

# QUADRAT Scotland Ltd

ENVIRONMENTAL IMPACT ASSESSMENT (EUROPEAN PROTECTED  
SPECIES & PROTECTED MAMMALS)  
FOR PROPOSED WIND DEVELOPMENT AT  
STRONAFIAN COMMUNITY WOODLAND

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*Bog pools in blanket bog to the north of Cruach nam Mult*

## SUMMARY

This report describes the results of a survey of protected mammals and other animals around the site envelope of the proposed Stronafian windfarm, including European Protected Species (EPS) such as otter *Lutra lutra*, badger *Meles meles* and red squirrel *Sciurus vulgaris* and other species protected under the Wildlife and Countryside Act 1981 *et seq.* such as water vole and adder.

The proposed scheme is for 2 wind turbines to the east of Cruach nam Mult. The turbines are located on largely degraded peatland and conifer plantation. The habitat in the vicinity includes some blanket bog and wet heath habitat, *Molinia caerulea* grassland, felled conifer plantation and rushy marsh with scrubby willow and birch woodland along the burns.

The survey mainly looked for signs of protected mammals such as otter and water vole, but the presence of any other protected species observed, such as reptiles or invertebrates, was noted and any habitat suitable for other EPS was recorded when seen:

- There were no signs of recent use by otter although a hole in the bank along the eastern burn may have been used in the past as a lie-up location.
- None of the places of rest noted were less than 250m from the proposed turbines although the access track will pass within about 50m.
- Pine marten signs were frequent at the end of the track at the entrance to the site.
- Some sub-optimal water vole habitat was noted along the burns along the eastern and southern boundaries and there were some old burrows present, though overgrown and with no sign of any recent activity.
- Signs of red squirrel (predated cones) were evident in the woodlands along the existing forestry access road.
- Badger scat was recorded on the open hill 1km to the east.
- Common lizard were noted on the steep bank of Cruach nam Mult.
- Small heath *Coenonympha pamphilus*, small pearl-bordered fritillary *Boloria selene* and green-veined white *Pieris napi* butterflies were noted across the site, mainly along the eastern burn and old drain.
- Large heath butterfly *Coenonympha tullia*, Common hawker *Aeshna juncea* and Common darter *Sympetrum striolatum* were noted from the bog-pools to the north of Cruach nam Mult.
- Mitigation for otter and other EPS should include pre-construction survey if works are not started within 6 months of this report.
- A toolbox talk should be provided for all contracted staff to ensure that they are aware of the sensitivities identified, areas to avoid and what to do if any further EPS signs are discovered, e.g. an otter resting site is found within 100m of the works envelope.
- During construction, the contractor should ensure that no sharp objects are left lying about, ramps are left in any trenches and excavations are covered to avoid animals getting hurt or trapped.
- Lights should not be left on overnight directed towards the burns.
- Any woodland to be felled should be checked for squirrel dreys before proceeding.
- Boards etc left lying should be checked for adder or lizards on lifting.
- Blanket bog should be retained for large heath butterfly.

## **1. INTRODUCTION**

The proposed scheme is for a community windfarm of 2 turbines to be constructed to the east of Cruach nam Mult

Surveys for otter and other protected species were carried out during June 2014 by Nikki Dayton of Quadrat Scotland Ltd.

Further desk-based information was obtained from SNH, NBN Gateway and UKBAP websites.

The survey assessed the presence and activity of otter *Lutra lutra*, and checked for other mammals and habitat suitable for European Protected Species (EPS). In addition, any signs of other protected species were noted during the walkover.

### **1.2 Site description**

The site envelope for the proposed windfarm is open ground and felled conifer within an extensive area of conifer plantation, around Cruach nam Mult near Colintrave. The ground is predominantly *Molinia* and wet heath and rush dominated habitats with more extensive wet heath and blanket bog to the north of the hill. Small, marshy burns run along the eastern and southern margins of the site, draining to the south-east.

### **1.3 Aims and objectives**

The aims of this study were to:

- (i) Assess use of the study area by EPS and other protected mammal species;
- (ii) Identify resting sites of the above species that may be disturbed or damaged either during construction or by any medium term or permanent changes;
- (iii) Provide the necessary data to determine potential need for licences for disturbance of target species and/or to inform mitigation needs; and
- (iv) Record signs of any other protected species that may be using the site.

