



ARECLEOCH WINDFARM EXTENSION
Protected Species 2015 Survey Report
Technical Appendix 8.2B

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EXECUTIVE SUMMARY

MacArthur Green was commissioned by ScottishPower Renewables to carry out protected species surveys for the proposed Arecleoch Windfarm Extension (referred to as the ‘proposed Development’).

The surveys were undertaken to inform the ecological assessment for Arecleoch Windfarm Extension.

Surveys were conducted between 12 and 14 October 2015 by MacArthur Green. The surveys found evidence of otter (*Lutra lutra*), red squirrel (*Sciurus vulgaris*), pine marten (*Martes martes*) and common lizard (*Zootoca vivipara*) using the study area. There was no evidence of badger (*Meles meles*) or water vole (*Arvicola amphibius*) using the study area.

The results of surveys undertaken for bats are reported separately.

1 INTRODUCTION

MacArthur Green was commissioned by ScottishPower Renewables to carry out protected species surveys at the proposed Arecleoch Windfarm Extension (referred to as the 'proposed Development'), located approximately 1.2 km to the south-west of the village of Barrhill in South Ayrshire. These surveys focussed on otter (*Lutra lutra*), water vole (*Arvicola amphibius*), badger (*Meles meles*), red squirrel (*Sciurus vulgaris*) and pine marten (*Martes martes*). A watching brief was also kept and signs recorded for other protected species potentially inhabiting the Site, i.e. native reptiles: the adder (*Vipera berus*); common or viviparous lizard (*Zootoca vivipara*); and slow worm (*Anguis fragilis*).

The results of surveys undertaken for bats are reported separately.

The surveys were undertaken to inform the ecological assessment for the Arecleoch Windfarm Extension.

2 THE SITE

The majority of the Site supports commercial forestry plantation, which is interspersed by areas of clearfell. The forestry rides generally support mire and heath habitat. There are a number of watercourses present on the Site, including Water of Tig to the north and west and the Laggish Burn to the south east. There are a number of smaller watercourses present on Site including White Loan, which feeds into the Cross Water to the east of the Site. There are also a number of unnamed burns present on the Site. A railway line intersects the Site and crosses the White Loan and Cross Water.

3 LEGAL PROTECTION

The details of the legal protection of the protected species surveyed for are given in Annex 1.

4 METHODS

Surveys to record the presence or likely absence of otter, water vole, badger, red squirrel and pine marten specifically were carried out at the Site between 12 and 14 October 2015. All habitats suitable for these species were surveyed within the study area, which encompassed the application boundary at the time the surveys were conducted (refer to Figure 8.2B-1).

It was not considered necessary to undertake a Habitat Suitability Index for great-crested newts (*Triturus cristatus*) as there were no ponds located within the Site. The signs found indicate type and intensity of activity and consequently help in the assessment of the importance of a particular area for the protected species. The survey methods used are described below.

4.1 Otter

All accessible watercourses within the study area were surveyed for otter field signs. Otter field signs and survey methods are described in Bang & Dahlstrøm (2001), Sargent & Morris (2003) and Chanin (2003), and include:

Holts: Underground features where otters live. They can be tunnels within bank sides, underneath root-plates or boulder piles, and even man-made structures such as disused drains. Holts are used by otters to rest up during the day, and are the usual location of natal or breeding sites. Otters may use holts permanently or temporarily;

Couches: These are above ground resting-up sites. They may be partially sheltered, or fully exposed. Couches may be regularly used, especially in reed beds and on in-stream islands. They have been known to be used as natal and breeding sites. Couches can be very difficult to identify, and may consist of an area of flattened grass

or earth. Where rocks or rock armour are used as couches, these can be almost impossible to identify without observing the otter in-situ;

Prints: Otters have characteristic footprints that can be found in soft ground and muddy areas;

Spraints: Otter faeces may 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 or couches and watercourses. Play areas are used by juvenile otters in play, and are often evident by trampled vegetation and the presence of slides. These are often positioned in sheltered areas adjacent to the natal holt.

Any of the above signs (apart from paths) are diagnostic of the presence of otter. However, it is often not possible to identify couches with confidence unless other field signs are also present. Spraints are the most reliably identifiable evidence of the presence of this species.

4.2 Water Vole

All watercourses within the study area were surveyed for water vole field signs following the methodology prescribed in Strachan, Moorhouse and Gelling (2011). This involved searching for the following field signs:

Faeces: Recognisable by their size, shape, and content. If not too dried-out these are also distinguishable from rat droppings by their smell;

Latrines: Faeces, often deposited at discrete locations;

Feeding stations: Food items are often brought to feeding stations along pathways and hauled onto platforms. Recognisable as neat piles of chewed vegetation up to 10 cm long;

Burrows: Appear as a series of holes along the water's edge distinguishable from rat burrows by size and position;

Lawns: May appear as grazed areas around land holes;

Nests: Where the water table is high above ground woven nests may be found;

Footprints: Tracks may occur at the water's edge and lead into bank side vegetation. May be distinguishable from rat footprints by size; and

Runways in vegetation: Low tunnels pushed through vegetation near the water's edge; these are less obvious than rat runs.

