

Appendix 9.5:

Habitat Survey

Report

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Shepherds' Rig Wind Farm
Habitat Survey Report
Appendix 9.5

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Contents

1	Introduction	2
2	Methods	4
3	Results and Evaluation	6
4	Discussion	12
5	Summary	13
6	References	14
7	Figures	15

1 Introduction

Proposed Varied Development Background

- 1.1 SETT Wind Development Limited ('the Applicant') gained Section 36 consent and deemed planning permission from Scottish Ministers in August 2023 to construct and operate Shepherds' Rig Wind Farm ('the Consented Development'). The Consented Development comprised 17 turbines (15 turbines with a maximum blade tip height of 149.9 metres (m) and two turbines with a maximum blade tip height of 125 m) and associated infrastructure.
- 1.2 The Applicant is now applying to Scottish Ministers for consent under Section 36C of the *Electricity Act 1989 (as amended)* and the *Town and Country Planning (Scotland) Act 1997* to vary the Consented Development. The proposed variations include:
- Removal of six turbines and associated crane hard standings;
 - Increase in the maximum blade tip height of the remaining 11 turbines to 220 m;
 - Increase in size of associated crane hardstandings to accommodate the larger turbines;
 - Relocation of eight turbines beyond the micro-siting allowance of the Consented Development, but within the same pattern of development;
 - Amendments to part of the track layout to reflect turbine removal and relocation (as outlined above);
 - Change to the number and location of required watercourse crossings to accommodate the amended track layout;
 - Increase in size and capacity of the associated Battery Energy Storage System (BESS);
 - Relocation of the temporary construction compound slightly beyond micro-siting allowance;
 - Removal of the previously proposed anemometer mast; and
 - Increase to the period of consent from 30 to 40 years.
- 1.3 Collectively, the proposed variations listed above are referred to as the 'Proposed Varied Development'.
- 1.4 The key element of the Proposed Varied Development is the variation to the number and locations of the turbines. Turbines 5, 6 and 7 are unchanged (within micro-siting allowance) from the Consented Development. Locations of most of the remaining turbines are only slightly adjusted (within 200 m of a consented turbine position) to incorporate the constraints associated with larger turbines. Four turbines (1, 2, 4 and 11) are over 200 m from a consented turbine location; however, no turbine is over 500 m from a consented location, and all turbines are within the same habitat types as the original consented scheme.
- 1.5 A suite of ecological survey data was gathered by Bear Environmental Limited and Arcus Consultancy Services Limited in 2018 to support the Consented Development's Section 36 application, submitted in 2018. The application was successful based on the ecological baseline gathered in 2018, the ecology chapter of the Environmental Impact Assessment (EIA) having determined that no significant impacts would occur due to the Consented Development. Due to the age of the data collected in 2018, updated ecological surveys have been undertaken to support the Proposed Varied Development, to determine if the conditions on-site have remained unchanged.
- 1.6 BSG Ecology have been commissioned by the Applicant to provide the terrestrial ecology chapter of the EIA Report, as well as updated baseline habitat and protected species survey data for the site, to support the Section 36C application.

Review of previous ecological baseline assessments

- 1.7 To support the original application for the Consented Development, an Ecological Impact Assessment was undertaken, supported by the following 2018 baseline reports:
- Shepherds Rig Wind Farm EIA Report – Chapter 9: Ecology (Infinergy 2018);
 - Shepherds' Rig Wind Farm Additional Environmental Information Report – Chapter 9: Ecology (Infinergy 2019); and
 - Shepherds Rig Wind Farm EIA Report – Appendix 9.1: Extended Phase 1 Habitat Report Bear Environmental (2018).
- 1.8 A review of the above sources was undertaken to inform the approach of the updated surveys in 2024.

Site description

- 1.9 The site remains the same as the Consented Development as is centred on British National Grid (BNG) 262319 593591, approximately 5 km east of the village of Carsphairn, Dumfries and Galloway. The site totals approximately 752 hectares (ha) and encompasses predominantly coniferous plantation at various stages of maturity.
- 1.10 Prior to being commercially planted, the site was likely a mosaic of upland habitats, including marshy grassland, dry acid heath and possibly blanket bog. Relic features containing some indicator species of these habitats are retained along plantation rides and tracks however they are not sufficiently distinct to be considered intact habitats. The site is displayed in Figure 1.
- 1.11 The site is surrounded by wet grassland habitats (some of which is currently grazed), heathland, and other coniferous plantation. Goat Burn, Black Burn and Craigengillan Burn and several small unnamed watercourses, flow through the site. These are tributaries of the Water of Ken, located approximately 0.3 km east of site. Watercourses are displayed in Figure 1.

Purpose of report

- 1.12 This report details the methods, any potential limitations, and results of the updated Phase 1 habitat surveys and (where appropriate) National Vegetation Classification (NVC) undertaken on-site in 2024, with the purpose of updating the existing baseline for the site.
- 1.13 Updated protected species data is presented in a separate report as **Appendix 9.6** (BSG Ecology 2026a and b).

Personnel

- 1.14 This report was written by Hannah Shone, Senior Ecologist at BSG Ecology. Hannah has been working in ecological consultancy since 2017 and has experience writing a range of habitat reports for a variety of renewables projects across the UK.
- 1.15 The report was technically reviewed by Owain Gabb MEEM, Director of BSG Ecology. Owain has worked as a professional ecologist since 1998 and has co-ordinated ecological and ornithological work for renewables projects throughout the UK and Ireland.
- 1.16 Phase 1 surveys and NVC were undertaken by Robert Mansbridge BSc ACIEEM of Solway Ecology on behalf of BSG. Robert has over nine years of professional experience in ecological consultancy and is competent in a wide range of surveys, including habitat assessment.

