



Erebus: Onshore Cable Route

Technical Appendix 20.4: Protected Species Report

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Author:	J Hudson (Jon Hudson Ecological Consultancy)
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ITPEnergised Office:	4th Floor, Centrum House, 108-114 Dundas Street, Edinburgh, EH3 5DQ

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1. Introduction

A Preliminary Ecological Assessment (PEA) was undertaken in July 2020 (see “Erebus Project: Preliminary Ecological Assessment of potential cable routes and substation locations (the “Site”) near Angle and Rhoscrowther, Pembrokeshire”, Hudson and Sutton, 2020). This report identified the vegetation and habitats present within the Survey Area, and, in broad terms, their potential to support protected species.

In February 2021 Jon Hudson Ecological Consultancy was commissioned by ITP Energised to carry out a Protected Species Scoping Survey and write the technical baseline report in support of an application to Pembrokeshire County Council for the same project.

The Survey Area comprised several potential cable route options still being considered to a number of potential substation sites near Pembroke Power Station (see Figure 1). Information gathered in the preparation of this report was used to inform a final cable route that had the minimum potential for ecological impacts.

The present survey report considers the protected species which potentially could occur within the area, including otters (*Lutra lutra*), badgers (*Meles meles*), bats (*Chiroptera sp.*), hazel dormouse (*Muscardinus avellanarius*) and reptiles (i.e. adder [*Vipera berus*], grass snake [*Natrix natrix*], slow worm [*Anguis fragilis*] and common lizard [*Zootoca vivipara*]). Great crested newts (*Triturus cristatus*) were not considered as this species is known to be absent from Pembrokeshire.

The survey was undertaken on February 22, 23, 25, 26 and March on 18, 19, 24. The purpose of the survey was to investigate all suitable habitat within the Survey Area (see **Error! Reference source not found.**), where accessible (see Figure 2 for areas where access was not available for survey) for any evidence of use by protected species. Additionally, trees and buildings were assessed for their potential to support roosting bats.

The survey is intended to highlight the presence (or likely presence) of protected species and areas of suitable habitat for these species (particularly areas of potential reptile, dormouse or otter habitat) and to facilitate the identification of potential constraints to development and to identify where mitigation and/or further survey work may be required.

Owing to the locations of resting places of protected species being detailed in this report, the information presented should be treated as confidential and for the consideration of Natural Resources Wales (NRW), the Planning Authority and their stakeholders only and not be made publicly available.

1.1 Site Description

The Survey Area is located on the Angle Peninsula in south Pembrokeshire and comprises several cable option routes to a number of potential substation sites near Pembroke Power Station (see Figure 1). Apart from the extensive sand dune systems at Broomhill/Gupton and Kilpaison Burrows, the landscape is dominated by intensive agriculture – arable and improved grasslands bounded by species-poor hedges. To the east of the Survey Area, however, some thicker more species-rich hedges occur in areas where farming is more mixed and “traditional”. Semi-natural habitats such as grasslands and woodlands are small and widely scattered with the largest blocks of woodland occurring around Angle and Bangeston. The Survey Area is bisected by several small stream valleys that create linear habitat features where woodlands, scrub and wetland habitats all occur. There are numerous small agricultural irrigation reservoirs. The northern section of the potential cable route (running from Neath Bridge to Sunnyridge to the north of the Hoplass solar farm) showed evidence of high importance for badgers and otters and therefore the more southerly option was chosen as the preferred route.

1.2 The Proposed Development

Blue Gem Wind (BGW) is proposing to develop a 96 MW Floating Offshore Wind (FLOW) project located in the Celtic Sea, 44 km southwest of the Pembrokeshire coastline in Wales. The Project is expected to be in operation for a maximum of 25 years and will include for up to 10 floating wind turbines of total capacity up to 96 MW. The offshore export cable is to make landfall at West Angle Bay where the onshore cabling will



be routed to the main grid connection point at Pembroke Power Station via an onshore substation at the grid connection point.

In the context of this report, the landfall and onshore cable route, including the substation, to the grid connection point form the “Proposed Development”.

2. Legislation and Guidelines

2.1 Legislation

2.1.1 Otter

Otter is listed on Appendix II of the Bern Convention and Annexes II and IV of the European Union Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e. the “Habitats Directive”), and it is protected as a European Protected Species (EPS) under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). As such, it is an offence to deliberately or recklessly:

- Capture, injure or kill an otter;
- Harass an otter or group of otters;
- Disturb an otter in a holt or any other structure or place it uses for shelter or protection;
- Disturb an otter while it is rearing or otherwise caring for its young;
- Obstruct access to a holt or other structure or place otters use for shelter or protection, or otherwise deny the animal use of that place;
- Disturb an otter in a manner or in circumstances likely to significantly affect the local distribution or abundance of the species; and
- Disturb an otter in a manner or in circumstances likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.

It is also an offence to:

- Damage or destroy a breeding site or resting place of such an animal (whether or not deliberately or recklessly); and
- Keep, transport, sell or exchange, or offer for sale or exchange any wild otter (or any part or derivative of one) obtained after 10 June 1994.

It should be noted that otter shelters are legally protected whether an otter is present or not. Actions that are prohibited can be made lawful by a licence issued by the appropriate Statutory Nature Conservation Organisation, which in this case is NRW.

Otters are also included in the Environment Act (Wales) 2016 Section 7 List as a species of principal importance.

2.1.2 Badger

Badger are fully protected under the Protection of Badgers Act 1992, which makes it an offence to:

- Take, injure or kill a badger;
- Possess, or cruelly ill-treat a badger;
- Mark and ring a badger;
- Sell and possess a live badger; and
- Interfere with a badger sett.

Interfering with a badger sett includes:



- Damaging or destroying a sett or any part of it;
- Obstructing access to a sett;
- Disturbing a badger whilst it is in a sett; and
- Causing or allowing a dog to enter a badger sett.

Should such actions be undertaken, despite having no intention to do so, they would still be considered an offence.

The 1992 Protection of Badgers Act defines a badger sett as “any structure or place which displays signs indicating current use by a badger”. A sett in an occupied territory is therefore classified as being in current use even if it is only used seasonally or occasionally by badgers, and it is afforded the same protection as an inhabited sett. Actions that are prohibited can be made lawful by a licence issued by the appropriate Statutory Nature Conservation Organisation, which in this case is NRW.

2.1.3 Bats

Bats are listed on Appendix II of the Bern Convention and Annexes II and IV of the European Union Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e. the “Habitats Directive”) and are protected as EPS’ under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). For any wild bat species, it is an offence to deliberately or recklessly:

- Capture, injure or kill a bat;
- Harass a bat or group of bats;
- Disturb a bat in a roost (any structure or place it uses for shelter or protection);
- Disturb a bat while it is rearing or otherwise caring for its young;
- Obstruct access to a bat roost or otherwise deny an animal use of a roost;
- Disturb a bat in a manner or in circumstances likely to significantly affect the local distribution or abundance of the species;
- Disturb a bat in a manner or in circumstances likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young; and
- Disturb a bat while it is migrating or hibernating.

It is also an offence to:

- Damage or destroy a breeding site or resting place of such an animal (whether or not deliberately or recklessly); and
- Keep, transport, sell or exchange, or offer for sale or exchange any wild bat (or any part or derivative of one) obtained after 10 June 1994.

It is a strict liability offence to damage or destroy a bat roost. A bat roost is protected at all times irrespective as to whether any bats are using the roost at a given time. If the work proposed is to affect bats or their roosts, an EPS licence, issued by the licensing authority Natural Resources Wales under Regulation 44 of the Habitats Regulations will be required in order to permit an otherwise illegal activity.

Seven bat species (Barbastelle bat, Bechstein's bat, Noctule, Common Pipistrelle, Soprano Pipistrelle, Brown long-eared bat, Greater horseshoe bat and Lesser horseshoe bat) are also included in the Environment Act (Wales) 2016 Section 7 List as a species of principal importance.

2.1.4 Reptiles

All British reptiles are protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and listed on Schedule 5 of the Act. Under this legislation:

- all reptiles are protected from intentional killing, injury or taking; and



- It is illegal to sell or offer to sell any of these species.

This partial protection does not directly protect the habitat of these species of reptile. Where these animals are present on land that is to be affected by development, the implications of legislation are that providing that killing can reasonably be avoided then an operation is legal. This requires that:

- the animals must be protected from injury or killing; and
- mitigation should be provided to maintain the conservation status of the species.

All reptiles are also included in the Environment Act (Wales) 2016 Section 7 List as a species of principal importance.

2.1.5 Hazel Dormouse

The dormouse is a fully protected species under both United Kingdom and European law. The Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended) afford legal protection to hazel dormice. The specific legal protection afforded to hazel dormice can be found within the Sections and Schedules of the relevant legislation and relevant case law. In general, this applies to any person and/or activity that:

- Damages or destroys a breeding or resting place of hazel dormice (this is sometimes referred to as the strict liability or absolute offence);
- Deliberately captures, injures or kills a hazel dormouse/dormice;
- Deliberately disturbs hazel dormice, and in particular disturbance likely to impair an animal's ability to survive, breed or nurture young, their ability to hibernate and migrate and disturbance likely to have a significant effect on local distribution and abundance;
- Intentionally or recklessly disturbs a hazel dormouse/dormice while occupying a structure or place used for shelter and/or protection (Wildlife and Countryside Act 1981 (as amended)); and
- Intentionally or recklessly obstructs access to any structure or place that a hazel dormouse/dormice use for shelter or protection (Wildlife and Countryside Act 1981 (as amended)) may be guilty of an offence.

Dormouse is also included in the Environment Act (Wales) 2016 Section 7 List as a species of principal importance.

