Tom na Clach Wind Farm Extension

Appendix 11.C

Protected Species Survey Report

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Issuing office

4 Riverside Studios | Newcastle Business Park | Newcastle Upon Tyne | NE4 7YL
T: 0191 303 8964 | W: www.bsg-ecology.com | E: info@bsg-ecology.com

Client	Nan Clach Extension Ltd
Project	Proposed Tom na Clach Wind Farm Extension
Version	FINAL
Project number	P20-227

	Name	**Position**	**Date**
Originated	Hannah Breadin	Senior Ecologist	28 October 2021
Reviewed	Steven Betts	Associate Director	28 February 2022
Approved for issue to client	Steven Betts	Associate Director	02 March 2022
Issued to client	Steven Betts	Associate Director	02 March 2022

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Contents

1 Introduction

Background to commission

1.1 BSG Ecology was commissioned by Nan Clach Extension Ltd (the Applicant) in March 2020 to complete protected species survey work at the proposed Tom na Clach Wind Farm Extension site (hereafter referred to as the Proposed Development), in support of an application to extend the operational Tom na Clach Wind Farm (hereafter referred to as the Operational Scheme) which is located to the north-west. The site, which is located approximately 22 km to the south-east of Inverness, has an approximate central Ordnance Survey Grid Reference (OSGR) of NH 86563 34600. The Proposed Development boundary is shown in Figure 1, Section 5.

Site description

1.2 The Proposed Development site covers an area of approximately 3.95 km^2 within an upland area comprising undulating, open moorland that is dominated by blanket bog. This habitat has been modified through drainage, burning and grazing by sheep. The majority of this habitat is relatively dry due to the combined effects of gully erosion and the presence of drainage ditches.

1.3 A number of small stream valleys cross the blanket bog. These have dry heath communities on their slopes, and occasional acid flush habitat in their bases. Acid grassland communities are present where the soils are more freely draining.

1.4 Small areas of lichen heath are present on the top of small hillocks and on the upper slopes within the western part of the Proposed Development. This habitat is generally located on slopes with northerly aspects where they are shaded and/or are likely to accumulate significant quantities of snow in winter.

1.5 A small area of juniper *Juniperus communis* scrub is present in the valley which forms the headwaters of the Allt Seileach in the far south-western part of the Proposed Development site.

1.6 To the south-west (and outside) of the Proposed Development is an area of young forestry plantation which is part of Glenkirk Forest.

1.7 The access track to the Operational Scheme runs in a south-westerly direction from the B9007. This route is c. 10 km long and crosses countryside that supports a more diverse range of habitats, including a number of small river valleys. This track will also provide the access for the Proposed Development.

Description of project

1.8 At the time that the bat survey work was commissioned, the Proposed Development included the installation of ten wind turbines and supporting infrastructure. The scope of the survey was therefore developed with reference to the indicative ten turbine layout.

Aims of the Study

1.9 The aims of the survey work were:

- To assess the habitats within the Proposed Development site to identify features that have potential to support protected species (excluding bats, which are the subject of a separate report).
- To identify any protected species using the Proposed Development site at different times of the year.
- To collect baseline information to inform an assessment of potential impacts on protected species arising from the construction and operation of the Proposed Development.

Personnel

1.10 Protected species surveys were completed by Neil Beamsley CEcol, MCIEEM, Principal Ecologist at BSG Ecology, and Hannah Breadin ACIEEM, Senior Ecologist at BSG Ecology. Both are experienced ecologists who have undertaken ecological assessments on a range of different development sites in northern England and Scotland. Survey assistance was provided by Emily Moore Ecologist and Matthew Breadin Assistant Ecologist at BSG Ecology.

1.11 This report was prepared by Hannah Breadin ACIEEM and reviewed by Steven Betts CEcol, CEnv, MCIEEM, Associate Director at BSG Ecology. Steven has worked in the ecological sector for more than 27 years and he has undertaken ecological assessments of many different wind farm sites.

