

---

**Kirkan Wind Farm**  
Environmental Impact Assessment Report  
Appendix 6.2: Protected Species



# CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2</b>	<b>METHODOLOGY .....</b>	<b>1</b>
2.1	Desk Study .....	1
2.2	Field Surveys .....	1
<b>3</b>	<b>RESULTS .....</b>	<b>4</b>
3.1	Existing Records of Protected and Notable Species .....	4
3.2	Walkover and Camera Trap Surveys .....	4

# 1 INTRODUCTION

- 1.1.1 This appendix has been prepared to accompany Chapter 6: Ecology of the Kirkan Wind Farm (hereafter the proposed development) Environmental Impact Assessment Report (EIA-R).
- 1.1.2 It presents detailed methodologies and results of desk studies and field surveys completed to establish baseline conditions with regards protected and notable terrestrial mammal species (excl. Bats which are considered separately in Appendix 6.3) to inform the design and assessment of the proposed development.
- 1.1.3 It should be read with reference to **Figures 6.4 to 6.10** (presented in Volume 3 of the EIAR).

## 2 METHODOLOGY

### 2.1 Desk Study

- 2.1.1 A desk study was undertaken to obtain existing records of protected and notable fauna within, and in close proximity to, the proposed development, their likely sensitivity to the proposed development and requirements for targeted field surveys.
- 2.1.2 The following key sources were consulted:
- Highland Biological Recording Group (HBRG); and,
  - Scottish Wildcat Action.

### 2.2 Field Surveys

- 2.2.1 Detailed knowledge of the presence or likely presence of protected mammal species within proximity to the proposed development has been derived from field surveys.
- 2.2.2 Target species for survey have included the following:
- Otter *Lutra lutra*;
  - Badger *Meles meles*;
  - Pine marten *Martes martes*;
  - Badger *Meles meles*;
  - Water vole *Arvicola amphibius*; and,
  - Wildcat *Felis silvestris*.

#### **Key Guidance**

- 2.2.3 Survey methodologies and subsequent interpretation of results have made reference to the following key pieces of guidance:

- Protected Species Advice for Developers: Otter (SNH, 2018a<sup>1</sup>);
- Protected Species Advice for Developers: Badger (SNH, 2018b<sup>2</sup>);
- Protected Species Advice for Developers: Pine Marten (SNH, 2018c<sup>3</sup>);
- Protected Species Advice for Developers: Water Vole (SNH, 2018d<sup>4</sup>); and,
- Protected Species Advice for Developers: Wildcat (SNH, 2018e<sup>5</sup>).

2.2.4 Additional pieces of guidance and peer reviewed literature have also been referred to and are referenced where relevant.

### **Personnel**

2.2.5 All field surveys have been undertaken by Mr R. Whytock and Mr A. Carroll, both professional ecologists with considerable experience in the survey and identification of field signs of protected mammal species in Scotland.

### **Walkover Surveys**

2.2.6 Walkover surveys were undertaken between the 26 and 27<sup>th</sup> February 2018 and subsequently between the 25<sup>th</sup> and 26<sup>th</sup> June 2018. Surveys comprised a systematic search of areas out to at least 100 m of the proposed development as access allowed, in order to identify signs indicating the presence or potential presence of terrestrial mammals as detailed in **Table 2.1**.

2.2.7 The search area was extended to accessible areas within 200m of the proposed development and for otter and wildcat and 250m for pine marten in accordance with SNH guidance (2018a; 2018c; and, 2018e).

2.2.8 Since the surveys, the proposed development area has been reduced substantially in size, and thus the project area, which is marked on **Figures 6.5 to 6.10**, is the developable area. Reference to mammal records in relation to the search area and project area are detailed in this report.