In line with current guidance (Dean *et al.*, 2016), the first visit should be undertaken during the first half of the water vole breeding season (mid-May to the end of June) and the second between July and mid-September.

4.3 Badger

Land with the potential to support badger within the study area was searched for field signs with particular attention given to areas around woodland and areas underlain by mineral soils. Field signs of badger are described in Neal and Cheeseman (1996), Bang and Dahlstrøm (2001), and Scottish Natural Heritage (2001). Field evidence searched for included:

Setts: single and/or groups of holes;

Prints: badgers have characteristic footprints that can be found in soft ground and muddy areas;

Latrines and dung pits: These are small excavated pits in which droppings are deposited. These are often used as territorial markers;

Hairs: Tufts of hair can often be found on fences, or in the entrances to setts;

Feeding signs (snuffle holes): Small scrapes where badgers have searched for insects and plant tubers;

Scratching posts: marks on trees (including fallen trees) where badgers have scratched leaving claw marks or ripped at areas of rotten bark to search for food; and

Paths: These are routes that badgers take when moving between setts and foraging areas.

Where setts were recorded, the presence of field signs and their current usage was recorded, in line with the definitions outlined in Table 4.1 below.

Table 4.1: Sett Entrance Classifications and Associated Descriptions

Classification	Description
Well-used	One or more of the following features: well-worn entrance, freshly excavated soil, bedding material.
Part-used	Leaves or twigs in the entrance and/or moss and other plants growing in or around the entrance, or none of the features of a well-used.
Disused	Partially or completely blocked, with considerable amount of excavation required for reoccupation.

Where a sett was recorded during the survey, the category of the sett was also recorded in line with the classifications in Table 4.2.

Table 4.2: Categories of Sett and Associated Descriptions

Category of Sett	Description
Main	Several holes with large spoil heaps and obvious paths emanating from and between sett entrances. Can range from 3 to >30 holes.
Annex	Normally less than 150m from the main sett, comprising several holes and usually with well-defined runs connecting it to the main sett.

Category of Sett	Description
Subsidiary	Normally fairly close to the main sett, at least 50m away. Generally no connecting tracks and used infrequently.
Outlier	Little spoil outside holes. Often no obvious paths connecting to other setts.

4.4 Pine Marten

Signs of pine marten were searched for within the study area following guidance from O’Mahony *et al.* (2006). Searches for pine marten scats were made along linear features such as fence lines, and around rock piles and dense scrub where the species could establish a den. Dens can include the utilisation of upturned trees, tee cavities, rocks or manmade structures such as log piles or large bird boxes.

4.5 Red squirrel

Areas of woodland within the study area that have the potential to support red squirrel were surveyed for squirrels, following guidance from Gurnell *et al.* (2009). Survey methods included:

Sightings: visual sightings of red squirrels;

Dreys: dreys are usually built close to the main stem of a tree, over 3 m from ground level and over 50x30 cm in size (Gurnell *et al.*, 2009); and

Feeding signs: predated cone (cone cores) searches in areas of woodland.

4.6 Other Protected Species

It is not considered necessary to undertake targeted reptile surveys; however, incidental records of reptile sightings, or signs such as shed skins, and features of particular importance (i.e. potential hibernacula) were recorded.

5 RESULTS AND DISCUSSION

The surveys found evidence of otter, pine marten and red squirrel within the study area. There was no evidence of badger or water vole using the study area.

Incidental records of protected species were also recorded within the study area during other ecological surveys undertaken by MacArthur Green. Evidence of otter and sightings of a common lizard and a pine marten were recorded during vegetation and bat surveys.

All results are provided within Annex 2 and Figure 8.2B-1.

The weather conditions were dry for the majority of the survey period with only a light shower occurring during the night on the 13th October. Weather conditions preceding the survey were dry and water flows were considered to be average (i.e. the watercourses were not in spate nor were they very low flows). Weather conditions were not considered to have affected the integrity of the survey.

5.1 Otter

Evidence of otter was recorded during the survey in eight locations. Four spraint locations were recorded along the Laggish Burn and a further four were recorded along the Water of Tig. No further evidence or protected features (e.g. holts) were recorded within the study area.

An incidental record of an otter spraint was recorded during a National Vegetation Classification (NVC) survey undertaken within the study area in July. The spraint was located on a boulder in the Water of Tig.

