

Appendix 11A

Ecology Desk Study

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1. Introduction

1.1 Purpose of this report

Wood Environment and Infrastructure Solutions UK Ltd (Wood) has been commissioned by RWE to provide ecological consultancy services in relation to the proposed Enoch Hill 2 Wind Farm (previously known as Monquhill Wind Farm), herein after referred to as 'the Site'.

This report provides the results of a desk-based ecological study conducted in March 2020. Details of the Proposed Development are provided, followed by a description of methods employed to obtain desk study information, presentation of results, and a summary of findings.

The results of the desk-based ecological assessment provide context on the nature conservation interest of the Site and surroundings and can be used to inform the preparation of an Environmental Impact Assessment Report (EIAR).

1.2 Site context

The Site is located approximately 6km to the south-west of New Cumnock, and approximately 9km north-east of Dalmellington, in East Ayrshire (Central Ordnance Survey [OS] grid reference: NS 58300 06229). It is positioned within commercial forestry plantation located adjacent to the consented 16 turbine Enoch Hill Wind Farm, of which received Section 36 consent in September 2019. The topography of the Site ranges from 250m at the base of the proposed access track (just off Afton Road) to 531m at the summit of Strandlud Hill (within the main Site).

The Proposed Development will comprise up to two turbines and associated crane pad hardstanding areas, access tracks, a substation, and a temporary construction compound. The Site will be accessed via the existing Pencloe forest access route.

2. Methodology

The ecological desk-based study was carried out by Wood in March 2020, in line with the Chartered Institute of Ecology and Environmental Management (CIEEM) best practice guidelines¹. In order to identify potential ecological constraints to the proposed works, information was collected regarding statutory and non-statutory sites designated for nature conservation purposes, and protected or notable species, including those listed on the Scottish Biodiversity List (SBL)², and Ayrshire Local Biodiversity Action Plan (LBAP)³. The desk study features of interest are summarised in **Box 1** below.

Box 1: Statutory and non-statutory sites of nature conservation value, protected and notable habitats and species

Statutory nature conservation sites

Sites of international importance of relevance to this ecological study include designated Special Areas for Conservation (SAC) sites. Sites of national importance are designated as National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSI) and local sites as Local Nature Reserves (LNRs).

- ▶ Special Areas of Conservation (SAC) – sites designated under Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive;
- ▶ Sites of Special Scientific Interest (SSSI) – these sites have been re-notified under the Wildlife and Countryside Act 1981 (as amended in Scotland) and provide statutory protection for the best examples of the UK’s flora and fauna;
- ▶ National Nature Reserves (NNRs) – these are designated under the National Parks and Access to the Countryside Act 1949 or the Wildlife and Countryside Act 1981 (as amended) and contain examples of the most important natural and semi-natural terrestrial and coastal ecosystems; and
- ▶ Local Nature Reserves (LNRs) – these are areas of natural heritage that are at least locally important. Local authorities select and designate LNRs under Section 21 of the National Parks and Access to the Countryside Act 1949 (as amended).

Non-Statutory nature conservation sites

These include Local Nature Conservation Sites (LNCSSs) such as: Listed Wildlife Sites (LWS); Sites of Importance for Nature Conservation (SINC); and Local Geodiversity Sites (LGS). Non-statutory conservation sites also include Scottish Wildlife Trust (SWT) reserves such as Provisional Wildlife Sites and areas included under the Ancient Woodland Inventory (AWI) or Semi Natural AWI (SNAWI). Priority Woodlands for Red Squirrel are also included as non-statutory conservation sites. These non-statutory sites, which are designated due to the presence of notable species or important habitats, broadly constitute the most important wildlife and geological sites that do not reach the criteria required for SSSI designation.