2.2.9 Surveys were undertaken during weather conditions conducive to the survey of terrestrial mammals.

**Table 2.1: Walkover survey methods.**

Species	Method
Otter	The walkover survey sought to identify field evidence indicative of otter presence along watercourse stretches within the search area including spraints, paw prints, paths, slides, food remains, potential holts and other places used for shelter.
Badger	The walkover survey sought to identify field evidence indicative of badger within the search area including setts, mammal runs, paw prints, hair, snuffle holes, scratching posts and latrines. As the majority of the search area comprised open moorland habitats, typically unfavourable for badger sett creation and foraging, search effort focused on linear habitat features, grassland habitats and woodland pockets.

<sup>1</sup> SNH (2018a) Protected species advice for developers: Otter. SNH, Inverness

<sup>2</sup> SNH (2018b) Protected species advice for developers: Badger. SNH, Inverness.

<sup>3</sup> SNH (2018c) Protected species advice for developers: Pine Marten. SNH, Inverness.

<sup>4</sup> SNH (2018d) Protected species advice for developers: Water Vole. SNH, Inverness.

<sup>5</sup> SNH (2018e) Protected species advice for developers: Wildcat. SNH, Inverness.

Species	Method
Pine marten	<p>Pine martens are primarily found in woodland habitats, including conifer plantations. They will also venture into open habitats to hunt, particularly if prey is abundant. Dens are typically made in hollow trees, amongst rocks and boulders or in disused bird nests or squirrel dreys. A search was therefore made for potential den sites within woodland habitats and rocky outcrops within the search area.</p> <p>Pine martens can be territorial and will leave scats on tracks and notable features to mark their territory such as rocks, tree stumps, and intersections with linear features such as watercourses, fences and woodland edges. An examination of suitable features within the study area was therefore also made for potential pine marten scats.</p>
Water vole	The walkover survey sought to identify field evidence indicative of water vole presence along watercourse stretches within the search area including potential burrows, faeces, latrines, feeding stations, lawns, paw prints and sightings.
Wildcat	The open moorland of the search area is unlikely to be suitable for wildcat. Searches were however made to locate and inspect habitat features favoured by wildcat for resting such as hollow trees, rock crevices, rabbit burrows, disused badger setts, fallen debris and fox earths for signs of indicative of their presence including scratching posts, hair, paw prints and scats.

### Camera Traps

2.2.10 As the majority of the walkover search area comprises open moorland habitats relatively unsuitable for terrestrial mammals, the placement of camera traps was undertaken within and adjacent to the search area to further ascertain the presence of terrestrial mammals within the general area. The placement of camera traps was therefore focused within the eastern extent of the study area, amongst woodland plantation edges, with equipment purposefully set out in locations more likely to capture wildcats and other mammals entering or leaving these habitats.

2.2.11 Three camera trap locations were deployed as illustrated in **Figures 6.5 to 6.10** (6.10 provided to Highland Council contains confidential information). A description of habitat features at each trap location is provided in **Table 2.2**. Camera traps were deployed from 07<sup>th</sup> April to the 26<sup>th</sup> June and baited with mackerel.

2.2.12 In consultation with Scottish Wildcat Action, trap location 2 was also baited with a valerian root lure.

**Table 2.2: Camera trap locations and recording dates.**

Camera Trap	Deployment Date	Grid Reference	Habitat Description
1	07 <sup>th</sup> April 2018	NH 37898 68183	Poorly established, planted natural regeneration woodland- mainly birch. Molinia dominated on the understory.
2	07 <sup>th</sup> April 2018	NH 37499 69250	On fence-line, clear fell to the south-east and molinia dominated tussock grassland to the north-west.
3	07 <sup>th</sup> April 2018	NH 38126 68481	On fence-line, semi-mature sitka plantation to the south-east and molinia dominated tussocky grassland to the north-west.