The nature of the habitats present along the Laggish Burn and Water of Tig are considered to be suitable for otter due to the presence of deeper pool areas with the potential to support fish. The habitat surrounding the Water of Tig would provide suitable features for use as shelter for any otter using the study area.

The spraints that were recorded during the surveys ranged in age, with some considered to be fresh whilst others were old and weathered. There were large blocks of forestry that had been clear-felled directly adjacent to the Laggish Burn which would have caused disturbance and loss of bankside shelter in the area reducing the attractiveness of the habitat for otter. However, the two fresher spraints found within this area indicate that otter are continuing to utilise this habitat. Otter are considered to be a species capable of exploiting a range of habitats (Strachan *et al.*, 2004). It is known that bankside tree cover can positively influence where otters hunt, by increasing the amount of invertebrates available for fish populations (Strachan *et al.*, 2004). However, if bordered by coniferous plantation, fish prey numbers are likely to be lower due to the acidification from the surrounding forestry (Strachan *et al.*, 2004). Many of the watercourses in the study area are surrounded by coniferous forestry. There were a high number of fallen trees, branch debris and wind blow present along the length of some of the watercourses. Such features are known to provide sheltering opportunities for otter and if any old trees with cavities are present in the area, these have the potential for use as holts (Strachan *et al.*, 2004). Given the numbers of spraints found during the survey and the number of fallen trees in the area, it is likely that otters will use the study area for shelter as well as foraging.

5.2 Water Vole

There was no evidence of water vole recorded during the surveys.

Some of the habitats present within the study area showed suitability for water vole utilisation. Soft, peaty banks with rush/grass vegetation were found along the Water of Tig, the Laggish Burn, Cross Burn and a small number of tributaries which would provide good habitat for burrow creation; however, no evidence was recorded.

5.3 Badger

No field signs or protected features for badger were recorded during the surveys.

It is unlikely that badgers would utilise the majority of the habitats present on the Site for foraging, commuting or sett building due to the presence of suboptimal mire and bog habitat making the Site very wet and peaty. There are also large areas of the forestry within the study area that have been clear-felled.

A dug out wasps nest was observed in an area of young mixed broadleaved plantation near the Laggish Burn. Badgers are known to target wasp nests in order to consume wasps and their larvae (Pearce, 2011), however no other evidence of badger was recorded within the study area.

There are areas of farmland present adjacent to the north and east of the Site boundary, providing good alternative habitat for badger. There is the potential for the forestry blocks and habitats adjacent to the farmland to be used by badgers if they are present within the wider area; however, no evidence of their presence was recorded within the study area during the surveys.

5.4 Pine Marten

Evidence of pine marten was recorded within the study area. There were ten potential pine marten scats recorded during the surveys. No dens were recorded within the study area.

An incidental sighting of pine marten was recorded during a bat survey that was being undertaken by MacArthur Green within the study area in July 2015. The individual was observed on the track to the south-east of the railway line. It disappeared into the forestry in a north-easterly direction.

Large areas of the forestry present within the study area had been clear-felled reducing the available suitable habitat for pine marten. Pine marten are likely to avoid clear-fell areas, taking preference to forested areas (Halliwell, 1997). The forestry that remains in the study area is of mixed age. There are large blocks of young plantation that are unlikely to possess any potential features that could be utilised for den building, such as fallen trees or tree cavities. There are areas of mature forestry within the wider area that have the potential to support pine marten. Pine marten are known to exploit old coniferous plantation to create dens, access prey and gain protection from predators (Caryl, 2008). The home ranges of pine marten are variable in Scotland, by both location and sex, with previous studies recording home ranges of males in Galloway as up to 33 km² (Bright and Smithson, 1997) and home ranges of females in Morangie as less than 1 km² (Caryl, 2008). A population of pine marten is known to be present within the Galloway Forest Park (Croose *et al.*, 2014), located approximately 12 km east of the Site. Although no dens were recorded in the study area, the incidental sighting confirms that pine marten are utilising the study area.

There is a large uncertainty associated with identifying scats produced by pine marten due to their vast variability in composition and their similarity with those produced by other species such as fox. DNA analysis is often used as a method to increase reliability of identification, although it is often not possible to determine to species level with this method due to possible reasons of degradation of samples or the collection of scat samples from species that cannot be sequenced (Croose *et al.*, 2014). The scats recorded during these surveys were therefore considered as 'potential' and a precautionary approach is applied when discussing their presence and utilisation of the Site. As a pine marten was observed within the study area, there is increased confidence that the scats recorded during the surveys were from this species.

5.5 Red Squirrel

Evidence of squirrel was recorded in during the surveys in the form of predated cones. No dreys were recorded during the surveys.