2 Methods

Desk study

- 2.1 A desk study¹ was undertaken to identify sites designated for nature conservation, protected and notable habitats and species, and invasive non-native species relevant to the site. The desk study area was based on the likely zone of influence of the scheme on different ecological receptors and an understanding of the maximum distances typically considered by statutory consultees.
- 2.2 A 5 km study area was considered to be proportionate for protected species records, taking into account the size of the proposal and the habitats surrounding. The South West Scotland Environmental Information Centre (SWSEIC) was contacted in December 2024 to obtain records of protected species and habitats, as well as non-statutory designated sites, within the desk study area. Records were reviewed critically alongside field survey results to assist with the evaluation as opposed to relying on them as the sole basis for the evaluation.
- 2.3 The desk study area was increased to 20 km for bat records, this exceeds the 10 km ZOI detailed in guidance (NatureScot 2021)
- 2.4 Information publicly available on MAGIC Map was also consulted to search for national statutory designated sites within 10 km and international designations within 20 km to ensure zones of influence for all species and impact risk zones for designates sites were accounted for.
- 2.5 Ordnance Survey mapping and publicly available aerial photography were also used to assess habitats and check for any features of potential interest.
- 2.6 The Scottish Ancient Woodland Inventory (AWI)² map was used to search for areas of ancient woodland within 2 km of the survey area.
- 2.7 Resources used to complete the desk study are summarised below in **Table 1**.

Table 1: Data sources referenced in the assessment

Data Source	Date Accessed / Received	Notes
MAGIC ³	Most recently accessed 16 December 2024	A 10 km desk study area was adopted for national Statutory-designated sites, increased to 20 km for international designations. Scotland data for European protected species licences and Great Crested Newt <i>Triturus cristatus</i> pond survey results 2017 – 2019 is not available.
Scottish AWI	Most recently accessed 16 December 2024	AWI selected from online mapping database layers.
SWSEIC	Data received 09 December 2024	A 5 km desk study area was adopted as proportionate, and data was requested on protected species and designated non-statutory wildlife sites. A 10 km search area was requested for bat species data.
Bing maps	Most recently accessed 16 December 2024	A search was made for ponds and watercourses within 500 m of the site. Habitats were assessed using aerial imagery.

¹ The data from the desk study is from December 2024 and therefore less than 2 years old. Given that the site has not changed significantly in character since then (and since 2018) this is considered appropriate for the assessment.

² NatureScot – www.map.environment.gov.scot/sewebmap

³ Multi Agency Geographic Information for the Countryside (MAGIC).

Field survey

- 2.8 Phase 1 habitat surveys were undertaken on 21 June, 23 July and 24 July in suitable weather conditions by Solway Ecology. The vegetation and land use types present within the survey area were classified with reference to current industry standard phase 1 survey guidance (JNCC, 2010). The survey encompassed the entire site and extended at least 300 m from turbine locations and 100 m from tracks and other infrastructure. This reflects Scottish Environmental Protection Agency (SEPA) (2017) guidance⁴, which recommends a minimum 250 m perimeter survey area around all excavations of 1 m or more depth.
- 2.9 During the Phase 1 habitat surveys, plant communities were assigned to NVC categories based on the community types identified in Rodwell (1991), where appropriate. Results of the 2018 habitat surveys were used as a reference throughout the 2024 surveys (Bear Environmental 2018).
- 2.10 Potential groundwater dependent terrestrial ecosystems (GWDTEs) were classified in line with SEPA (2017) Land Use Planning System Guidance Note 31⁵: Potential GWDTEs found on-site are presented in Figure 4, the status of which will be further detailed in the hydrology assessment. GWDTE are defined by the UK Technical Advisory Group (UKTAG 2004)⁶ as:
- “A terrestrial ecosystem of importance at Member State level that is directly dependent on water level in or flow of water from a groundwater body (that is in or from the saturated zone). Such an ecosystem may also be dependant on the concentrations of substances (and potential pollutants) within that groundwater body, but there must be a direct hydraulic connection with the groundwater body”.*
- 2.11 In line with the guidance provided in UKTAG (2004), an ecological approach to identifying GWDTE has been used. Each NVC plant community has an allocated score indicating dependency on groundwater (3=low , 2=moderate or 1=high).

Limitations to methods

- 2.12 The Phase 1 survey and survey were undertaken in the optimal time of year, in suitable weather conditions. Overall, no significant limitation to the characterisation and assessment of habitats has been identified in the context of informing the preliminary habitat survey.

⁴ SEPA (2017). Planning guidance on onshore wind farm developments. Land use planning system Guidance Note 4.

⁵ SEPA (2017) Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems

⁶ UKTAG (2004). Guidance on the identification and risk assessment of groundwater dependent terrestrial ecosystems. UK Technical Advisory Group on the Water Framework Directive.

3 Results and Evaluation

Desk Study

- 3.1 All relevant ecological data provided were reviewed and the results are included in the relevant sections below.

Statutory designated sites

- 3.2 One nationally designated site is located within 5 km of the Site; Cleugh SSSI. Further details are provided in Table 2 and Figure 2, Section 7. The search area was extended to 20 km for internationally designated sites.

Table 2: Statutory designated sites.