2.2 Best Practice Ecological Guidance

As part of the protected species survey, cognisance has been taken of the following best practice guidelines and survey method publications:

2.2.1 Otter

- Competencies for Species Survey: Otter (CIEEM, 2013a); and
- Monitoring the Otter *Lutra lutra* (Chanin, 2003).

2.2.2 Badger

- Competencies for Species Survey: Badger (CIEEM, 2013b); and
- Surveying for Badgers: Good Practice Guidelines (Scottish Badgers, 2018).

2.2.3 Bats

- Competencies for Species Survey: Bats (CIEEM, 2013c);
- Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016); and
- Bat Roosts in Trees – A guide to identification and Assessment for Tree-Care and Ecology Professionals (BTHK, 2018).



2.2.4 Reptiles

- Competencies for Species Survey: Reptiles (CIEEM, 2014); and
- Reptile Habitat Management Handbook (Edgar *et al.*, 2010).

2.2.5 Hazel Dormouse

- Competencies for Species Survey: Dormouse (CIEEM, 2013d);
- Habitat requirements of Dormice *Muscardinus avellanarius* in Relation to Woodland Management in Southwest England (Bright & Morris, 1990); and
- The Dormouse Conservation Handbook (2nd Ed.) (Bright *et al.*, 2006).

3. Methods

3.1 Desk Study

A desk study confirming wildlife designations and information relating to protected and notable species was undertaken by ITP Energised. The results of that study were used to inform the protected species survey design and implementation and this report. For more details please refer to ITP Energised (2020).

In terms of international and national nature conservation designations, i.e. Special Protection Areas (SPAs), Ramsar sites, Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs), National Parks, and National Nature Reserves (NNRs), as well as statutory local designations i.e. Local Nature Reserves (LNR) were identified within 5km of the Site. Non-statutory designations, such as Local Wildlife Sites (LWSs), Sites of Interest for Nature Conservation (SINCs) or woodland areas included on the Ancient Woodland Inventory (AWI), were identified within 1.5km of the Site.

Only designations with ecological and/or ornithological qualifying features were considered relevant in this study.

Existing records for protected or otherwise notable species (e.g. Environment (Wales) Act 2016/LBAP priority species) were identified within 2km of the Site. Records were obtained from the local biodiversity records centre and only records from within the last 10 years were considered relevant to the study.

Data sources included the following records centre and online databases:

- West Wales Biodiversity Information Centre (WWBIC, 2020);
- National Biodiversity Network Atlas (NBN Atlas, 2020);
- Natural Resources Wales: Designated Sites Search (Natural Resources Wales, 2020a);
- MAGIC: Nature on the Map (MAGIC, 2020); and
- Natural Resources Wales Ancient Woodland Inventory (Natural Resources Wales, 2020b).

3.2 Field survey

The protected species survey was undertaken on February 22, 23, 25, 26 and March 18, 19, 24. The purpose of the survey was to investigate all suitable habitat within the Survey Area (where accessible) for any evidence of use by protected species (including otter, badger, bats, reptiles, hazel dormouse). Additionally, trees and abandoned buildings were assessed for their potential to support roosting bats.

The protected species survey applied to a maximum 250m buffer to either side of the indicative cable route centreline (see **Error! Reference source not found.**). Each individual protected species survey buffer followed the current best practice guidance, which dictates a 100m survey buffer for badger and 50m survey buffer for bats and, reptiles. The survey buffer was extended out to 250m to check for signs indicative of otter presence, particularly along any watercourses crossed by the route, and for hazel dormouse in areas



of suitable habitat (hedges, scrub and woods). In practice, any evidence of protected species recorded within the maximum buffer of 250m was noted.

3.2.1 Otter

A search was undertaken of the valleys and woods where suitable habitat for otter was present. Throughout the Survey Area, streams and pond edges, overhanging banks, cavities, bankside vegetation and riparian features, such as boulders and mud, were searched for the following signs of otter use:

- Spraints – otter dung, which is used for marking territories, is often located on prominent features within the channel or on the bank (including weirs, bridges, rocks, tree roots, watercourse confluences, etc.);
- Footprints – located in soft mud, silt or sandbanks;
- Runs and trails – pathways from the water into dense cover or around bankside trees;
- Slides – down banks as an entry to water bodies; and
- Feeding remains – e.g., remains of fish and amphibians.
- Evidence of potential otter holts/resting places was also searched for during the survey. Two categories are used to describe otter resting sites, depending on the strength of evidence available. Otter resting sites were categorised as either:
 - Actual Resting Site – signs that a site is well used by otters are present, including a trampled entrance, spraints or footprints; or
 - Possible Resting site - the site is typical of an otter resting site, with obvious evidence that it is being used by a mammal, but no signs are present that otters use the site.

A third category (Potential Resting site) covers places that could be used as resting sites by otters.

- Potential holt/Resting site - the site is typical of an otter resting site, but there are no signs of use (e.g., an entrance), by any mammal. Numerous potential sites were identified, and these were categorised as high, medium or low potential depending on their suitability for otters.

3.2.2 Badger

As part of the survey, field signs including setts, day beds, badger faeces in dung pits, evidence of foraging, badger paths, scratching posts, hair and footprints, were searched for. The survey was based on the methods described by Scottish Badgers (2018). The survey included all the woods and fields in the survey area with a focus on the hedgerows, field boundaries, watercourses, paths and other linear features.

On identification of a badger sett, the number of entrances was noted, and an assessment of the activity level and status of the sett was made where possible. The status of a sett was evaluated and determined where this was possible based on descriptions presented in Scottish Badgers good practice guidelines (2018), which assigns setts into one of four categories:

- Main sett (used throughout the year and constitutes the main breeding sett);
- Annexe sett (forms part of the main sett area, but is not directly linked by an underground passage to the main sett, either due to a barrier (e.g. separated by a watercourse or ditch) or by distance);
- Subsidiary sett (offers an alternative large sett complex to the main sett but is usually, although not always, at least 50m away and are not always obviously linked by a well-used path); and
- Outlier sett (often comprising just one or two holes and is infrequently used by badgers).

Each sett entrance can be classified according to its degree of usage as:

- Well-used: are clear of vegetation and debris, sides worn smooth but not necessarily excavated recently;
- Partially used: not in regular use and have debris in the entrance; and



- Disused: not in use for some time, are partially blocked and could not be used without considerable effort.

It should be noted that the status of a badger sett can change over a relatively short period of time and that it is often not possible to be certain of the sett type (apart from obvious, large main setts) without detailed survey. For example, some badger social groups will move the location of the main sett to other less-used setts within their territory in response to external factors, such as disturbance. In this case, it was decided that it was not appropriate to note entrances as well-used, partially used or disused as these may change their status over the time scale of the project.

It should be noted that a sett that appears disused at the time of survey could become active at any time and that a dedicated badger survey of each sett would be required to assess their status and level of use. All setts recorded in this survey were considered to be active and had at least some well/partially used entrances.

3.2.3 Bats

3.2.3.1 Preliminary Roost Assessment

A targeted Preliminary Roost Assessment (PRA) was carried out within the 50m survey buffer for bats. Targeting was achieved initially through careful examination of the route and aerial imagery, to identify possible bat roost constraints to the development. The remote targeting was then ground-truthed and assessed during the site survey visits where any potential roost features (PRFs) were identified.

- The Survey Area was surveyed to identify potentially valuable roosting features for bats following current BCT guidelines (Collins, 2016) and taking note of the Bat Tree Habitat Key (BTHK) (BTHK, 2018) guidance for potential tree features.

All trees and structures within the 50m buffer were inspected from ground level (using binoculars to inspect features in the upper reaches of the trees as required) for PRFs. PRFs included: any features with potential suitability to support roosting bats, for example: woodpecker holes, rot holes, hazard beams, cankers, splits, cavities, crevices and knot holes. Additionally, any features identified were assessed for evidence of bats; e.g. bat corpses, droppings, feeding remains, scratch marks, and urine and grease staining (as per Collins [2016] and BTHK [2018]).

PRFs identified in the PRA were not subjected internal inspection of any sort. Following the PRF inspection, the trees were then graded as to whether they contained Negligible, Low, Moderate or High roost suitability and the requirement for further survey was determined (following the iterative process outlined in good practice guidance [Collins, 2016]).

3.2.4 Reptiles

A full reptile survey using artificial refugia (i.e. survey mats) was not undertaken, as agreed prior to survey through consultation with NRW. However, during the site survey visits all areas of potentially suitable habitat for reptiles such as ponds, pools and ditches, areas of long grass, scrub, hedgerows, and wood/stone/rubble piles were looked for and when found, visually searched for reptiles. Any items such as sheet materials, flat stones, old tyres, etc., under which reptiles might hide were turned over (such items were only very rarely encountered). Methods involved a search for basking reptiles on/under naturally occurring refugia in locations that offered the most suitable habitat for reptiles, i.e. structurally diverse grassland habitats with areas of bare ground/short vegetation and wetland features.

3.2.5 Hazel Dormouse

A full dormouse survey using nest tubes, hair tubes or footprint tunnels was not undertaken. A nut hunt was not undertaken due to the sparsity of hazel (*Corylus avellana*) within the Survey Area and also due to the timing of the survey. Instead, all areas of potentially suitable dormouse habitat were identified, assessed and mapped as agreed prior to survey through consultation with NRW.

Dormice generally use areas of dense woody vegetation cover and are more likely to be found where there is a wide diversity of woody species contributing to three-dimensional habitat complexity, a number of food



sources, plants suitable for nest-building material, and good connectivity to other areas of suitable habitat. In south Wales, dormice have been found to use hedgerows as well as woodlands.

