

**Spittal to Loch Buidhe to Beaully 400 kV
OHL Connection
Environmental Impact Assessment
Volume 5 | Technical Appendix**

**Appendix 9.2 | Ornithology Technical
Report - Sections A and B**

July 2025



Technical Report

Spittal to Loch Buidhe Ornithology Surveys

May 2023 – August 2024

ERM

March 2025



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Executive Summary

Between May 2023 and August 2024, the route for the northern half of the proposed Beaulieu - Spittal Overhead Line was the subject of a suite of ornithology surveys across the potential route options.

Surveys were completed to agreed methodologies and in line with NS guidance with the following surveys carried out either in focussed areas or along the entire route:

- Vantage point (VP) surveys along the route options, with the data presented in this report covering the final route choice;
 - Surveys consisted of an average of six hours of survey per VP / month, with a target of twelve months of surveys;
- Breeding bird surveys, carried out in 2023 and 2024 based on a Brown and Shepherd survey methodology (as detailed in section 3.3.2);
 - Surveys were carried out in 2023 and 2024; due to low wader numbers recorded in 2023, in identified sensitive areas, surveys were repeated in 2024 to confirm whether the low breeding bird activity results from 2023 reflected the adverse weather experienced in that spring (or not);
 - Surveys covered the route plus a 500 m corridor;
 - Surveys also encompassed substation locations;
- Breeding raptor surveys - carried out in 2024 along the route, with a two-visit survey, but utilising breeding bird survey data to improve the robustness of the territory analysis;
- Breeding diver, duck and grebe surveys - carried out in 2023 and 2024, with surveys extending out to waterbodies situated within 2km of the route to survey for breeding divers and sensitive/scarce ducks and grebes;
- Woodland grouse surveys - carried out in spring 2024 at dawn to survey for lekking black grouse. As there was no recent historic evidence of capercaillie breeding along this section of the proposed route no dedicated surveys were conducted;
- Foraging goose surveys – winter walkover surveys were carried out in winter 2023/24 over three areas where it was identified Special Protection Area (SPA) populations of geese and swans could be foraging in proximity to the Overhead Line (OHL) route;
- Roosting goose and swans – in addition to foraging surveys, additional VPs were carried out in winter 2023/24 in areas adjacent to roosts which were not already covered by VPs along the route, to improve understanding of activity in the vicinity of the roosts; and
- Wintering raptor roost VPs – during winter 2023/24 additional VPs were also undertaken at dawn and dusk in areas where previous roosts had been recorded or where there was evidence for there being a possible roost there.

Collectively, the surveys provided a comprehensive set of data which will enable the baseline ornithology receptors of the area to be described. A short synopsis is provided below.

Vantage point surveys

A total of 52 target species were recorded during vantage point surveys. Of these, five species were Annex I listed; (common tern, dunlin¹, golden plover, sandwich tern, short-eared owl), five species were Schedule 1 listed; (barn owl, goshawk, greenshank, greylag goose², whimbrel), and 12 species were listed on both Annex I and Schedule 1 (black-throated diver, golden eagle, hen harrier, little gull, marsh harrier, merlin, osprey, peregrine, red kite, red-throated diver, white-tailed eagle, whooper swan).

Of the 52 species recorded, nine species (golden plover, golden eagle, greylag goose, hen harrier, merlin, osprey, red kite, red-throated diver, and white-tailed eagle) recorded ten flight segments or more.

Of the 52 species recorded, four species (greylag goose, hen harrier, osprey, and red kite) recorded significant activity (i.e. 100 flight segments or more).

Non-Annex I and / or Schedule 1 species with significant activity recorded comprised common gull, curlew, great black-backed gull, herring gull, and lapwing.

Breeding bird surveys

A total of thirteen Annex I and / or Schedule 1 listed species were recorded breeding within the survey area. These were crested tit, crossbill, dunlin, golden plover, greenshank, greylag goose, hen harrier, merlin, osprey, red kite, red-throated diver, Scottish crossbill, and white-tailed eagle.

Breeding raptor surveys

Seven Annex I and / or Schedule 1 listed raptor species (golden eagle, hen harrier, merlin, osprey, peregrine, red kite, and white-tailed eagle) were identified along the route. Of these, breeding territories were identified for hen harrier, merlin, osprey, red kite and white-tailed eagle.

Other Annex 1 and / or Schedule 1 raptor species recorded included marsh harrier (recorded during VP surveys only), short-eared owl (recorded during VP and breeding bird surveys only) and barn owl (recorded during VP and breeding bird surveys only).

Other raptor species recorded included buzzard, kestrel, sparrowhawk and tawny owl.

Divers, grebes and ducks

Two red-throated diver breeding lochans were identified located within the breeding bird survey buffer.

Woodland grouse

No black grouse leks were identified. Birds were heard calling in woodland north of Melvich Lodge, and there was an incidental sighting of four males in May.

¹ Only the *schinzii* subspecies which is the subspecies breeding in the UK is Annex I listed.

² Schedule 1, Part II listed species where birds are afforded special protection during the close season which is 1 February to 31 August (21 February to 31 August below high-water mark), but which may be killed or taken outside this period. With regards greylag goose, this only applies to the Outer Hebrides, Caithness, Sutherland and Wester Ross only.

Foraging geese

Surveys of potential foraging areas recorded usage by several goose and swan species (greylag goose, pink-footed goose, Canada goose, mute swan and whooper swan), enabling information to be gathered on those fields used most by the species. The most commonly observed species were greylag (peak count of 400 observed in November 2023 south-west of Loch Watten) and pink-footed goose (peak count of 300 observed in February 2024 in Strathfleet south-west of Golspie).

Goose roosts

Greylag goose, pink-footed goose, mute swan and whooper swan were all recorded during the additional winter goose and swan roost vantage point surveys, with roosts confirmed (with birds recorded on the water at least once during the 6 months of surveys) at Loch of Toftingall, Loch Stemster, Loch Brora, Loch Lunndaidh, and at the mouth of the River Fleet.

Wintering raptor roosts

Two potential red kite roost locations were identified on the southern portion of the alignment: one in the Strath Carnaig area; and the second near Rogart.

Survey data gathered will enable a detailed assessment of the proposed OHL route, and for mitigation measures to be developed to protect the ornithological interests.

1 Introduction

1.1 Terms of Reference

In May 2023, Atmos Consulting Ltd. was commissioned by ERM to undertake ornithological surveys in relation to the possible route for a proposed SSEN overhead powerline on land from Spittal to Loch Buidhe, situated in Highland Region, Scotland.

The proposed overhead line route (hereafter referred to as the “Site”) has been subject to avian surveys from May 2023 continuing through to August 2024.

1.2 Site Location and Description

The Site extends from Spittal (located approximately 12km south-south-east of Thurso) to Loch Buidhe (located approximately 7.2km to the north-east of Bonar Bridge) (Figure 1, Appendix A refers).

The Site encompasses a variety of habitats including moorland, peatland, blanket bog, scrub, mixed woodlands, and agricultural fields predominately used for grazing livestock.

The Site has been divided into two sections:

- Section A – from Spittal to tower location 202, inland from Kintradwell (approximate National Grid Reference NC 90212 08783);
- Section B – from tower location 202 to Loch Buidhe.

Section A originates at the proposed new Spittal area Substation (Banniskirk), following a southerly direction west of Dunbeath, Berriedale and Helmsdale before continuing south-west to north of Brora. There are numerous designated sites including Special Areas of Conservation (SACs), Special Protected Areas (SPAs) and Sites of Special Scientific Interest (SSSIs) along this section including the Caithness and Sutherland Peatlands SAC, SPA and SSSI and the East Caithness Cliffs SPA. The peatlands in the area form part of the Flow Country (an intact and expansive blanket bog system that stretches across Caithness and Sutherland). The Flow Country was inscribed on the World Heritage List to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as of July 2024. The terrain in the area is mix of moderate hills with some steep slopes, and areas with more gradual undulating terrain.

Section B of the Proposed Development originates north of Brora, heading generally south-west towards Loch Buidhe Substation and the proposed new Loch Buidhe area Substation (Carnaig). Section B passes through the Strath Carnaig and Strath Fleet Moors SPA and SSSI which extends from the west of Golspie to Loch Buidhe. The terrain in this section has a mix of high hills and steep slopes.

2 Ornithological Legislation and Conservation Status

2.1 Wildlife and Countryside Act 1981 (as amended) & Conservation (Natural Habitats & c.) Regulations 1994 (as amended in Scotland)

The Wildlife and Countryside Act 1981 (as amended) (WCA) is the principal mechanism for the legislative protection of wildlife in Great Britain. All wild birds and their active nests, eggs and young are protected from damage, destruction or capture under the WCA. Bird species listed on Schedule 1 gain additional protection particularly around their nests, with disturbance listed as an offence, and with special penalties for breaches of the law related to those Schedule 1 species. The WCA also provides the mechanism by which the Conservation of Wild Birds (Directive 2009/147/EC, the 'Birds Directive') is transposed into UK law, allowing for the designation of Special Protection Areas (SPAs).

The Birds Directive lays out special measures to conserve wild birds, their eggs, nests and habitats, and applies special protection to those species as listed under Annex I of the Directive. This is to apply special protection, in particular, to those species which are migratory and are considered to be of a shared heritage and conservation responsibility across all European Union member states.

The Conservation of Habitats and Species Regulations (1994) (as amended in Scotland), or 'Habitat Regulations', are the method by which the relevant European Directives are translated into Scottish law, with the most recent modification consisting of the Amendment (Scotland) 2012 revision. Specifically, the Habitat Regulations transpose the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and Natural Habitats and Wild Fauna and Flora (92/43/EEC, the 'Habitats Directive') into a Scottish context. Despite the departure of the UK from the EU, these provisions remain in Scots law.

2.2 Nature Conservation (Scotland) Act 2004

The Scottish Biodiversity List (SBL) was developed to meet the requirements of Section 2 (4) of the Nature Conservation (Scotland) 2004 Act (NCSA) for the conservation of biodiversity. This legislation required Scottish Ministers to publish lists of species of flora, fauna and habitats considered to be of principal importance for the purposes of biodiversity. Taken together, the WCA (1981) and NCSA (2004) ensure that all wild birds, their nests and eggs are protected by making it an offence to:

- Intentionally or recklessly kill, injure or take any wild bird;
- Intentionally or recklessly take, damage or destroy the nest of any wild bird while it is in use or being built;
- Intentionally or recklessly take or destroy the egg of any wild bird; and
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building or is at (or near) a nest with eggs or young or disturb the dependent young of such a bird without a Schedule 1 licence provided by NatureScot.

2.3 Ramsar

Ramsar sites are designated under the Ramsar Convention on Wetlands (Ramsar 1971), which requires signatories to maintain the ecological character of their internationally important wetlands.

Within the Scottish context, most Ramsars are also SPAs or Natura sites (i.e SPAs in this context), except for specific sites where they are designated as wetland habitats only. Generally, they have been treated as being the equivalent to Natura sites within the planning framework, although the situation has been complicated by recent statements on the Scottish Government website which state that Ramsar qualifying interests which coincide with the interests of Natura sites are given the same level of legal protection; where interests are not the same as Natura interests but instead match SSSI interests, they will receive protection under the SSSI regime. As such, although sites designated as Ramsar sites will be identified as such in the text, any consideration will address them as SPAs only.

2.4 Biodiversity Action Plans

The UK Biodiversity Action Plan (UK BAP) was the UK's response to the commitments of the Rio Convention on Biological Diversity. The plan outlines action for 26 species of birds of conservation importance/concern.

The Nature Conservation (Scotland) Act 2004 places a duty of care on public bodies to further the conservation of biodiversity in Scotland, the execution of which is implemented through Local Biodiversity Action Plans (LBAPs).