Site Name	Distance and direction (from nearest point)	Reason for designation
National Designations (5 km search buffer)		
Cleugh (SSSI)	4 km south	Best example of unimproved grassland in Dumfries and Galloway and contains a wide range of grassland and plant communities including dry base-rich knolls and wet acidic flushes.
European and International Designations (20 km search buffer)		
Merrick Kells (SAC)	10.2 km west	Designated for the presence of Annex 1 habitats: northern Atlantic wet heaths, siliceous alpine and boreal grasslands, and active blanket bog habitats.
Loch Ken and River Dee Marshes (Ramsar and SPA).	13 km south	Linear loch and river system containing swamp, fen, grassland and carr woodland. A good example of a semi-natural freshwater system. The site supports internationally important roosting numbers of Greenland white-fronted geese <i>Anser albifrons flavirostris</i> and Icelandic greylag geese <i>Anser anser</i> . There are also four nationally important aquatic plants and three nationally important aquatic invertebrates found within the wetland complex.
Silver Flowe (Ramsar)	14.9 km southwest	One of the most important systems of blanket mire within Great Britain. Least-disturbed patterned blanket mires with the most diverse extent of acid peatland in southern Scotland.
Upper Nithsdale Woods (SAC)	15.4 km east	Designated due to the presence of Tilio-Acerion forests of slopes, screes and ravines, an Annex 1 habitat.
Muirkirk and North Lowther Uplands (SPA)	19.2 southwest	Designated due to the presence of both breeding golden plover <i>Pluvialis apricaria</i> and hen harrier <i>Circus cyaneus</i> .
Tynron Juniper Wood (SAC)	19.03 km east	Designated due to the presence of <i>Juniperus communis</i> formations on heaths or calcareous grasslands, an annex 1 habitat.

Non-statutory designated sites

- 3.3 Two non-statutory designates sites were identified within 5 km of the site. Results are detailed in Table 3. A third potential site was also identified.

Table 3: *Non-statutory designated sites.*

Priority Habitat Type	Distance and direction (from nearest point)	Description
Island Block Oak Woodland (LWS)	0.7 km south	Ancient semi-natural woodland gorge woodland, conifer plantation and semi-natural oak woodland. The Site hosts bluebell <i>Hyacinthoides non-scripta</i> species, a UK Conservation Concern (CC), Local Priority Species (LPS), and LBAP species. Buzzard <i>Buteo buteo</i> is also present and a CC, LCC, and LBAP species.
Polmaddy (LWS)	3.4 km southwest	Extensive bog, unimproved acid, neutral, and marshy grassland. Site contains ancient remains and monument. Nationally rare and declining species such as spignel <i>Meum athamanticum</i> and whorled caraway <i>Carum verticillatum</i> (local BAP species). Other local BAP species present include Rock-rose <i>Helianthemum nummularium</i> and meadow pipit <i>Anthus pratensis</i> . Whorled caraway and meadow pipit are also UKBAP Conservation Concern species.
Afton Uplands (pLWS)	4.8 km north	Potential local wildlife site, comprising large open areas of heathland and bog. Polach Burn and Afton Water run through the site.

Notable plant records

- 3.4 42 records of notable plant species were returned for locations within 2 km of the site. A summary is provided in Table 4.

Table 4: *Notable plant, lichen and fungi records within 2 km of the Site.*

Common Name	Status	Date of recording
Scots Pine	National; Nationally Scarce (excluded from IUCN red list)	2024
Juniper	Local; Dumfries and Ayrshire plant register	2000
Whorled Caraway	Local; Dumfries plant register	2021
Deergrass	National; IUCN (2001) data deficient	2000
Frog orchid	National; IUCN (pre 1994) vulnerable, Dumfries and Ayrshire plant register	1999
Lesser butterfly orchid	National; IUCN (pre 1994) vulnerable, Dumfries and Ayrshire plant register	1999
Greater butterfly orchid	National; IUCN (1994) near threatened, Dumfries and Ayrshire plant register	2021
Common fragrant orchid	Local; Dumfries plant register	1999
Common rock rose	Local; Dumfries plant register	2022

Spignel	National; Nationally Scarce (excluded on red list), IUCN (1994) near threatened, Dumfries and Ayrshire plant register	2022
Welsh poppy	National; Nationally Scarce (excluded from IUCN red list)	2018
Heath fragrant orchid	Local; Dumfries plant register	2021
Kidney vetch	Local; Dumfries plant register	2022
Cloudberry	Local; Ayrshire plant register	2007
Rock stonecrop	National; Nationally Scarce (excluded from IUCN red list)	2024
Starry saxifrage	Local; Ayrshire plant register	2018
Scarlet cup lichen	National; IUCN (2001) data deficient	1985
Pine bolete	National; IUCN (1994) near threatened	2022
Alpine clubmoss	Local; Dumfries and Ayrshire plant register	2007

Invasive non-native plant records

- 3.5 No records of invasive plant species were returned by SWSEIC for locations within 2 km of the site.

Habitat Survey Results

- 3.6 The results of the Phase 1 Habitat survey are presented below and should be read in conjunction with Figure 1. NVC habitats and GWDTE classifications are mapped in Figures 3 and 4 respectively. The following broad habitat types (and their associated JNCC habitat codes) were recorded on-site during the survey:

- Coniferous woodland – plantation: A1.2.2 (492.33 ha)
- Felled plantation woodland: J5 (196.99 ha)
- Marsh/marshy grassland: B5 (31.05 ha)
- Hardstanding: J5 (7.8 ha)
- Dry Heath/acid grassland-dry heath mosaic: D5 (4.4 ha)
- Broadleaved woodland plantation: A1.1.2 (20.07 ha)
- Quarry: I2.1 (0.65 ha)
- Running Water: G2
- Wall: J2.

