



ARCUS

BAILLIE GREENER GRID PARK

APPENDIX 4: PRELIMINARY ECOLOGICAL APPRAISAL REPORT

STATKRAFT UK LTD

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Prepared By:

Arcus Consultancy Services

7th Floor
144 West George Street
Glasgow
G2 2HG

T +44 (0)141 221 9997 | **E** info@arcusconsulting.co.uk
w www.arcusconsulting.co.uk

Registered in England & Wales No. 5644976

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APPENDIX A: FIGURES

1 INTRODUCTION

Arcus Consultancy Services ('Arcus') was commissioned by Statkraft UK LTD (hereafter referred to as the Applicant) to undertake a Preliminary Ecological Appraisal (PEA) of a plot of land located within the footprint of the existing Baillie Wind Farm, located south west of Thurso in the Scottish Highlands. The construction of a Greener Grid Park ('the Development') has been proposed within the surveyed plot of land ('the Site'); the red line boundary for which is shown in Figure 1, Appendix A.

The PEA presented within this report was carried out with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal¹,

This report details ecological baseline conditions and potential ecological impacts from the Development, taking into account relevant planning policy and legislation. Further surveys and good practice mitigation have been described, where applicable, in order to provide additional information for assessing impacts and to inform recommendations to avoid or reduce potential impacts.

2 METHODS

2.1 Desk Study

2.1.1 Designated Site and Biological Records

A Desk Study was undertaken to provide ecological conditions and contextual information for the land within the Site and the surrounding environment.

Records of International statutory designated sites within 5 kilometres (km) of the Site (hereafter referred to as the 'Desk Study Area') were searched, with a radius 2 km search for nationally designated sites. This was deemed appropriate considering the small development footprint. The search was carried out using NatureScot (formerly SNH) Sitelink².

In addition, recent records (within the past 20 years) of protected and invasive species within 2 km were obtained from publicly available resources, such as the National Biodiversity Network (NBN Atlas)³.

2.1.2 Baillie Wind Farm Post-Construction Ornithological Monitoring

In addition to the above, a review of the result of ongoing operational goose monitoring⁴ taking place at Baillie Wind Farm was undertaken, to get an understanding of the baseline condition regarding foraging wintering bird species within the Site.

In addition to flight activity monitoring and carcass searches carried out to assess the potential impact of turbines on qualifying species of the Caithness Loch SPA, Post-Construction Ornithological Monitoring involved Feeding Location Search Surveys.

The baseline information collected from Feeding Location Search Surveys was reviewed to establish whether the Site is of value to goose and swan species associated with the HRA. Data collected from flight activity monitoring and carcass searches were considered

¹ CIEEM (2017), *Guidelines for Preliminary Ecological Appraisal, 2nd Edition*. [Available online] https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Dec2017.pdf

² NatureScot. NatureScot SiteLink. Available online at <https://sitelink.nature.scot/home>. [Accessed July 2021].

³ National Biodiversity Network. NBN Atlas. Available online at <https://nbnatlas.org/>. [Accessed July 2021].

⁴ Cameron Ecology Ltd (2020) Baillie Wind Farm Post-construction Ornithological Monitoring Report Winter 2019-2020 (November 2020)

of very little value to the appraisal of the Development, so were not included within the baseline.

2.1.2.1 Feeding Location Search Surveys

Monthly searches of fields in the study area, which included the Site and Landowner (LO) boundary, were carried out between October and March annually from 2011 to 2020, to record the presence of foraging geese and swan species. The frequency of survey was reduced from twice per month to once per month in winter 2017-2018 onward and comprised of one session of four hours each month.

2.2 Field Study

2.2.1 Extended Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey (hereby referred to as 'the Phase 1 Survey') was carried out on 8th September 2021. The Phase 1 Survey was carried out in accordance with the Joint Nature Conservation Committee (JNCC) guidance⁵, and aimed to record and map all natural and semi-natural habitats within the Site and the wider Land Ownership (LO) boundary (hereafter referred to as the 'Survey Area', see figure 2), where access was possible. Habitat features indicating the presence, or likely presence, of protected species or other species of nature conservation were also noted.

The Phase 1 Survey also aimed to record non-native, invasive floral and faunal species including but not limited to, Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).

In addition, habitats were assessed for their potential to support protected species including, but not limited to; pine marten (*Martes martes*), badger (*Meles meles*), otter (*Lutra lutra*), water vole (*Arvicola amphibius*), red squirrel (*Sciurus vulgaris*), bats (*Chiroptera* sp.), and breeding birds, in accordance with relevant best practice survey guidance^{6,7}. These assessments were used to inform further survey requirements and recommendations.