## 3 RESULTS

### 3.1 Existing Records of Protected and Notable Species

#### *HBRG*

- 3.1.1 A request for records of protected and notable mammal species within, and in close proximity to, the site was submitted to the HBRG in 2016, prior to the commencement of ecological field surveys.
- 3.1.2 At the time of consultation only a single badger record was returned, comprising a single animal road fatality at Lubfearn as shown in **Figure 6.4**.

#### *Scottish Wildcat Action*

- 3.1.3 The proposed development is not located within a wildcat priority area.
- 3.1.4 Scottish Wildcat Action were however consulted in February 2018 for additional species records and advice within the general area.
- 3.1.5 At the time of consultation the group held two sightings records. Due to the sensitive nature of the records, details are presented in confidential **Annex 2**, which will be made available to SNH and the Scottish Government.
- 3.1.6 No records were returned from within the project area.

### 3.2 Walkover and Camera Trap Surveys

- 3.2.1 This section provides an overview of protected and notable terrestrial mammal observations recorded during walkover and camera trap surveys conducted in 2018 and should be read with reference to **Figures 6.5 to 6.X** and photographic plates presented in **Annex 1**.

#### *Otter*

- 3.2.2 Evidence of otter activity within the search area comprised the recording of spraints (**Figure 6.5**) and a single couch location. Due to the sensitive nature of the couch location, details are presented in confidential **Annex 2** and **Figure 6.10**, which will be made available to SNH and the Scottish Government.
- 3.2.3 Descriptions of target notes illustrated on **Figure 6.5** are provided in **Table 3.1**.
- 3.2.4 The Glascarnoch River and Blackwater were considered to provide the most favourable features for foraging otter within the search area, supporting an abundance of riffles and pools and with an abundance of spraints identifying widespread use by the species. The vegetated banks of the watercourse support rocky outcrops and boulders and were considered to provide frequent holt creation opportunities; however no potential holt sites were recorded during surveys.
- 3.2.5 The watercourses within the remaining search area comprising narrow stony-bedded upland streams and burns were considered to provide some but limited foraging opportunities, with fewer signs of presence recorded suggesting occasional commuting only. Woodland habitats were also searched for signs of holt locations including natal dens, however no potential features were recorded.

3.2.6 The project area offered limited otter habitat, principally commuting watercourses that they may use. Habitats outside the project area, in the search area provided more suitable otter habitat, including habitat potential suitable for shelter and holt creation.

**Table 3.1: Terrestrial mammal walkover target notes – otter.**

Target Note Ref. Figure 6.5	Grid reference	Description
1	NH 35072 70497	Good foraging area, with range of riffles and pools.
2	NH 35938 70260	Good foraging and shelter opportunities. Spraints found.
3	NH 36813 70497	Very good foraging opportunities with lots of pools and riffles, providing a range of species for food. Bank sides not vegetation and provide limited cover for shelter opportunities. Spraints frequent throughout.
4	NH 38351 70200	Very good foraging and shelter opportunities. Spraints frequent throughout.
5	NH 34998 69716	Deeply incised upland burn with good foraging and shelter opportunities however, no signs of presence recorded.
6	NH 35018 68406	
7	NH 34519 68589	Semi-mature forestry plantation adjacent to watercourses with potential for holt creation.
8	NH 35997 68129	Sub-optimal foraging opportunities, but possibly used as a commuting corridor.
9	NH 36744 68930	Suitable foraging opportunities, with wooded sections for holt creation however, no signs of presence recorded.

Target Note Ref. Figure 6.5	Grid reference	Description
10	NH 37738 68000	Woodland area adjacent to watercourses with potential for holt creation. No signs of presence recorded.
11	NH 38207 68648	Suitable foraging opportunities with a small number of spraints found suggesting low level of use. Adjacent woodland habitats providing suitable opportunities for holt creation however, no signs of presence recorded.

### ***Badger***

3.2.7 No evidence of badger was recorded during surveys however, a number of suitable habitat features for the species were recorded as illustrated in **Figure 6.6** and detailed in **Table 3.2**.