Coniferous woodland – plantation (A1.2.2) overlying modified bog (E1.7) in places

- 3.7 Coniferous woodland is the dominant habitat on-site. Canopy diversity was limited, with dominant Sitka spruce *Picea sitchensis* and European larch *Larix decidua*. As in the 2018 habitat survey (Bear Environmental 2018), extensive felling and re-planting had been undertaken throughout the Site. The ground flora varied significantly in relation to the stage of the timber cycle in individual forest coupes.
- 3.8 Mature plantation woodland (accounting for approximately 194.75 ha of the total area) generally contained no ground flora or was dominated by mosses *Bryophyta* spp.
- 3.9 In young to semi mature woodland⁷ (297.57 ha of the total habitat area), ground flora varied. The majority of the plantation woodland had no ground flora due to canopy occlusion. Where gaps in the canopy allowed sufficient light to penetrate, the ground flora was dominated by species-poor grassland which contained remnant indicator species of marshy and neutral grassland (primarily

⁷ Semi-mature to mature woodland up to 50 years in age.

tufted hairgrass *Deschampsia cespitosa* and soft rush *Juncus effusus*). Grassland type ground flora was most prevalent within the youngest plots of plantation woodland. Moss and remnant degraded blanket mire were also recorded in north western area of the plantation woodland.

- 3.10 Woodland rides throughout the site had a ground flora dominated by purple moor-grass *Molinia caerulea* with indicator species of marshy grassland and modified/degraded mire. This was notable in woodland in more inundated areas, notably the southwest of the northern survey area, where the water table was high and more riparian channels were present.
- 3.11 Some areas (see the location of Target Note 3 in the 2018 Phase 1 habitat report (Bear Environmental 2018)) are described as blanket mire beneath coniferous woodland). Where the water table was higher remnant bog species were present, including red bog moss *Sphagnum capillifolium*, papillose bog-moss *Sphagnum papillosum*, red-stemmed feathermoss *Pleurozium schreberi*, bog haircap moss *Polytrichum strictum* and magellanic bogmoss *Sphagnum magellanicum*. Parts of the coniferous woodland support hare's-tail cotton-grass *Eriophorum vaginatum* and deergrass *Trichophorum germanicum*. Several decades of forestry planning and active forestry management in these areas has caused disruptions to hydrology and substrate structure which has caused artificial drying and degradation of the original habitat types.
- 3.12 Coniferous woodland is a non-NVC habitat, however parts of the ground flora were consistent with NVC community M17, *Scirpus cespitosus* – *Eriophorum vaginatum* blanket bog (degraded). M17 is a priority habitat classification (albeit in degraded, condition).
- 3.13 Coniferous woodland achieves a GWDTE score of 3 (low), based on the presence of the M17 understory.

Felled plantation woodland (A1.2.2)

- 3.14 Extensive areas of clear felled woodland were present on-site, largely within the northern parcel. In these areas vegetation was limited, ground cover was predominantly brash. Vegetative species present included: soft rush *Juncus effusus*, tufted hair-grass *Deschampsia cespitosa*, foxglove *Digitalis purpurea* and bent grasses *Agrostis* spp..
- 3.15 Felled woodland is a non-NVC habitat and is not ground water dependant.

Marshy grassland (B5)

- 3.16 Areas of degraded marshy grassland were present within the plantation woodland understorey. This has a limited species diversity, dominated by soft rush and tufted hair grass with abundant purple moor grass. The species composition indicates that the habitat is wet, acidic and poorly drained. Other species recorded included bracken *Pteridium aquilinum*, dock species *Rumex* sp. and marsh thistle *Cirsium palustre*.
- 3.17 In wetter areas, notably woodland rides and edges, the species assemblage was more varied and remnants of the historic, now modified, blanket bog were present. Moss species included: red-stemmed feather moss *Hylocomium splendens*, sphagnum moss *Sphagnum* spp. and common haircap *Polytrichum commune*. Moss was recorded frequently in areas of felled plantation. Other flora present in areas not dominated by soft rush included: creeping buttercup *Ranunculus repens*, rough meadow grass *Poa trivialis*, heath rush *Juncus squarrosus*, sweet vernal-grass *Anthoxanthum odoratum*, tormentil *Potentilla erecta*, Yorkshire-fog *Holcus lanatus*, ling heather *Calluna vulgaris*, bell heather *Erica cinerea*, and hard fern *Blechnum spicant*. Rare incidences of sneezewort *Achillea ptarmica*, common spotted orchid *Dactylorhiza fuchsii*, and foxglove were also recorded. Heathland characteristics, such as the presence of ling heather (*Calluna vulgaris*) and bell heather indicate a mosaic of wet and dry areas is present.
- 3.18 The mix of dominant wetland species, alongside heathland plants and occasional rarer species, indicates a dynamic habitat with plants adapted to wet, acidic, and nutrient-rich conditions.
- 3.19 The remnant marshy grassland on-site is consistent with NVC community M23; *Juncus* – *Galium* rush pasture, but due to the dominance of *Juncus effusus* the area does not qualify as priority habitat.

- 3.20 M23 Marshy grassland achieves a GWDTE score of 2, moderate.

Hardstanding (J5)

- 3.21 Hardstanding forestry roads were present throughout the site. Since the previous botanical survey, these had been extended in the northern site, causing the loss of a small portion of marshy grassland. Marginal species on either side of the track include: bird's-foot trefoil *Lotus corniculatus*, dock species, ribwort plantain *Plantago lanceolata*, broad leaved plantain *Plantago major*, selfheal *Prunella vulgaris* and heather *Calluna* sp., reflective of the adjacent dry heath/acid grassland habitat.
- 3.22 An NVC and GWDTE score are not appropriate for this habitat classification as hardstanding is non-vegetative and not ground water dependant in nature.