Predated cones were recorded in four separate locations across the Site. The cones found at one location were old, and the area had recently been clear-felled making it unlikely that squirrels would still be utilising this area. The evidence recorded at the additional three locations shows that squirrels are using the study area for foraging. The majority of the remaining standing forestry found within the study area is considered suitable for the species due to the level of forestry cover and presence of coning trees.

It is not possible to determine species of squirrel, red or grey, from stripped cones alone. Red squirrel are known to be present within the wider area and therefore the field sign is presumed to be from red squirrel as a worst case scenario. Guidance produced by the Forestry Commission states that forestry with dominant Sitka spruce (*Picea sitchensis*) has a low potential carrying capacity with an estimated 0.00 to 0.11 squirrels per hectare (Gurnell *et al.*, 2009). The Fleet Basin in the Galloway Forest Park, approximately 23 km east of the Site, has been proposed as a red squirrel stronghold against grey squirrels, and Glentrool within the Galloway Forest Park, located approximately 14.5 km east of the Site has been noted as a Red Squirrel Priority Woodland (Poulsom *et al.*, 2005). Lurz (2010) has also noted that the home ranges of red squirrels can range between seven and 23 hectares in coniferous woodlands. Due to these high levels of conservation focus and given the home range of

red squirrels, it is likely that red squirrels could be utilising the study area. Red squirrels have been observed in the wider area during survey works undertaken by MacArthur Green on other projects.

5.6 Other Species

No sightings of reptiles were recorded during this survey. Reptiles in Scotland are active for a shorter period of time (March-October) than in southern England (Edgar *et al.*, 2010) and so it is possible that the timings of the survey corresponded with the end of their active period.

A common lizard was observed during the NVC survey that was undertaken within the study area in July 2015. It was seen close to a tributary to the Cross Water. This record confirms that reptiles are utilising the Site.

A number of features with the potential for utilisation by reptiles for either basking or hibernacula were recorded within the study area, including stone ruins and walls.

Evidence of red fox (*Vulpes vulpes*) was observed at numerous locations across the study area, in the form of scats and distinctive scent markings.

Other incidental records include red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*) and the European common frog (*Rana temporaria*).

6 CONCLUSIONS

Observations of pine marten and common lizard confirm their presence on the Site. The surveys found evidence of otter, pine marten and red squirrel to be using the study area, and several features with the potential for use as hibernacula and basking for reptiles were recorded. No protected features were recorded.

There was no evidence of water vole, or badger found within the study area.

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Annex 1. Legal Protection

Otters receive protection under the Conservation Regulations (1994) (as amended) only¹.

Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)

Under Regulation 39 (1) it is an offence to:

- (a) deliberately or recklessly to capture, injure or kill a wild animal of a European protected species;
- (b) deliberately or recklessly:
 - (i) to harass a wild animal or group of wild animals of a European protected species;
 - (ii) to disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;
 - (iii) to disturb such an animal while it is rearing or otherwise caring for its young;
 - (iv) to obstruct access to a breeding site or resting place of such an animal, or otherwise to deny the animal use of the breeding site or resting place;
 - (v) to disturb such an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; or
 - (vi) to disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;
- (c) deliberately or recklessly to take or destroy the eggs of such an animal; or
- (d) to damage or destroy a breeding site or resting place of such an animal.

Regulation 44 (2e) allows a licence to be granted for the activities noted in Regulation 39 such that:

Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.

Otter is also listed on Appendix I of CITES, Appendix II of the Bern Convention and Annexes II and IV of the Habitats Directive (1994). It is also listed as globally threatened on the IUCN/WCMC Red Data List.

Water vole is not protected by Section 9, subsection 1 of the Wildlife and Countryside Act but is covered by Section 9, subsection 4 and Section 10².

Wildlife and Countryside Act (1981) Nature Conservation (Scotland) Act 2004

Under Section 9, Subsection 4, Paragraphs (a) and (b)⁴, it is an offence to:

- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection.
- Intentionally or recklessly disturb any such animal while it is occupying a structure or place which it uses for that purpose.

Under Section 10, Subsection 3, Paragraph (c)⁴, any person shall not be guilty of an offence by reason of:

- Any act made unlawful by that section if he shows:
 - (a) That each of the conditions specified in subsection (3A) was satisfied in relation to the carrying out of the unlawful act; or
 - (b) That the unlawful act was carried out in relation to an animal bred and, at the time the act was carried out, lawfully held in captivity.
- Section 3A states those conditions referred to in Subsection 3c are:
 - (a) That the unlawful act was the incidental result of a lawful operation or other activity;
 - (b) That the person who carried out the lawful operation or other activity:
 - (i) took reasonable precautions for the purpose of avoiding carrying out the unlawful act; or
 - (ii) did not foresee, and could not reasonably have foreseen, that the unlawful act would be an incidental result of the carrying out of the lawful operation or other activity; and
 - (c) That the person who carried out the unlawful act took, immediately upon the consequence of that act becoming apparent to the person, such steps as were reasonably practicable in the circumstances to minimise the damage or disturbance to the wild animal, or the damage or obstruction to the structure or place, in relation to which the unlawful act was carried out.