3.3 Survey Limitations

3.3.1 General

A small part of the survey area was not accessed due to access restrictions. (see Figure 2). This area between Broomhill and Neath farms has a series of old irrigation reservoirs linked by a small stream that runs into Angle Bay. There is a small stand of mature woodland, some scrub and semi-improved grassland. There are many large earth bunds. The area has no public access and is undisturbed. This area is potentially important for otter and badger and the woodland may have trees suitable for supporting roosting bat.

3.3.2 Otter

The weather prior to the survey dates had been poor with heavy rain which may have removed some otter signs, such as spraints and footprints.

3.3.3 Badger

The weather prior to the survey dates had been poor with heavy rain which may have removed some badger signs, such as footprints.

3.3.4 Bats

Visible evidence of bat usage of PRFs on the outside of roosting locations can often be removed during adverse weather conditions. The weather prior to the survey dates had been poor with heavy rain which may have removed some signs. Therefore, the absence of bat evidence does not necessarily equate to the absence of roosting bats. Due to the limitations of what is known about the ecology of tree-roosting bats, it is arguable that all trees with bat roosting potential should be considered part of a resource that will be used at one time or another by tree-roosting bats. Survey work on individual trees may confirm presence but is unlikely to conclusively prove absence. Precautionary measures are likely to still be required during works, even where surveys have not identified occupancy.

3.3.5 Reptiles

No limitations were associated with the reptile survey. Good weather with seasonally warm sunshine was experienced on the survey days.

3.3.6 Hazel Dormouse

A nut search was not possible due to the general scarcity of hazel and the fact that the survey took place in February, a time when there are no “fresh” nuts present and when the tooth marks on old nutshells will have worn away over winter and be no longer possible to confidently identify. The absence of dormouse evidence does not necessarily equate to the absence of dormice. Due to the limitations of what is known about the ecology of dormice in this part of Pembrokeshire, and the fact that a previous survey in the area have found evidence of dormice (Greenlink Interconnector Ltd., 2020a), it is arguable that any hedges, patches of scrub and woods could be considered part of a resource that will be used at one time or another by dormice.

4. Results

4.1 Otter

4.1.1 Desk Study

Seven records of otter were identified within 2km of the Site during the external data search, the closest being located at the south of Greenlink substation and was recorded in 2013.



The surveys carried out for the Greenlink project in 2018 identified a potential holt and three couches (open, uncovered areas used as a resting place) around the water body east of Greenhill and a further potential holt north of Vine Cottage, near Hoplass. Additionally, spraint, prints, slides and feeding remains were identified throughout the area (Greenlink Interconnector Ltd., 2020b).

4.1.2 Field Survey Results

The field survey results for otter are presented in Figure 3 and detailed Target Notes (TNs) presented in full in Table 1. In summary, the following signs indicative of otter activity were recorded during the survey:

- Signs of otter evidence were found in suitable habitat throughout the Survey Area, including spraints, slides, trails/runs, footprints and feeding evidence.
- No otters were seen during the survey.
- No actual holts, breeding or resting sites were confirmed during the survey.
- There are 21 areas of habitat that have high potential for otter holt/resting sites.
- There are 7 areas of habitat that have low to medium potential for otter holt/resting sites.
- A total of 4 spraints were recorded.
- A total of 7 slides were recorded.
- There were 17 possible trails/runs recorded.
- There was one record of feeding evidence in the north-east of the Site, where the remains of a pair of otter predated mating toads were found (see TN 94).
- No “actual” or “possible” resting or natal den sites were identified during the survey, but such sites are rarely located when carrying out routine otter surveys (Liles, 2003).

4.2 Badger

4.2.1 Desk Study

Following the external data desk study, twenty-seven records of badger were identified within 2km of the Site. A day nest was recorded in 2019 on the East Angle Bay Cable Route at Rhoscrowther, and a sett was recorded in 2015 1km from Freshwater B Cable Route. Additional badger records are presented in Appendix A of the desk study report, ITP Energised (2020).

The badger survey carried out for the Greenlink project in 2018 identified 27 badger setts within the survey area predominantly in the east within woodland and hedgerows to the south of the existing National Grid Substation (Greenlink Interconnector Ltd., 2020c).

4.2.2 Field Survey

Signs of badger evidence were commonplace throughout most of the Survey Area, including setts, latrines trails and footprints. Details and locations of the survey results can be found in Confidential Annex 1, Table 2 and Figure 4. In summary, the following signs indicative of badger activity were recorded: A total of 27 confirmed (active) setts were recorded.

- A further 10 Suspected/possible setts (where field evidence suggested the likely presence of a sett but it could not be located, usually due to dense and impenetrable scrub) were recorded.
- A total of 11 latrines were recorded.
- A total of 75 trails were recorded.
- A total of 19 feeding activity signs were recorded.



4.3 Bats

4.3.1 Desk Study

During the roost surveys carried out in 2018 for the Greenlink project (Greenlink Interconnector Ltd., 2019), the war memorial (gun emplacement/gun battery) located on the B4319, north of Freshwater West Beach was identified as a frequently used roost for Greater horseshoe bats (*Rhinolophus ferrumequinum*) and more infrequently used by Lesser horseshoe bats (*R. hipposideros*). Further bat surveys undertaken on behalf of the Greenlink project identified the presence of the following species: Lesser horseshoe, Greater horseshoe, common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), *Myotis* species, Noctule (*Nyctalus noctula*), Barbastelle (*Barbastella barbastellus*), Leisler's (*Nyctalus leisleri*), Nathusius' pipistrelle (*Pipistrellus nathusii*), serotine (*Eptesicus serotinus*) and long-eared (*Plecotus spp.*) bats.

The external data search returned the following records:

- Six records of brown-long eared bat were identified within 2km of the Site.
- Five records of common pipistrelle were identified within 2km of the Site.
- Seven records of pipistrelle sp. were identified within 2km of the Site.
- Seven records of soprano pipistrelle were identified within 2km of the Site.
- A single record of Daubenton's bat was identified within 0.54km of the Site.
- Fifty records of greater horseshoe bat were identified within 2km of the Site.
- Twenty records of lesser horseshoe bat were identified within 2km of the Site.
- A long-eared bat species was recorded within 2km of the Site.
- Two records of natterer's bat were identified within 2km of the Site.
- Twenty-three records of noctule bat were identified within 2km of the Site.
- A single record of a serotine bat was identified within 1.3 km of the Site.
- Two records of whiskered bat were identified within 2km of the Site.

4.3.2 Field Survey

No evidence indicative of bats was recorded in the Survey Area, however a number of PRFs were recorded. Details and locations of the bat survey results can be found in Appendix A, **Error! Reference source not found.** and **Error! Reference source not found..** In summary, the following PRFs were identified during the survey:

- A total of 34 trees with Medium, Medium/High or high Potential were recorded.
- A total of 7 trees with Low or low/medium Potential were recorded.

4.4 Reptiles

4.4.1 Desk Study

The external data desk study confirmed historical records for the following reptiles:

- Four records of adder were identified within 2km of the Site, the closest being located 0.18km south of Freshwater B Cable Route, recorded in 2010.
- Twenty-six records of common lizard were identified within the Site, the closest being 0.22km south of the West Angle Route, recorded in 2016.
- Three records of grass snake were identified within 2km of the Site, the closest being located 0.01km south of West Angle Route recorded in 2015.
- Four records of slow worm were identified within 2km of the Site, the closest being located 0.1km northeast of Substation option 2, recorded in 2019.



4.4.2 Field Survey

Details and locations of the survey results can be found in Appendix A, Error! Reference source not found. and Figure 5 Reptile Survey Results

. No reptiles were recorded during the reptile survey, however the following evidence was noted:

- A total of 1 potential refugia/hibernacula (an area of piles of stones and rubble in old farm quarry workings) were recorded at the following location: TN 152.
- 22 areas of medium to high potential reptile habitat were recorded.

4.5 Hazel Dormouse

4.5.1 Desk Study

The Greenlink surveys identified areas of suitable dormouse habitat (mostly in the area south of the power station) and recorded the presence of dormouse from a dormouse nesting tube survey (Greenlink Interconnector Ltd., 2020a).

4.5.2 Field Survey

No evidence of dormouse was recorded in the Survey Area. A number of areas of suitable habitat were recorded, as shown in **Error! Reference source not found.** and TNs detailed in **Error! Reference source not found.** In summary: 19 areas of medium and high potential dormouse habitat were recorded.

- 3 areas of low potential dormouse habitat were recorded.

5. Discussion

5.1 Otter

Otter are nomadic in nature and tend to inhabit large home ranges (up to 40km of waterway for an adult male). Otter use every type of water habitat, including; rivers and streams, ditches, wetlands, lakes, ponds, reservoirs, estuaries and coastline. Within an otter's home range, several different resting sites will normally be used and may be used only infrequently as otter make use of multiple resting areas within a given territory (Chanin, 2003).

Within the survey area, the habitats for otters are generally considered to be good, partly because of the quality and extent of cover (provided by patches of wet woodland, scrub/bramble (*Rubus fruticosus*) and areas of tall herb vegetation, such as common reed [*Phragmites australis*]) and partly because of the lack of disturbance along most of the riparian valleys (which have no public access).

The survey recorded signs of otter activity consisting of spraints, slides, trails and feeding signs. Although no field signs indicative of natal dens was found during the survey, otter breeding sites may potentially be present within the Survey Area and wider environs within the most undisturbed areas of woodland and scrub within the stream valleys.

Despite the high levels of disturbance (from hikers, dog walkers, etc.), field signs in the area around West Angle bay indicate that it is regularly used by otter. The Hoplass – Neath - Angle Bay valley system appears to likely be another important area for otter, as is the valley south of the village of Rhoscrowther, the valley from Broomhill Farm to Angle Bay and some of the irrigation ponds and small stream valleys on the coastal edges on the south side of the B4320. The Valero land between Broomhill and Neath Farms (inaccessible during the survey) is also considered likely to be suitable for otter.