3 RESULTS

3.1 Desk Study Results

3.1.1 Statutory Designated Sites

Three international designated sites were recorded within the Desk Study Area, these were;

- Caithness Lochs Special Protection Area (SPA): designated for non-breeding Greenland white-fronted goose (*Anser albifrons flavirostris*), greylag goose (*Anser anser*) and whooper swan (*Cygnus cygnus*), and is located 3 km south of the Site at its closest proximity⁸;

⁵ Joint Nature Conservation Committee (JNCC) (2010) *Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit*. Peterborough, JNCC, Peterborough.

⁶ NatureScot (2020) Planning and development: protected species. Available at: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species> [Accessed 29/09/21]

⁷ Collins, J. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.)*. The Bat Conservation Trust, London.

⁸ NatureScot Sitelink: Caithness Lochs SPA Overview Available at: <https://sitelink.nature.scot/site/8477> [Accessed 29/09/2021]

- Broubster Leans Special Area of Conservation (SAC): designated for wetland habitats ('very wet mires often identified by an unstable 'quaking' surface') and is located 3 km south of the Site at its closest proximity⁹; and
- North Caithness Cliffs SPA: designated for breeding fulmar (*Fulmarus glacialis*), guillemot (*Uria aalge*), kittiwake (*Rissa tridactyla*), peregrine (*Falco peregrinus*), puffin (*Fratercula arctica*), razorbill (*Alca torda*) and 'seabird assemblage' and is located approximately 4.75 km northwest of the Site¹⁰.

No nationally designated sites were recorded within the Desk Study Area.

No areas of woodland listed on the Ancient Woodland Inventory are located within 2km of the Site.

Due to the presence of the above European Site, a Habitat Regulation Appraisal (HRA) is required. This is detailed in full in Section 4, below.

3.1.2 Protected Flora and Fauna

The desk study did not identify any records of protected species or invasive species within the Site; however, the following records of protected species were identified within the Desk Study Area over the past 20 years:

- 5 records of common pipistrelle bat (*Pipistrellus pipistrellus*);
- 5 records of pine marten; and
- 1 record of otter

In addition, 98 bird species were recorded within the Desk Study Area, including merlin (*Falco columbarius*) which is listed as a Schedule 1 species (on the Wildlife and Countryside Act 1981)¹¹:

3.1.3 Location Search Survey

3.1.3.1 Summary of Previous/Historical Results (2011-2019)

- 2011-2012: Whooper swans were recorded in large numbers feeding to the south of the wind farm. White-fronted geese were recorded regularly feeding at a number of locations to the north of the wind farm that were previously thought to be of minor importance as feeding areas.
- 2012-2013: No obvious changes in the distribution of feeding locations were noted from those recorded in 2011- 2012.
- 2013-2014: Similar distribution to previous years but feeding areas were noted to be closer to the turbines than in previous winters (within 600m).
- 2014-2015: No obvious change in distribution of feeding locations from previous years, however, the number of feeding locations observed in winter 2014-2015 within 600 m of the turbines was lower than in the previous winter.
- 2015-2016: There was no evidence from the surveys in winter 2015-2016 that there had been any notable and significant change in distribution or abundance of geese and swans previously recorded.
- 2016-2017: There was no evidence from the surveys in winter 2016-2017 that there had been any notable and significant change in distribution or abundance of geese and swans previously recorded.

⁹ NatureScot Sitelink: Broubster Leans SAC Overview [online] Available at: <https://sitelink.nature.scot/site/8213> [Accessed 29/09/2021]

¹⁰ NatureScot Sitelink: North Caithness Cliff SPA Overview [online] Available at: <https://sitelink.nature.scot/site/8554> [Accessed 29/09/2021]

¹¹ UK Government (1981) Wildlife and Countryside Act 1981 – Chapter 69. [only] Available at: <http://www.legislation.gov.uk/ukpga/1981/69/contentsf> [Accessed 29/09/2021]

- 2017-2018: There was no evidence from the surveys in winter 2017-2018 that there had been any notable and significant change in distribution or abundance of geese and swans previously recorded.
- 2018-2019: There was no evidence from the surveys in winter 2018-2019 that there had been any notable and significant change in distribution or abundance of geese and swans previously recorded.

3.1.3.2 Summary of Recent Results (2019-2020)

The majority of records were located in fields within 2 km to the south of Baillie Wind Farm between Shebster and Knockglass. The grass and barley stubble fields around Brims also hosted large numbers of greylag geese, with a maximum of 2,300 birds there in December. Overall, the number of birds recorded in the survey area was much higher than that in the previous two winters largely driven by the large flocks observed around Brims in November and December.