The 'UK Post-2010 Biodiversity Framework' succeeded the UK BAP and 'Conserving Biodiversity – the UK Approach'. The framework considers the 'Aichi targets' following a conference in Japan in 2010 and publication of the new EU Biodiversity Strategy (EUBS) in 2011 and complements existing UK biodiversity strategies and targets by identifying activities required to achieve them. This framework places more weight on national responses such as the Scottish Biodiversity Strategy, than on a UK wide response.

2.5 Birds of Conservation Concern 5

The leading government (Joint Nature Conservation Committee (JNCC)) and non-government conservation organisations in the UK jointly reviewed the population status of the 247 bird species that are regularly found within the United Kingdom using data from national monitoring schemes. This was most recently reviewed in 2021 (Stanbury *et al.*, 2021) and was an update to the earlier 2015 BoCC report.

Based on seven quantitative criteria, each species has been placed on one of three lists:

- Red list - species that are globally threatened, have had an historical population decline in the UK from 1800 -1995, a rapid (> or = 50%) decline in UK breeding population over the past 25 years, or a rapid (> or = 50%) contraction of UK breeding range over the past 25 years; Loch Buidhe to Spittal Overhead Line January 2024;
- Amber list - species that have had a historical population decline from 1800-1995 but are recovering (population size has more than doubled over the past 25 years), a moderate (25-49%) decline in UK breeding population over the past 25 years, a

moderate (25-49%) contraction of UK breeding range over the past 25 years, a moderate (25-49%) decline in UK non-breeding population over the past 25 years, or species with unfavourable conservation status in Europe also known as Species of European Conservation Concern (SPEC); and

- Green list - species that have no identified threat to their population status.

2.6 Ornithological Guidance

NatureScot, formerly Scottish Natural Heritage³ has produced several guidance documents in relation to the assessment of impacts of wind farm developments⁴ on bird populations. The following guidance informed the survey work and any subsequent assessments:

- Monitoring the Impact of Onshore Wind Farms on Birds (2009a);
- Assessing the Cumulative Impacts of Onshore Wind Energy Developments (2012a);
- Assessing Connectivity with Special Protection Areas (SPAs) (2016a);
- Environmental Statements and Annexes of Environmentally Sensitive Bird information (2016b);
- Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds (2016c);
- Recommended bird survey methods to inform impact assessment of onshore wind farms (2017b); and
- Assessing the Significance of Impacts from Onshore Wind Farms on Birds at Sites Outwith Designated Areas (2018).

³ References will therefore still refer to 'SNH' as this was the publisher of guidance etc at the time of publication.

⁴ While the proposed development is not a wind farm, wind farm guidance has been adopted to inform the survey design (as stated in *Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds* (SNH, 2016c).

3 Methodology

3.1 Desktop Study

3.1.1 Designated Sites

The desktop study consisted of a search for statutory and non-statutory designated sites with avian qualifying features within 10km of the Site, increased to 20km for Special Protection Areas with qualifying interests for geese as a result of NatureScot guidance on connectivity (SNH, 2016a), as well as a data review for sources of information relating to bird populations on and within the vicinity of the Site, including data from Royal Society for the Protection of Birds (RSPB) and Highland Raptor Study Group (HRSG).

3.2 Target Species

Target avian species were identified as those that are either afforded specific legislative protection (i.e. of high conservation interest) or represent qualifying interests in designated sites in the wider area. Reference was then made to guidance for the identification of potentially vulnerable species (SNH, 2017b; SNH, 2018). The final list of target species was determined using these guidance documents and data from the HRSG and RSPB, along with the likelihood of each species being present at the site and in the environs (based upon available habitat, experience of working in this region and geographical location).

Target species are those:

- identified as potentially at risk from impacts of onshore wind farms (SNH, 2018);
- identified as potentially at risk from impacts of powerlines (SNH, 2016c);
- species listed in Annex I of the EC Wild Birds Directive (2009/147/EC);
- non-passerines listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended);
- species listed on the Scottish Biodiversity List (SBL); and
- red-listed species on BoCC 5.

3.3 Survey Methodologies

Survey methodologies were in accordance with SNH (2016c and 2017b) guidance as well as survey methodologies described in Gilbert *et al.* (1998) and Hardey *et al.* (2013).

All surveys were carried out by experienced ornithological surveyors. Any survey works that required a licence were carried out by surveyors holding (or listed as an associate on) a NatureScot Schedule 1 bird licence.

3.3.1 Vantage Point Surveys

Vantage Point (VP) surveys were initiated in May 2023 and undertaken following the methods recommended by NatureScot guidance at the time of survey (SNH, 2016c and 2017b). In accordance with OHL survey guidelines (SNH, 2016c), surveys were undertaken over a minimum period of 12 months, unless stated (Section 3.5 refers).

During the project the alignment was subject to design iterations. While VP surveys were conducted over a wide area to accommodate these possible design iterations, reporting and assessment is based on those VP locations that overlook the final alignment design. VP locations were sited to provide coverage where existing records or habitat present was considered suitable to support species of conservation concern and / or targeted at areas within connectivity distance of designated sites for relevant qualifying bird species.

Each VP survey was undertaken by a suitably experienced single observer in conditions of good visibility. Acceptable weather conditions included winds no stronger than Beaufort force six, and no persistent rain. The surveyor positioned themselves as inconspicuously as possible to minimise their effect on the birds' natural behaviour. The surveyor surveyed a 180° arc centred on a predetermined view bearing. While the VP was selected to ensure that the viewshed covered the required study area out to 2km, as per NatureScot guidance, observations from the VP have not been constrained to a 2km radius with any observations beyond 2km recorded as incidental records.

The viewshed was based on visibility over bare ground at an imaginary layer 5m above the ground. Appendix A, Figures 3 and 15 show the VP locations and their viewsheds.

Table 1 presents the details of the all the VP locations.

Table 1: Details of Vantage Point Locations

VP Number	Easting	Northing	View Bearing (degrees)	VP Location on the Route Alignment	Notes
1	316774	955631	35	Section A – Spittal to Brora	
2	319475	953770	35	Section A – Spittal to Brora	
5	321061	949802	330	Section A – Spittal to Brora	
6	317382	948637	110	Section A – Spittal to Brora	
7	316810	945807	90	Section A – Spittal to Brora	
8	318752	943610	260	Section A – Spittal to Brora	
9	317199	942196	80	Section A – Spittal to Brora	
9 alternative	318974	941271	259	Section A – Spittal to Brora	Moved in May 2024 due to access restrictions
10	319515	939578	270	Section A – Spittal to Brora	
11	317762	938802	90	Section A – Spittal to Brora	
12	316634	936119	110	Section A – Spittal to Brora	
13	316694	934279	180	Section A – Spittal to Brora	
14	314863	933542	135	Section A – Spittal to Brora	

VP Number	Easting	Northing	View Bearing (degrees)	VP Location on the Route Alignment	Notes
15	315857	931608	240	Section A – Spittal to Brora	
16	313614	929715	135	Section A – Spittal to Brora	
17	313281	930698	118	Section A – Spittal to Brora	
18	311970	926346	30	Section A – Spittal to Brora	
19	313367	926212	300	Section A – Spittal to Brora	
20	312288	924663	240	Section A – Spittal to Brora	
21	309696	923508	135	Section A – Spittal to Brora	
22	308767	921269	80	Section A – Spittal to Brora	
23	307855	921281	130	Section A – Spittal to Brora	
24	307476	919308	225	Section A – Spittal to Brora	
27	302472	917949	185	Section A – Spittal to Brora	
28	301183	916062	300	Section A – Spittal to Brora	
36	290259	908601	80	Section A – Spittal to Brora	
38	289432	906857	0	Section B – Brora to Loch Buidhe	
39	287870	908514	140	Section B – Brora to Loch Buidhe	
40	287714	907447	200	Section B – Brora to Loch Buidhe	
41	284644	907492	155	Section B – Brora to Loch Buidhe	
44	281069	906323	155	Section B – Brora to Loch Buidhe	
47	278436	903968	135	Section B – Brora to Loch Buidhe	
50	277517	900762	325	Section B – Brora to Loch Buidhe	
52	273836	900888	30	Section B – Brora to Loch Buidhe	
53	276311	901314	270	Section B – Brora to Loch Buidhe	
54	273630	900003	225	Section B – Brora to Loch Buidhe	
55	275081	900357	190	Section B – Brora to Loch Buidhe	

VP Number	Easting	Northing	View Bearing (degrees)	VP Location on the Route Alignment	Notes
56	271267	898979	190	Section B – Brora to Loch Buidhe	
57	267743	898405	170	Section B – Brora to Loch Buidhe	
58	264833	898320	170	Section B – Brora to Loch Buidhe	
59	306749	921037	110	Section A – Spittal to Brora	
60	304836	920289	140	Section A – Spittal to Brora	
62	301251	917232	330	Section A – Spittal to Brora	
63	298706	918591	170	Section A – Spittal to Brora	
65	293746	915258	120	Section A – Spittal to Brora	
66	292702	913401	150	Section A – Spittal to Brora	
67	291030	911135	120	Section A – Spittal to Brora	
68	303662	919026	339	Section A – Spittal to Brora	
69	296064	918672	170	Section A – Spittal to Brora	
71	298510	915825	17	Section A – Spittal to Brora	
72	297173	916382	17	Section A – Spittal to Brora	
75	276856	903203	153	Section B – Brora to Loch Buidhe	
76	318799	952622	95	Section A – Spittal to Brora	
77	294795	916611	113	Section A – Spittal to Brora	VP 69 moved in June and renumbered for better coverage

Each survey at each VP location lasted no longer than three hours duration. Other survey work and estate activity on the Site was considered, to minimise the potential for disturbance of baseline conditions and issues compromising data integrity. VPs were completed to cover all daylight hours (between dawn and dusk) in any given survey day.

During each VP survey, the landscape was scanned continuously until a target species was detected. Once detected, the bird was observed until it landed or flew out of sight, with monitoring occurring so long as it remained within the viewshed field of view. The time of first detection was noted, and the exact time spent flying in a specified height band was recorded.

Flight lines were recorded within the following three height bands:

- A - < 5m;
- B - 5m – 70m; and,
- C - > 70m.

Height band B is where collision risk can occur, being the height where powerline cables will be situated once the proposed development is active. Birds at this height are therefore considered to be at collision risk height. Details of the date, timing, and surveyor for all VP surveys are provided in Appendix B.

3.3.2 Brown and Shepherd Breeding Bird Survey

A breeding bird survey was carried out using the Brown & Shepherd upland breeding bird survey method for moorland habitats (Brown & Shepherd 1993) using two visits (increased to three visits at the locations of the proposed substations). Two visits were used because given the scale and scope of the Proposed Development, impacts were more likely to occur on larger species, such as waders, occurring in a lower density rather than the more common passerines along the route. Brown & Shepherd (1993) has been modified (e.g. NatureScot 2017) to improve the robustness particularly for smaller less visible species. This technique is used to census upland breeding waders such as golden plover *Pluvialis apricaria*, dunlin *Calidris alpina*, greenshank *Tringa nebularia* and other species of open upland moor but can be used to record all moorland species and provides a reliable estimate for most other species.

Surveys were completed during May to July in 2023 and April to August 2024, avoiding high winds and other unfavourable weather conditions. The method is based on a constant search effort, allowing 20 to 25 minutes per 500 x 500m quadrat of open land. A predetermined route through each quadrat was followed so that all areas of each quadrat were approached to within at least 100m, with the surveys taking place between 08:30 and 18:00, in accordance with guidance.

The behaviour and location of each individual bird was recorded on a 1:25,000 scale map, using standard British Trust for Ornithology (BTO) codes. Records from each survey were combined into a final visit map, so that duplicate records of the same birds could be removed.

Birds were assumed to be confirmed breeding at a location if one or more of the following was recorded:

- Presence of a nest, eggs or young (including newly fledged); and/or
- A bird was observed carrying food or breeding material.