## **2. FIELD SURVEY METHODOLOGY**

### **2.1 Otters**

The site envelope was surveyed for signs of otter using the 'walkover' and standard spraint technique (Chanin 2003b). This involved visual searching for signs of otter activity and signs along the corridors of the main water courses within the site to a minimum distance of 250m from all structures including tracks. A hand-held GPS was used to record target note positions.

Signs indicating the presence of otters are:

- Holts – underground features where otters live;
- Lie-ups – above ground resting up sites, sometimes covered;
- Spraints (dung) – often deposited on prominent places such as boulders or tree stumps to mark territory;
- Paw-prints and runs/tracks through the vegetation; and
- Sightings of animals.

### **2.2 Water vole**

The required survey area, extending at least 250m from all proposed structures, was surveyed for signs of water vole by 'walkover'. Standard water vole survey data sets (see Strachan *et al.*, 2011) were collected wherever water vole signs were encountered.

This involved visual searching for signs of water vole activity along the corridors of the water courses within the site, including all tributaries, pools and soaks across open upland areas, to a minimum distance of 250m from all structures including tracks. A hand-held GPS was used to record target note positions.

Signs indicating the presence of water voles are: pellet latrines, paw-prints and runways, burrows, constructed nests, patches of closely grazed vegetation near holes and sightings of animals.

### **2.3 Badgers**

The site envelope was surveyed for signs of badgers living or using the habitat, particularly all woodland areas, to 500m either side of any proposed structures (Harris *et al.*, 1989).

Signs indicating the presence of badgers are dung, paw-prints, hair under fence-runs and tracks (these may be broad and numerous around setts) and the setts themselves. Moss and other vegetation may be scraped off old stumps and around the bases of mature trees where they have been rooting for invertebrates and seeds.

### **2.4 Red squirrel**

Wooded areas within the site were surveyed for red squirrel by checking for signs on the ground and in the trees (Gurnell *et al.*, 2009).

Signs of red squirrel included the presence of animals and dreys and/or signs of squirrel feeding activity on cones and nuts.

### **2.5 Pine marten and wildcat**

Signs of scat for these species, dens and prints were checked for in appropriate habitats, such as woodland, boulder fields and rides, and noted where seen during the other surveys. However, these species are difficult to assess and very mobile.

## **2.6 Bats**

The presence and use of the site by bats was covered by a separate survey (see Wild Surveys 2014).

## **2.7 Other Species**

During the walkover surveys for the other protected species, signs of any other mammal or reptile, amphibian or invertebrate species seen were also noted.

### 3. RESULTS

#### 3.1 Otters

There were no signs of otter presence within the site envelope, mainly determined by the absence of spraint or tracks. At one location, an old hole under a bank tree could be an old lie-up location, but there is a lack of any active signs.

**Table 1 - Results of otter survey**

ID	Easting	Northing	Notes
1	201845	683977	Otter hole in burn, probably lie-up, no sign recent use.

#### 3.2 Water vole

No active signs of water vole were noted although there was some suitable, though sub-optimal, habitat on the shallow, marshy burn along the eastern margins of the site and several old burrows that were now overgrown, some partly collapsed.

**Table 2 - Results of water vole survey**

ID	Easting	Northing	Notes
1	201757	683776	Old water vole burrows, 2, inactive
2	201703	683723	Old water vole burrow
3	201843	684111	8 water vole burrows that may be active or relatively recent - no feeding signs or latrines noted.

#### 3.3 Badger

Woodland areas were searched for signs of mammals but no evidence of badger was found except in some open ground towards A'Cruach, over 500m from the proposed construction site.

#### 3.4 Red squirrel

Woodland areas were searched for signs of mammals but no evidence of red squirrel was found within the site envelope. Signs of cone predation were noted from a mature stand of conifer along the existing forestry access, c 1km from the site envelope.

#### 3.5 Pine marten and wildcat

Signs of pine marten were frequent and fresh, predominantly on/around the end of the existing track to the south-east of the site envelope. Fresh pine marten scat was present here at almost every visit over the year. No den was found although it is possible that there is a den locally, given the high frequency of spraint marking at this location. No

sign of wildcat were noted but the site is within the normal range for wildcat (Macdonald *et al.* 2004).

### **3.6 Bats**

The presence and use of the site by bats was covered by a separate survey (see Wild Surveys 2014).