There were two records of greylag geese feeding within 600 m of the turbines; these being just single birds in January and February, in a barley stubble field approximately 500 m south of the turbines near Achimore. Most observations were of geese feeding in improved grass pasture as well as barley stubble fields and oat stubble fields.

No feeding swan or goose species associated with the Caithness Loch SPA were recorded feeding within the Site of the LO boundary in 2019-2020. Foraging distribution recorded across the monitoring period showed little variability and was relatively limited within Baillie Wind Farm, when compared to foraging in the wider area. Foraging predominantly occurred in improved grassland and stubble fields and arable grassland habitats typically associated with these species, which are absent for the Site and LO boundary (see section 3.2.1, below).

3.2 Field Survey Results

3.2.1 Extended Phase 1 Habitat Survey

3.2.1.1 Overview

The Site was found to comprise mainly of semi-improved acid and neutral grassland, with some areas of bare ground, a small building and a patch of wet heath/acid grassland mosaic. The entire LO boundary was also surveyed (where accessible), consisting of more acid grassland, neutral grassland, both dry and wet heath/acid grassland mosaics, recently felled coniferous plantation, broadleaved woodland, scrub, and wet dwarf shrub heath.

The entire east side of the LO boundary is bounded by an access track of Baillie Wind Farm, where the site is located, and the south is bounded by a deep man-made ditch. Historical aerial photography shows that the entire LO boundary was previously ploughed in preparation for tree planting, with about two thirds planted with small trees.

Habitats recorded within the Survey Area, as well as their presence within the Site and LO boundaries are provided in Table 1. For more information, please refer to Figure 2, Appendix A for the Phase 1 Survey Map, and the habitat descriptions provide below. The codes below in Table 1 and Section 3.2.1.2 are in reference to JNCC guidance⁵ for Phase 1 Habitats.

Table 1: Phase 1 Habitats Records within the Survey Area

Phase 1 Habitat	Site boundary	Land Ownership boundary
A1.1.1 – Broadleaved woodland – semi-natural		✓
A2.1 - Scrub- dense/continuous		✓
A4.2 – Coniferous woodland – recently felled		✓

B1.1 - Acid grassland – semi-improved		✓
B1.2 - Acid grassland – unimproved		✓
D2 - Wet dwarf scrub heath	✓	✓
D5 - Dry heath/acid grassland	✓	✓
D6 - Wet heath/acid grassland	✓	✓
B2.2 – Neutral grassland – semi-improved	✓	✓
J4 – Bare ground	✓	
J3.6 - Buildings	✓	

3.2.1.2 Habitat Descriptions

A1.1.1 – Broadleaved woodland – semi-natural

A single small patch of broadleaved woodland was recorded outside to the Site boundary, within the west of the LO boundary. Species recorded were tree species black alder (*Alnus glutinosa*) and ash (*Fraxinus excelsior*), as well as scrub species, European gorse (*Ulex europaeus*). Tufted hairgrass (*Deschampsia cespitosa*) was also recorded in the understory and open areas.

A2.1 - Scrub- dense/continuous

A relatively large patch of scrub was recorded at the far north west of the LO boundary, and outside the Site boundary and was dominated by European gorse.

A4.2 – Coniferous woodland – recently felled

A relatively large area of felled coniferous woodland was recorded adjacent to scrub and broadleaved woodland patch described above in the north of the LO boundary, and outside the Site boundary. Flora recorded included common heather (*Calluna vulgaris*) and grasses such as tufted hair grass, as well as evidence of scattered spruce (*Picea sp.*) and lodgepole pine (*Pinus contorta*) regeneration.

B1.2 -Acid grassland – semi-improved

Semi-improved acid grassland was by far the most dominant habitat type and was recorded across the Site and the wider LO boundary. Species recorded included common self-heal (*Prunella vulgaris*), meadow buttercup (*Ranunculus acris*), devil's bit scabious, (*Succisa pratensis*), Yorkshire fog (*Holcus lanatus*), matt grass (*Nardus stricta*), White clover (*Trifolium repens*), creeping thistle (*Cirsium arvense*), Ribwort Plantain (*Plantago lanceolata*), soft rush (*Juncus effusus*) and dandelion (*Taraxacum agg.*), as well as areas of rushes (*Carex spp.*), and fescues (*Festuca spp.*) and patches of European gorse.