Protected species

Many species of animal and plant receive legal protection, which for the purposes of this study refers to:

- European Protected Species as defined within the EC Habitats Directive and translated into UK legislation through The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (the Habitats Regulations);
- Species included on Schedule 1, 5 and 8 of the Wildlife and Countryside Act 1981 (WCA) (as amended), excluding species that are only protected in relation to their sale; and

¹ CIEEM, (2017). *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

² The Scottish Biodiversity List is a list of plants, animals and habitats that Scottish Ministers consider to be of principal importance to biological conservation. <https://www.gov.scot/Topics/Environment/Wildlife-Habitats/16118/Biodiversitylist/SBL>

³<https://www.south-ayrshire.gov.uk/sustainable-development/lbap.aspx>



Box 1: Statutory and non-statutory sites of nature conservation value, protected and notable habitats and species

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

Priority and notable habitats and species

These include habitats and species listed in Annex 1 and Annex 2 of the Habitats Directive, together with habitats and species which are listed on the Scottish Biodiversity List, Local Biodiversity Action Plans, and/or those which are of some other conservation interest based on their status nationally, regionally or locally.

Where possible, data for the desk-based assessment were drawn from existing ecological records and site information gathered to inform the Enoch Hill 2 Environmental Impact Assessment Report (EIAR). A suite of ecological assessments were carried out by Envirocentre in 2011, with follow up assessments conducted by Wood in 2016 and 2017. These assessments include:

- desk-based ecological studies and extended Phase 1 habitat survey^{4,5};
- focused protected species surveys^{5,6,7,8,9};
- application of camera trap monitoring within Carsphairn Forest to detect potential presence/absence of pine marten⁵; and
- National Vegetation Classification (NVC) surveys of the proposed Site^{4,10}.

In addition to the use of existing data, a web-based search for statutory and non-statutory designated sites, and legally protected or notable species both within 2km of the Site was also carried out, as follows.

- Information regarding statutory designated sites within an approximate 2km radius of the Site boundary was acquired using the Scottish Natural Heritage (SNH) Sitelink web-based application¹¹;
- Commercially available records of protected and/or notable species from within the last ten years were searched within the National Biodiversity Atlas (NBN) database¹²;
- A data request for records of protected and/or notable species within a 2km radius of the Site boundary (extended to 5km for bats and bat roost records) was submitted to the South West Scotland Environmental Information Centre (SWSEIC), formally known as Dumfries and Galloway Environmental Records Centre. Analysis of species data focussed only on records made within the last ten years, as older records may give an inaccurate picture of the current ecological interest within the Site and the surrounding area;
- Information relating to non-statutory designated sites within an approximate 2km radius of the Site boundary was also requested from SWSEIC; and

⁴ Envirocentre (2011). *Monquhill Wind Farm: Flora, Habitats and Vegetation*.

⁵ Wood (2018). *Monquhill Wind Farm: Baseline Ecology Report of Proposed Access Route*.

⁶ Envirocentre (2011). *Monquhill Wind Farm: Protected Species Survey*.

⁷ Wood (2018). *Bat Survey Report*.

⁸ Amec Foster Wheeler (2016). *Monquhill Wind Farm: Great Crested Newt Survey*.

⁹ Amec Foster Wheeler (2016). *Monquhill Wind Farm: Protected Species Report 2016*.

¹⁰ Amec Foster Wheeler (2016). *Monquhill Wind Farm: National Vegetation Classification Survey Report 2016*.

¹¹ <https://gateway.snh.gov.uk/sitelink/searchmap.jsp>

¹² <https://nbnatlas.org>

- A search to determine the potential habitats and features of interest was conducted using 1:25,000 scale Ordnance Survey (OS) maps¹³ and aerial imagery from the Google Maps¹⁴ and Bing Maps¹⁵ websites.

¹³ www.ordnancesurvey.co.uk

¹⁴ www.maps.google.co.uk

¹⁵ <https://www.bing.com/maps>

3. Results

3.1 Review of existing ecological data

Habitats

Field survey work conducted within 100m of the proposed Site access route identified that habitats comprise a mixture of improved grassland, semi improved neutral grassland, marshy grassland, and broad-leaved woodland within the north-east section of the access track. As the track progresses south-west towards Strandlud Hill, the surrounding habitat changes into mature coniferous woodland with pockets of modified bog along track edges and rides, with a combination of marshy grassland and acid flush habitat fringing watercourses⁵.

Within the main Site boundary, coniferous woodland plantation was identified as the dominant habitat type. On the open summit of Strandlud Hill, acid grassland habitat (NVC community U5) was found to occur in association with modified bog (NVC community M20). Habitat within forest rides was formed predominantly of modified bog, which often occurred in mosaic with acid grassland (NVC communities U4, U5, and U6), acid flush (NVC community M6), and rush pasture (NVC community M23). Two ponds were also identified within the Site boundary.