In the absence of either of these indicative behaviours, birds were classified as probable breeding if one or more of the following was recorded:

- Courtship, displaying or singing in the same location on more than one visit;
- Territorial disputes.

In the absence of any of the above indicative behaviours, birds were classified as possible breeding if one or more of the following was recorded:

- Singing or displaying on one visit;
- A pair in suitable habitat; and/or
- Birds reacting antagonistically on one visit.

Other records (e.g., of a bird in flight over an area commuting) were recorded as activity of non-breeding birds. The surveyor also recorded all passerines observed during the survey.

3.3.3 Breeding Raptors

Two surveys were undertaken between April and August 2024.

Breeding surveys for both golden eagle *Aquila chrysaetos* and white-tailed eagle *Haliaeetus albicilla* comprised two visits, undertaken between March and July. Surveys covered suitable habitat extending up to 6km from the OHL corridor, where access was permitted.

Surveys for all other breeding raptors extended up to 2km from the OHL corridor, where access permitted.

The identity and activity of all raptors were recorded on 1:25,000 scale maps, using standard BTO codes for all species and behaviour.

Surveys were targeted to cover areas of the route considered suitable for breeding raptor territories and was also informed by historic data of known nest sites and topography.

3.3.4 Breeding Divers, Ducks and Grebes

Breeding diver, duck and grebe surveys were undertaken in 2023 and 2024. These were based around species specific methodologies as detailed in Gilbert *et al.* (1998), but which were then adapted given the range of species which could be encountered, to produce a consolidated approach for all waterbodies.

All waterbodies within the breeding bird survey area (i.e. within 500m of the OHL corridor) were surveyed. In addition, further surveys were undertaken at suitable lochans beyond this area (provided they were not covered by other surveys such as VPs), out to a distance of 2km, where access permitted.

Surveys were undertaken between May and July to determine the presence of any breeding diver, duck and / or grebe species (Figures 8 and 20, Appendix A and Table 2 refers).

Table 2: Details of Surveyed Lochs

Loch	Easting	Northing	Location of the Route Alignment	Notes
Loch Watten	322165	956229	Section A – Spittal to Brora	
Waterbody at Banniskirk Mains	317613	957160	Section A – Spittal to Brora	Within the viewshed of VP1.
Loch of Toftingall	319021	952332	Section A – Spittal to Brora	Surveyed in 2024 only due to lack of access in 2023. Within the viewshed of VP76 and surveyed during breeding bird surveys in 2024.
Loch Rangag	317795	941634	Section A – Spittal to Brora	Within the viewshed of VP9 and surveyed during breeding bird surveys in 2023 and 2024.

Loch	Easting	Northing	Location of the Route Alignment	Notes
Loch Stemster	318905	942353	Section A – Spittal to Brora	Within the viewshed of VPs 8 and 9, and surveyed during breeding bird surveys in 2023 and 2024.
Borgue Loch	312013	927073	Section A – Spittal to Brora	Within the viewshed of VP18. Location is just outwith the breeding bird survey buffer of 500m and presence of notable species recorded during breeding bird surveys in 2023 and 2024.
Loch an Tubairnach	287598	908877	Section B – Brora to Loch Buidhe	
An Dubh-lochan	288052	907749	Section B – Brora to Loch Buidhe	Surveyed during breeding bird surveys in 2023.
Loch Brora	285354	907046	Section B – Brora to Loch Buidhe	Location is within the viewshed of VP41. Surveyed during breeding bird surveys in 2023. Survey extents limited to 2km either side of the OHL corridor.
Loch Horn	279809	906040	Section B – Brora to Loch Buidhe	Location is within the viewshed of VP44. Surveyed during breeding bird surveys in 2023 and 2024.
Loch nan Caorach	280348	902032	Section B – Brora to Loch Buidhe	
Loch Lunndaidh	278437	900838	Section B – Brora to Loch Buidhe	
Loch Farlary	277229	905057	Section B – Brorta to Loch Buidhe	Within the viewshed of VP74. Included to cover a change in route alignment that was subsequently not progressed beyond May 2024.
Loch Salachaidh	276207	903657	Section B – Brora to Loch Buidhe	Within the viewshed of VP74. Included to cover a change in route alignment that was subsequently not progressed beyond May 2024.
Loch Ruagaidh	273311	899409	Section B – Brora to Loch Buidhe	Within the viewshed of VP54, and surveyed during breeding bird surveys in 2023.
Loch Laoigh	273120	895980	Section B – Brora to Loch Buidhe	
Loch Buidhe	266262	898440	Section B – Brora to Loch Buidhe	Within the viewshed of VPs 57 and 58. Surveyed during breeding bird surveys in 2023 and 2024.

In addition to the above, and following the same methodology as a standard VP survey (Section 3.2.1 refers), a single dawn VP survey was undertaken at Loch Farlary (Table 3

refers). This survey was undertaken in recognition of historic breeding diver activity recorded in the area. Only a single survey was undertaken as a proposed change in route alignment, bringing the alignment closer to the loch, was never progressed beyond May 2024. Figure 27 (Appendix A refers) shows the VP location and viewshed.

Table 3: Details of Vantage Point Locations

VP Number	Easting	Northing	View Bearing (degrees)	VP Location of the Route Alignment	Notes
300	277262	905215	180	Section B – Brora to Loch Buidhe	Only one survey undertaken as the proposed route deviation taking the route closer to the loch was never progressed beyond May 2024.

3.3.5 Breeding Woodland Grouse

Two survey visits were undertaken in April and May 2024 to determine the presence of black grouse *Lyrurus tetrix* and capercaillie *Tetrao urogallus*.

The black grouse lek survey followed the National Black Grouse Survey Instructions (Hancock *et al.*, 1999) summarised in Gilbert *et al.* (1998), which involves a preparatory visit followed by one or more further visits between the last week in March and mid-May, carried out 1 hour before sunrise to 2 hours after (along a predetermined route), to locate leks and count any lekking birds. Based on the work carried out in 2023, areas considered suitable for black grouse and capercaillie were identified with the actual surveys carried out in 2024. Given historical records and habitats present, surveys were particularly targeted at black grouse. As a result, the survey area included black grouse preferred habitats along the route and a 1.5km buffer of the Site boundary (the recommended buffer distance in NatureScot guidance (SNH, 2017b)).

Based on historic data, these surveys were targeted at suitable locations around Golspie and Brora (Figures 9 and 21, Appendix A and Table 4 refers).

Table 4: Details of Woodland Locations

Woodland	Easting	Northing	Location of the Route Alignment	Notes
Kildonan	293792	912690	Section A – Spittal to Brora	
Torrish	294536	916708	Section A – Spittal to Brora	
Sutherland (northern extent - around Loch Horn)	279741	905370	Section B – Brora to Loch Buidhe	
Sutherland (southern extent)	278912	904900	Section B – Brora to Loch Buidhe	
Morvich (northern extent)	273792	903080	Section B – Brora to Loch Buidhe	Surveys cancelled after one visit as deviation to the route was no longer being considered
Morvich	275575	901167	Section B – Brora to Loch	

Woodland	Easting	Northing	Location of the Route Alignment	Notes
(eastern extent)			Buidhe	
Loch Buidhe (western extent – around substation)	265478	897721	Section B – Brora to Loch Buidhe	
Loch Buidhe (eastern extent)	267799	898087	Section B – Brora to Loch Buidhe	

3.3.6 Wintering Goose Foraging

Goose walkover surveys commenced in November 2023 and were carried out during winter and migratory periods until April 2024.

All fields were numbered and transects were carried out approximately a month apart, ensuring that each field / numbered area was scanned to check for the presence of feeding waterbirds, specifically geese and swans. Surveys were undertaken outside the dawn / dusk period to ensure records comprised the feeding locations of birds.

Based on available historic data (Mitchell, 2012), surveys were targeted on three specific locations:

- In the fields between Spittal and Watten;
- In the fields between Doll and Brora; and
- In the fields of Strathfleet.

3.3.7 Wintering Goose and Swan Roost VPs

VP surveys to identify winter goose and swan roost locations were undertaken monthly between November 2023 and April 2024.

Surveys followed the same methodology as the standard VP surveys (Section 3.2.1 refers) and were undertaken either at dawn (commencing half an hour before sunrise and ending 2.5 hours after) or dusk (commencing 2.5 hours before sunset and ending half an hour after).

Locations were identified based on historic data and Table 5 presents the details of the locations. Appendix A, Figures 11 and 23 show the VP locations and their viewsheds.

Table 5: Details of Wintering Goose and Swan VP Locations

VP Number	Easting	Northing	View Bearing (degrees)	VP Location on Route Alignment	Notes
GS101	316855	954306	35	Section A – Spittal to Brora	
GS102	319245	951650	0	Section A – Spittal to Brora	
GS103	318606	942168	75	Section A – Spittal to Brora	
GS104	287627	909392	180	Section B – Brora to Loch Buidhe	Surveys were discontinued in December 2023 due to difficulties surrounding access.

VP Number	Easting	Northing	View Bearing (degrees)	VP Location on Route Alignment	Notes
GS105	285530	908160	255	Section B – Brora to Loch Buidhe	
GS106	280242	905599	315	Section B – Brora to Loch Buidhe	
GS107	278018	900723	65	Section B – Brora to Loch Buidhe	
GS108	277460	898168	320	Section B – Brora to Loch Buidhe	
GS109	268984	897406	85	Section B – Brora to Loch Buidhe	Initial scoping visit determined that this location supported dried out bog and the location was considered unsuitable for roosting geese and swans.
GS110	266037	898112	5	Section B – Brora to Loch Buidhe	

3.3.8 Wintering Raptor Roost VPs

VP surveys to identify winter raptor roost locations were undertaken between November 2023 and April 2024. The frequency of surveys varied depending on the species (Table 6 refers).

Surveys followed the same methodology as the standard VP surveys (Section 3.2.1 refers) and were undertaken either at dawn (commencing half an hour before sunrise and ending 2.5 hours after) or dusk (commencing 2.5 hours before sunset and ending half an hour after).

Locations were identified based on historic data and Table 6 presents the details of the locations. Appendix A, Figures 13 and 25 show the VP locations and viewsheds.

Table 6: Details of Wintering Raptor Roost VP Locations

VP Location	View Bearing (degrees)	VP Location on Route Alignment	Notes
HH1	270	Section B – Brora to Loch Buidhe	Surveys undertaken monthly between November 2023 and February 2024, followed by a further survey April 2024 (ERM, 2023).
HH2	30	Section B – Brora to Loch Buidhe	Surveys undertaken monthly between November 2023 and February 2024, followed by a further survey April 2024 (ERM, 2023).
HH3	95	Section B – Brora to Loch Buidhe	Surveys undertaken monthly between November 2023 and February 2024, followed by a further survey April 2024 (ERM, 2023).
HH4	200	Section A – Spittal to Brora	Surveys undertaken monthly between November 2023 and February 2024, followed by a further survey April 2024

VP Location	View Bearing (degrees)	VP Location on Route Alignment	Notes
			(ERM, 2023).
HH5	180	Section A – Spittal to Brora	Surveys undertaken monthly between November 2023 and February 2024, followed by a further survey April 2024 (ERM, 2023).
KT1	0	Section B – Brora to Loch Buidhe	Surveys undertaken monthly between November 2023 and February 2024, followed by a further survey April 2024 (ERM, 2023).
KT2/3	135	Section B – Brora to Loch Buidhe	Surveys undertaken monthly between November 2023 and February 2024, followed by a further survey April 2024 (ERM, 2023).
EA1	0	Section B – Brora to Loch Buidhe	Due to the separation distance from the proposed route alignment, a single survey was undertaken in February 2024 (ERM, 2023).
EA2	0	Section B – Brora to Loch Buidhe	Two surveys were undertaken in January and February 2024 due to the proximity of the route alignment (ERM, 2023).
EA3	135	Section B – Brora to Loch Buidhe	Due to the separation distance from the proposed route alignment, a single survey was undertaken in January 2024 (ERM, 2023).
EA4	285	Section A – Spittal to Brora	Due to the separation distance from the proposed route alignment, a single survey was undertaken in January 2024 (ERM, 2023).
EA5	180	Section A – Spittal to Brora	Due to the separation distance from the proposed route alignment, a single survey was undertaken in January 2024 (ERM, 2023).
EA6	270	Section A – Spittal to Brora	Due to the separation distance from the proposed route alignment, a single survey was undertaken in January 2024 (ERM, 2023).
EA7	270	Section A – Spittal to Brora	Two surveys were undertaken in January and February 2024 due to the proximity of the route alignment (ERM, 2023).
WE1	180	Section B – Brora to Loch Buidhe	Two surveys were undertaken in January and February 2024 due to the proximity of the route alignment (ERM, 2023).
WE2	30	Section A – Spittal to Brora	Two surveys were undertaken in January and February 2024 due to the proximity of the route alignment (ERM, 2023).