1.12 Full details of experience and qualifications can be found at http://www.bsg-ecology.com/people.

2 Methods

Desk study

2.1 A search of the National Biodiversity Network atlas was undertaken, which contains the majority of all records held by the Highlands Biological Recording Group. A search for all protected species records was carried out in January 2021 for the Proposed Development site and a study area that extends 2 km from the site boundary. Online aerial photography of the site and its surroundings (Google Earth Pro, accessed on 13 August 2021) was examined to further assist in understanding the context of the site and to identify and assess possible habitat linkages with other habitats or sites of ecological importance within the local area.

2.2 The results of previous survey work completed by BSG Ecology in 2014 to inform the application for the Operational Scheme has been consulted. Survey work in 2014 covered both habitats and protected species within the Proposed Development site, together with habitats to the north, east and west of the Operational Scheme. The results if this survey work has been referred to within the individual species sections below, where it provides historical data for each species.

Field survey

Otter

2.3 Otter *Lutra lutra* surveys were completed on the 21 July 2020 and 28 April 2021. The July survey was completed by Neil Beamsley and Emily Moore whilst April survey was completed by Hannah Breadin and Matthew Breadin.

2.4 The survey included a walkover of all the watercourses which fall within the Proposed Development site in order to assess their suitability for supporting otter (Chanin, 2003). Burns, pools and wet flushes within 200 m of proposed turbine locations and infrastructure were searched for evidence of otter presence in line with NatureScot guidance[1] that states that otter survey should be completed of all suitable habitats within 200 m of development proposals. Signs of otter presence include: spraints (droppings); spraint sites (areas where spraints are deposited regularly); paths; feeding remains; resting sites (below-ground holts, covered lie-ups and above-ground couches); possible resting sites (sites considered to be suitable for lying up but showing no signs of being in use/having been used); prints; and claw-marks.

2.5 Survey was aided by the placement of wildlife cameras on two of the larger watercourses between 21 July 2020 and 4 August 2020 and 28 April 2021 and 9 May 2021. The locations of these cameras were selected as they supported habitats with good suitability for use by otter (see discussion within the Results section of report). These locations were considered to be most likely to detect otter commuting into or out of the Proposed Development site.

2.6 Camera 1 was placed on the Allt Carn an t-Sean-liathanaich at an approximate OSGR of NH 87527 34592, close to where an existing track crosses the watercourse in the eastern part of the Proposed Development site. Camera 2 was placed on the Allt Seileach at an approximate OSGR of NH 85750 33627, close to where the watercourse leaves the outer edge of Glenkirk Forest before entering the Proposed Development site.

2.7 Camera locations are shown in Figure 1, Section 5.

Water vole

2.1 Two water vole surveys *Arvicola amphibius* have been completed within the Proposed Development. These were completed on the 21 July 2020 and 28 April 2021 as recommended in guidance for water vole survey (Dean *et al*, 2016). The July survey was completed by Neil Beamsley and Emily Moore whilst April survey was completed by Hannah Breadin and Matthew Breadin.

[1] https://www.nature.scot/doc/standing-advice-planning-consultations-otters

2.2 There is no guidance from NatureScot regarding the scope of water vole surveys; however, in the absence of such guidance, the same search area as was used for otter was also adopted for water vole. Survey was therefore completed of all burns, pools and wet flushes within 200 m of proposed turbine locations and associated infrastructure.

2.3 Surveys were based on the standard water vole survey method described by Strachan *et al*. (2011) and Dean *et al*. (2016). The banks of each watercourse, water body and drainage ditch within 200 m of proposed turbine locations and infrastructure were surveyed. If signs of water vole activity, such as burrows, runways through vegetation, piles of feeding remains and faecal latrines, were observed, they were noted and mapped.

2.4 Information on habitat suitability for water vole was also collected for each watercourse within the survey area in accordance with Harris *et al.* (2009). This method assesses eight habitat characteristics with each scoring 1 if present and 0 if absent. These scores are then applied to the riparian habitats present as follows: >5 “optimal”, 3-5 “sub-optimal” or <3 “unsuitable” habitat for water vole. The eight habitat characteristics are:

- Well-developed (>60%) bank-side and emergent vegetation to provide cover;
- Year-round availability of food sources;
- Suitable refuge areas above extremes in water levels;
- Steep banks suitable for burrowing;
- Permanent open water;
- Presence of berm (ledge at water level);
- Lack of disturbance through poaching, grazing and/or recent management; and
- Nest building opportunities in vegetation above water level.