Protected species

A review of existing ecological records identified the presence, or potential presence, of a variety of protected species within the Site, and its surrounds, including:

- Evidence of otter activity (in the form of spraints and potential resting sites) was identified along the Afton Water⁵, Carcow Burn and Small Burn⁵;
- A small occasional/day roost for three bat species (*soprano pipistrelle*, *common pipistrelle* and *Myotis* species) was recorded at Monquhill Farmhouse, however, no evidence was found to suggest that this building is used for roosting during the sensitive maternity or hibernation periods⁷;
- Manual bat activity surveys and static detector surveys carried out between 2016 and 2017 demonstrated low levels of bat activity within the Site compared with the Afton Glen control site located outside the Site boundary. Bat activity was dominated by common and soprano pipistrelle species, with *Nyctalus* and *Myotis* species recorded in very low numbers⁷;
- Suitable water vole habitat was identified upstream of the Afton Water, Glenshalloch, Glenhastel and Carcow Burns, whereby the presence of soft peat and earth banks, and rush, sedge, and grass species within the area could provide opportunities for sheltering and foraging⁵;
- A single sighting of red squirrel within woodland to the north of the access track⁵; and
- Potential reptile refugia in the form of dry-stone walls within the field system at Pencloe Farm and along the boundary of Carsphairn forest⁵.

3.2 2020 desk study results

Statutory and non-statutory sites

Results of the statutory and non-statutory site search are presented in **Table 3.1**. A map detailing the location of each site is presented in **Figure 11A**.

Table 3.1 Statutory and non-statutory sites within 2km of the Site boundary

Site	Designation	Grid reference	Description	Distance and orientation from Site
Statutory sites				
N/A				
Non-statutory sites				
Glen Afton	Local Nature Conservation Sites	NS 61799 10151	Semi-natural valley woodland, scrub and semi-improved grassland. Predominantly alder and birch with good shrub and ground layers.	Approximately 10m east of Site entrance
Connel Burn/Benty Cowan	Local Nature Conservation Sites	NS 57783 09224	A variety of upland habitats along the upper Connel Burn including acidic and marshy grassland, blanket bog, species-rich ledges and numerous flushes.	Connel Burn/ Benty Cowan overlaps the Site
Afton Uplands	Local Nature Conservation Sites	NS 64963 08249	An extensive upland site which encompasses a range of upland mire, montane heath and grassland habitats. Alpine clubmoss and juniper are present, while stiff sedge is frequent over the summit of Craighraneoch and Blackcraig.	200m south-east of the Site
Bolt Wood	Ancient	NS 62992 07809	In Scotland, Ancient Woodland is defined as land that is currently wooded and has been continually wooded since at least 1750. Its age means that it is important for biodiversity and cultural identity.	1.5km south-east
Carcow Wood	Woodland	NS 61642 09878		0.25km north-west
Un-named wood	Inventory	NS 61479 11432		1.3km north-west

No statutory designated sites were identified within 2km of the Site. There are six non-statutory sites within 2km of the Site, three of which are classed as Local Nature Conservation Sites (LNCS), while the remaining three sites are listed within the Ancient Woodland Inventory¹⁶.

The Site is situated within the transition zone area of the Galloway and Southern Ayrshire Biosphere Reserve. This UNESCO Biosphere reserve was designated because of the combination of the area's "unique landscapes and wildlife areas and rich cultural heritage"¹⁷.

In addition to the information provided in Table 3.1, the Site lies within Carsphairn Forest, which is a former Red Squirrel Priority Woodland. While this area has now been superseded in terms of strategic priorities, the woodland is still considered to be of local importance for red squirrel.

¹⁶ The Ancient Woodland Inventory records where Scotland's ancient and mature woodlands can be found. <https://gateway.snh.gov.uk/natural-spaces/dataset.jsp?dsid=AWI>

¹⁷ <http://www.gsabiosphere.org.uk/>

Legally protected and priority species

The results of the data search for legally protected/ priority species within 2km of the Site boundary (extended to 5km for bats) are presented in **Table 3.2**. Only records within the last 10 years have been included in this search. Note that ornithological records have not been included within this report.