3.4 Survey information

3.4.1 Quality Assurance (QA)

After surveys all sheets were collected and reviewed by experienced ecologists (not the surveyor) to ensure Quality Control (QC). Following this, and the resolution of any issues, they were then scanned and inputted into a dedicated database. The database entries were then reviewed by a third ecologist (not the ecologist who inputted the data). The data was then extrapolated by GIS to produce figures and these were then subject to further QA.

Surveys carried out on tablets were added to the GIS data viewer and QA'd in a similar process as detailed above.

3.5 Survey Limitations

3.5.1 Vantage Point Surveys

Access restrictions due to shooting on individual estates impacted on survey effort. In some cases, surveys were delayed and consequently, survey hours were doubled up in individual months, leading to an overlap of breeding and non-breeding season hours. An example of this was at Braemore and Langwell Estate where access was restricted during August and September meaning additional survey effort was undertaken outwith this time to meet the required number of breeding season hours.

For the majority of VP locations, surveys were undertaken over a period of at least one year (SNH, 2016c and 2017b). As the surveys progressed the route alignment was subject to on-going design iterations resulting in a number of VPs becoming redundant as their viewsheds no longer covered the route alignment. Equally, VPs 71, 72, 75, 76 and 77 were adopted in May 2024 as viewsheds from these covered any gaps in coverage of the updated route alignment. As a result, these VPs did not receive the full 12 months of survey as recommended in guidance (SNH, 2016c).

Best practice guidance for wind farm surveys recommends that Individual elements of a bird survey programme should not be split over different years. Due to survey commissioning and land access considerations, breeding season VP surveys were split across the 2023 and 2024 breeding seasons for this Site (May – August 2023 and March – May 2024). Results from both years have been compared and are considered together to provide a representative baseline for the Site. As a result this is not considered to be a significant limitation.

Through the winter months, surveys were impacted by the weather with heavy snow blocking roads and icy conditions making it impossible to get to certain high elevation VPs.

3.5.2 Breeding Bird Surveys

The commissioning of the project in April 2023 meant that early breeding activity in late March / April 2023 which resulted in territory abandonment may have been missed and so there may be an underestimate in the breeding activity observed on Site for that year. As a result, breeding bird surveys were repeated in key parts of the Site in 2024.

NatureScot guidance for power lines (SNH, 2016c) does not provide any methodology and only directs to adopting the methodology as outlined in guidance for onshore wind farm developments, the latest version of which is dated 2017 (SNH, 2017b).

Although NatureScot guidance for onshore wind farm developments (SNH, 2017b) states four surveys are required, only two were undertaken. Consultation with NatureScot was undertaken regarding the proposed survey methodologies (ERM, 2023) where it was subsequently agreed that two survey visits would be sufficient. With a development of this type, key species of concern would be upland moorland waders and key raptor species and not common moorland passerines. Increasing the number of visits has most effect on the ability to survey passerines.

Areas surveyed in 2023 and 2024 differed as a result of changes in the route design and a change in individual access restrictions. Consequently, some areas, notably Torrish, were only surveyed in 2024. The difference in survey area is shown on Figures 5a – 5c, 6a – 6c, 17a – 17c, and 18a – 18c (Appendix A refers).

Results from 2023 surveys highlighted fewer wader observations than might be expected given the habitats present. In an attempt to understand whether this was caused by natural inter-year variation, or was caused by a result of 2023 surveys starting late in the season and thereby potentially missing early season abandonment, 2024 surveys targeted key areas where upland moorland waders and key raptor species would be expected.

As a consequence, a direct comparison between years is not always possible. This is compounded by the fact that surveys in 2023 covered, where access permitted, all possible deviations in route alignment. However in 2024, the route alignment has been refined which resulted in a smaller survey area.

3.5.3 Breeding Raptors

NatureScot guidance for power lines (SNH, 2016c) does not provide any methodology and only directs to adopting the methodology as outlined in guidance for onshore wind farm developments, the latest version of which is dated 2017 (SNH, 2017b).

Although NatureScot guidance for onshore wind farm developments states four surveys are required, only two were undertaken following consultations with NatureScot (ERM, 2023). Due to individual land parcel access restrictions, surveys were undertaken alongside (but not at the same time) as breeding bird surveys. Data from breeding bird surveys and vantage point surveys were also used in assessing the presence of territories which increases the robustness of the surveys.

3.5.4 Breeding Divers, Ducks and Grebes

As the surveys were undertaken consecutively with breeding bird surveys, limitations have already been described in Section 3.5.2. There were no additional limitations specific to these surveys which have been identified.

3.5.5 Breeding Woodland Grouse

Surveys were undertaken in accordance with guidance with two visits to key target areas (based on historical data) undertaken between April and mid-May around dawn (Section 3.3.5 refers). Where possible, to avoid repeated disruption to landowners, visits were scheduled to be undertaken consecutively on the same land parcel as breeding

bird surveys and therefore the limitations have already been described (Section 3.5.2 refers).

3.5.6 Winter Goose Foraging

While NatureScot guidance for windfarms recommends fortnightly surveys, at the request of ERM to replicate the effort undertaken on the southern alignment, and given the type of development, monthly surveys were undertaken. This is not considered to be a significant limitation as the data recorded provides sufficient information to the preferred foraging locations of geese.

3.5.7 Winter Goose and Swan Roost VPs

Through the winter months, surveys were impacted by the weather with heavy snow blocking roads and icy conditions making it impossible to get to certain high elevation VPs. This, coupled with the state of some underutilised estate tracks, meant that surveys were undertaken at the next earliest available opportunity within the survey window.

3.5.8 Wintering Raptor Roost VPs

Through the winter months, surveys were impacted by the weather with heavy snow blocking roads and icy conditions making it impossible to get to certain high elevation VPs. This, coupled with the state of some underutilised estate tracks, meant that surveys were undertaken at the next earliest available opportunity within the survey window.

4 Results

4.1 Desktop Study

4.1.1 Designated Sites

There are 19 designated sites with avian qualifying features in the vicinity (i.e. sites within 10km with avian receptors or within 20km for SPAs with geese as a qualifying feature) of the Site (Figure 2, Appendix A refers). Table 7 lists each designated site, the qualifying features and approximate distance from the Site at its closest point.

Table 7: Designated Sites

Site Name	Qualifying Feature(s)	Approximate Distance from the Site at its closest point (km)
SPAs		
Caithness and Sutherland Peatlands	Breeding: <ul style="list-style-type: none"> • Black-throated diver <i>Gavia arctica</i> • Common scoter <i>Melanitta nigra</i> • Dunlin <i>Calidris alpina schinzii</i> • Golden eagle <i>Aquila chrysaetos</i> • Golden plover <i>Pluvialis apricaria</i> • Greenshank <i>Tringa nebularia</i> • Hen harrier <i>Circus cyaneus</i> • Merlin <i>Falco columbarius</i> • Red-throated diver <i>Gavia stellata</i> • Short-eared owl <i>Asio flammeus</i> • Wigeon <i>Anas Penelope</i> • Wood sandpiper <i>Tringa glareola</i> 	0.00 (within site)
Strath Carnaig and Strath Fleet Moors	Breeding: <ul style="list-style-type: none"> • Hen harrier 	0.00 (within Site)
Dornoch Firth and Loch Fleet	Non-breeding: <ul style="list-style-type: none"> • Bar-tailed godwit <i>Limosa lapponica</i> • Curlew <i>Numenius arquata</i> • Dunlin <i>Calidris alpina</i> • Greylag goose <i>Anser anser</i> • Oystercatcher <i>Haematopus ostralegus</i> • Redshank <i>Tringa totanus</i> • Scaup <i>Aythya marila</i> • Teal <i>Anas crecca</i> • Waterfowl assemblage • Wigeon Breeding: <ul style="list-style-type: none"> • Osprey <i>Pandion haliaetus</i> 	0.24
East Caithness Cliffs	Breeding: <ul style="list-style-type: none"> • Cormorant <i>Phalacrocorax carbo</i> • Fulmar <i>Fulmarus glacialis</i> • Great black-backed gull <i>Larus marinus</i> 	0.87

Site Name	Qualifying Feature(s)	Approximate Distance from the Site at its closest point (km)
	<ul style="list-style-type: none"> Guillemot <i>Uria aalge</i> Herring gull <i>Larus argentatus</i> Kittiwake <i>Rissa tridactyla</i> Peregrine <i>Falco peregrinus</i> Razorbill <i>Alca torda</i> Seabird assemblage Shag <i>Phalacrocorax aristotelis</i> 	
Moray Firth	<p>Non-breeding:</p> <ul style="list-style-type: none"> Common scoter Eider <i>Somateria mollissima</i> Goldeneye <i>Bucephala clangula</i> Great northern diver <i>Gavia immer</i> Long-tailed duck <i>Clangula hyemalis</i> Red-breasted merganser <i>Mergus serrator</i> Red-throated diver Scaup Shag Slavonian grebe <i>Podiceps auritus</i> Velvet scoter <i>Melanitta fusca</i> <p>Breeding:</p> <ul style="list-style-type: none"> Shag 	1.04
Caithness Lochs	<p>Non-breeding:</p> <ul style="list-style-type: none"> Greenland white-fronted goose <i>Anser albifrons flavirostris</i> Greylag goose Whooper swan <i>Cygnus cygnus</i> 	2.40
Lairg and Strath Brora Lochs	<p>Breeding:</p> <ul style="list-style-type: none"> Black-throated diver 	8.30
Ramsars		
Caithness and Sutherland Peatlands	<p>Ramsar criterion 1:</p> <ul style="list-style-type: none"> Blanket bog Mire communities Oligotrophic lochs <p>Ramsar criterion 2:</p> <ul style="list-style-type: none"> Bog orchid <i>Hammarbya paludosa</i> Black-throated diver Dunlin Freshwater peal mussel <i>Margaritifera margaritifera</i> Golden plover Otter <i>Lutra lutra</i> Red-throated diver <i>Sphagnum lindbergii</i> <i>Sphagnum majus</i> Water beetle <i>Oreodytes alpinus</i> Wood sandpiper <p>Ramsar criterion 4:</p> <ul style="list-style-type: none"> Common scoter 	0.00 (within Site)