Dry Heath/acid grassland-dry heath mosaic (D5)

- 3.23 A mosaic of remnant dry heath with patches of acid grassland was recorded in small stretches, predominantly adjacent access tracks and verges. The habitat is fragmented due to felling activities forming localised habitat parcels of limited extent with restricted connectivity to the wider site; however, a larger extent is present than that recorded in the 2018 habitat survey (Bear Environmental 2018).
- 3.24 Heather was dominant, with blaeberry *Vaccinium myrtillus*, pleurocarpous mosses, rush species, bog haircap moss *Aulacomnium palustre*, red-stemmed feather moss *Hylocomium splendens*, and tormentil present. Bell heather was noted rarely. Species frequent in areas of acidic grassland were limited to wavy hair grass *Deschampsia flexuosa*. Vegetative markers of neutral grassland were also recorded, such as Yorkshire fog *Holcus lanatus*) and foxglove *Digitalis purpurea*, which may be indicative of the influence of disturbance and imported rock from the access tracks impacting the marginal habitat.
- 3.25 In places, scrub was encroaching, consisting of bracken and willow *Salix* spp..
- 3.26 Heathland is a priority habitat. The area meets the NVC classification of H12 – U2 Mosaic *Calluna vulgaris* – *Vaccinium myrtillus* heath – *Deschampsia flexuosa* acid grassland mosaic. The dry heath is not groundwater dependant.

Broadleaved woodland plantation (A1.1.2)

- 3.27 All broadleaved plantation woodland on-site is juvenile with tree guards still in place. Tree species consisted of oak *Quercus* spp., common alder *Alnus glutinosa*, rowan *Sorbus aucuparia*, and silver birch (*Betula pendula*).
- 3.28 The woodland is plantation, however, the closest NVC classification is W16 *Quercus* – *Betula* – *Deschampsia flexuosa* woodland. The woodland is not ground water dependant.

Quarry (I2.1)

- 3.29 Four quarries are present in the north of the site, all consisting of bare rock with negligible vegetation cover.
- 3.30 The quarry recorded in the southern part of the site in 2018 is no longer present, the area was re-profiled and acid grassland succession had taken place.
- 3.31 An NVC and GWDTE score is not appropriate for this habitat classification.

Running water (G2)

- 3.32 Three named watercourses are present on-Site: Blackburn, Goat Burn and Craigengillan Burns. All of which have connectivity to the Water of Ken, located off-Site to the east.

3.33 Multiple small burns and ditches were recorded across the site, notably in plantation woodland under dense canopy, a majority of which were concentrated in the southern section of plantation woodland in the northern site.

3.34 An NVC and GWDTE score is not appropriate for this habitat classification.

Wall (J2.5)

3.35 Limited length of drystone wall and sheepfold were present within the southern site and at the south-western mature plantation within the northern site. Vegetation on the walls was limited to bryophytes including red stalked feather moss *Pleurozium schreberi*.

3.36 An NVC and GWDTE score is not appropriate for this habitat classification.

4 Discussion

- 4.1 Results and discussion in this report are limited to habitats, species specific information is discussed independently (BSG 2026a, b and 2025).

Designated Sites

Statutory Designated Sites

- 4.2 No European or internationally designated sites are located within 10 km of the site.
- 4.3 A single nationally designated statutory site is located within 5 km of the site, Cleugh SSSI. Cleugh is designated due to the presence of unimproved lowland neutral grassland communities, a habitat not located within the site.
- 4.4 Statutory designated sites were not considered in the 2018 habitat report, however, statutory designations within the vicinity of the Proposed Varied Development are unchanged from the 2018 assessment for the Consented Development (Infinergy 2018).

Non-statutory Designated Sites

- 4.5 Two non-statutory designated Sites are located within 5 km of the site, of these, one is located outside of 2 km and the closest is located 0.7 km south of the site. Both are considered sufficiently distanced that no direct or indirect impacts will be suffered as a result of the Proposed Varied Development.
- 4.6 Non-statutory designated sites were not considered in the 2018 habitat report. Non-statutory designations within the vicinity of the Proposed Varied Development have not changed since the 2018 assessment for the Consented Development which only identified Dundegh Wood ancient woodland, Dundegh Wood is not independently designated as a non-statutory site, it is encompassed within the wider Island Block Oak Woodland LWS. Additionally, Polmaddy LWS and Afton Uplands pLWS were not identified in the 2018 assessment.

Priority Habitats

- 4.7 The site was dominated by coniferous plantation and felling with a varied ground flora ranging from bare ground to remnants marshy grassland and bog habitat. Degradation due to habitat succession has taken place since the 2018 surveys (Bear Environmental 2018) of blanket bog on-site. Whilst remnant bog habitats are present in the woodland understory these are predominantly modified bog, lacking the species diversity present in both 2018 and 2013. As an M17 NVC classification, the bog remains priority habitat, although in a significantly degraded condition.
- 4.8 Other habitats of value recorded were consistent with those present in 2018 and limited to the strips of heathland adjacent the access tracks. This meets the definition of a H12 community and priority habitat.
- 4.9 No new or notable habitats were located past those recorded within the 2018 phase 1 habitat survey.

GWDTE

- 4.10 Wetland habitats are known to be sensitive to changes in their water supply. Potential ground water dependant habitats on-site are limited to:
- M17 degraded blanket bog (woodland understory); low
 - M23 marshy grassland; moderate
- 4.11 A hydrology assessment is required to confirm the presence and/or functionality of GWDTEs on-site. Whilst habitats with potential for ground water reliance were identified in the 2018 surveys, all were assessed as surface fed and therefore not GWDTEs following the hydrology assessment (Infinergy 2018).

5 Summary

- 5.1 Overall, habitats on-site are largely unchanged from the 2018 habitat survey, except for blanket bog which is now degraded and only present within some areas of the woodland understory. Priority habitats on-site were limited to degraded blanket bog (M17) and the dry heath/ acid grassland mosaic (H12).