5.2 Badger

Due to historical persecution against badger, all data relating to this species and their dens is provided in a separate Confidential Annex 1 that should be read in conjunction with this report.

5.3 Bats

Records of bats from the desk study indicate that a wide range of bat species are present within the Survey Area. Bats recorded include: Brown-long eared bat, common pipistrelle, soprano pipistrelle, Daubenton's bat, greater horseshoe bat, lesser horseshoe bat, Natterer's bat, noctule bat, serotine bat and whiskered bat. In the British Isle 14 bat species have been recorded roosting in trees.

Of the ten bats listed above, the following eight are known to roost in trees:

- Daubenton's bat, noctule bat and lesser horseshoe bat are void (large cavity) roosting species.
- common pipistrelle, soprano pipistrelle, whiskered bat are crevice (small tight cracks, splits and holes) roosting species.
- Natterer's bat and brown long-eared may use larger voids or small crevices.

In the Survey Area, there are few very large old trees with "veteran tree" features. Sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*) are common and can often develop some PRFs (particularly crevices) early in life. Due to the extreme, windswept nature of the area, some younger stands of ash trees have also developed a range of crevices and holes with potential PRFs. However, larger voids (trunk and limb cavities) are not common within the Survey Area. The wooded areas of course are the most important areas for PRF's. Outside of wooded areas, field and hedgerow trees are not common and where present are of no great size or age to support PRFs. However, many of the trees within the Survey Area will be capable of supporting crevice roosting species and some will likely support void roosting species. The Valero land between Broomhill and Neath Farms may support features for bats, but was not accessible at the time of survey.

Although all PRFs within the wider 250m survey area were recorded for completeness, 11 are located within the potential bat disturbance buffer of 50m of any proposed works, these are described in TNs: 106, 107, 108, 109, 110, 127, 128, 209, 87.

5.4 Reptiles

No Reptiles were seen during the survey. The survey did not aim specifically to record reptile species but to assess the potential of the survey route as reptile habitat. Most of the Survey Area consists of improved grassland or arable farmland with poor, incomplete hedges on enriched, rough grassy banks (Hudson, 2020). There is little high potential reptile habitat outside of the sand dunes at Kilpaison Burrows.

There is the potential for any hedgebank or patch of suitable habitat to support reptiles. However, 22 areas of medium to high potential reptile habitat were recorded and mapped within the Survey Area. In these areas, a reptile mitigation plan providing a Reptile Toolbox Talk, mitigation and a working method statement that involves a watching brief in the med/high potential areas will be adopted.

A small area of the Kilpaison Burrows dune system falls within the reptile survey 50m buffer but works will not come within this distance of this area. The Valero land between Broomhill and Neath Farms may be important for reptiles but was not accessible at the time of survey.

5.5 Hazel Dormouse

The Greenlink surveys (Greenlink Interconnector Ltd., 2020a) identified areas of suitable dormouse habitat (mostly in the area south of the power station) and recorded the presence of dormouse from a dormouse nesting tube survey. This survey noted that "Suitable habitat for dormice was present throughout the site in the form of thick hedges, scrub and woodland blocks or belts." The survey appears to have been restricted



to the area to the southwest of Greenhill. Outside of this area, there appears to be little in the way of what is considered to be typical dormouse habitat.

However, although dormouse habitat is traditionally thought of as ancient semi-natural woodlands with a mixed, species-rich understorey, other woodland types, hedgerows, gorse (*Ulex europaeus*) and bracken (*Pteridium aquilinum*) scrub, coastal scrub, wet woodland and reed beds, bramble thickets and even overgrown gardens are all important habitats (Bright *et al.*, 2006). Some of these sites may comprise sub-optimal habitat, with low densities of dormice present, but others can harbour significant numbers. The absence of dormice should not be assumed simply on the basis of a 'non-typical' habitat.

The principal factor governing habitat suitability appears to be food availability. Important food species include hazel, being the principal source of nuts in the autumn prior to hibernation; blackthorn, being a particularly important nectar and flower source in early spring; brambles, being important as a source of berries; and, honeysuckle (*Lonicera periclymenum*), being a source of not only nectar and flowers but easily shredded bark, for nesting material. Sycamore and other species which are characterised by a high insect biomass, become especially important during the mid-summer as other food sources are low at this time.

Considering this, and the fragmented nature of suitable habitat within an agricultural-dominant landscape of Pembrokeshire, the potentially suitable dormouse habitats recorded during the survey were categorised as:

- Defunct/poor, thin hedges are classed as **low potential** except where connected to high potential habitats when they become **medium potential**.
- Grazed woods are **medium potential**.
- Scrub (bramble, gorse, hazel, hawthorn [*Crataegus monogyna*], etc.) is classed as **medium potential** or **high potential** where adjoining/connected to high potential habitats.
- Ungrazed woods (with a poorly developed understorey/ground flora and without hazel/honeysuckle/bramble) are **medium potential**.
- Intact/good, thick/species-rich hedges are classed as **high potential**, unless very isolated when they become **medium potential**.
- Ungrazed woods (with well-developed understorey/ground flora with hazel/honeysuckle/bramble) are **high potential** unless very small and isolated when they become medium.

Using this method, some general areas of the survey area appear to be more potential to support dormouse. These areas tend to be in the more wooded parts of the survey areas but some of the less intensively farmed areas do support better hedges that may be suitable for dormice. The whole area covered by the Greenlink survey is considered High potential. This is due to the presence of records and the fact that at least some of the woodlands and hedges in this area appear to be suitable habitat.

Almost all of the hedgerows across the survey site are species-poor mixtures of hawthorn, blackthorn (*Prunus spinosa*), gorse and grey willow (*Salix cinerea*). Ash and sycamore are sometimes present as small standards in less exposed areas. Hedges within arable field systems, such as those to the south and west of Angle, are usually defunct and often lacking fences and with gaps between and below the bushes. Intact hedges are generally continuous and slightly thicker but are otherwise similar and have a grass-dominated and enriched ground flora.

Occasionally, hedges are found in better condition, being wider and less intensively managed and may have a fringe of bramble or encroaching scrub. Around some grazed fields, such as those in the east at Lambeeth and Sawdern, some of the hedges are spreading and form thick bands of scrub. A few roadside hedges around Angle village are enriched with wych elm (*Ulmus glabra*) and have a richer hedge-bottom flora with species such as primrose (*Primula vulgaris*).

Precautionary measures are likely to still be required during works, even where surveys have not identified presence.



6. References

BTHK (2018). Bat Roosts in Trees – A guide to identification and Assessment for Tree-Care and Ecology Professionals. Exeter: Pelagic Publishing.

Bright, P & Morris, P. (1990). Habitat requirements of dormice *Muscardinus avellanarius* in relation to woodland management in Southwest England. Biological Conservation. Vol.55 (issue 4), pp.307-326. Bright, P, Morris, P, Mitchell-Jones, T (2006). The Dormouse Conservation Handbook Second Edition, English Nature.

Chanin P. (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough.

CIEEM (2013a). Competencies for Species Survey: Eurasian Otter. Available online at: <https://cieem.net/wp-content/uploads/2019/02/CSS-EURASIAN-OTTER-April-2013.pdf> (accessed April 2021).

CIEEM (2013b). Competencies for Species Survey: Badger. Available online at: <https://cieem.net/wp-content/uploads/2019/02/CSS-BADGER-April-2013.pdf> (accessed April 2021).

CIEEM (2013c). Competencies for Species Survey: Bats. Available online at: <https://cieem.net/wp-content/uploads/2019/02/CSS-BATS-April-2013.pdf> (accessed April 2021).

CIEEM (2013d). Competencies for Species Survey: Hazel Dormouse. Available online at: <https://cieem.net/wp-content/uploads/2019/02/CSS-HAZEL-DORMOUSE-April-2013.pdf> (accessed April 2021).

CIEEM (2014). Competencies for Species Survey: Reptiles. Available online at: <https://cieem.net/wp-content/uploads/2019/02/CSS-REPTILES-October-2014.pdf>

Collins J (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines, Third Edition. The Bat Conservation Trust, London.

Greenlink Interconnector Ltd. (2019). Greenlink Environmental Statement – Onshore Wales, Appendix 6.7: Bat Survey Report. Available online at: <https://www.greenlink.ie/file-share/f065f415-d25a-4bbf-84de-8b68297fefdb> (accessed May 2021).

Greenlink Interconnector Ltd. (2020a). Greenlink Environmental Statement – Onshore Wales, Appendix 6.12: Dormouse Method Statement. Available online at: <https://www.greenlink.ie/file-share/49f170fd-32d4-44cd-91c4-8eedb893aa94> (accessed May 2021).

Greenlink Interconnector Ltd. (2020b). Greenlink Environmental Statement – Onshore Wales, Appendix 6.5: Riparian Mammals Survey Report. Available online at: <https://www.greenlink.ie/file-share/49f170fd-32d4-44cd-91c4-8eedb893aa94> (accessed May 2021).

Greenlink Interconnector Ltd. (2020c). Greenlink Environmental Statement – Onshore Wales, Chapter 6: Biodiversity. Available online at: <https://www.greenlink.ie/file-share/f065f415-d25a-4bbf-84de-8b68297fefdb> (accessed May 2021).

Hudson J. and Sutton M. (2020) Erebus Project: Preliminary Ecological Assessment of potential cable routes and substation locations near Angle and Rhoscrowther, Pembrokeshire.