Site Name	Qualifying Feature(s)	Approximate Distance from the Site at its closest point (km)
	<ul style="list-style-type: none"> • Greenshank • Wigeon 	
Dornoch Firth and Loch Fleet	<p>Ramsar criterion 1:</p> <ul style="list-style-type: none"> • Estuarine alder woodland • Estuaries of Dornoch Firth and Loch Fleet • Sand dunes of Morrich More <p>Ramsar criterion 2:</p> <ul style="list-style-type: none"> • Baltic rush <i>Juncus balticus</i> • Dwarf eelgrass <i>Zostera noltei</i> • Eelgrass <i>Zostera marina</i> • Harbour seal <i>Phoca vitulina</i> • Otter • Osprey • Seaside centaury <i>Centaureum littorale</i> <p>Ramsar criterion 5:</p> <ul style="list-style-type: none"> • Curlew • Dunlin • Oystercatcher • Redshank • Scaup • Teal <p>Ramsar criterion 6:</p> <ul style="list-style-type: none"> • Bar-tailed godwit • Greylag goose • Wigeon 	0.19
Caithness Lochs	<p>Ramsar criterion 6:</p> <ul style="list-style-type: none"> • Greenland white-fronted goose • Greylag goose • Whooper swan 	2.40
SSSIs		
Shielton Peatlands	<ul style="list-style-type: none"> • Blanket bog • Breeding bird assemblage 	0.00 (within Site)
Strath Carnaig and Strath Fleet Moors	<p>Breeding:</p> <ul style="list-style-type: none"> • Hen harrier 	0.00 (within Site)
Mound Alderwoods	<ul style="list-style-type: none"> • Breeding bird assemblage • Saline lagoon • Wet woodland 	0.19
Berriedale Cliffs	<ul style="list-style-type: none"> • Maritime cliff <p>Breeding:</p> <ul style="list-style-type: none"> • Fulmar • Guillemot • Kittiwake • Razorbill • Seabird colony • Shag 	0.82
Loch Scarmclate	<ul style="list-style-type: none"> • Base-rich loch 	3.42

Site Name	Qualifying Feature(s)	Approximate Distance from the Site at its closest point (km)
	Non-breeding: <ul style="list-style-type: none"> • Greylag goose 	
Loch Fleet	<ul style="list-style-type: none"> • Eelgrass beds • Native pinewood • Saltmarsh • Sand dunes • Sandflats • Vascular plant assemblage Breeding: <ul style="list-style-type: none"> • Breeding bird assemblage Non-breeding: <ul style="list-style-type: none"> • Eider 	4.11
Dunbeath Peatlands	<ul style="list-style-type: none"> • Blanket bog Breeding: <ul style="list-style-type: none"> • Breeding bird assemblage • Dunlin • Golden plover • Greenshank 	4.88
Strathmore Peatlands	<ul style="list-style-type: none"> • Blanket bog • Water beetle <i>Oreodytes alpinus</i> Breeding: <ul style="list-style-type: none"> • Breeding bird assemblage • Common scoter • Dunlin • Golden plover • Greenshank • Wigeon 	5.86
Coir' an Eoin	<ul style="list-style-type: none"> • Blanket bog Breeding: <ul style="list-style-type: none"> • Golden plover 	6.34
Lairg and Strath Brora Lochs	Breeding: <ul style="list-style-type: none"> • Black-throated diver 	8.25

4.2 Section A – Spittal to Brora

4.2.1 Flight Activity – VPs

While VP surveys were conducted over a wide area to accommodate all possible design iterations, reporting is based on those VP locations that overlook the final route design.

Table 8 summarises the VP survey effort across all VP locations from May 2023 to August 2024, inclusive. The specific details of each VP survey visit (date, time, duration, and surveyor) can be found in Appendix B, Table 43. A summary of the weather conditions during all of the VP surveys is presented in Appendix C, Table 45. Section 3.3.1 provides an explanation of the number of hours that were surveyed from each location.

Table 8: Vantage Point Survey Effort (May 2023 – August 2024)

VP Number	Month				Total hours in breeding season 2023	Month						Total hours in non-breeding season 2023 / 2024	Month						Total hours in breeding season 2024	Total hours across breeding season 2023 and breeding season 2024
	May 2023	June 2023	July 2023	August 2023		September 2023	October 2023	November 2023	December 2023	January 2024	February 2024		March 2024	April 2024	May 2024	June 2024	July 2024	August 2024		
1	0	12	3	9	24	12	0	9	3	8	4	36	5	5	8	0	0	0	18	42
2	0	12	0	12	24	12	0	4.5	7	2.5	10	36	3	3	12	0	0	0	18	42
5	0	5	7	12	24	12	0	6	6	9	3	36	6	6	6	0	0	0	18	42
6	6	6	0	12	24	12	6	0	6	6	6	36	6	0	0	6	0	0	12	36
7	0	12	0	12	24	12	0	6	6	0	12	36	6	0	12	0	0	0	18	42
8	0	6	6	18	30	12	6	0	6	7	5	36	3	6	9	0	0	0	18	48
9	0	6	6	12	24	12	0	6	0	3	15	36	3.5	0	0	0	0	0	3.5	27.5
9 alternative	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	12
10	4.5	6	1.5	12	24	12	6	0	6	6	6	36	6	0	6	0	0	0	12	36
11	0	9	3	12	24	12	0	3	9	6	6	36	6	0	6	0	0	0	12	36
12	6	6	0	12	24	12	0	4.5	6	3	10.5	36	0	6	6	0	0	0	12	36
13	0	12	0	12	24	12	0	9	6	6	6	39	6	0	12	0	0	0	18	42
14	6	6	0	12	24	6	3	8	3	6	10	36	6	0	0	6	0	0	12	36

VP Number	Month				Total hours in breeding season 2023	Month						Total hours in non-breeding season 2023 / 2024	Month						Total hours in breeding season 2024	Total hours across breeding season 2023 and breeding season 2024
	May 2023	June 2023	July 2023	August 2023		September 2023	October 2023	November 2023	December 2023	January 2024	February 2024		March 2024	April 2024	May 2024	June 2024	July 2024	August 2024		
15	6	6	0	12	24	6	0	9	9	6	6	36	6	0	6	0	0	0	12	36
16	0	6	12	6	24	9	3	6	3	10.5	5	36.5	6	0	6	0	0	0	12	36
17	6	6	0	12	24	12	0	6	6	6	6	36	6	0	0	6	0	0	12	36
18	6	6	3	9	24	9	6	3	6	6	6	36	5	0	5	2	0	0	12	36
19	6	6	0	12	24	12	0	6	6	6	6	36	6	0	6	0	0	0	12	36
20	0	12	3	9	24	9	6	3	9	5	6	38	6	0	12	0	0	0	18	42
21	6	6	0	12	24	6	6	6	6	6	6	36	5	0	7	0	0	0	12	36
22	0	6	6	12	24	6	6	9	3	9	6	39	6	0	12	0	0	0	18	42
23	4	0	8	12.5	24.5	6.25	6	6	6.75	6	6	37	6	0	0	6	0	0	12	36.5
24	6	6	6	6	24	6	6	3	9	6	6	36	3	9	0	0	0	0	12	36
27	6	0	0	18.5	24.5	12	0	6	6.25	6	6	36.25	0	3	6	3	0	0	12	36.5
28	0	6	6	12	24	12	0	6	6	0	12	36	4	0	14	0	0	0	18	42
36	6	0	6	12	24	12	0	0	12	3	9	36	0	0	6	6	0	0	12	36
59	0	12	0	12	24	6	6	6	6	0	12	36	3	0	15	0	0	0	18	42
60	0	0	9	15.5	24.5	9.25	6	6	0	3	12	36.25	0	6	12	0	0	0	18	36.5
62	0	6	6	12	24	12	0	6	6	0	12	36	0	6	12	0	0	0	18	42

VP Number	Month				Total hours in breeding season 2023	Month						Total hours in non-breeding season 2023 / 2024	Month						Total hours in breeding season 2024	Total hours across breeding season 2023 and breeding season 2024
	May 2023	June 2023	July 2023	August 2023		September 2023	October 2023	November 2023	December 2023	January 2024	February 2024		March 2024	April 2024	May 2024	June 2024	July 2024	August 2024		
63	0	9	3	15.5	24.25*	9	0	10	3	0	12	37.25*	7	3	8	0	0	0	18	42.25
65	0	9	3	12	24	12	0	13	0	4.5	7	36.5	6	6	6	0	0	0	18	42
66	0	0	6	18	24	12	0	6	6	3	9.5	36.5	6	3	9	0	0	0	18	42
67	0	6	6	12	24	12	0	6	6	2	12	38	3	0	15	0	0	0	18	42
68	0	0	0	0	0	0	0	6	15	6	9	36	6	0	0	12	5	13	36	36
69	0	0	0	0	0	0	0	3.5	18	7.5	7	36	7	6	0	6	6	12	37	37
71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	12	18.5	33.5	33.5
72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	12.25	12.25	27.5	27.5
76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	12	12	3	36	36
77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12

* 3.25 hours were undertaken at VP63 on 30th August 2023, and these hours count towards the total non-breeding season hours. The total number of hours for the breeding season 2023 and non-breeding season 2023 / 2024 as displayed here have been adjusted accordingly.

Vantage Point Survey Results

A total of 52 target species were recorded during VP surveys between May 2023 and August 2024. A summary of target species flights and flight times are presented in Table 9.

Appendix D, Table 47 details individual flight data for all target species. A complete species list with conservation status details of all species is included in Appendix E, Table 54.

The flight lines for these registrations are presented in Appendix A, Figures 4a – 4n, and include all ground registrations and heard-only registrations. Birds that were only heard, and not seen, are not included in Table 9. A summary of all point registrations (i.e. ground registrations and heard-only registrations) is included in Appendix F, Table 55.

Table 9: Summary Flight Data for Target Species

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Arctic skua	<i>Stercorarius parasiticus</i>	1	3	3	478	478	1
Barn owl	<i>Tyto alba</i>	1	1	4	153	12	0
Black-headed gull	<i>Chroicocephalus ridibundus</i>	1	11	9	850	310	1
Brent goose	<i>Branta bernicla</i>	1	1	1	34	34	0
Canada goose	<i>Branta canadensis</i>	1	18	20	9,046	7,246	8
Common gull	<i>Larus canus</i>	1	150	508	2,548,272	2,508,723	83
Common tern	<i>Sterna hirundo</i>	1	15	5	1,432	1,432	1
Cormorant	<i>Phalacrocorax carbo</i>	1	3	11	613	380	1
Curlew	<i>Numenius arquata</i>	1	6	136	6,193	4,172	14
Eider	<i>Somateria mollissima</i>	15	15	1	675	675	0
Golden eagle	<i>Aquila chrysaetos</i>	1	3	36	10,633	5,223	10
Goldeneye	<i>Bucephala clangula</i>	1	5	9	213	23	0
Golden plover	<i>Pluvialis apricaria</i>	1	16	18	1,945	1,683	3
Goosander	<i>Mergus merganser</i>	1	2	4	130	24	0
Goshawk	<i>Accipiter gentilis</i>	1	2	4	276	251	0
Great black-backed gull	<i>Larus marinus</i>	1	16	121	15,516	13,708	39
Greenshank	<i>Tringa nebularia</i>	1	1	4	57	16	0