6 References

- Arcus (2018a) Shepherds Rig Wind Farm. Appendix 9.2: Protected Species. September 2018.
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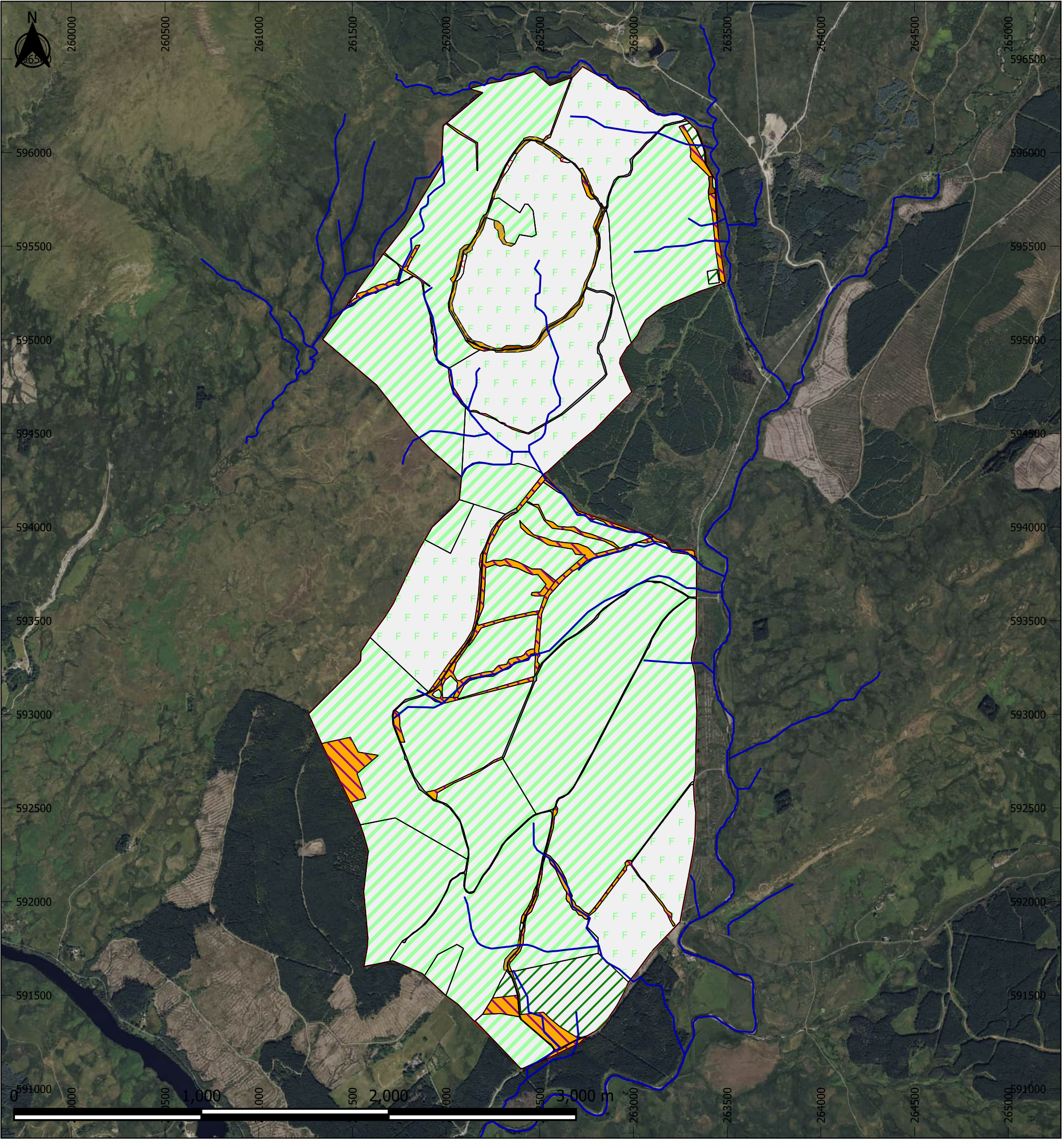
7 **Figures**