¹ The Conservation Amendment (Scotland) Regulations (2007) removed EPS from Schedule 5 and 8 of the Wildlife and Countryside Act 1981.

² as amended by the Nature Conservation (Scotland) Act 2004

Badgers are protected under the Protection of Badgers Act 1992 (as amended by the Nature Conservation (Scotland) Act 2004 (as amended)).

The following applies under this legislation:

Part 1.–

- (1) A person is guilty of an offence if, except as permitted by or under this Act, he wilfully kills, injures or takes, or attempts to kill, injure or take, a badger.
- (2) If, in any proceedings for an offence under subsection (1) above consisting of attempting to kill, injure or take a badger, there is evidence from which it could reasonably be concluded that at the material time the accused was attempting to kill, injure or take a badger, he shall be presumed to have been attempting to kill, injure or take a badger unless the contrary is shown.
- (3) A person is guilty of an offence if, except as permitted by or under this Act, he has in his possession or under his control any dead badger or any part of, or anything derived from, a dead badger.

Part 3. –

- (1) A person is guilty of an offence if, except as permitted by or under this Act, he interferes with a badger sett by doing any of the following things–
 - (a) damaging a badger sett or any part of it;
 - (b) destroying a badger sett;
 - (c) obstructing access to, or any entrance of, a badger sett;
 - (d) causing a dog to enter a badger sett; or
 - (e) disturbing a badger when it is occupying a badger sett,
 - (f) intending to do any of those things or being reckless as to whether his actions would have any of those consequences.
- (2) A person is guilty of an offence if, except as permitted by or under this Act, he knowingly causes or permits to be done an act which is made unlawful by subsection (1) above.

Note: A badger sett is defined in law as any structure or place which displays signs of current use by a badger.

Red squirrels and pine martens are protected by the following legislation:

Wildlife and Countryside Act (1981)
Nature Conservation (Scotland) Act 2004

Under Section 9, Subsection 1, it is an offence to:

Intentionally or recklessly:

- Kill, injure or take any wild animal listed on Schedule 5;
- Damages or destroys or obstructs access to, any structure or place that any animal listed on Schedule 5 uses for shelter or protection;
- Disturbs any such animal while it is occupying a structure or place which is used for that purpose
- Sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead wild animal included in Schedule 5, or any part of, or anything derived from, such an animal.
- Publish or cause to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things.

Adder, slow worm and viviparous lizard are protected by the following legislation:

These three species of reptile are noted within Schedule 5 of the Wildlife and Countryside Act (1981). However, Schedule 5 of the 1981 act notes that these species are protected ‘in respect of section 9(5) only’.

Section 9(5) states:

- (5) Subject to the provisions of this part, if any person-

- (a) Sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in Schedule 5, or any part of, or anything derived from, such an animal; or
- (b) Publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things.

he shall be guilty of an offence

An amendment was made to Schedule 5 on 18 March 1988 relating to slow worm and viviparous lizard to give them protection under Section 9(1). A further amendment was made to Schedule 5 on 27 March 1991 relating to adders which afford them protection under Section 9(1).

Section 9(1) (as amended by the Nature Conservation (Scotland) Act 2004) states:

‘Subject to the provisions of this Part, if any person intentionally or recklessly kills, injures or takes any wild animal included in schedule 5, he shall be guilty of an offence.’