Pine marten

2.5 Pine marten *Martes martes* surveys were carried out on 21 July 2020 and 28 April 2021 by Neil Beamsley and Hannah Breadin respectively. Pine martens are mainly found in woodlands, including conifer plantations, although they may also venture into more open habitats to hunt, including rocky hillsides (Cresswell *et al.,* 2012). The survey area for pine marten therefore focused on suitable habitat within the western part of the Proposed Development site and close to plantation woodland habitat within Glenkirk Forest, which provides the most suitable potential pine marten habitat. If any potential evidence of pine marten was observed the location was recorded: any potential pine marten scats observed were collected for later DNA analysis.

2.6 A search for potential den locations was carried out focusing on those features with suitability, such as bolder outcrops, rock piles and uneven ground. These surveys were complemented by the placement of two wildlife cameras placed near the western edge of the Proposed Development site between 21 July 2020 and 4 August 2020 and 28 April 2021 and 9 May 2021. Cameras were located at OSGR NH 85750 33627 (Camera 2, also deployed for the purposes of surveying for otter) and OSGR NH 85609 33997 (Camera 3).

2.7 Camera Locations are shown in Figure 1, Section 5.

Wildcat

2.8 NatureScot recommends a risk-based habitat survey approach and a walkover survey looking for potential den sites and other signs of Scottish wildcat *Felis sylvestris* presence[2] (also see Littlewood *et al*., 2014). This approach has therefore been adopted for the survey of the Proposed Development site.

[2] https://www.nature.scot/sites/default/files/2018-04/Guidance-Wildcat-Survey-Methods.pdf

2.9 Survey focused on habitats in the western part of the Proposed Development site and close to Glenkirk Forest, which is where there are habitats that are more suited for supporting wildcat than the open bog habitat that dominates the Proposed Development site. The survey was completed on 21 July 2020 and 28 April 2021 by Neil Beamsley and Hannah Breadin respectively.

Other Species

2.1 Targeted surveys for reptiles have not been completed within the Proposed Development site. Common lizard *Zootoca vivipara* is known to be present (observations of the species have been made within the Proposed Development site both in 2014 and in 2020). Precautionary measures to mitigate impacts on reptiles and to ensure legislative compliance will be outlined in a Construction Environmental Management Plan (CEMP). Any evidence or sightings of reptiles observed during surveys on site was recorded and the location mapped.

2.2 Specialist surveys for badger *Meles meles* and red squirrel *Sciurus vulgaris* have been scoped out of the current assessment because of the absence of historical records (from both the desk study and previous survey completed for the Operational Scheme) and due to the sub-optimal nature of habitats present for these species. If evidence was found to indicate the presence of either species during other survey, this was recorded and the location mapped.

Limitations

2.3 No significant constraints to the surveys were encountered. The surveys were carried out at an appropriate time of the year and all parts of the Proposed Development site were accessible.

3 Results

Otter

3.1 The desk study identified four records of otter from within the 2 km study area. Of these records only one was dated post 1980s and originated from within Glenkirk Forest to the west of the Proposed Development.

3.2 Several otter footprints, a spraint and a potential couch were recorded during the walkover survey in 2014; however, with the exception of a single footprint, all of these field signs were located outside the Proposed Development site to the west and south. The field signs were found within areas that were considered to provide better quality habitat for otter than is available within the Proposed Development site.

3.3 Several watercourses flow through the Proposed Development site, which is drained largely by the headwaters of the Rhilean Burn: Allt Carn an t-Sean-liathanaich (the upper reach of the main stem of Rhilean Burn), Allt an t-Slugain Mhoir and Caochan Tom nan Clach. A small part of the western section of the Proposed Development site is drained by the headwaters of Allt Seileach. Both the Rhilean Burn and Allt Seileach are within the catchment of the River Findhorn, which is known to support otter.

3.4 The Allt Carn an t-Sean-liathanaich and connecting lower reaches of the Caochan Tom nan Clach were assessed as having some potential to support foraging and commuting otter; however, the surrounding open moorland habitat lacks sheltering opportunities (see Photographs 5, 6 and 8, Section 6).