Greylag goose	<i>Anser anser</i>	1	120	190	204,327	92,684	19
Hen harrier	<i>Circus cyaneus</i>	1	2	99	8,723	4,737	12
Herring gull	<i>Larus argentatus</i>	1	150	678	687,223	507,414	115
Lapwing	<i>Vanellus vanellus</i>	1	60	93	13,798	9,866	5
Lesser black-backed gull	<i>Larus fuscus</i>	1	7	52	13,840	10,311	13
Little grebe	<i>Tachybaptus ruficollis</i>	1	1	2	5	0	0
Marsh harrier	<i>Circus aeruginosus</i>	1	1	1	40	40	1
Merlin	<i>Falco columbarius</i>	1	3	40	4,869	4,530	6
Mute swan	<i>Cygnus olor</i>	1	9	4	683	655	0
Osprey	<i>Pandion haliaetus</i>	1	4	115	21,817	20,040	27
Oystercatcher	<i>Haematopus ostralegus</i>	1	12	83	4,729	3,207	2
Peregrine	<i>Falco peregrinus</i>	1	1	8	663	292	2
Pink-footed goose	<i>Anser brachyrhynchus</i>	1	250	52	372,579	94,201	6
Pochard	<i>Aythya ferina</i>	2	2	2	168	168	0
Red-breasted merganser	<i>Mergus serrator</i>	1	2	2	73	42	1
Red kite	<i>Milvus milvus</i>	1	1	24	3,281	2,908	4
Redshank	<i>Tringa totanus</i>	1	2	3	115	30	0
Red-throated diver	<i>Gavia stellata</i>	1	2	13	606	577	3
Ringed plover	<i>Charadrius hiaticula</i>	1	2	2	95	95	0
Sandwich tern	<i>Sterna sandvicensis</i>	1	1	1	9	9	0
Short-eared owl	<i>Asio flammeus</i>	1	2	7	609	32	0
Snipe	<i>Gallinago gallinago</i>	1	2	10	728	633	0
Teal	<i>Anas crecca</i>	1	3	5	234	123	0
Tufted duck	<i>Aythya fuligula</i>	3	17	9	2,484	112	0
Unidentified duck		1	5	3	254	254	0
Unidentified goose		2	60	12	62,424	9,480	0
Unidentified grebe		5	5	1	295	295	0
Unidentified gull		1	60	34	74,583	64,800	5
Unidentified large gull		1	120	33	268,348	260,283	6

Unidentified swan		2	8	3	123	24	0
Whimbrel	<i>Numenius phaeopus</i>	1	1	1	41	41	1
White-tailed eagle	<i>Haliaeetus albicilla</i>	1	2	21	3,587	2,220	6
Whooper swan	<i>Cygnus cygnus</i>	1	9	2	933	933	1
Wigeon	<i>Anas penelope</i>	1	1	1	43	31	0
Woodcock	<i>Scolopax rusticola</i>	1	1	3	16	0	0

4.2.2 Breeding Bird Surveys

2023

As detailed in Table 10, the two Brown and Shepherd (1993) breeding bird survey visits (three at the proposed substations as detailed below) were carried out on multiple days between May to July (inclusive) for the 2023 breeding season. The study area for this survey included the Site boundary plus a 500m buffer (Appendix A, Figures 5a – 5c refers).

Table 10: Breeding Bird Survey Effort 2023

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
1	Kintradwell Estate	02/05/2023	JW, FT, AW, SS, DB, LS, RP	09:30	17:00	07:30
1	Kintradwell Estate	03/05/2023	JW, FT, AW, SS, DB, LS, RP	09:15	17:00	07:45
1	Kintradwell Estate / Gordonbush Estate	04/05/2023	JW, FT, AK, SS, DB, RP	09:15	17:00	07:45
1	Braemore and Langwell Estate	11/05/2023	DB, JL, SS, WG, WJ	09:00	17:00	08:00
1	Braemore and Langwell Estate	06/06/2023	YMK, JL	09:00	17:00	08:00
1	Helmsdale / Dunbeath	07/06/2023	DMK, YMK, JL	09:30	16:30	07:00
1	Braemore and Langwell Estate / Sibster	07/06/2023	YMK, JL	09:30	17:30	08:00
1	Helmsdale / Dunbeath / Achnamoine	08/06/2023	DMK, YMK, SS, JL	09:00	16:30	07:30
1	Rumster Forest	08/06/2023	WG, WJ	09:15	16:45	07:30
1	Forse	09/06/2023	CMK, YMK, SS, JL	09:30	17:00	07:30

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
1	Halsary Wind Farm	09/06/2023	WG, WJ	09:15	16:45	07:30
1	Helmsdale / Dunbeath	09/06/2023	DMK, AW	09:00	16:30	07:30
1	Spittal Substation/ Latheron	12/06/2023	CMK, AK, AW	08:30	16:30	08:00
1	Achormlarie	12/06/2023	JL, YMK	09:30	16:30	07:00
1	Spittal / Latheron	13/06/2023	CMK, YMK, AK	09:00	16:30	07:30
1	Dunbeath	13/06/2023	AW, JL	09:00	16:30	07:30
1	Spittal / Latheron	14/06/2023	CMK, YMK, AK, DB	09:00	17:00	08:00
1	Dunbeath	14/06/2023	AW, JL	09:00	16:45	07:45
2	Braemore and Langwell Estate	03/07/2023	DMK, YMK, DB, AB, KMQ, TB	08:45	16:45	08:00
2	Braemore and Langwell Estate	04/07/2023	DMK, WJ, DB, AB, KMQ, TB	08:45	17:00	08:15
2	Kintradwell Estate	05/07/2023	JW, DMK, DB, AB, KMQ, TB	08:30	17:00	08:30
2	Kintradwell Estate	06/07/2023	JW, FT, DMK, AB, KMQ, TB	09:00	17:00	08:00
2	Spittal Substation/ Latheron	10/07/2023	DB, WJ, KMQ	09:00	17:00	08:00
2	Spittal / Latheron	11/07/2023	JW, CMK, DB, AK, JL, AB	09:00	17:00	08:00
2	Spittal / Latheron / Dunbeath	12/07/2023	JW, CMK, DB, AK, JL, AB	08:30	16:30	08:00
2	Dunbeath / Borgue – Newport / Navidale / Portgower	13/07/2023	JW, CMK, DB, AK, JL, AB, KMQ, TJC	08:15	16:45	08:30
2	Dunbeath / Borgue – Newport / Navidale / Portgower	14/07/2023	DMK, CMK, DB, AK, JL, AB, KMQ	09:00	17:00	08:00
2	Dunbeath / Borgue – Newport / Navidale / Portgower	17/07/2023	TJC, AB, KMQ	09:00	16:30	07:30

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
2	Dunbeath / Borgue – Newport / Navidale / Portgower	18/07/2023	DB, AB, KMQ	09:15	17:15	08:00
2	Dunbeath / Borgue – Newport / Navidale / Portgower	19/07/2023	DB, AB, KMQ	09:15	16:45	07:30
2	Dunbeath / Borgue – Newport / Navidale / Portgower	20/07/2023	DB, AB, KMQ	08:45	16:45	08:00
2	Dunbeath / Borgue – Newport / Navidale / Portgower	21/07/2023	DB, AB, KMQ	09:00	17:00	08:00
2	Spittal / Dunbeath	25/07/2023	DB, KC, AB, KMQ	08:45	16:45	08:00
2	Spittal / Dunbeath	26/07/2023	DB, KC, AB, KMQ, TJC	08:45	16:45	08:00
2	West Helmsdale	27/07/2023	AW, KC	08:45	17:00	08:15
2	West Helmsdale	28/07/2023	DB, AB	08:30	16:30	08:00
3	Spittal Substation	28/07/2023	AW, KC	08:45	16:45	08:00

A total of 122 species were recorded during the 2023 breeding season. Table 11 presents each of the species in terms of their breeding status and conservation value. (NatureScot 2018) (Figures 5a – 5c, Appendix A refers).