B1.1 - Acid grassland – unimproved

This habitat consisted of a variety of grass and herb species, similar to those recorded in adjacent areas of semi-improved grassland, and was extremely limited, only being found at the very south of the LO boundary. It appeared to be associated with the remains of spoil removed from ditch clearing that occurred immediately to the south.

D2 - Wet dwarf scrub heath

Wet dwarf scrub heath was recorded in one single area in the south of the LO boundary, outside the Site boundary, adjacent to areas of acid grassland and acid grassland/wet heath mosaic. Floral species recorded included black bog-rush (*Schoenus nigricans*), cross-leaved heath (*Erica tetralix*), Yorkshire fog, and purple moor-grass, (*Molinia caerulea*)

D5 - Dry heath/acid grassland

This habitat was limited to two small patches located in the south of the LO boundary, and outside the Site boundary. Floral species recorded common heather, as well as common grass species, such as Yorkshire fog, tufted hair grass, and matt grass.

D6 - Wet heath/acid grassland

This habitat was only found in one location, present only in the south west of the LO boundary outside the Site boundary. Floral species record included grass species such as Yorkshire fog and purple moor grass, and rushes species such as black bog-rush and soft rush, as well as marsh grass of Parnassus (*Parnassus parnassia*), spotted orchid (*Dactylorhiza spp*), cross-leaved heath and devil's bit scabious.

B2.2 – Neutral grassland – semi-improved

This habitat was limited to two relatively small patches and the vast majority of which was located in the Site boundary, with only very small areas located outwith it. It was the most abundant habitat within the Site boundary after semi-improved acid grassland, which was dominant. This habitat was considered likely to represent a transition between these two habitat types, with species recorded including tufted hair grass, soft rush, Yorkshire fog, meadow buttercup and white clover.

Other habitats

An access track leading to an overhead line transmission tower were located within the Site boundary, and were classified as bare ground (J4)/buildings (J.3.6)

3.2.1.3 Protected Species Assessment

An assessment of the suitability for the Survey Area to support protected species is provided below. Species not discussed are considered unlikely to occur locally.

Badger

No evidence of badgers was recorded during the Phase 1 Survey. Although the species are not widespread in the far north of Scotland, the presence of broadleaved woodland and scrub within the LO boundary and agricultural field margins in the wider local area suggest that presence of the species cannot be entirely ruled out, but it is considered unlikely.

Bats

No evidence of roosting bats were recorded during the Phase 1 Survey. Suitable habitats were limited to the small patch of broadleaved woodland in the west of the LO boundary, but no Potential Roost Features (PRFs) such as split limbs and rot holes were noted on any trees.

Otter

No evidence of otter was recorded during the Phase 1 Survey, largely due to the absence of watercourses and waterbodies of value for foraging or commuting. A single ditch was recorded but it was considered unlikely to be used by the species, with the exception of on a very occasional or seasonal basis.

Water vole

Although a single ditch was recorded in the south of the LO boundary, it was assessed to be sub-optimal for water vole, and no evidence of water vole was recorded during the Phase 1 Survey.

Pine marten

Despite the limited extent to woodland, pine marten scat was recorded at two locations within the LO boundary, both at the base of the overhead line transmission tower within the Site. Although small patches of woodland exist in relatively close proximity to the LO boundary, it is likely the species presence is associated with the large, extensive coniferous woodland located approximately 1.3 km to the south of the LO boundary. It is likely that the species access the site for occasional commuting and foraging, taking advantage of the wind farm access tracks.

Red squirrel

No evidence of red squirrel was recorded within the Site during the Phase 1 Survey largely due to the lack of suitable woodland within the LO boundary.

Breeding Birds

Due to the time of survey, breeding bird activity was not recorded, however several bird species were recorded, including wren (*Troglodytes troglodytes*), linnet (*Linaria cannabina*) and carrion crow (*Corvus corone*). The Site itself provides sub-optimal nesting bird habitat, however the presence of common ground nesting bird species such as meadow pipit (*Anthus pratensis*) and skylark (*Alauda arvensis*) during the breeding season are feasible.

4 HABITAT REGULATIONS APPRAISAL (HRA)

4.1 Requirements and Methodology¹²

Under the Habitats Regulations, all competent authorities must consider whether any plan or project will impact the integrity of a European site or its qualifying features. This is broadly known as Habitats Regulations Appraisal (HRA). An HRA can involve up to three key stages:

- Stage 1: Screening (determination 'likely significant effects')
- Stage 2: Appropriate Assessment (assessment of potential 'adverse effects'); and
- Stage 3: Alternative solutions and 'Imperative Reasons of Overriding Public Interest' (IROPI)

4.1.1 Screening¹³

Stage 1 of an HRA is 'Screening', which is carried out to determine whether the plan of the project will have a 'likely significant effect' on a European Site. If there is a reasonable link between a proposal's effects and the site's qualifying interests, or significant effect cannot be objectively ruled out with certainty, it is considered 'likely'.