3.5 Fish surveys of the Proposed Development site found that fish densities were generally poor within these watercourses and foraging resources are consequently likely to be limited for otter (Waterside Ecology, 2020). Suitable sites that may provide potential otter lying-up cover exist to the west of the Proposed Development site in Glenkirk Forest and in the area of juniper scrub associated with the Allt Seileach burn (which is approximately 500 m to the south-west of the nearest proposed turbine location), however, the watercourse in this location was found to have a wetted width of less than 0.5 m, was shallow and likely to provide poor foraging resources for otter (see Photographs 3 and 4, Section 6).

3.6 Other watercourses within the Proposed Development site are all narrow, shallow, lacking in cover and likely to provide very limited foraging resources to otter (the habitat is poor for fish, amphibians and other potential prey species - see Photographs 9 and 10, Section 6).

3.7 Survey in 2020/21 identified a single otter spraint on a rock along the Allt Carn an t-Sean-liathanaich at approximate OSGR NH 87577 34656 (see Photograph 7, Section 6). No other evidence of otter presence was recorded during the surveys of the Proposed Development site. No otter activity was recorded on any of the wildlife cameras deployed within the site. The location of the spraint is shown on Figure 1, Section 5.

3.8 Whilst it is likely that the Allt Carn an t-Sean-liathanaich and connecting lower reaches of the Caochan Tom nan Clach may potentially provide some suitable habitat for otter, the survey findings suggest that use of these watercourses by otter is likely to be limited to occasional foraging and commuting only.

Water vole

3.9 The desk study identified two records of water vole within the study area, both dating from pre-1990 and identified to a two figure OSGR only.

3.10 The 2014 survey work recorded water vole signs along the upper section of the Allt Carn an t-Sean-liathanalch, and along the upper section of the Caochan Tom nan Clach burn, both sections of which fall within the Proposed Development site.

3.11 Habitat suitability assessment indicates that sections of the Allt Carn an t-Sean-liathanalch are suitable for supporting water vole, particularly where slow flowing, meandering sections of watercourse are associated with wetland and grassland habitats. Whilst the lower reaches of Caochan Tom nan Clach Water are also considered to be suitable for supporting water vole, no sections of the watercourses fall within 200 m of proposed turbine locations or the associated infrastructure.

3.12 Where watercourses are located within 200 m of proposed turbine locations and the associated infrastructure, they are either considered to provide sub-optimal conditions (in the case of the Allt an t-Slugain Mhoir**)** or are assessed as being unsuitable for water vole. This is due to the bare peat which forms the banks, the very narrow, shallow characteristics of the channel and the disturbance and poaching which has arisen as a result of current management practices (see Photographs 9 and 10, Section 6). All these characteristics mean that sufficient food, burrow-forming and sheltering opportunities are lacking. The results of the habitat suitability assessment for each watercourse are shown in Table 1 below (refer to Section 2.4 for an explanation of the scoring system).

Table 1: Results of the water vole Habitat Suitability Assessment (0 = absent, 1 = present)

Habitat Characteristic	**Watercourse (sections within 200m of proposed turbines and infrastructure)**				
	Allt Carn an t-Sean-liathanaich	**Allt an t-Slugain Mhoir**	**Caochan Tom nan Clach (upper reaches)**	**Minor tributaries of Allt Carn an t-Sean-liathanaich**	**Unnamed drainage ditches**
Vegetation >60%	1	1	0	0	0
Food-source	1	1	0	0	0
Refuge area	1	0	0	0	0
Steep banks	1	1	1	1	1
Open-water	1	1	1	1	0
Berm	0	0	0	0	0
Disturbance	0	0	0	0	0
Nesting opportunities	1	0	0	0	0
Total	6	4	2	2	1
Suitability Category	**Optimal**	**Sub-optimal**	**Unsuitable**	**Unsuitable**	**Unsuitable**

3.14 No evidence of water vole was identified during either the 2020 or 2021 survey, despite a detailed search of the upper sections of the Allt Carn an t-Sean Liathanalch. It is possible that the species has become more restricted in its distribution or suffered a reduction in population numbers since survey in 2014 resulting in the negative survey result from 2020/21.