ITP Energised (2020). Onshore Infrastructure Environmental Baseline & Constraints Assessment Appendix A - Ecological Desk Study. V1.0. ITP Energised.

Liles, G. (2003). Otter Breeding Sites: Conservation and Management. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough.



MAGIC: Nature on the Map (2020). Interactive Map. Available online at: <https://magic.defra.gov.uk/magicmap.aspx> (accessed April 2020).

National Biodiversity Network (NBN) Atlas (2020). NBN Atlas. Available online at: <https://nbnatlas.org/> (accessed April 2020).

Natural Resources Wales (2020a). Designated Sites Search. Available online at: <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en> (accessed April 2021).

Natural Resources Wales (2020b). Ancient Woodland Inventory. Available online at: <https://naturalresources.wales/guidance-and-advice/environmental-topics/woodland-management/woodlands-and-the-environment/ancient-woodland-inventory/?lang=en> (accessed April 2021).

Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines. Available online at: https://www.scottishbadgers.org.uk/userfiles/file/planning_guidelines/Surveying-for-Badgers-Good-Practice-Guidelines_V1.pdf (accessed October 2020).

Sergeant, G. and Morris, P. (2003). How to Find and Identify Mammals. 2nd Edn. The Mammal Society, London.

WWBIC (2020). Data Request for ITP Energised. April 2020.



7. Appendices

7.1 Appendix A – Survey Maps and Target Notes

Note that at many Target Note locations, the presence of (or potential for) more than one species was recorded. Therefore, a Target Note may have two or more species recorded and conversely, a Target Note number may appear in more than one of the maps and tables below.