Table 11: Breeding Bird Survey Recorded Species 2023

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
AC	Arctic skua	<i>Stercorarius parasiticus</i>			Yes	Red	Non-breeding (1)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
BO	Barn owl	<i>Tyto alba</i>		Yes	Yes	Green	Non-breeding (1)
B.	Blackbird	<i>Turdus merula</i>				Green	Probable (2) Possible (10) Non-breeding (22)
BC	Blackcap	<i>Sylvia atricapilla</i>				Green	Possible (9)
BK	Black grouse	<i>Lyrurus tetrix</i>			Yes	Red	Confirmed (1) Non-breeding (1)
BH	Black-headed gull	<i>Chroicocephalus ridibundus</i>			Yes	Amber	Non-breeding (6)
BT	Blue tit	<i>Cyanistes caeruleus</i>				Green	Probable (1) Possible (14) Non-breeding (5)
BF	Bullfinch	<i>Pyrrhula pyrrhula</i>			Yes	Amber	Possible (1) Non-breeding (4)
BZ	Buzzard	<i>Buteo buteo</i>				Green	Confirmed (2) Probable (4) Possible (21) Non-breeding (67)
CG	Canada goose	<i>Branta canadensis</i>					Non-breeding (2)
C.	Carrion crow	<i>Corvus corone</i>				Green	Possible (9) Non-breeding (93)
CH	Chaffinch	<i>Fringilla coelebs</i>				Green	Probable (2) Possible (42) Non-breeding (42)
CC	Chiffchaff	<i>Phylloscopus collybita</i>				Green	Probable (1) Possible (11) Non-breeding (15)
CT	Coal tit	<i>Periparus ater</i>				Green	Possible (13) Non-breeding (17)
CD	Collared dove	<i>Streptopelia decaocto</i>				Green	Non-breeding (1)
CM	Common gull	<i>Larus canus</i>				Red	Probable (1) Possible (6) Non-breeding (131)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
CS	Common sandpiper	<i>Actitis hypoleucos</i>				Amber	Probable (1) Possible (2) Non-breeding (4)
CA	Cormorant	<i>Phalacrocorax carbo</i>				Green	Probable (1)
CI	Crested tit	<i>Lophophanes cristatus</i>		Yes		Green	Possible (1)
CR	Crossbill	<i>Loxia curvirostra</i>		Yes		Green	Possible (1) Non-breeding (2)
CK	Cuckoo	<i>Cuculus canorus</i>			Yes	Red	Possible (2) Non-breeding (29)
CU	Curlew	<i>Numenius arquata</i>			Yes	Red	Confirmed (1) Probable (2) Possible (23) Non-breeding (62)
DI	Dipper	<i>Cinclus cinclus</i>				Amber	Confirmed (1) Non-breeding (1)
DN	Dunlin	<i>Calidris alpina</i>		Yes	Yes	Red	Possible (3) Non-breeding (1)
D.	Dunnock	<i>Prunella modularis</i>				Amber	Confirmed (3) Possible (2) Non-breeding (11)
E.	Eider	<i>Somateria mollissima</i>				Amber	Probable (1)
FP	Feral pigeon	<i>Columba livia</i>				Green	Possible (1) Non-breeding (16)
F.	Fulmar	<i>Fulmarus glacialis</i>				Amber	Confirmed (1) Probable (1) Non-breeding (1)
GC	Goldcrest	<i>Regulus regulus</i>				Green	Probable (1) Possible (7) Non-breeding (4)
EA	Golden eagle	<i>Aquila chrysaetos</i>	Yes	Yes	Yes	Green	Non-breeding (3)
GP	Golden plover	<i>Pluvialis apricaria</i>	Yes		Yes	Green	Probable (2) Possible (1) Non-breeding (7)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
GO	Goldfinch	<i>Carduelis carduelis</i>				Green	Confirmed (1) Probable (2) Possible (16) Non-breeding (15)
GB	Great Black-backed gull	<i>Larus marinus</i>				Red	Possible (2) Non-breeding (15)
NX	Great skua	<i>Stercorarius skua</i>				Red	Non-breeding (2)
GS	Great spotted woodpecker	<i>Dendrocopos major</i>				Green	Non-breeding (2)
GT	Great tit	<i>Parus major</i>				Green	Possible (25) Non-breeding (23)
GE	Green sandpiper	<i>Tringa ochropus</i>		Yes	Yes	Amber	Non-breeding (1)
GR	Greenfinch	<i>Carduelis chloris</i>				Red	Possible (5) Non-breeding (1)
GK	Greenshank	<i>Tringa nebularia</i>		Yes		Amber	Possible (1) Non-breeding (3)
H.	Grey heron	<i>Ardea cinerea</i>				Green	Non-breeding (8)
P.	Grey partridge	<i>Perdix perdix</i>			Yes	Red	Non-breeding (1)
GL	Grey wagtail	<i>Motacilla cinerea</i>				Amber	Non-breeding (4)
GJ	Greylag goose	<i>Anser anser</i>		Yes *		Amber	Confirmed (4) Possible (1) Non-breeding (7)
* Listed under Schedule 1 Part II (in Outer Hebrides, Caithness, Sutherland and Wester Ross only)							
HH	Hen harrier	<i>Circus cyaneus</i>	Yes	Yes	Yes	Red	Possible (1) Non-breeding (8)
HG	Herring gull	<i>Larus argentatus</i>			Yes	Red	Possible (4) Non-breeding (110)
HC	Hooded crow	<i>Corvus cornix</i>			Yes	Green	Possible (2) Non-breeding (27)
HM	House martin	<i>Delichon urbicum</i>				Red	Confirmed (1) Possible (13) Non-breeding (23)
HS	House sparrow	<i>Passer domesticus</i>			Yes	Red	Possible (14) Non-breeding (14)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
JD	Jackdaw	<i>Corvus monedula</i>				Green	Probable (2) Possible (15) Non-breeding (42)
J.	Jay	<i>Garrulus glandarius</i>				Green	Non-breeding (1)
K.	Kestrel	<i>Falco tinnunculus</i>			Yes	Amber	Probable (1) Possible (9) Non-breeding (16)
KI	Kittiwake	<i>Rissa tridactyla</i>				Red	Non-breeding (1)
L.	Lapwing	<i>Vanellus vanellus</i>			Yes	Red	Probable (1) Possible (10) Non-breeding (44)
LB	Lesser Black-backed gull	<i>Larus fuscus</i>				Amber	Non-breeding (4)
LI	Linnet	<i>Linaria cannabina</i>			Yes	Red	Probable (1) Possible (10) Non-breeding (9)
LG	Little grebe	<i>Tachybaptus ruficollis</i>				Green	Non-breeding (2)
AF	Little tern	<i>Sternula albifrons</i>	Yes	Yes	Yes	Amber	Non-breeding (1)
LT	Long-tailed tit	<i>Aegithalos caudatus</i>				Green	Confirmed (1) Possible (4) Non-breeding (1)
MG	Magpie	<i>Pica pica</i>				Green	Non-breeding (5)
MA	Mallard	<i>Anas platyrhynchos</i>				Amber	Confirmed (1) Probable (1) Non-breeding (2)
MW	Marsh warbler	<i>Acrocephalus palustris</i>		Yes		Red	Non-breeding (1)
MP	Meadow pipit	<i>Anthus pratensis</i>				Amber	Confirmed (14) Probable (139) Possible (897) Non-breeding (1,128)
ML	Merlin	<i>Falco columbarius</i>	Yes	Yes	Yes	Red	Possible (1) Non-breeding (5)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
M.	Mistle thrush	<i>Turdus viscivorus</i>				Red	Confirmed (1) Possible (6) Non-breeding (20)
MH	Moorhen	<i>Gallinula chloropus</i>				Amber	Non-breeding (1)
OP	Osprey	<i>Pandion haliaetus</i>	Yes	Yes	Yes	Amber	Confirmed (1) Possible (4) Non-breeding (3)
OC	Oystercatcher	<i>Haematopus ostralegus</i>				Amber	Confirmed (1) Possible (13) Non-breeding (36)
PE	Peregrine	<i>Falco peregrinus</i>	Yes	Yes	Yes	Green	Non-breeding (1)
PH	Pheasant	<i>Phasianus colchicus</i>				Green	Possible (1) Non-breeding (19)
PF	Pied flycatcher	<i>Ficedula hypoleuca</i>				Amber	Non-breeding (2)
PW	Pied wagtail	<i>Motacilla alba</i>				Green	Possible (10) Non-breeding (32)
PG	Pink-footed goose	<i>Anser brachyrhynchus</i>				Amber	Non-breeding (1)
RN	Raven	<i>Corvus corax</i>				Green	Probable (2) Possible (2) Non-breeding (45)
RG	Red grouse	<i>Lagopus lagopus scotica</i>			Yes	Green	Possible (4) Non-breeding (14)
KT	Red kite	<i>Milvus milvus</i>	Yes	Yes	Yes	Green	Non-breeding (6)
RL	Red-legged partridge	<i>Alectoris rufa</i>				Green	Possible (1) Non-breeding (4)
FR	Redpoll	<i>Carduelis flammea</i>				Red	Confirmed (1) Possible (18) Non-breeding (24)
RK	Redshank	<i>Tringa totanus</i>				Amber	Non-breeding (1)
RH	Red-throated diver	<i>Gavia stellata</i>	Yes	Yes	Yes	Green	Non-breeding (2)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
RB	Reed bunting	<i>Emberiza schoeniclus</i>			Yes	Amber	Confirmed (1) Probable (2) Possible (3) Non-breeding (8)
RZ	Ring ouzel	<i>Turdus torquatus</i>			Yes	Red	Non-breeding (1)
RP	Ringed plover	<i>Charadrius hiaticula</i>				Red	Non-breeding (2)
R.	Robin	<i>Erithacus rubecula</i>				Green	Probable (5) Possible (21) Non-breeding (26)
RO	Rook	<i>Corvus frugilegus</i>				Amber	Possible (4) Non-breeding (22)
SM	Sand martin	<i>Riparia riparia</i>				Green	Possible (1) Non-breeding (10)
SW	Sedge warbler	<i>Acrocephalus schoenobaenus</i>				Amber	Possible (3) Non-breeding (4)
SA	Shag	<i>Phalacrocorax aristotelis</i>				Amber	Non-breeding (2)
SE	Short-eared owl	<i>Asio flammeus</i>	Yes		Yes	Amber	Non-breeding (1)
SK	Siskin	<i>Carduelis spinus</i>			Yes	Green	Probable (3) Possible (20) Non-breeding (41)
S.	Skylark	<i>Alauda arvensis</i>				Red	Confirmed (3) Probable (71) Possible (291) Non-breeding (178)
SN	Snipe	<i>Gallinago gallinago</i>				Amber	Probable (1) Possible (4) Non-breeding (18)
ST	Song thrush	<i>Turdus philomelos</i>			Yes	Amber	Confirmed (1) Probable (1) Possible (8) Non-breeding (9)
SH	Sparrowhawk	<i>Accipiter nisus</i>				Amber	Possible (1) Non-breeding (4)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
SF	Spotted flycatcher	<i>Muscicapa striata</i>			Yes	Red	Confirmed (1) Possible (7) Non-breeding (4)
SG	Starling	<i>Sturnus vulgaris</i>				Red	Probable (1) Possible (12) Non-breeding (33)
SD	Stock dove	<i>Columba oenas</i>				Amber	Possible (1)
SC	Stonechat	<i>Saxicola torquata</i>				Green	Confirmed (1) Probable (4) Possible (38) Non-breeding (55)
SL	Swallow	<i>Hirundo rustica</i>				Green	Probable (7) Possible (25) Non-breeding (128)
SI	Swift	<i>Apus apus</i>				Red	Non-breeding (6)
T.	Teal	<i>Anas crecca</i>				Amber	Confirmed (2) Non-breeding (1)
TS	Tree sparrow	<i>Passer montanus</i>			Yes	Red	Non-breeding (5)
TC	Treecreeper	<i>Certhia familiaris</i>				Green	Possible (2) Non-breeding (3)
TU	Tufted duck	<i>Aythya fuligula</i>				Green	Possible (1)
TW	Twite	<i>Linaria flavirostris</i>				Red	Possible (1)
	Unidentified duck						Non-breeding (2)
	Unidentified gull						Non-breeding (2)
	Unidentified large gull						Non-breeding (22)
	Unidentified small wader						Non-breeding (1)
W.	Wheatear	<i>Oenanthe oenanthe</i>				Amber	Probable (2) Possible (7) Non-breeding (23)
WC	Whinchat	<i>Saxicola rubetra</i>				Red	Probable (1) Non-breeding (2)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
WE	White-tailed eagle	<i>Haliaeetus albicilla</i>	Yes	Yes	Yes	Amber	Non-breeding (3)
WH	Whitethroat	<i>Sylvia communis</i>				Amber	Possible (2)
WW	Willow warbler	<i>Phylloscopus trochilus</i>				Amber	Confirmed (1) Probable (3) Possible (70) Non-breeding (15)
WP	Woodpigeon	<i>Columba palumbus</i>				Amber	Possible (8) Non-breeding (74)
WR	Wren	<i>Troglodytes troglodytes</i>				Amber	Probable (11) Possible (101) Non-breeding (69)
Y.	Yellowhammer	<i>Emberiza citrinella</i>			Yes	Red	Possible (1) Non-breeding (2)

2024

As detailed in Table 12, two Brown and Shepherd (1993) breeding bird survey visits were carried out across multiple days from April to early August (inclusive) for the 2024 breeding season. The study area for this survey included the Site boundary plus a 500m buffer (Appendix A, Figures 6a – 6c refers).

Table 12: Breeding Bird Survey Effort 2024

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
1	Torrish Estate	05/04/2024	NE	09:00	17:00	08:00
1	Torrish Estate	23/04/2024	BM, SA	08:30	17:00	08:30
1	Torrish Estate	24/04/2024	SA	08:30	17:00	08:30
1	Torrish Estate	05/04/2024	SA	08:30	17:00	08:30
1	Torrish Estate	01/05/2024	KC, NE, EH, BM	08:30	16:45	08:15
1	Torrish Estate	02/05/2024	EH, BM	08:30	16:45	08:15
1	Dunbeath Estate	07/05/2024	SA	09:00	16:30	07:30
1	Dunbeath Estate	08/05/2024	SA, FC	08:45	16:45	08:00
1	Loch of	09/05/2024	SA, LM	09:15	16:45	07:30

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
	Toftingall					
1	Forse	09/05/2024	BM, SS	09:30	16:30	07:00
1	West Helmsdale	14/05/2024	BM	09:00	17:00	08:00
1	Torrish Estate	14/05/2024	SS, JL, NE	09:15	16:45	07:30
1	West Helmsdale	15/05/2024	BM	09:00	16:45	07:45
1	Torrish Estate	15/05/2024	SS, JL	08:45	16:45	08:00
1	Torrish Estate	16/05/2024	BM, NE	08:45	16:45	08:00
1	Braemore and Langwell Estate	10/06/2024	JL, KC, BM, EH	09:00	17:00	08:00
1	Braemore and Langwell Estate	11/06/2024	JL, KC, BM, EH	09:00	16:45	07:45
1	Braemore and Langwell Estate	12/06/2024	JL, KC, BM	08:45	16:30	07:45
1	Braemore and Langwell Estate	13/06/2024	JL, KC, BM	09:00	16:45	07:45
1	Kintradwell Estate	03/07/2024	LM	09:15	17:15	08:00
2	Torrish Estate	15/07/2024	SA	09:00	16:45	07:45
2	West Helmsdale	16/07/2024	BM	09:15	17:00	07:45
2	Torrish Estate	16/07/2024	SA	09:00	16:45	07:45
2	West Helmsdale	17/07/2024	BM	09:15	17:00	07:45
2	West Helmsdale	18/07/2024	BM	08:45	16:30	07:45
2	Glen Loth	18/07/2024	SA	08:30	16:30	08:00
2	Forse	22/07/2024	LM, BM	09:00	16:45	07:45
2	Forse	23/07/2024	LM, BM	09:00	16:45	07:45
2	Dunbeath Estate	24/07/2024	BM	08:45	16:30	07:45
2	Dunbeath Estate	25/07/2024	LM, BM	09:00	16:30	07:30
2	Torrish Estate	26/07/2024	LM, KC, BM	09:00	16:30	08:00
2	Braemore and Langwell Estate	31/07/2024	KC	08:45	16:30	07:45
2	Braemore and	01/08/2024	KC	08:45	16:15	07:30

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
	Langwell Estate					
2	Kintradwell Estate	07/08/2024	KC	08:45	16:30	07:45

A total of 96 species were recorded in 2024 breeding season. Table 13 presents each of the species in terms of their breeding status and conservation value. (NatureScot 2018) (Figures 6a – 6c, Appendix A refers).