It is important to note that the determination of a 'significant effect' in the EIA process, is not the same as the determination 'likely significant effect' in the HRA process.

Determination of a 'likely significant effect' during HRA Screening is a comparatively quick and straightforward process. In HRA screening, only projects and plans that clearly have no ecological connectivity to the site's qualifying interests, and obviously won't undermine the conservation objectives, can be screened out. Screening cannot use mitigation to conclude no 'likely significant effects'. For those sites that cannot be screened out, 'likely

¹² NatureScot: Habitats Regulations Appraisal (HRA) [online] Available at: <https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra> [Accessed 29/09/2021]

¹³ NatureScot: Habitats Regulations Appraisal (HRA): likely significant effects [online] Available at: <https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra/habitats-regulations-appraisal-hra-likely> [Accessed 29/09/2021]

significant effects' are determined, and an 'appropriate assessment' (AA) is required (Stage 2).

4.1.2 Appropriate Assessment¹⁴

In an Appropriate Assessment (AA), a 'competent authority' (such as a Local Planning Authority) will carry out a detailed assessment of the potential effect of the project on the designated site and its qualifying features, and decide whether there is enough evidence to conclude that the proposals will not have adverse effects on the site's integrity (i.e. compromise the conservation objectives). If, following the development of mitigation, the effect is still assessed as significant or uncertainty remains, the process would proceed to Stage 3. Unlike screening, an AA may use mitigation to conclude no 'adverse effect', but this excludes compensation measures.

4.1.3 Alternative Solutions and IROPI¹⁴

In Stage 3 alternative solutions and modifications of the development plans will be considered, and 'imperative reasons of overriding public interest' (IROPI), including economic, social, environmental, human health, and public safety' benefits will be investigated. A competent authority may wish to consent a proposal despite the potential for an adverse effect on site integrity where IROPI can be demonstrated and it can be shown that there are no alternative solutions.

4.2 HRA Screening

The Development is not associated with the management of any European Site, and therefore must undergo HRA screening. Screening automatically scopes out European Sites considered obviously too distant, or obviously unconnected with the Site (such as marine sites), and this is reflected in the search criteria applied in the Desk Study. Within the Desk Study Area, three European Sites were recorded, these were;

- Caithness Lochs Special SPA:
- Broubster Leans SAC; and
- North Caithness Cliffs SPA:

4.2.1 Caithness Lochs Special SPA

The Site lies within the established connectively distance from the SPA¹⁵. In addition, a report published by the Wildlife and Wetlands Trust (WWT) indicates that the fields surrounding the Site are of foraging importance to the SPA pink-footed goose population¹⁶.

In light of the above, ecological connectivity between the Development and SPA is feasible, and therefore **likely significant effects** are predicted.

As such, an Appropriate Assessment is required to determine if the Development will have adverse effects on the SPA. Information to inform this process has been provided in the form of a Shadow Appropriate Assessment (sAA) in Section 4.3, below.

4.2.2 Broubster Leans SAC

Due to the 3 km distance between the Site and the Broubster Leans SAC and the absence of similar wetland habitats within the Site, there is no perceptible ecological connectivity

¹⁴ NatureScot: Habitats Regulations Appraisal (HRA): appropriate assessment [online] Available at: <https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra/habitats-regulations-appraisal-hra> [accessed 29/09/2021]

¹⁵ NatureScot (2016) Assessing connectivity with special protection areas. Version 3 – June 2016

¹⁶ Mitchell, C. 2012. Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge. 108pp.

between the Development and SAC, as therefore **no likely significant effects** are predicted, and no Appropriate Assessment is required.

4.2.3 North Caithness Cliffs SPA

Although this designation has terrestrial aspects, the vast majority of the SPA area is coastal/marine, and it is designated for seabird species that would not use inland, terrestrial habitats. Although designated for peregrine, a largely inland bird species, the Site is located outwith the core breeding season range (2km) for the species.

In light of the above, there is understood to be no likely ecological connectivity between the Development and SPA, and therefore **no likely significant effects** are predicted and no Appropriate Assessment is required.

4.3 Shadow Appropriate Assessment

The Caithness Lochs SPA is a 1381.65 ha complex of six waterbodies spread across approximately 30 km from Broubster, south east of Reay to Loch of Wester, north of Wick⁸.

