Cankers (caused by localised bark death);
- Other hollows or cavities, including butt-rots;
- Double leaders forming compression forks with included bark and potential cavities;
- Gaps between overlapping stems or branches;
- Partially detached ivy with stem diameters in access of 50 mm; or,
- Bat or bird boxes.

26 The potential for buildings and trees to support roosting bats were categorised based on the criteria outlined in Table 6B.1 below.

Table 6B.1: Bat Habitat Suitability Criterial (taken from Collins, 2016)

Suitability	Description Roosting Habitat	Commuting and Foraging Habitat
Negligible	Negligible habitat features on site not likely to be used by roosting bats.	Negligible habitat features on site not likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to its size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high	Continuous habitat connected to the wider landscape that could be used by bats for commuting such

	conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure of tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site close to and connected to known roosts.

Reptiles

27 Habitats within the Application Site and a surrounding buffer of 100 m were assessed for their potential to support common reptiles such as common lizard and slow worm (Edgar et al., 2010 and Froglife, 2010). The full extent of the reptile survey area is shown in Figure 6B.2. Visual searches involved inspecting potentially suitable habitat (such as sunny, sheltered locations used for basking) for the presence of reptiles. Refuge surveys involved investigating structures and objects which may also be used by reptiles for providing warmth and shelter. These may include stone walls, piles of rubble or wood and debris (such as corrugated iron sheets).

6B.3.2 Results

28 The habitats within the protected species survey areas were generally considered to have negligible potential to support any protected species, being largely devoid of shelter and subject to high levels of human disturbance. The habitats within the inaccessible site of the former Cockenzie Power Station in particular were considered to be unsuitable for any protected species.

29 The only evidence of protected species which was found was an old, two-entrance outlier badger sett located just outside the site of the former Cockenzie Power Station's eastern perimeter fence with faint and slightly overgrown mammal paths leading under the fence (TN1, Figure 6B.2). However, both entrances were overgrown with vegetation and showed no signs of recent activity. Consequently it was concluded that the sett was disused and probably had been inactive for some time. While the mammal paths suggest that badgers may once have entered the site of the former Cockenzie Power Station, the demolition of the facility and

clearance of the site means that there is no longer any suitable habitat for the species within the perimeter fence.

30 No evidence of any other protected species was detected in the accessible sections of the survey area during the protected species survey.

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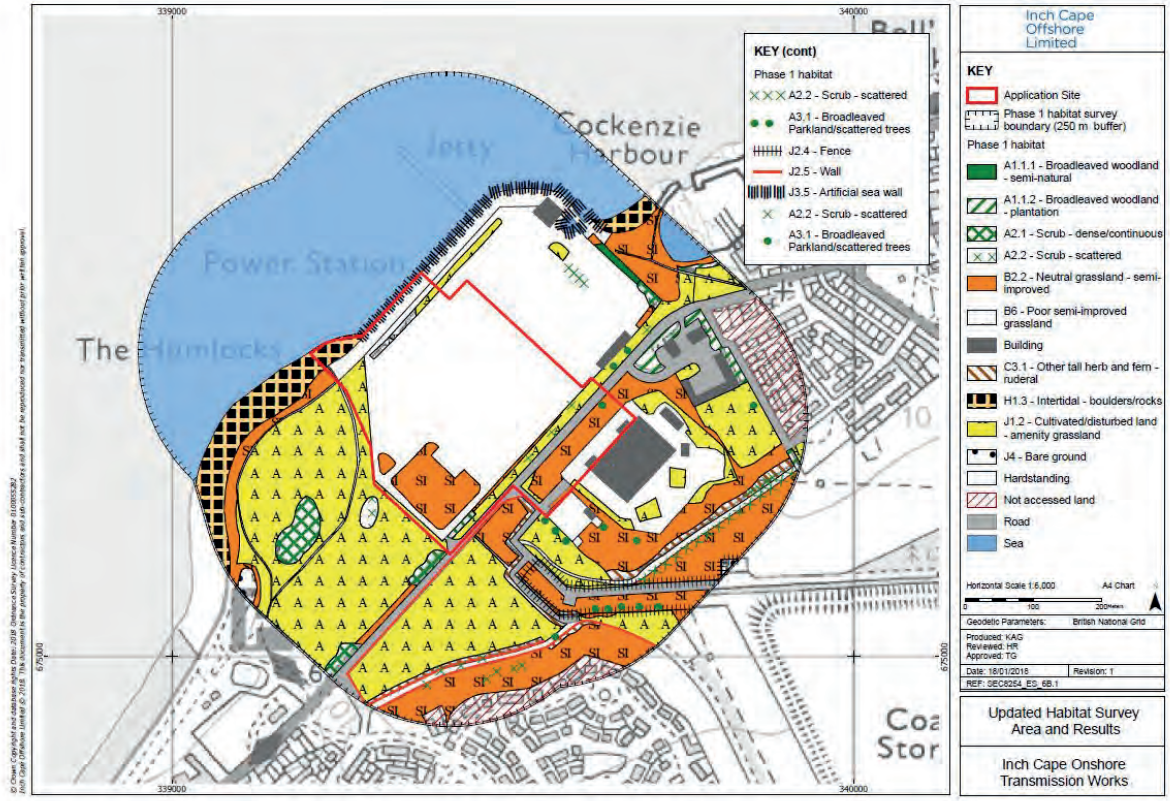