Figure 1: Phase 1 habitats

Figure 2: Statutory sites within 5 km

Figure 3: NVC Habitats

Figure 4: GWDTE



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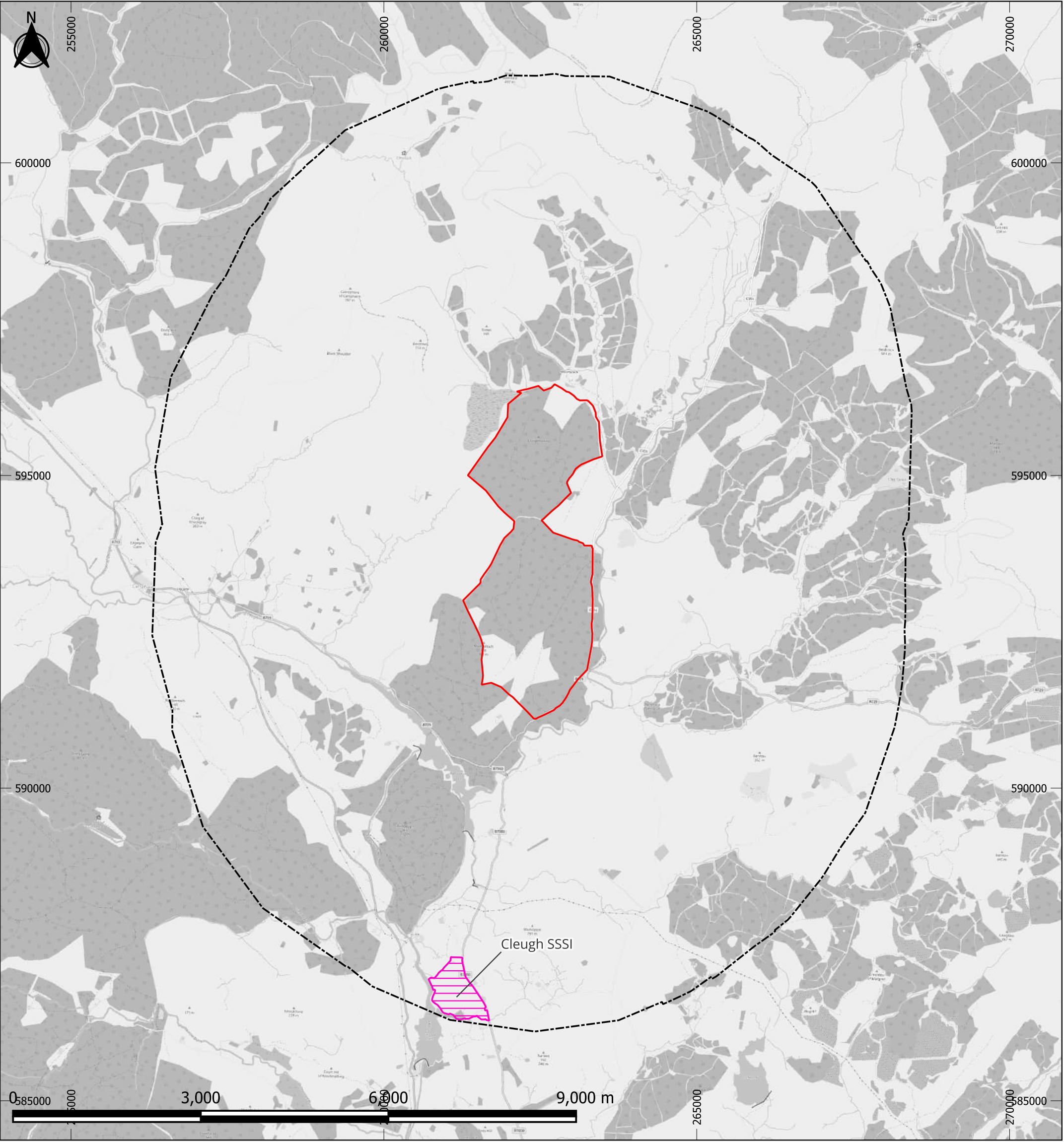
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SHEPHERDS RIG WIND FARM

DRAWING TITLE
Figure 1: Phase 1 Habitats

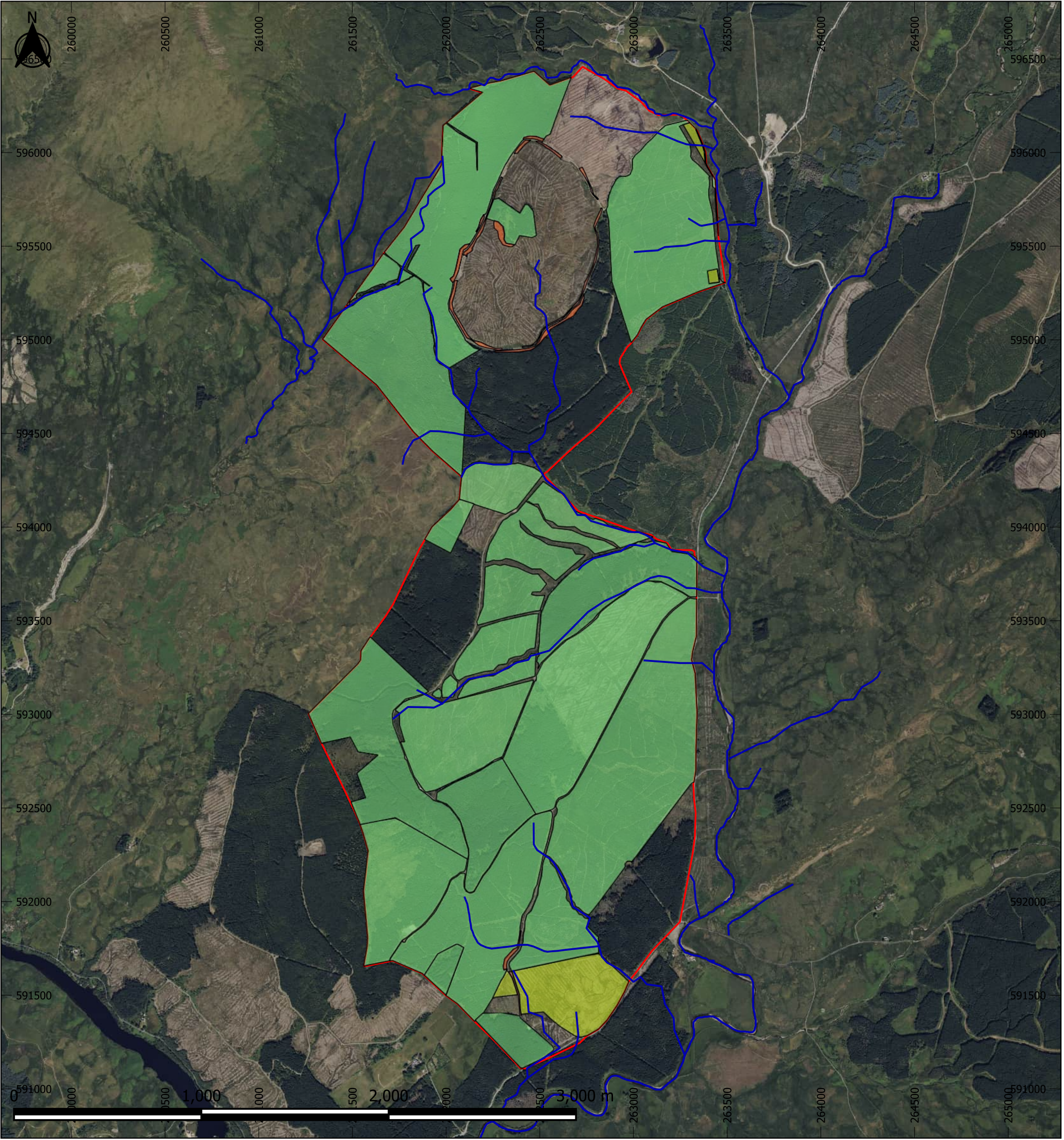
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- Legend
- Running water
 - Broadleaved woodland - plantation
 - Coniferous woodland - plantation
 - Scrub
 - Coniferous woodland - recently felled
 - Marsh/marshy grassland
 - Bracken
 - Dry heath/acid grassland
 - Quarry
 - Built up areas inc. hardstanding
 - Site boundary