As detail in Section 3.1.3, no feeding swan or goose species associated with the Caithness Lochs SPA were recorded feeding within the Site or the LO boundary. Foraging predominantly occurred within improved grassland, stubble fields and other arable habitats surrounding Baillie Wind Farm and the wider local area, which, as evident from the Phase 1 habitats survey results (see Section 3.2.1), are absent from the Site and LO boundary.

The SPA is very large in extent, especially compared to the comparatively very small size of the Site, and extensive alternative foraging areas are known to be widely available in the local area.

Even in the worst-case scenario, assuming that SPA birds did utilise the Site, it is considered that due to the small scale of the Site and discreet nature of the works involved in the Development, the magnitude of any effect is likely to be too low to adversely affect the integrity of the SPA or its qualifying features, singularly or cumulatively.

In light of the above, **no adverse effects** on the Caithness Loch SPA are predicted.

5 RECOMMENDATIONS

5.1.1 Good Practise Mitigation Measures

Nesting Birds

All active birds' nests are legally protected from deliberate or reckless damage and disturbance under the Wildlife and Countryside Act 1981. To ensure legislative compliance as construction work will be carried out in accordance with NS guidance for construction and birds¹⁷.

As per this guidance, it is recommended that works, or at the very least vegetation clearance works, should be undertaken outside of the breeding bird season (March-August, inclusive¹⁸) to minimise the risk of legislative non-compliance associated with the Development.

Where this is not possible, it is recommended that nesting bird checks are carried out by a suitably qualified ecologist immediately prior to any vegetation clearance, tree felling or other noisy operations.

¹⁷ NatureScot (2016) Dealing with construction and birds Guidance. March 2016.

¹⁸ Wild Birds: Surveys and Mitigation a for Development Projects. [online] Available at <https://www.gov.uk/guidance/wild-birds-surveys-and-mitigation-for-development-projects>. [Accessed 29/09/21]

5.1.2 Protected Mammals

Although evidence of protected mammals was limited to pine marten, the Site has the potential to support other protected species. It is therefore recommended that pre-construction surveys are carried out to ensure appropriate, up to date baseline data is collected to inform appropriate mitigation measures. Surveys should take place at an appropriate time ahead of construction in accordance with NS survey guidelines⁶.

Should protected species be recorded during pre-construction surveys, a Species Protection Plan (SPP) will be written to ensure the safeguarding of protected species during construction, and to ensure works are legal compliant with protected species legislation.

In addition to the development of the SPP, the implementation during construction of the following good practise control measures is also recommended:

- Cover excavations overnight to prevent animals falling into them. Inspect excavations for the presence of animals before recommencing work on them;
- Any deep excavations that are to be left open overnight should include a means of escape for any animals that may fall in;
- Where possible, works should be limited to the hours from dawn to one hour before sunset;
- Store any building materials above ground on pallets; and
- Any waste material will be placed into skips.

5.2 Enhancement Measures

In addition to the aforementioned mitigation measures, it is recommended that the following enhancement measures are used to enhance biodiversity of the Site.

In order to improve habitat from ground nesting passerine birds, management including cutting and grazing of grassland habitats outwith the Site, and within the LO boundary should be kept to a minimum, or if possible avoided. This would help improve sward height for the benefit of ground nesting birds, and to encourage greater floral diversity for the benefit of invertebrates, as well as species which predate them.

To improve habitats for tree nesting bird passerine species, it is recommended that bird boxes are installed at appropriate locations with the area of broadleaved woodland to improve tree nest availability.

6 CONCLUSION

The Site lies within the operational Baillie Wind Farm, and habitats present were limited to common and widespread heath, grassland and heath/grassland mosaic habitats, as well as areas of bare ground associated with the overhead line transmission tower. Although these habitats are broadly of low ecological value, they have potential to support some common and widespread ground nesting bird species, as well as some protected species, including pine marten, which was recorded within the Site.

In addition, devil's-bit scabious was recorded within grassland habitats, which is the food plant of marsh fritillary (*Euphydryas aurinia*), a butterfly species that is fully protected under the Wildlife and Countryside Act (1981) and is listed on the Scottish Biodiversity List. However, the Site is considered outwith the range of this species¹⁹.

The Site lies within relatively close proximity to the Caithness Lochs SPA, however no foraging has been recorded within the Site, and habitats considered suitable for foraging geese were not recorded. As such, no adverse effects on the integrity of the Caithness Lochs SPA are anticipated from the Development.