Pine marten

3.15 No records of pine marten were returned during the desk study.

3.16 During the surveys carried out in 2014 fresh prints that were considered to have been made by a pine marten were found in wet peat approximately 500 m to the south-west of the Proposed Development site, in close proximity to Glenkirk Forest. No other field signs were recorded at that time.

3.17 No evidence of pine marten was recorded during the 2020/21 survey. Habitats within the Proposed Development site are dominated by open moorland / blanket bog with only very small, isolated areas of scrub. Consequently, habitats are poorly suited for supporting pine marten, both in terms of the limited sheltering opportunities that are available and the availability of food. This species is considered likely to be an infrequent visitor, if present at all.

Wildcat

3.18 Two records of Scottish wildcat were returned during the desk study; one dated from 1913 and one from 1985. Both were identified to a two figure OSGR only. No recent records of wildcat were returned, i.e., records from within the last ten years.

3.19 No evidence of Scottish wildcat was recorded during survey work in 2014.

3.20 No evidence of wildcat was recorded during the 2020 or 2021 survey. Wildcats will range into open moorland to hunt for prey, but generally will stay within 200 m of woodland cover (Silver, 2013). Woodland habitat is located approximately 450 m from the nearest turbine location and therefore it is considered unlikely that wildcat, if present, will range as far as the Proposed Development. The habitats within the Proposed Development are considered to be poorly suited for supporting this species (as it provides limited cover for wildcat and their prey) and wildcat is considered unlikely to be present.

Reptiles

3.21 The desk study returned no reptile records from within the Proposed Development site.

3.22 As discussed in Section 2, detailed surveys for reptiles have not been completed but reptile presence has been assumed. Common lizard was recorded within the Proposed Development site during the course of other survey work in 2014. A single common lizard was also recorded in July 2020 within the north-eastern part of the Proposed Development site (at approximate OSGR NH875354). No other reptile species have been recorded within the site.

Badger

3.23 The desk study returned no records of badger.

3.24 Survey work in 2014 found no badger setts within the survey area. One badger field sign was detected: a badger footprint was found in a location which is closely connected to the woodlands and fields of the Findhorn Valley. This location does not fall within the footprint of the Proposed Development site.

3.25 No evidence of badger presence was recorded during any of the survey visits completed in 2020 and 2021. The moorland / blanket bog habitats that dominate within the Proposed Development site are poorly suited for badger, providing a poor foraging resource and limited opportunities for sett creation. Glenkirk Forest is the nearest habitat with good potential for supporting badger and this is located over 500 m from the nearest proposed turbine or infrastructure location. It is therefore considered unlikely that badger is present within the Proposed Development site.

Red squirrel

3.26 No records of red squirrel were returned during the desk study.

3.27 No suitable habitats (particularly mature coniferous plantation) are located within 500 m of the proposed turbine locations and no field signs were recorded during any of the surveys of the Proposed Development during either 2014 or 2020/21. The moorland / blanket bog habitats that dominate within the Proposed Development site are poorly suited for red squirrel, providing a poor foraging resource and lacking any sheltering opportunities for this species.

Other species

3.28 The desk study identified three records of red deer *Cervus elaphus*, all of which originated from within or close to Glenkirk Forest, located approximately 500 m to the west of the Proposed Development site. Trail cameras deployed in July 2020, within the vicinity of Glenkirk Forest, recorded red deer on a small number of occasions.