Annex 2. Survey Results

Species	Sign	Grid Reference	Notes	Photo
Otter	Spraint	NX18381 82085	Spraint, few days old on rock on edge of Water of Tig. Surrounding habitat is commercial forestry, but bedrock evident along banks - good surrounding habitat for otter shelter.	1
Otter	Spraint	NX18332 82149	Spraint on rock at confluence.	
Otter	Spraint	NX18400 82192	Spraint, old on boulder in centre of burn.	
Otter	Spraint	NX18536 82146	Multiple spraints, few days old plus some older on rock in stream.	
Otter	Spraint	NX21114 78027	Spraint, old on rock in the Laggish Burn.	
Otter	Spraint	NX22163 78298	Spraint on bridge - fresh.	
Otter	Spraint	NX22622 78525	Spraint on rock in stream, near willow tree area.	
Otter	Spraint	NX22102 78295	Very old otter spraint found on an emerging rock in middle of watercourse. Only bones remaining so difficult to see. Another spraint on same rock. Looks fresher - partially washed into moss.	
Otter	Spraint	NX 18543 82141	Incidental record: Spraint found on stream boulder (Water of Tig), few days old but relatively fresh. Found while doing NVC survey on 29/07/2015.	
Pine marten	Sighting	NX20996 79270	Incidental record: Pine marten observed during a bat survey. Seen on track before disappearing into the forestry, heading north-east.	
Pine marten	Scat	NX18904 80971	Possible pine marten scat on mossy mound near small burn, no distinct smell.	
Pine marten	Scat	NX18716 82592	Scat on edge of forestry, sweet smelling.	
Pine marten	Scat	NX20893 78220	Scat on forest ride in the centre - 3 small patches within 30cm of each other, variable.	
Pine marten	Scat	NX22163 78298	Scats x 3 on bridge - on centre and edge of track over burn. 1 fresh, 2 older (near to otter spraint).	2
Pine marten	Scat	NX22089 78371	Scat on edge of forestry near burn	

Species	Sign	Grid Reference	Notes	Photo
Pine marten	Scat	NX22686 78540	Scat on stone wall, contains small berries. 2 further scats within 2m and 2 further scats approx. 50m to the east along stone wall.	
Pine marten	Scat	NX20595 82181	Potential pine marten scat. Found on forestry track. No smell. Purple/blue colour, looks slightly oily. Can still see the remnants of the blaberries in it. Looks quite fresh. Very soft consistency. Full length of scat pile is 55mm.	
Pine marten	Scat	NX20840 80221	Potential pine marten scat on bridge over railway. Quite dark, oily and purple in colour. Contains berries, seeds and insects. Seems as though it is next to a scat from another animal.	
Pine marten	Scat	NX21301 80198	Possible pine marten scat found close to watercourse. Surrounded by fox scats.	
Pine marten	Scat	NX21532 80117	Found bordering the track just down from the plantation boundary. Full of fruit and insects	
Red squirrel	Stripped cones	NX18636 82164	Squirrelled cones, quite old	
Red squirrel	Stripped cones	NX22078 78377	Stripped cones in plantation	
Red squirrel	Stripped cones	NX21119 80135	Lots of stripped cones found on the floor. Differences in how they have been eaten. Appears as though some have been eaten on the ground and some were eaten up the tree (seeds and cones in cobwebs/moss on tree).	3
Red squirrel	Stripped cones	NX20853 80518	Squirrelled cones, quite old. Along edge of clear-fell.	
Reptile	Sighting	NX 21188 81013	Incidental record: Sighting on common lizard during NVC survey undertaken on 27/07/2015.	
Reptile	Potential hibernacula	NX18372 80991	Potential hibernacula, stone circle, part in ruin with overgrown vegetation.	
Reptile	Potential hibernacula	NX18375 82171	Stone ruin, rectangle, overgrown vegetation/moss, approx. 10m from burn.	4
Reptile	Potential hibernacula	NX19601 82302	Stone ruins, some small piles with moss/overgrown vegetation. Potential hibernacula.	

Species	Sign	Grid Reference	Notes	Photo
Reptile	Potential hibernacula	NX19448 82913	Potential hibernacula. Wall running along Site boundary. Stones fallen away in places with some moss and vegetation growing over.	
Reptile	Potential hibernacula	NX19574 82869	Potential hibernacula. Wall running close to watercourse and fence. Piles of stones, covered with vegetation and moss.	