¹⁹ Butterfly Conservation - Marsh Fritillary *Euphydryas aurinia* [online] Available at: <https://butterfly-conservation.org/butterflies/marsh-fritillary> (accessed 29/09/2021)

Enhancement measures have been recommended to help improve the ecological value of the habitats immediately adjacent to the Site.

APPENDIX A: FIGURES

Figure 1: Designated Sites

Figure 2: Extended Phase 1 Habitat Survey Results Map

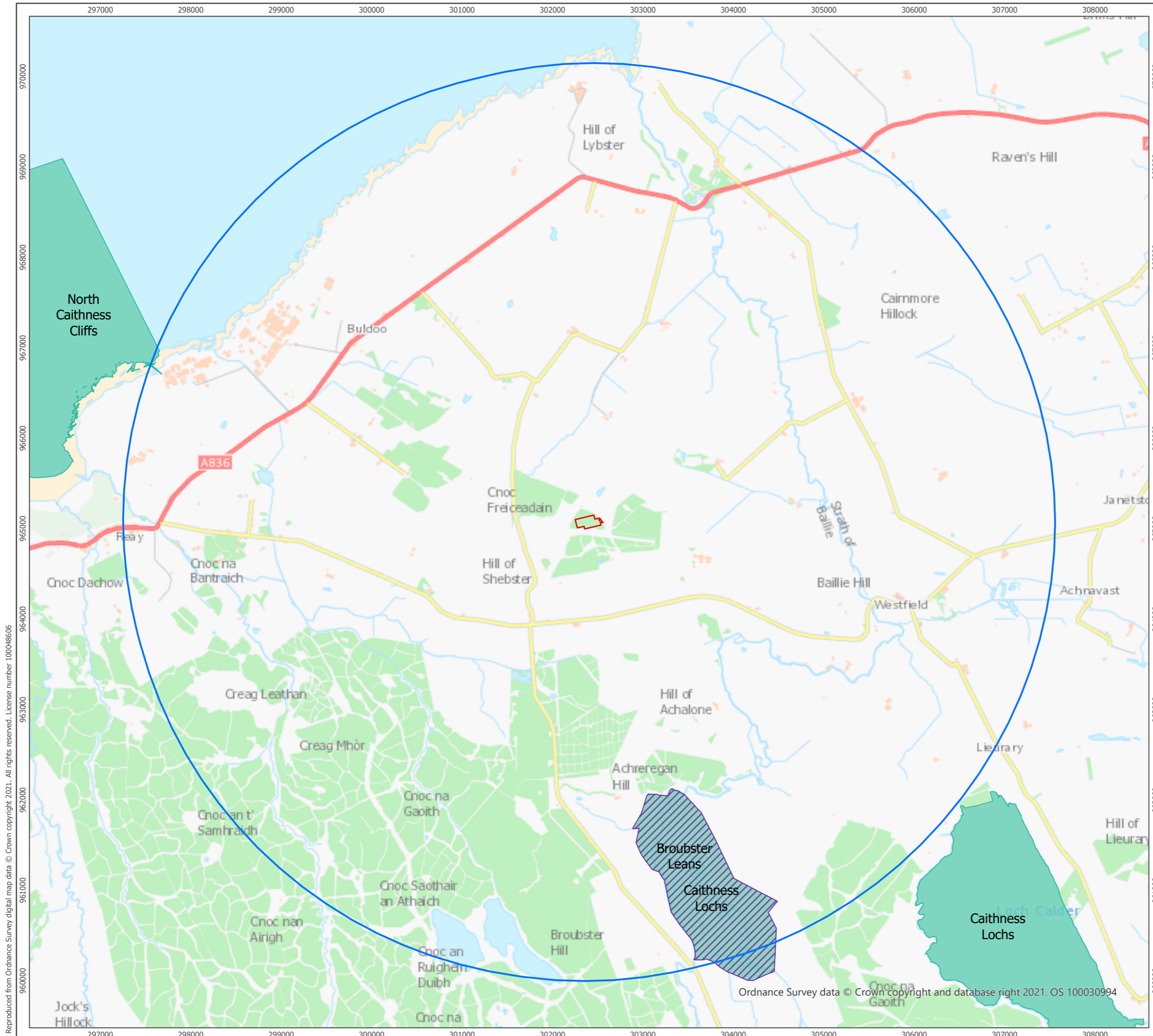
- Site Boundary
- Desk Study Area (5 km buffer of Site Boundary)
- Special Areas of Conservation
- Special Protection Areas

1:40,717 Scale @ A3

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Checked By: NW	Date: 29/09/2021