Table 3.2 Records of legally protected/ priority species within 2km (5km for bats) of the Site boundary (2010-2020)

Species	Number of records	Year of most recent record	Conservation designation
Terrestrial mammal			
Eurasian red squirrel	6	2016	WCA5, Ayr-LBAP, SBL
Myotis bat	4	2016	HabRegs2, WCA5
Whiskered/ Brandt's bat	2	2016	HabRegs2, WCA5
Daubenton's bat	5	2016	HabRegs2, WCA5, SBL
Natterer's bat	5	2016	HabRegs2, WCA5, SBL
Leisler's bat	4	2016	HabRegs2, WCA5
Pipistrelle bat	9	2016	HabRegs2, WCA5
Common pipistrelle bat	9	2016	HabRegs2, WCA5, Ayr-LBAP
Soprano pipistrelle bat	9	2016	HabRegs2, WCA5, Ayr-LBAP, SBL
Brown long-eared bat	2	2016	HabRegs2, WCA5, SBL
Non-native species			
Eastern grey squirrel	145	2015	WCA9/INV
Notes:			
HabRegs2 – The Conservation (Natural Habitats & c) Regulations 2010 (Schedule 2); WCA 5 – Wildlife and Countryside Act 1981 (Schedule 5); WCA9/INV – Non-native species listed in Schedule 9 of Wildlife and Countryside Act 1981; Ayr-LBAP – Ayr Local Biodiversity Action Plan; SBL – Scottish Biodiversity List			