Annex 3. Photographs

Photo 1 Area of otter sprainting along Water of Tig



Photo 2 Potential pine marten scat on track over Laggish Burn



Photo 3 Stripped cones found to the east of the Study Area



Figure 8.2B-1 Protected Species Survey Results 2015


Photo 4 Potential hibernacula next to the Water of Tig




Legend

 Application Boundary

 Turbine

 Study Area

 Infrastructure


 No Access

Species, Sign


 Otter, Spraint

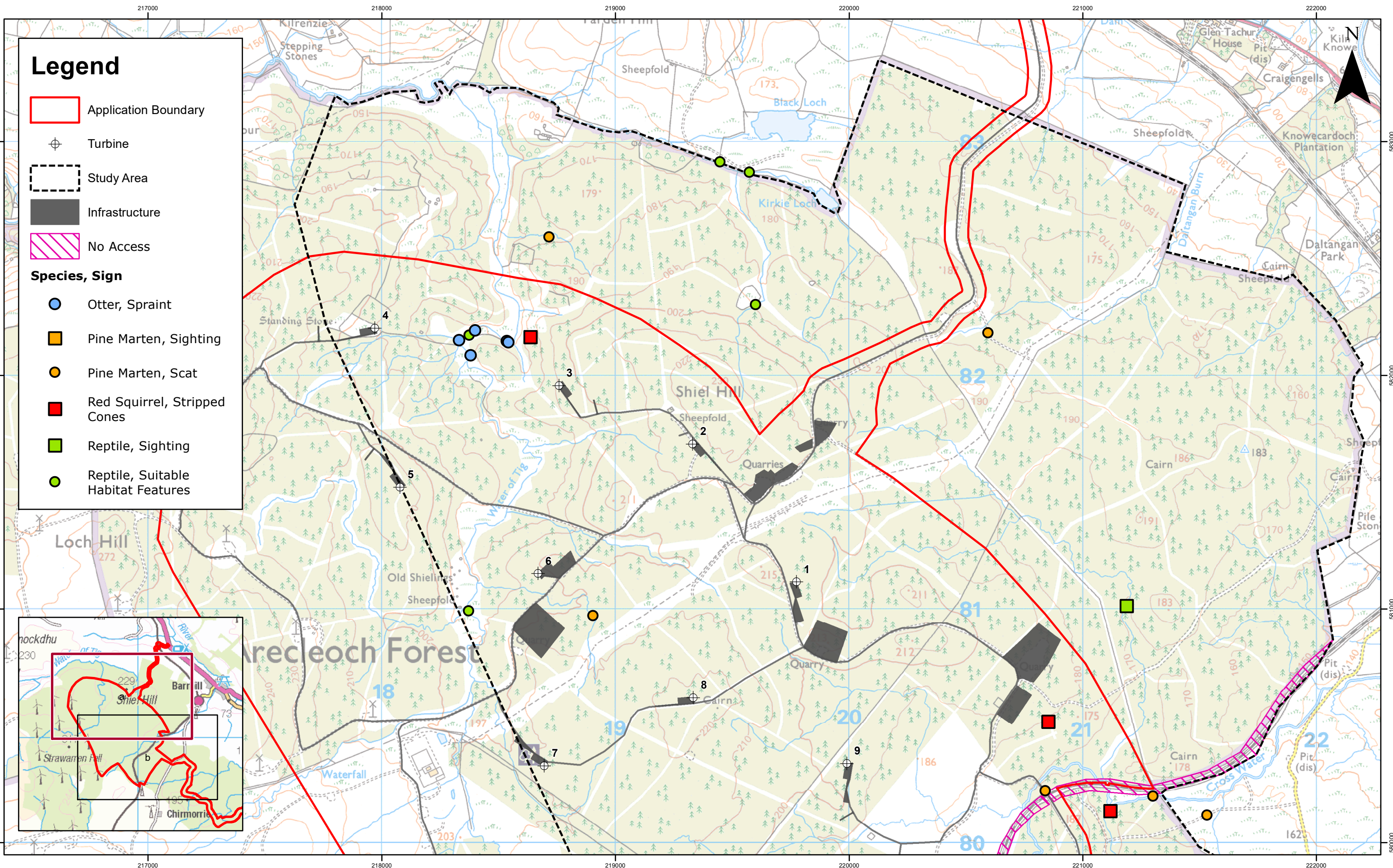
 Pine Marten, Sighting

 Pine Marten, Scat

 Red Squirrel, Stripped Cones

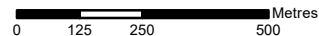
 Reptile, Sighting

 Reptile, Suitable Habitat Features



Rev	Date	By	Comment
A	15/05/19	ATA	First Issue.