**Table 3.2: Terrestrial mammal walkover target notes – badger.**

Target Note Ref. Figure 6.6	Grid reference	Description
1	NH 36566 70235	Suitable foraging opportunities provided by a range of rough grasslands and hummocky vegetation.
2	NH 37268 70888	
3	NH 38741 70082	Good foraging and sett creation opportunities provided by mixed woodland and rough pastures.
4	NH 39389 69310	Good sett creation opportunities within mature coniferous plantation woodland.
5	NH 37980 68391	Linear strip of suitable foraging habitat, grassed watercourse margins.
6	NH 37391 69024	Stunted woodland supporting glades and rides and providing opportunities for foraging and sett creation.
7	NH 37837 67975	Coniferous woodland plantation, providing some sett creation opportunities, but sub-optimal on account of waterlogged and peaty soils.
8	NH	Rough grazing pasture provided good foraging opportunities.



Target Note Ref. Figure 6.6	Grid reference	Description
	36897 69666	
9	NH 35096 70149	Mixed rough grazing pasture providing good foraging and sett creation opportunities. Located in close proximity to hotel premises.
10	NH 34627 69350	Mixed re-generating woodland with rides and glades providing good foraging opportunities. Waterlogged and peaty soils providing poor opportunities for sett creation.
11	NH 34561 68683	

### ***Pine Marten***

3.2.8 Evidence of pine marten activity within the search area comprised the recording of tracks (**Figure 6.7**), live sightings and camera trap triggers.

3.2.9 Descriptions of target notes illustrated on **Figure 6.7** are provided in **Table 3.3**.

3.2.10 The project area is largely sub-optimal for breeding pine marten and no evidence of den sites was recorded. The species does however evidently use the open moorland habitats in the search area (to east of the project area) for, at least, foraging and commuting. Surrounding mature plantation woodland, particularly to the east and north of the A835 at Inchbae, is considered more optimal for den creation and breeding is highly likely to occur locally.

3.2.11 The presence of pine marten utilising the search area was confirmed through live triggers at two camera trap locations (1 and 2, with at least two different individuals recorded (**Annex 1; Plates A to C**)).

**Table 3.3: Terrestrial mammal walkover target notes – pine marten.**

Target Note Ref. Figure 6.7	Grid reference	Description
1	NH 37898 68163	Pine marten tracks running under fenceline. Lightly used track.
2	NH 37991 68287	Pine marten tracks running under fenceline. Well-used track.
3	NH 34661 69692	Young regenerating mixed woodland. Currently sub-optimal to support breeding individuals, but providing good foraging opportunities. No evidence of presence recorded.
4	NH 34661 69692	Small pocket of semi-mature Sitka spruce plantation also providing good foraging opportunities, but no evidence of presence recorded.
5	NH 35578 67966	Open heathland close to woodland cover, providing good foraging potential.
6	NH 36393 68588	
7	NH 37153 68629	Stunted woodland sub-optimal for breeding and den creation

Target Note Ref. Figure 6.7	Grid reference	Description
		but providing very good foraging habitat with a range of prey species present.
8	NH 37858 67951	Mature coniferous plantation woodland providing good opportunities for breeding and den creation. No den sites recorded.
9	NH 38371 68595	Area of clear fell. Sub-optimal for foraging and den creation.
10	NH 39364 69215	Coniferous plantation providing good breeding and foraging opportunities.
11	NH 39058 70015	Extensive mosaic of open heath, grassland, mature and immature woodlands providing excellent foraging and breeding opportunities.
12	NH 38759 68637	Single individual observed on track.

### ***Water Vole***

3.2.12 Evidence of water vole activity within the search area comprised observations of live individuals, the recording of burrows, latrines, footprints and feeding remains (**Figure 6.8**), with species activity extensive locally but largely restricted to lower elevation, slower flowing watercourses.