- Legend
- Sites of Special Scientific Interest
 - Site boundary
 - 5km from site boundary



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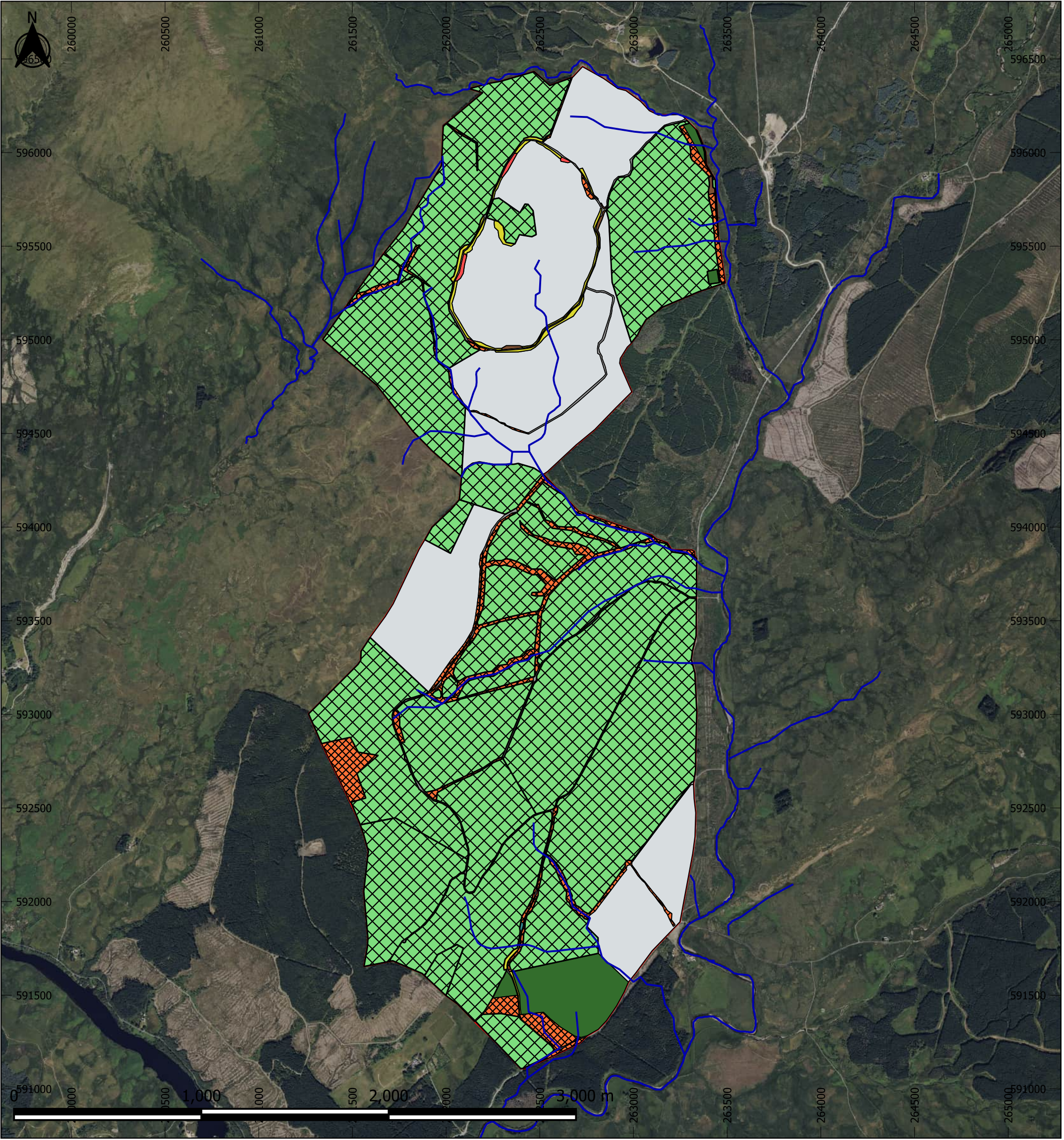
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Figure 3: NVC Habitats

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- Legend
- M17: *Scirpus cespitosus*-*Eriophorum vaginatum* blanket mire
 - H12 – U2 Mosaic: *Calluna vulgaris* – *Vaccinium myrtillus* heath – *Deschampsia flexuosa*
 - W16: *Quercus* spp.-*Betula* spp.-*Deschampsia flexuosa* woodland
 - Running water
 - Site boundary



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Figure 4: GWDTE

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- Phase 1 Habitats
- Running water
 - Broadleaved woodland - plantation
 - Coniferous woodland - plantation
 - Scrub
 - Coniferous woodland - recently felled
 - Marsh/marshy grassland
 - Bracken
 - Dry heath/acidic grassland mosaic
 - Quarry
 - Built up areas

- GWDTE
- Low
 - Moderate
- Site Boundary
- Site boundary