Designated Sites Map
Figure 1

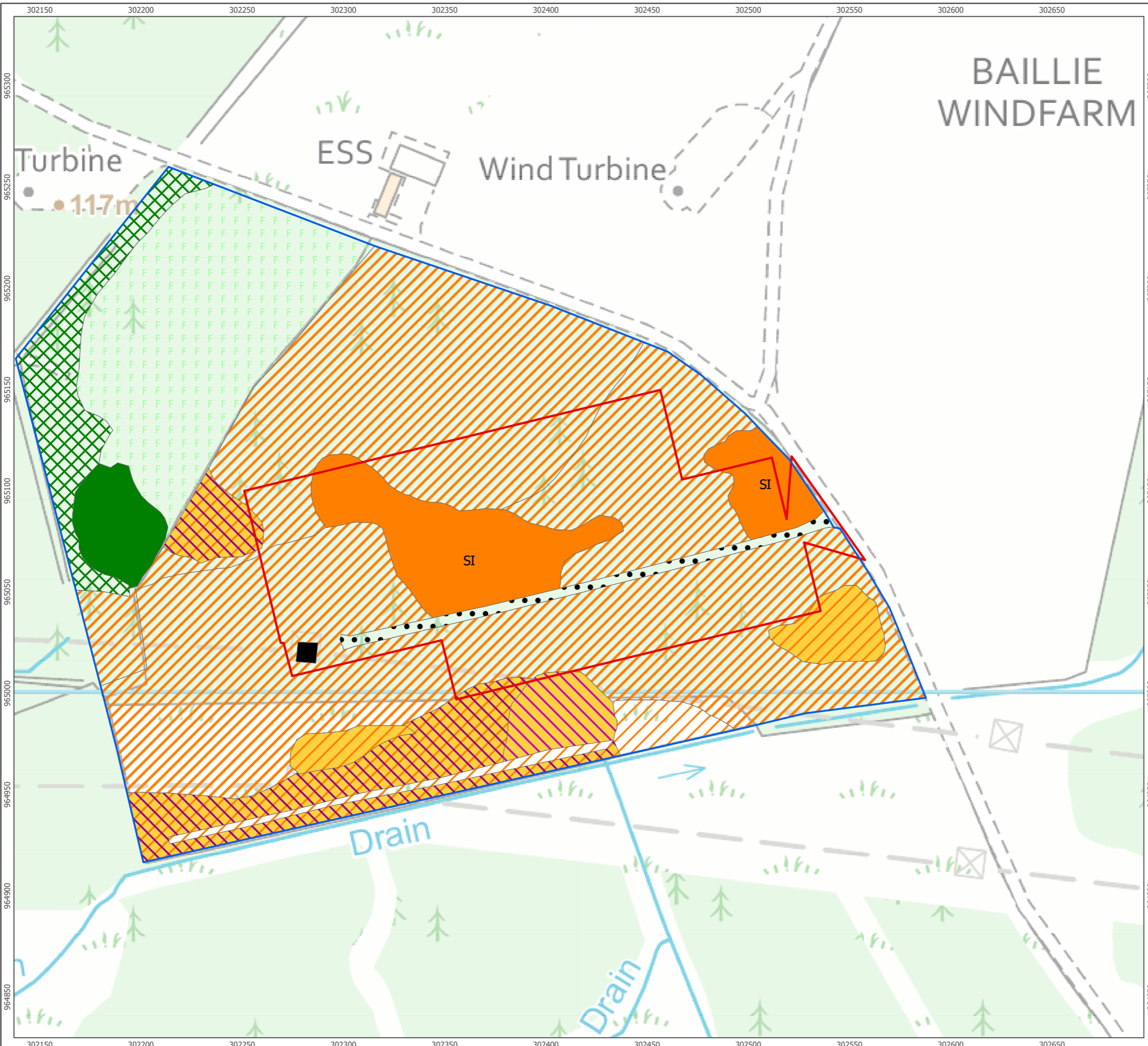
Baillie Greener Grid Park
Preliminary Ecological Appraisal



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BAILLIE WINDFARM



- Site Boundary
- Land Ownership Boundary
- Acid grassland - semi-improved
- Acid grassland - unimproved
- Bare ground
- Broadleaved woodland - semi-natural
- Buildings
- Coniferous woodland - recently felled
- Dry heath/acid grassland
- Neutral grassland - semi-improved
- Scrub - dense/continuous
- Wet dwarf shrub heath
- Wet heath/acid grassland

1:1,836 Scale @ A3

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Extended Phase 1 Habitat Survey Results Figure 2

Baillie Greener Grid Park Preliminary Ecological Appraisal