### **3.7 Other records**

Small heath butterfly *Coenonympha pamphila* were recorded on the grassy slopes along the burn to the east of the site and there were occasional small pearl-bordered fritillary *Boloria selene* along this marshy drain. There were frequent small white and green-veined white *Pieris napi* throughout the site.

Common darter *Sympetrum striolatum* and common hawker dragonfly *Aeshna juncea* were recorded from the bog-pools to the north of Cruach nam Mult and large heath butterfly *Coenonymphula tullia* were noted from the area of blanket bog surrounding these pools.

Large and small heath butterflies and small pearl-bordered fritillary are priority BAP species and are known to be steadily declining in this country.

## 4. POTENTIAL IMPACTS

### *Construction*

There is no requirement for a licence to disturb protected mammals at this site. The only possible otter signs are precautionary and are more than 250m from turbines and 50m from tracks. Pine marten are often active near the south of the site but no den has been identified. Badger scat has been noted over 500m to the east of the proposed works.

Disturbance due to noise and increased human activity will occur during construction, but will be temporary. Such disturbance is highly unlikely to alter long-term use by otters. Kruuk (1995) notes that otters can be tolerant of a great deal of disturbance and noise.

Pine marten are present in the vicinity of the site, and regularly spraint mark in the south-east corner along the track. However there is no sign of a den within 250m of the turbines and impacts to these species, beyond short-term disturbance, are expected to be negligible.

Badger scat was recorded in the plantation, c. 500m to the east, but no further evidence of tracks or setts was noted and these signs are at some distance from the proposed works. Impacts to badger are expected to be negligible.

Otters, pine marten and badger are inquisitive and site management during construction should seek to ensure that they are not harmed. In particular, any open pipes should be capped at night to prevent mammals or other wildlife potentially becoming trapped.

Water vole burrows were noted along the eastern burn but there was no sign of activity during the survey period and the burrows are overgrown or collapsed. Impacts to water vole are therefore taken to be negligible.

Other priority species present that may be impacted on include protected butterfly species, dragonflies and common lizard. Care should be taken to check likely sites during warm weather in advance of ground breaking for adder and lizards and to avoid new works on open acid or marshy grassland during the flying season for these butterflies (April to August).

The pools to the north of Cruach nam Mult and the surrounding blanket bog, that provide the habitat for large heath butterflies and dragonflies/damselflies, will not be affected by the proposed works. The access track will run alongside the burn down the eastern margin of the site and there are potential impacts from the development to this habitat and associated species from:

- Excavation during upgrade of the tracks
- Silt mobilisation during works
- Pollution from vehicles
- Increased vehicular access causing noise and fumes
- Compaction of wet ground due to vehicular access and track upgrade works
- Changes to local hydrology affecting flush habitats

*Post-construction*

So long as ground works are fully reinstated, the proposed wind farm is unlikely to alter long-term use of the site by protected mammals, or affect the medium or long-term viability of lizard, adder, large and small heath or pearl-bordered fritillary butterfly populations.

The proposed scheme is unlikely to have effects on otter movement or dispersal in the area, as no barriers to otter movement will be created.

## 5. CONCLUSIONS AND RECOMMENDATIONS

The proposed windfarm may result in some temporary impacts due to disturbance to pine marten but impacts to other protected species are likely to be negligible. A pre-construction check will need to be made of the works corridor if construction is not started within 6 months of May 2014.

During construction, it is important that the mitigation advised addresses the following:

- Otter, pine marten and badger are mobile and inquisitive species and may become trapped in pipes or similar structures if the ends are not securely capped overnight, or in trenches unless exit ramps are provided. They may also suffer harm from sharp or heavy/unstable objects left on the construction site.
- Lights should not be directed towards any resting locations overnight. Particular care should be taken to provide adequate, maintained silt traps wherever run-off from the works area may enter watercourses.

Medium and long-term impacts to protected mammals are expected to be **Low** so long as adequate reinstatement is carried out.

Construction phase impacts to protected butterflies along the eastern burn are possible in the short term due to increased disturbance, silt mobilisation, changes to hydrology and pollution. These can be mitigated by keeping any new track or structures at least 10m from the burn, by culverting all watercourses using neutral pH materials and by ensuring adequate, maintained silt control measures. All vehicles should be maintained to avoid leaks and be of low ground-pressure types. Medium and long-term impacts to reptile and butterfly populations are expected to be **Low** assuming habitats are restored following completion of works.

## 6. REFERENCES

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**APPENDIX 1 – MAP**