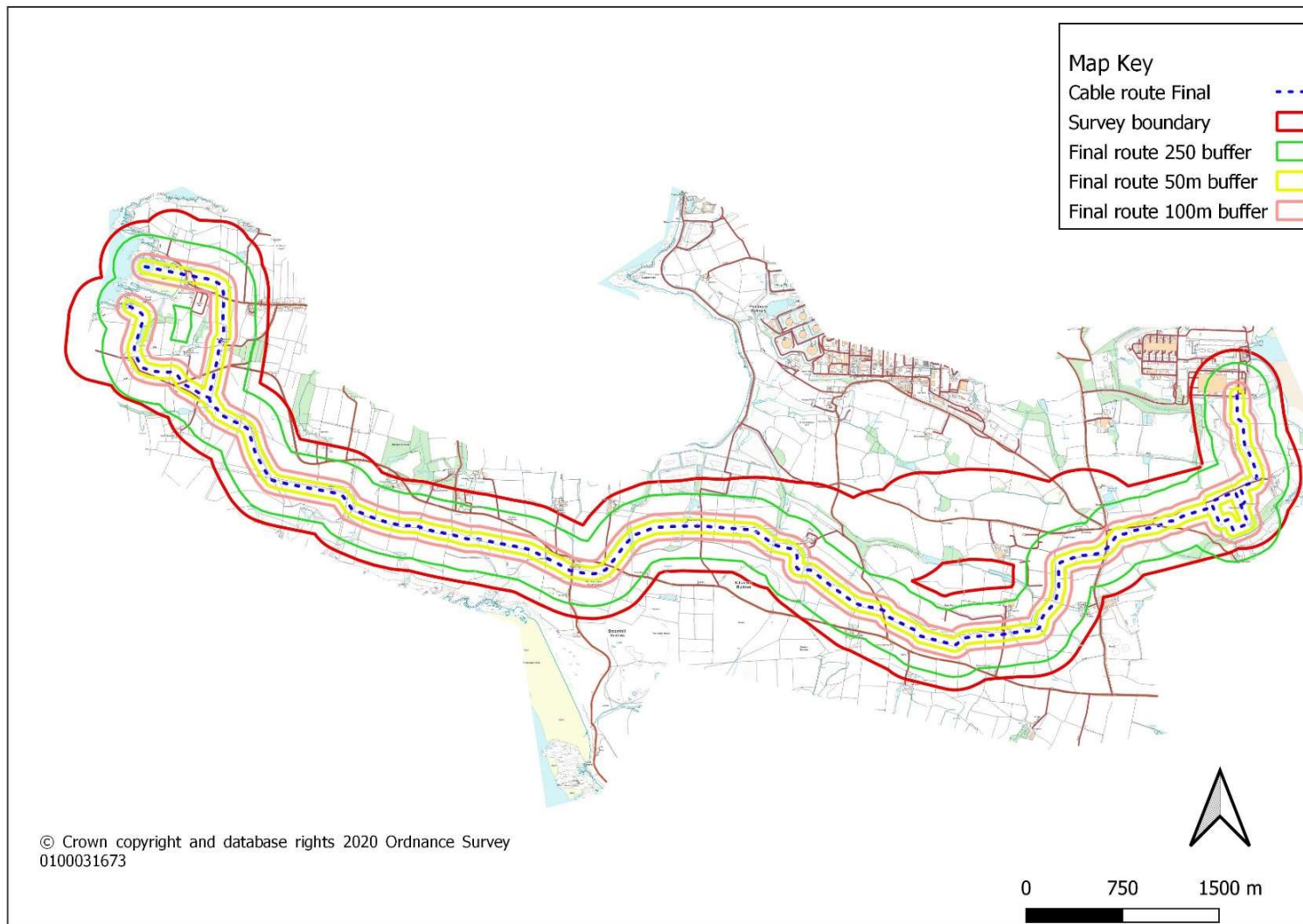


Figure 1: Survey Areas

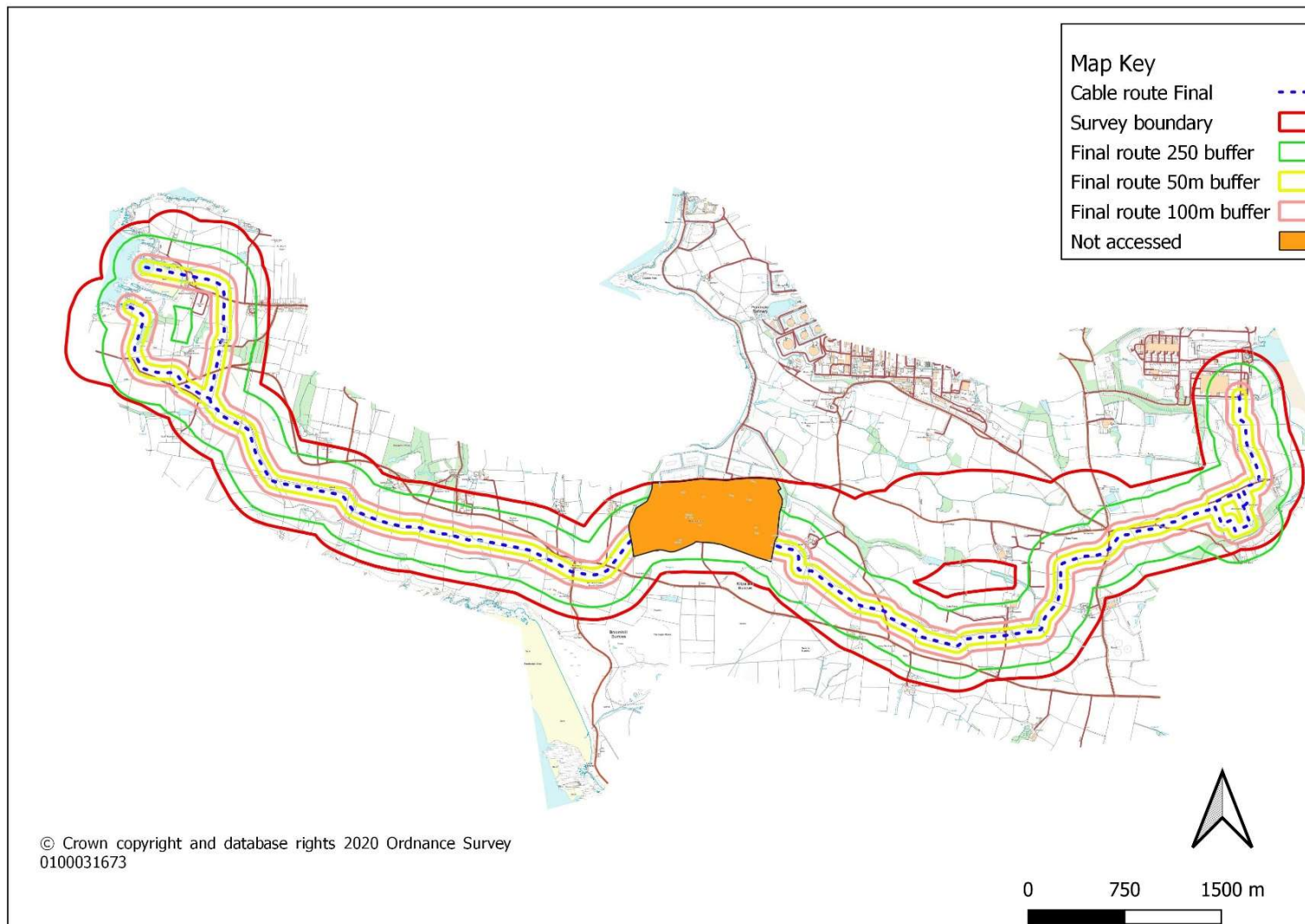


Figure 2: Area not accessed during the survey

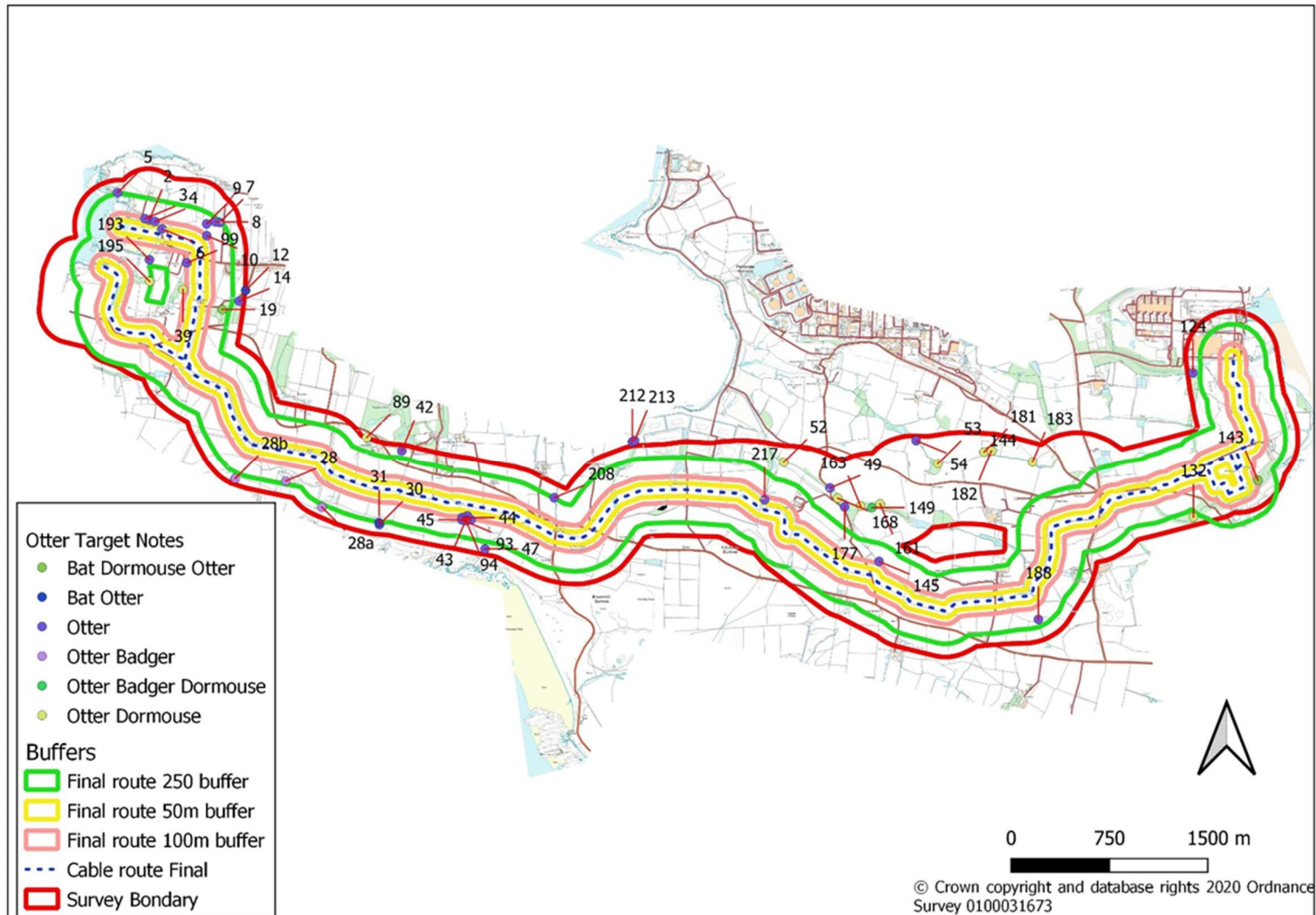


Figure 3: Otter Survey Results



Table 1: Otter Target Notes

Target Note	NGR	Species	Photo No.	Otter Spraint	Otter Trail	Otter Slide	Otter Potential Resting	Otter Potential Holt/Breeding	Notes
2	SM8529103341	Otter	6, 7	Yes	Yes				Trail from track down slope to beach
3	SM8525803351	Otter			Yes				Trail into blackthorn scrub
4	SM8533403329	Otter			Yes				Trail crossing track
5	SM850035	Otter	8				High	High	Dense Blackthorn Scrub
6	SM8538803274	Otter	1, 2, 3, 4, 5	Yes	Yes				Trail under gate from beach to scrub covered ditch
7	SM8582903322	Otter			Yes				Trail into field corner
8	SM8579503326	Otter	9		Yes				Trail into scrub
9	SM8572803311	Otter			Yes				Trail under elder in corner
10	SM8572903221	Otter			Yes				Trail into ditch
12	SM8602602804	Bat Otter			Yes				Trail from culvert to field
14	SM8597602722	Otter			Yes				Path, slide and otter prints on bank between streams in wood
28	SM8634601392	Otter Badger	17, 18, 19, 20				High	High	Bramble, gorse and blackthorn scrub by valley stream and pond
30	SM8704701012	Otter					High	High	
31	SM8704401026	Bat Otter							Probable otter trail under wych elm



39	SM8554802811	Otter Dormouse					High	High	The pond marked on the map is virtually dried up the wood is mostly wet willow very tangled understory with fallen trees likely to be suitable for otter very little potential bat roost - potential for dormouse
42	SM8721701580	Otter							
43	SM8771801079	Otter			yes	yes			
44	SM8767701065	Otter			yes				
45	SM8774601050	Otter				yes			
47	SM8785200827	Otter			yes				Track leading into tussocks of <i>Molinia</i> at head of eastern valley
49	SM9048401292	Otter		yes					
52	SM9013101490	Otter Dormouse				yes			
53	SM9130701479	Otter Dormouse				Yes			
54	SM9114101658	Otter		yes					
89	SM8695001682	Otter Dormouse					Low		Heavily grazed wood close to house and garden.
93	SM8767701047	Otter				yes	High	High	Large irrigation reservoir surrounded by scrub
94	SM8770801041	Otter	JH1 28, 29			yes	High	High	signs of Otter feeding on toads
99	SM8557803014	Otter	JH1 18				Med	Low	



124	SM9325302175	Otter			Possible				Numerous swan mussels <i>Anodonta cygnaea</i> around pond edge (uncommon in west Wales) – a possible food source for otters.
132	SM9325701070	Otter Dormouse						High	Wet alder wood with moderately dense bramble patches
144	SM9169101574	Otter Badger					High	High	
145	SM9089700795	Otter					High	High	
149	SM9080301141	Otter Badger Dormouse					High	High	Willow scrub high otter potential no bat potential some dormouse potential
152	SM9096001106	Reptile							
161	SM9086601170	Otter Dormouse					High	High	Dense willow woodland with some old ash trees with thick bramble and shrub layer.
163	SM9071801153	Otter Dormouse			Yes		Med	Med	Some potential for otter but probably too much disturbance
168	SM9054301213	Otter Dormouse					High	High	Dense willow scrubs with Bramble high Otter pot, med Dormouse
177	SM9059601143	Otter					High	High	wet woodland in a scrubby valley, much of which has high otter and some Dormouse potential
181	SM9165901570	Otter Dormouse					High	Med	
182	SM9171601580	Otter Dormouse					high	High	High potential for Holt in large brash piles
183	SM9202901492	Otter Dormouse					High	High	
188	SM9207400291	Otter			Probable track		Low	Low	



193	SM8529203038	Otter					Med	Low	Low potential otter holt habitat
195		Otter Dormouse					High	High	A fence divides the wood. to west much dense bramble and shrub layer
208		Otter							Pond with blackthorn and gorse scrub. Possible Very Low otter potential
212		Otter				Yes	High	High	Dense scrub and woodland in stream valley
213		Otter			Yes				Path links pond and woodland and stream. Woodland is dense with scrub and bramble High Otter Holt potential
217		Otter					High	High	No evidence seen but dense, undisturbed habitat with ponds and streams nearby
28a	SM86590114	Otter Badger					High	High	Bramble, gorse and blackthorn scrub by valley stream and pond
28b	SM85930137	Otter Badger					Low/Med	Low/Med	Bramble, gorse and blackthorn scrub by valley stream and pond