Figure 6B.1 Updated Habitat Survey Area and Results

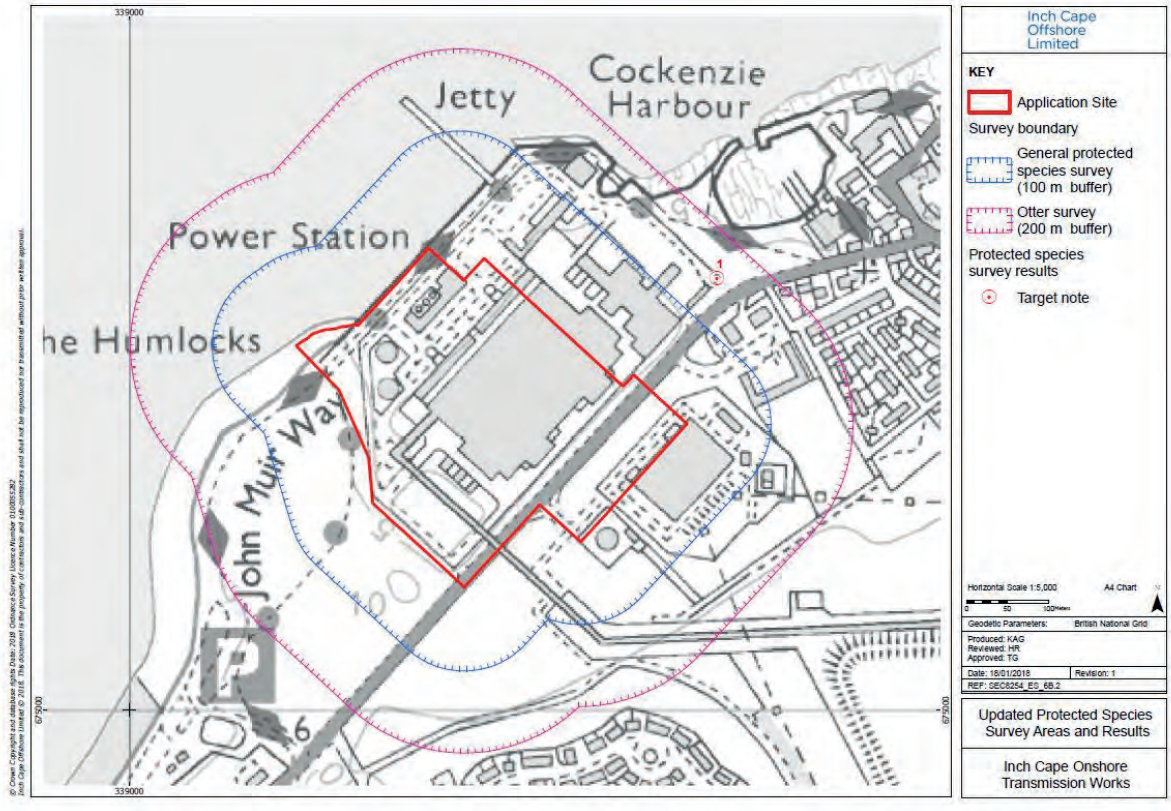

Figure 6B.2 Updated Protected Species Survey Areas and Results