4 References

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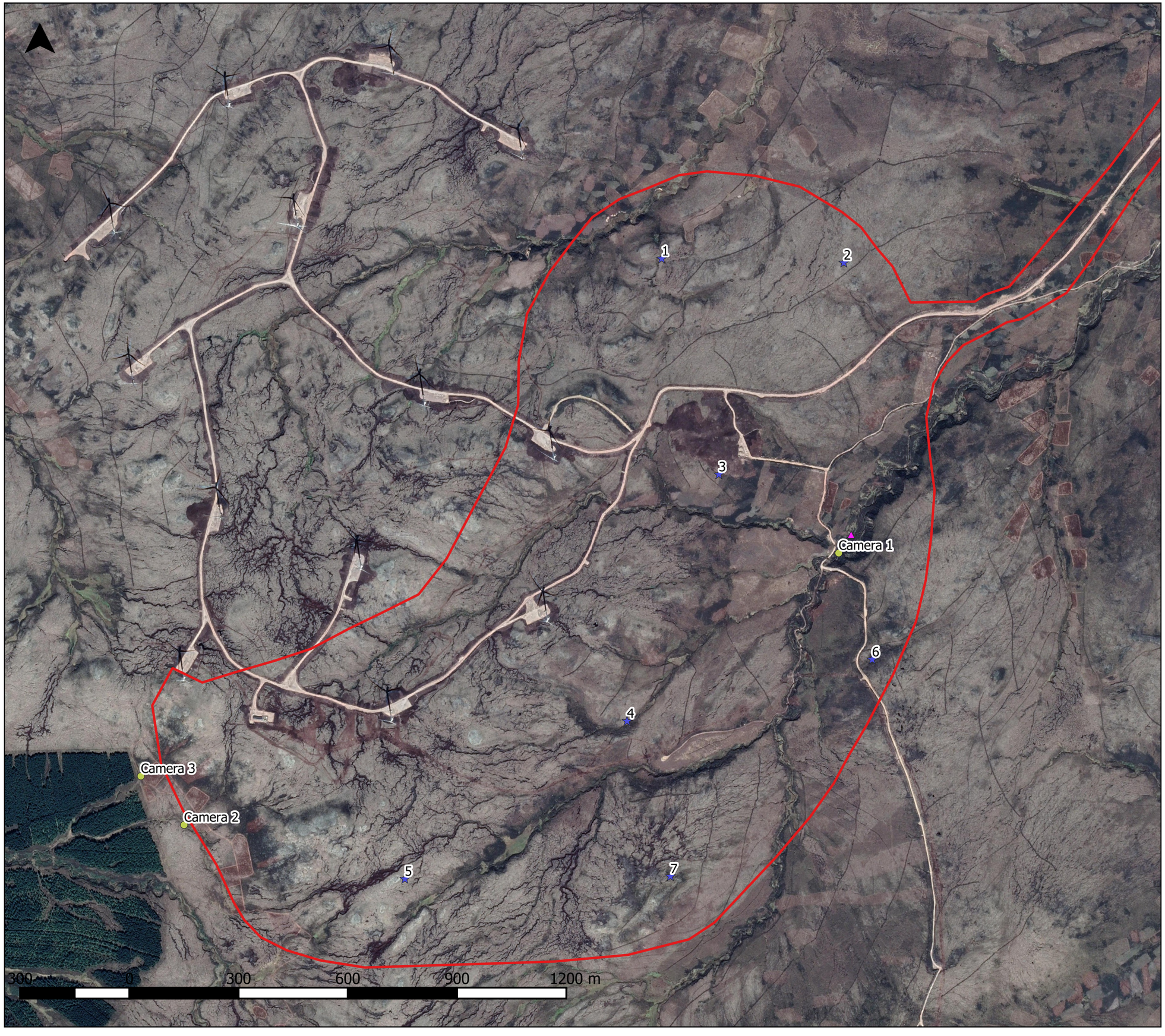
5 Figures



Legend

- Proposed Turbine Location
- Spraint
- Camera trap locations

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OFFICE: Newcastle
T: 0191 303 8964

JOB REF: P20-227

PROJECT TITLE

Tom nan Clach

DRAWING TITLE

Figure 1: Camera and Otter Spriant Locations

DATE: 07.01.2022

SCALE: 1:10,000

DRAWN: HB

STATUS: FINAL

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Document path

6 Photographs

Photograph 1: The dominant upland habitat within the Proposed Development

Photograph 2: The dominant upland habitat within the Proposed Development. The Operational Scheme is visible in the distance.

Photograph 3: View south-west from the Proposed Development boundary showing Glenkirk Forest in the distance.

Photograph 4: South-west of the Proposed Development boundary showing Allt Seileach flowing through Glenkirk Forest.

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Photograph 7: Old otter spraint on a rock within the Allt Carn an t-Sean-liathanaich within north-eastern part of the Proposed Development.

Photograph 8: Lower reaches of Caochan Tom nan Clach flowing through the north-eastern part of the Proposed Development.

Photograph 9: Upper reaches of Caochan Tom nan Clach within the centre of the Proposed Development

Photograph 10: Minor unanmed watercourse flowing through the Proposed Development.