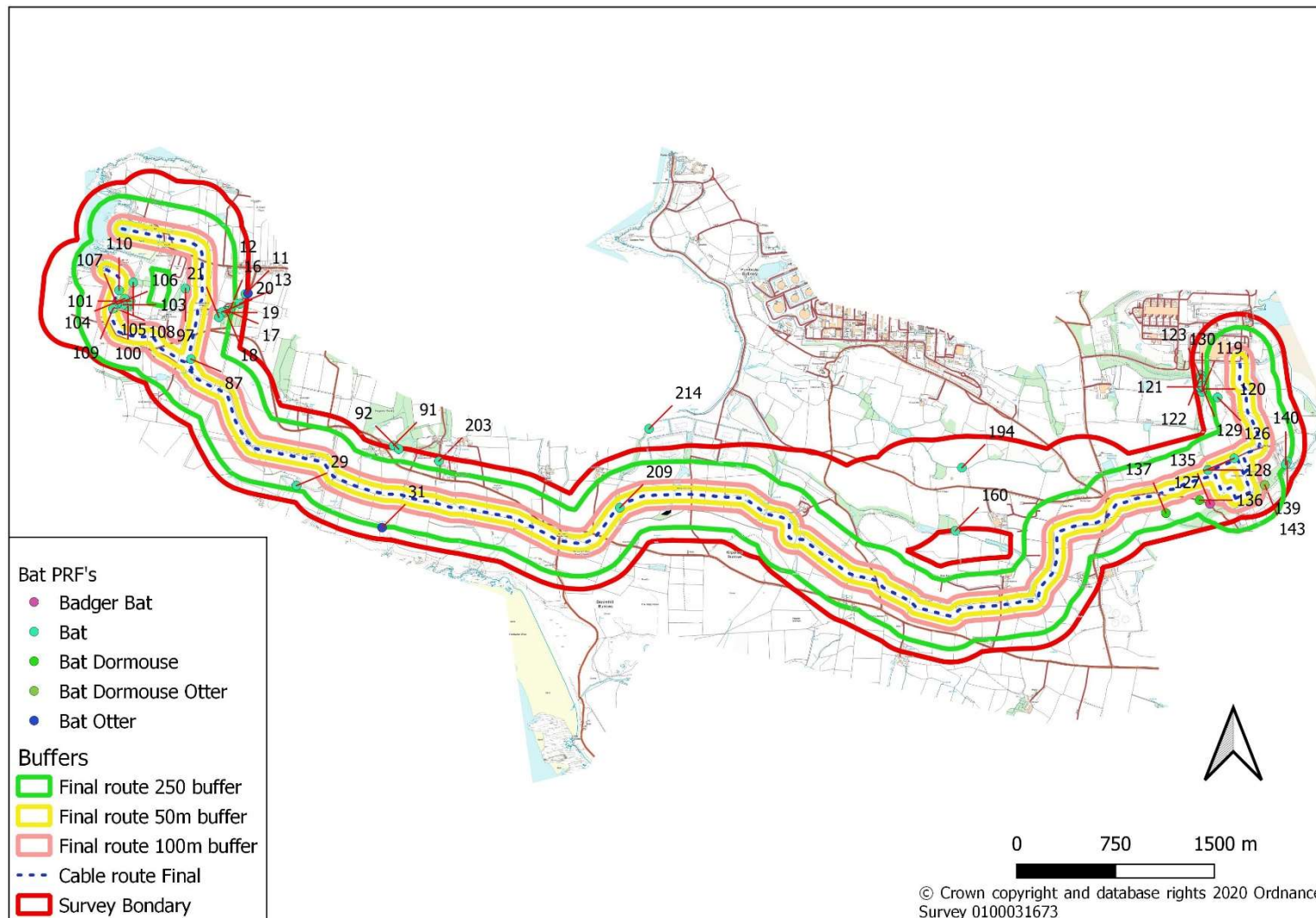


Figure 4 Preliminary Roost Features



Table 2 Bat Target Notes

Target Note	NGR	Species	Photo No.	Bat roost Potential: Building	Bat roost Potential: Tree	Bat roost Description	Evidence of use	Notes
11	SM8600702800	Bat	10		Med	Sycamore with woodpecker hole	No	
12	SM8602602804	Bat and Otter			Med	Sycamore with limb scar	No	Otter Trail from culvert to field
13	SM8596402726	Bat	11		Med	Ash with potential holes below limb scars	No	
16	SM8588702675	Bat	12		Med	2 Sycamore with dense ivy	No	
17	SM8587402669	Bat			Med	Alder with trunk cavity	No	
18	SM8585902669	Bat			Med	2 Alder with dense ivy	No	
19	SM8584802658	Bat Dormouse Otter			Med	Alder with limb scar & holes	No	bramble cover light, denser to southern woodland boundary
20	SM8582802662	Bat	13		High	Ash with narrow vertical trunk splits	No	
21	SM8580502622	Bat	14		High	3 Ash with dense ivy and cracked limbs	No	
29	SM86390134	Bat	21	Low		Brick building within embankment - no evidence	No	



Target Note	NGR	Species	Photo No.	Bat roost Potential: Building	Bat roost Potential: Tree	Bat roost Description	Evidence of use	Notes
31	SM8704401026	Bat Otter			Med	Rot holes crevices	No	Probable otter trail under wych elm
87	SM8559202305	Bat			Low	Small rot hole	No	Low potential roost No evidence seen
91	SM8713101649	Bat			Low	Large open horizontal hole	No	
92	SM8717101622	Bat	JH1 22		Med	Rot holes (several small holes and crevices from lightning strike?)	No	
97	SM8555002840	Bat	JH1 19	Low		?	No	Old water tank with no real potential
100	SM8511402704	Bat	JH1 9		Med	Small hole	No	
101	SM8513302745	Bat			Low	Small rot hole	No	
103	SM8507702717	Bat	JH1 9		Low	Small hole	No	
104	SM8508902764	Bat	JH 1 3		Med	Hollow	No	
105	SM8515402886	Bat	JH 1 1		Med	Rot hole	No	
106	SM8503302723	Bat	JH1 5		Low	Large shallow and open rot cavity	No	



Target Note	NGR	Species	Photo No.	Bat roost Potential: Building	Bat roost Potential: Tree	Bat roost Description	Evidence of use	Notes
107	SM8502902725	Bat	JH1 4		Low/med	Large cavity in trunk	No	
108	SM8501102694	Bat	JH1 14		Med/High	Large hole (possible hollow trunked pollard)	No	
109	SM8500102688	Bat	JH1 13		Med/High	Numerous rot holes and crevices	No	
110	SM8504702827	Bat	JH 1 12		High	Rot hole/hollows/crevices	No	
119	SM9327202057	Bat			Med	Sycamore with hole below limb scar	No	
120	SM9327402078	Bat			Med	2 oaks with holes	No	
121	SM9325702094	Bat	34		High	hollow oak	No	
122	SM93260218	Bat	35		Med	10+ Medium-High oak and ash with thick ivy around pond	No	
123	SM9326502157	Bat			Med	6+ Medium-High oak and ash with thick ivy to the south of coast path	No	
126	SM9339102014	Bat			Med	Ash with dense ivy	No	
127	SM9351701552	Bat				Hole	No	



Target Note	NGR	Species	Photo No.	Bat roost Potential: Building	Bat roost Potential: Tree	Bat roost Description	Evidence of use	Notes
128	SM9331801463	Bat				Hole	No	
129	SM9327202100	Bat			Med	Ash with dense ivy	No	
130	SM9327502102	Bat			Med	Oak with dead limb	No	
135	SM9333401206	Badger Bat	45 46		Med	3 ash with ivy	No	Strip of scrub / woodland with some hazel either side of track
136	SM9325401235	Bat Dormouse			Med	ash with ivy	No	No evidence of Dormouse
137	SM9299801137	Bat Dormouse			Med	numerous ash with ivy	No	Bramble in wooded valley, less potential for otter in western part. No evidence of Dormouse
139	SM9392101528	Bat			High	Sycamore dead with holes	No	
140	SM9390901505	Bat			High	Hollow sycamore. Numerous medium potential ash with ivy	No	
143	SM937013	Bat Dormouse Otter			Med	numerous ash with ivy	No	woodland with dense bramble not accessed. No evidence of Dormouse
160	SM9139901002	Bat			Medium	Ivy and rot holes	No	5 ash trees. Low To medium potential



Target Note	NGR	Species	Photo No.	Bat roost Potential: Building	Bat roost Potential: Tree	Bat roost Description	Evidence of use	Notes
194	SM9144901481	Bat	JH1 35		Med	Small hole	No	Leading to larger cavity?
203	SM8747601531	Bat			Low/Med	Small hole	No	Several trees with low/medium bat roost potential present in the wood
209	SM8885101177	Bat			low	Rot hole	No	Not accessed. Shelter belt.no shrub layer, nettles and grass. Larger trees on east may have bat roost potential.
214	SM8907201776	Bat			Medium	Small hole	No	A group of 5 ash trees with medium bat roost potential