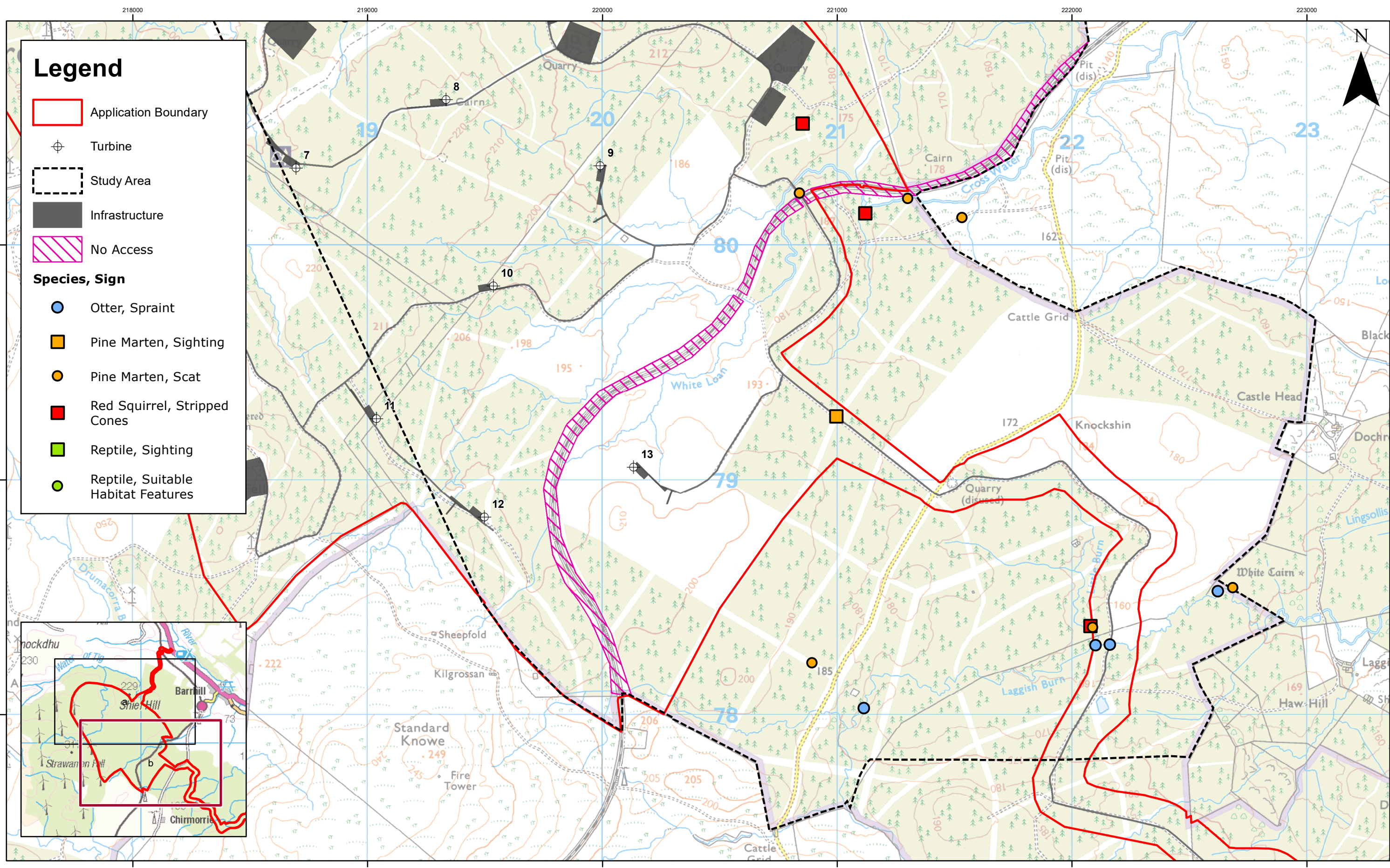
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Scale @ A3



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Arcleoch Windfarm Extension Protected Species Survey Results 2015

Drg No	E_EIAR_Fig8.2B1_PS_2015_AHE	
Rev	A	Datum: OSGB36
Date	15/05/19	Projection: OSNG
Figure	8.2B-1a	

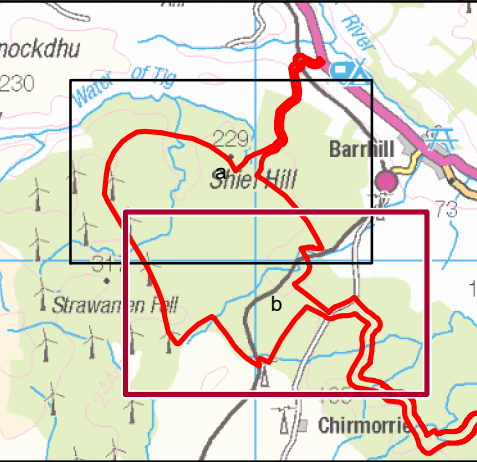


Legend

- Application Boundary
- Turbine
- Study Area
- Infrastructure
- No Access

Species, Sign

- Otter, Spraint
- Pine Marten, Sighting
- Pine Marten, Scat
- Red Squirrel, Stripped Cones
- Reptile, Sighting
- Reptile, Suitable Habitat Features



				1:15,000 Scale @ A3		<h2 style="margin: 0;">Arcleoch Windfarm Extension</h2> <h3 style="margin: 0;">Protected Species Survey Results 2015</h3>	Drg No E_IAR_Fig8.2B1_PS_2015_AHE
	Rev Date By Comment	A 15/05/19 ATA First Issue.	© Crown Copyright 2019. All rights reserved. Ordnance Survey Licence 0100031673. Contains Ordnance Survey data © Crown copyright and database right 2019.		Rev A Datum: OSGB36 Date 15/05/19 Projection: OSNG Figure 8.2B-1b		