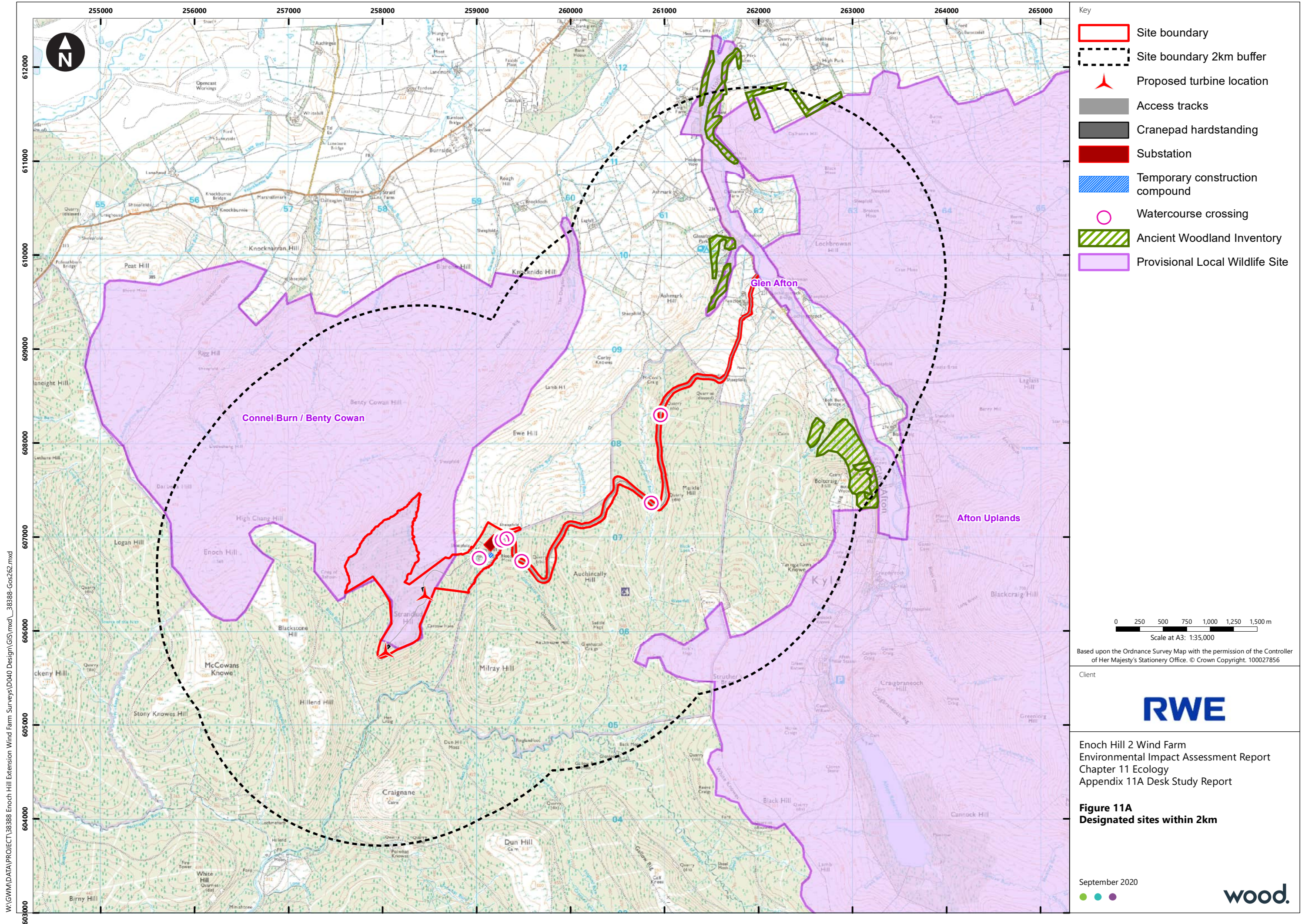
4. Summary

This desk-based ecological assessment has been carried out to inform any potential and/or confirmed ecological constraints to the proposed Enoch Hill 2 Wind Farm project. A summary of the assessment findings is provided below.

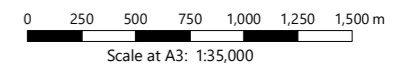
- There are no statutory designated sites within 2km of the Site. Non-statutory designated sites within 2km include three Local Nature Conservation Sites (LNCS) (Afton Glen, Connel Burn/Benty Cowan, and Afton Uplands) and three woodlands listed within the Ancient Woodland Inventory;
- Habitats adjacent to the main access route comprise improved grassland, semi-improved grassland, marshy grassland, and broadleaved woodland, with coniferous woodland bordering the access route as it progresses towards Strandlud Hill. Habitats within the main Site boundary are comprised primarily of mature coniferous woodland plantation with pockets of modified bog, acid grassland, and marshy grassland in open areas and forest rides;
- While no information relating to bat roosts was obtained through SWSEIC, bat activity (echolocation calls) from common pipistrelle, soprano pipistrelle, brown long eared, and myotis bat species have been recorded within 2km of the Site;
- Manual bat activity surveys and static detector surveys demonstrated generally low levels of bat activity within the Site, with any activity dominated by common and soprano pipistrelle species, with *Nyctalus* and *Myotis* species recorded in very low numbers. A small bat roost was identified at Monquhill farmhouse, positioned within the Site boundary, during field surveys; and
- Otters have been found to utilise watercourses present within the Site. In addition, habitat with potential to support water vole, reptiles, and red squirrel was identified during field surveys. Potential therefore exists for these species to occur during construction phase works.

Annex 11A Scientific species names

Common name	Scientific name
Alpine club moss	<i>Lycopodium alpinum</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Common pipistrelle bat	<i>Pipistrellus pipistrellus</i>
Daubenton's bat	<i>Myotis daubentonii</i>
Eastern grey squirrel	<i>Sciurus carolinensis</i>
Great crested newt	<i>Triturus cristatus</i>
Juniper	<i>Juniperus communis</i>
Leisler's bat	<i>Nyctalus leisleri</i>
Myotis bat species	<i>Myotis</i> sp.
Natterer's bat	<i>Myotis nattereri</i>
Otter	<i>Lutra lutra</i>
Pine marten	<i>Martes martes</i>
Red squirrel	<i>Sciurus vulgaris</i>
Stiff sedge	<i>Carex bigelowii</i>
Soprano pipistrelle bat	<i>Pipistrellus pygmaeus</i>
Water vole	<i>Arvicola amphibius</i>
Whiskered/ Brandt's bat	<i>Myotis mystacinus/ brandtii</i>



- Key
- Site boundary
 - Site boundary 2km buffer
 - ▲ Proposed turbine location
 - Access tracks
 - Cranepad hardstanding
 - Substation
 - Temporary construction compound
 - Watercourse crossing
 - Ancient Woodland Inventory
 - Provisional Local Wildlife Site



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Figure 11A
Designated sites within 2km

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