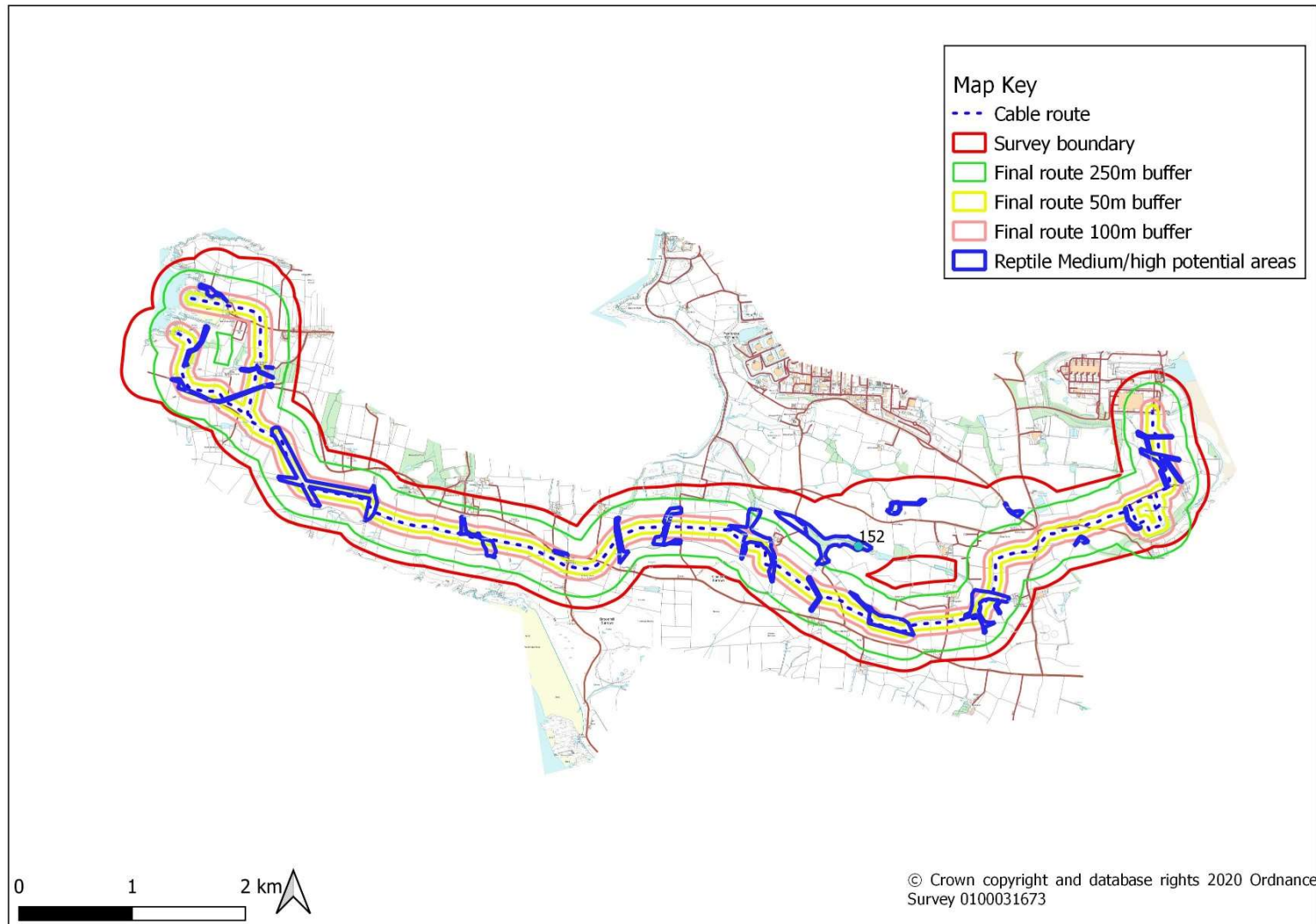


Figure 5 Reptile Survey Results



Table 3 Reptile Target Notes

Target Note	NGR	Species	Photo number	Notes
152	SM9096001106	Reptile		Rubble and stone piles

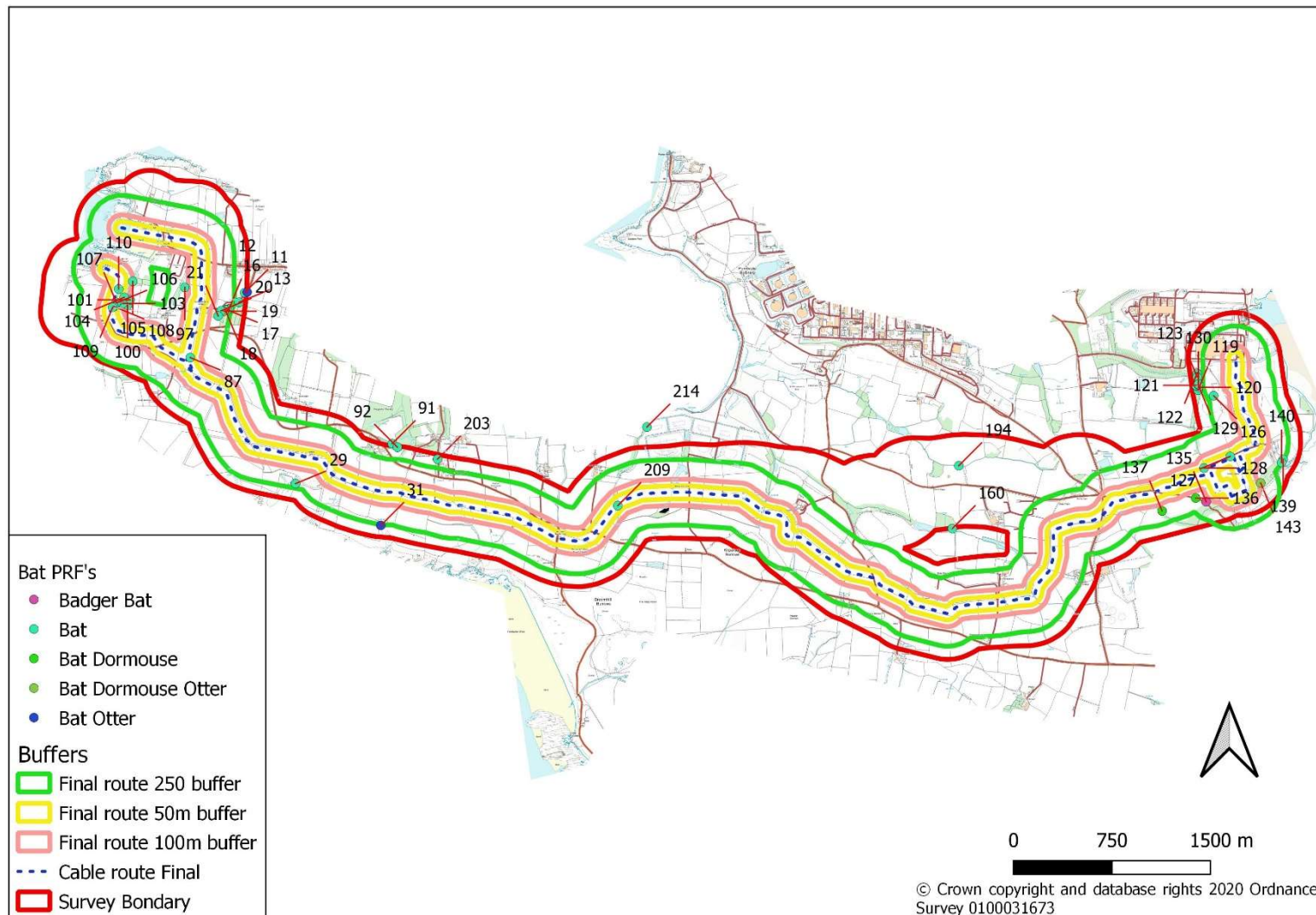


Figure 6 Hazel Dormouse Survey Results



Table 4 Dormouse Target Notes

Target Note	NGR	Species	Photo number	Dormouse Potential	Notes
1	SM8510602801	Dormouse		Medium, No evidence of Dormouse	Small ash and alder trees, heavily grazed, no understory
15	SM8592802696	Dormouse		High No evidence of Dormouse	Sparse hazel, formerly coppiced, dormouse potential
19	SM8584802658	Bat Dormouse Otter		High No evidence of Dormouse	bramble cover light, denser to southern woodland boundary
39	SM8554802811	Otter Dormouse		High No evidence of Dormouse	The pond marked on the map is virtually dried up the wood is mostly wet willow very tangled understory with fallen trees likely to be suitable for otter very little potential bat roost - potential for dormouse
52	SM9013101490	Otter Dormouse		High No evidence of Dormouse	
53	SM9130701479	Otter Dormouse		Medium No evidence of Dormouse	
89	SM8695001682	Otter Dormouse		Low No evidence of Dormouse	Heavily grazed wood close to house and garden.
117	SM9328302015	Dormouse	31 36	High No evidence of Dormouse	Scattered hazel and dense bramble scrub fringing wood of ash and old coppiced hazel
125	SM9332602040	Dormouse	37 38	Med. No evidence of Dormouse No evidence of Dormouse	Holloway with sycamore, hazel and blackthorn. Sheep grazed but with bramble patches / fringe to north
131	SM9320401026	Dormouse	39 40	High No evidence of Dormouse	Ash with some old hazel coppice, sheep grazed light bramble understorey,



Target Note	NGR	Species	Photo number	Dormouse Potential	Notes
132	SM9325701070	Otter Dormouse		High No evidence of Dormouse	Wet alder wood with moderately dense bramble patches
133	SM93320113	Dormouse	41 42 43 44	High No evidence of Dormouse	Hazel and scrub on slope. No evidence of Dormouse
136	SM9325401235	Bat Dormouse		High No evidence of Dormouse	No evidence of Dormouse
137	SM9299801137	Bat Dormouse		Med No evidence of Dormouse	Bramble in wooded valley, less potential for otter in western part. No evidence of Dormouse
138	SM931010	Dormouse		High No evidence of Dormouse	Sparse hazel in ash woodland, but bramble, honeysuckle etc. No evidence of Dormouse
143	SM937013	Bat Dormouse Otter		Med No evidence of Dormouse	woodland with dense bramble not accessed. No evidence of Dormouse
149	SM9080301141	Otter Badger Dormouse		Medium No evidence of Dormouse	Willow scrub high otter potential no bat potential some dormouse potential
161	SM9086601170	Otter Dormouse		High No evidence of Dormouse	Dense willow woodland with some old ash trees with thick bramble and shrub layer.
163	SM9071801153	Otter Dormouse		Med No evidence of Dormouse	Some potential for otter but probably too much disturbance
168	SM9054301213	Otter Dormouse		Med No evidence of Dormouse	Dense willow scrubs with Bramble high Otter pot, med Dormouse
178	SM9070700907	Dormouse		Medium No evidence of Dormouse	Very dense hedge possible dormouse habitat but not well connected



Target Note	NGR	Species	Photo number	Dormouse Potential	Notes
179	SM9172301620	Dormouse		Medium No evidence of Dormouse	Patches of willow with hazel possible dormouse isolated so not High potential
181	SM9165901570	Otter Dormouse		Medium No evidence of Dormouse	
182	SM9171601580	Otter Dormouse		Medium No evidence of Dormouse	High potential for Holt in large brash piles
183	SM9202901492	Otter Dormouse		Medium No evidence of Dormouse	
187	SM9202000276	Dormouse		Medium No evidence of Dormouse	Thick hedge
195	SM8529402872	Otter Dormouse		High, No evidence of Dormouse	A fence divides the wood. to west much dense bramble and shrub layer
196	SM9206400432	Dormouse		High No evidence of Dormouse	Thick Hedge
197	SM9286101593	Dormouse		High No evidence of Dormouse	Thick Hedge. Dormouse recorded here by Greenlink survey
199	SM9090700675	Dormouse		High No evidence of Dormouse	
200	SM9147900217	Dormouse		Medium No evidence of Dormouse	



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