3.2.13 During survey watercourse sections within the survey area were classified on the basis of their suitability for water vole and signs of species presence, defined as followed and as illustrated on **Figure 6.8**:

- Areas of High Use (red-hatched): Watercourse sections displaying the highest densities of signs indicative of water vole presence including multiple burrows and latrines;
- Areas of Medium Use (green-hatched): Watercourse sections displaying lower densities of signs indicative of water vole presence including occasional burrows and latrines; and,
- Areas Low Use (blue-hatched): Watercourse sections displaying very infrequent signs of water vole activity (illustrated where recorded).

3.2.14 Watercourses within the project area supported water vole, and this included watercourses with high usage by water voles.

### ***Wildcat***

3.2.15 No evidence of wildcat was recorded within the search area however a single observation of a “dark” likely feral cat was made during ornithological surveys in May 2018 (**Figure 6.9**; Target Note No. 1).

3.2.16 A lack of improved grasslands and rabbits (main prey species) makes the project area unfavourable for the species. Woodland edge habitats to the periphery of the project area together with mature plantation woodland within the wider surrounding area may however form part of wider territories for individuals if present locally.

3.2.17 Descriptions of target notes illustrated on **Figure 6.9** are provided in **Table 3.4**.

**Table 3.4: Terrestrial mammal walkover target notes – wildcat.**

Target Note Ref. Figure 6.9	Grid reference	Description
1	NH 39047 69179	Brief sighting of “dark” cat at rocky outcrop during ornithological survey on 24 <sup>th</sup> May 2018. No distinctive wildcat characteristics noted. Highly likely a feral domestic individual.
2	NH 34661 69692	Young regenerating mixed woodland. Currently sub-optimal to provide den opportunities.
3	NH 34661 69692	Small pocket of semi-mature Sitka spruce plantation, too isolated to provide foraging or den building opportunities.
4	NH 35578 67966	Open heathland, sub-optimal foraging potential.
5	NH 36393 68588	
6	NH 37153 68629	Stunted woodland currently sub-optimal for breeding and den creation. Some rough tussocky grassland pockets scattered throughout, which may provide foraging potential, but likely to be lost as woodland matures and canopy closes.
7	NH 36827 69695	Area of semi-improved pasture, but no signs of rabbit presence.
8	NH 37894 70363	Area of rocky heath, likely to support abundance of small mammal prey items.
9	NH 34803 70576	Areas of semi-improved grassland, heath and mire, providing good potential for rabbits, but no evidence found. Likely to support an abundance of other small mammals, but too close to buildings (human occupancy) to be optimal foraging habitat.
10	NH 34882 70122	
11	NH 36738 70533	
12	NH 39058 70015	Extensive mosaic of open heath, grassland, mature and immature woodlands but no signs of rabbit presence, suggesting area is suboptimal for foraging.

### ***Additional Species***

#### Red Squirrel

3.2.18 No signs of red squirrel were recorded during survey. Woodland habitats within the project area, comprising young mixed plantation specimens, are sub-optimal for drey creation. Mature plantation, in the wider area outside of the search area, are however considered to provide good foraging and drey creation opportunities.

### Mink

3.2.19 Evidence of mink, by way of a single mink scat (Plate X) was recorded along the banks of the Glascarnoch River (**Figure 6.8**) outside of the project area confirming the species presence locally.

### Deer

3.2.20 Deer observations are included in **Appendix 6.5**.

## ANNEX 1 – PHOTOGRAPHIC PLATES



**Plate X:** Camera Trap 1 (trigger): Single pine marten 16<sup>th</sup> April 2018.



**Plate X:** Camera Trap 1 (trigger): Single pine marten 16<sup>th</sup> April 2018 – damaged tail evident.



**Plate X:** Camera Trap 2 (trigger): Single pine marten 19<sup>th</sup> May 2018.





**Plate X:** Camera Trap 2 (trigger): Single pine marten 23<sup>rd</sup> May 2018.