Table 13: Breeding Bird Survey Recorded Species 2024

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
AC	Arctic skua	<i>Stercorarius parasiticus</i>			Yes	Red	Non-breeding (1)
B.	Blackbird	<i>Turdus merula</i>				Green	Confirmed (1) Possible (8)
BC	Blackcap	<i>Sylvia atricapilla</i>				Green	Possible (1) Non-breeding (2)
BK	Black grouse	<i>Lyrurus tetrix</i>			Yes	Red	Non-breeding (1)
BH	Black-headed gull	<i>Chroicocephalus ridibundus</i>			Yes	Amber	Non-breeding (4)
BT	Blue tit	<i>Cyanistes caeruleus</i>				Green	Possible (4) Non-breeding (2)
BF	Bullfinch	<i>Pyrrhula pyrrhula</i>			Yes	Amber	Possible (1)
BZ	Buzzard	<i>Buteo buteo</i>				Green	Confirmed (1) Possible (20) Non-breeding (39)
C.	Carrion crow	<i>Corvus corone</i>				Green	Possible (7) Non-breeding (25)
CH	Chaffinch	<i>Fringilla coelebs</i>				Green	Probable (5) Possible (27) Non-breeding (13)
CC	Chiffchaff	<i>Phylloscopus collybita</i>				Green	Possible (3)
CT	Coal tit	<i>Periparus ater</i>				Green	Confirmed (1) Probable (4) Possible (18) Non-breeding (17)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
CD	Collared dove	<i>Streptopelia decaocto</i>				Green	Non-breeding (1)
CM	Common gull	<i>Larus canus</i>				Red	Possible (4) Non-breeding (34)
CS	Common sandpiper	<i>Actitis hypoleucos</i>				Amber	Possible (2) Non-breeding (2)
CA	Cormorant	<i>Phalacrocorax carbo</i>				Green	Non-breeding (1)
CR	Crossbill	<i>Loxia curvirostra</i>		Yes		Green	Possible (3) Non-breeding (3)
CK	Cuckoo	<i>Cuculus canorus</i>			Yes	Red	Confirmed (2) Probable (1) Possible (14) Non-breeding (13)
CU	Curlew	<i>Numenius arquata</i>			Yes	Red	Probable (1) Possible (15) Non-breeding (3)
D.	Dunnock	<i>Prunella modularis</i>				Amber	Non-breeding (4)
FP	Feral pigeon	<i>Columba livia</i>				Green	Non-breeding (6)
FF	Fieldfare	<i>Turdus pilaris</i>	Yes	Yes	Yes	Red	Non-breeding (1)
GC	Goldcrest	<i>Regulus regulus</i>				Green	Probable (11) Possible (23) Non-breeding (11)
EA	Golden eagle	<i>Aquila chrysaetos</i>	Yes	Yes	Yes	Green	Non-breeding (5)
GP	Golden plover	<i>Pluvialis apricaria</i>	Yes		Yes	Green	Non-breeding (2)
GO	Goldfinch	<i>Carduelis carduelis</i>				Green	Possible (4) Non-breeding (3)
GD	Goosander	<i>Mergus merganser</i>				Green	Possible (1)
GH	Grasshopper Warbler	<i>Locustella naevia</i>			Yes	Red	Possible (1) Non-breeding (1)
GB	Great Black-backed gull	<i>Larus marinus</i>				Red	Non-breeding (10)
GS	Great spotted woodpecker	<i>Dendrocopos major</i>				Green	Non-breeding (1)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
GT	Great tit	<i>Parus major</i>				Green	Possible (10) Non-breeding (11)
GR	Greenfinch	<i>Carduelis chloris</i>				Red	Non-breeding (1)
GK	Greenshank	<i>Tringa nebularia</i>		Yes		Amber	Non-breeding (1)
H.	Grey heron	<i>Ardea cinerea</i>				Green	Confirmed (1) Possible (2) Non-breeding (5)
GL	Grey wagtail	<i>Motacilla cinerea</i>				Amber	Non-breeding (4)
GJ	Greylag goose	<i>Anser anser</i>		Yes *		Amber	Confirmed (1) Possible (1) Non-breeding (9)
* Listed under Schedule 1 Part II (in Outer Hebrides, Caithness, Sutherland and Wester Ross only)							
HH	Hen harrier	<i>Circus cyaneus</i>	Yes	Yes	Yes	Red	Probable (4) Non-breeding (18)
HG	Herring gull	<i>Larus argentatus</i>			Yes	Red	Confirmed (2) Possible (4) Non-breeding (52)
HC	Hooded crow	<i>Corvus cornix</i>			Yes	Green	Possible (1) Non-breeding (2)
HM	House martin	<i>Delichon urbicum</i>				Red	Possible (2) Non-breeding (2)
JD	Jackdaw	<i>Corvus monedula</i>				Green	Non-breeding (7)
K.	Kestrel	<i>Falco tinnunculus</i>			Yes	Amber	Possible (9) Non-breeding (18)
L.	Lapwing	<i>Vanellus vanellus</i>			Yes	Red	Possible (3) Non-breeding (8)
LB	Lesser Black-backed gull	<i>Larus fuscus</i>				Amber	Non-breeding (6)
LI	Linnet	<i>Linaria cannabina</i>			Yes	Red	Possible (1) Non-breeding (1)
LG	Little grebe	<i>Tachybaptus ruficollis</i>				Green	Possible (1) Non-breeding (1)
LT	Long-tailed tit	<i>Aegithalos caudatus</i>				Green	Possible (1) Non-breeding (1)
MA	Mallard	<i>Anas platyrhynchos</i>				Amber	Probable (1) Possible (1) Non-breeding (3)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
MP	Meadow pipit	<i>Anthus pratensis</i>				Amber	Confirmed (2) Probable (97) Possible (324) Non-breeding (709)
ML	Merlin	<i>Falco columbarius</i>	Yes	Yes	Yes	Red	Non-breeding (10)
M.	Mistle thrush	<i>Turdus viscivorus</i>				Red	Non-breeding (7)
MS	Mute Swan	<i>Cygnus olor</i>					Non-breeding (1)
OP	Osprey	<i>Pandion haliaetus</i>	Yes	Yes	Yes	Amber	Non-breeding (3)
OC	Oystercatcher	<i>Haematopus ostralegus</i>				Amber	Possible (5) Non-breeding (3)
PE	Peregrine	<i>Falco peregrinus</i>	Yes	Yes	Yes	Green	Non-breeding (1)
PH	Pheasant	<i>Phasianus colchicus</i>				Green	Confirmed (1) Possible (1)
PW	Pied wagtail	<i>Motacilla alba</i>				Green	Possible (4) Non-breeding (6)
PO	Pochard	<i>Aythya ferina</i>			Yes	Red	Non-breeding (1)
RN	Raven	<i>Corvus corax</i>				Green	Possible (1) Non-breeding (21)
RM	Red-breasted merganser	<i>Mergus serrator</i>				Amber	Possible (1)
RG	Red grouse	<i>Lagopus lagopus scotica</i>			Yes	Green	Non-breeding (12)
KT	Red kite	<i>Milvus milvus</i>	Yes	Yes	Yes	Green	Non-breeding (1)
FR	Redpoll	<i>Carduelis flammea</i>				Red	Possible (1) Non-breeding (11)
RK	Redshank	<i>Tringa totanus</i>				Amber	Possible (1) Non-breeding (2)
RH	Red-throated diver	<i>Gavia stellata</i>	Yes	Yes	Yes	Green	Confirmed (1) Non-breeding (2)
RB	Reed bunting	<i>Emberiza schoeniclus</i>			Yes	Amber	Possible (1) Non-breeding (5)
R.	Robin	<i>Erithacus rubecula</i>				Green	Probable (5) Possible (6) Non-breeding (5)
RC	Rock Pipit	<i>Anthus petrosus</i>				Green	Non-breeding (2)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
RO	Rook	<i>Corvus frugilegus</i>				Amber	Non-breeding (1)
SM	Sand martin	<i>Riparia riparia</i>				Green	Non-breeding (9)
CY	Scottish crossbill	<i>Loxia scotia</i>	Yes	Yes	Yes	Red	Possible (1)
SW	Sedge warbler	<i>Acrocephalus schoenobaenus</i>				Amber	Possible (2) Non-breeding (3)
SK	Siskin	<i>Carduelis spinus</i>			Yes	Green	Probable (4) Possible (16) Non-breeding (20)
S.	Skylark	<i>Alauda arvensis</i>				Red	Probable (27) Possible (116) Non-breeding (20)
SN	Snipe	<i>Gallinago gallinago</i>				Amber	Non-breeding (8)
ST	Song thrush	<i>Turdus philomelos</i>			Yes	Amber	Possible (12) Non-breeding (1)
SH	Sparrowhawk	<i>Accipiter nisus</i>				Amber	Non-breeding (3)
SF	Spotted flycatcher	<i>Muscicapa striata</i>			Yes	Red	Confirmed (2) Non-breeding (2)
SG	Starling	<i>Sturnus vulgaris</i>				Red	Confirmed (1) Possible (1) Non-breeding (4)
SC	Stonechat	<i>Saxicola torquata</i>				Green	Confirmed (3) Probable (7) Possible (21) Non-breeding (22)
SL	Swallow	<i>Hirundo rustica</i>				Green	Probable (1) Possible (3) Non-breeding (17)
SI	Swift	<i>Apus apus</i>				Red	Non-breeding (1)
TO	Tawny owl	<i>Strix aluco</i>				Amber	Non-breeding (1)
TC	Treecreeper	<i>Certhia familiaris</i>				Green	Non-breeding (2)
TU	Tufted duck	<i>Aythya fuligula</i>				Green	Possible (1) Non-breeding (2)
	Unidentified goose						Non-breeding (1)

BTO Code	Common Name	Scientific Name	EU Birds Directive Annex 1	Schedule 1 Wildlife and Countryside Act 1981	Scottish Priority Species	Birds of Conservation Concern 5 (BoCC 5)	Breeding Status (possible, probable, confirmed, or non-breeding)
	Unidentified gull						Non-breeding (3)
W.	Wheatear	<i>Oenanthe oenanthe</i>				Amber	Confirmed (1) Possible (3) Non-breeding (5)
WE	White-tailed eagle	<i>Haliaeetus albicilla</i>	Yes	Yes	Yes	Amber	Non-breeding (3)
WH	Whitethroat	<i>Sylvia communis</i>				Amber	Possible (1)
WN	Wigeon	<i>Anas penelope</i>				Amber	Non-breeding (1)
WW	Willow warbler	<i>Phylloscopus trochilus</i>				Amber	Probable (6) Possible (42) Non-breeding (7)
WP	Woodpigeon	<i>Columba palumbus</i>				Amber	Confirmed (1) Possible (3) Non-breeding (29)
WR	Wren	<i>Troglodytes troglodytes</i>				Amber	Probable (11) Possible (49) Non-breeding (19)

4.2.3 Breeding Raptor Surveys

A total of 34 breeding raptor survey days were carried out over five months during the breeding season 2024 at the Site as detailed in Table 14. (Breeding raptor surveys were not commissioned for 2023.) The survey included a 2km buffer encompassing the Site, extending to 6km in the case of eagles, where access permitted.

Table 14: Breeding Raptor Survey Effort 2024

Survey Area	Date	Start time	Stop time	Duration
Halsary Wind Farm to Loch Stemster	24/04/2024 22 – 26/07/2024	08:45	16:15	07:30
Torrish Estate	14 – 16/05/2024 22 – 26/07/2024	09:00	16:00	07:00
Dunbeath Estate	07 – 08/05/2024 09/07/2024	08:45	16:00	07:15
Loch of Toftingall	09/05/2024 11/07/2024	09:15	15:45	06:30
Langwell and	02/05/2024	08:45	16:30	07:45

Survey Area	Date	Start time	Stop time	Duration
Braemore Estate	10 – 14/06/2024			
Kintradwell Estate	02 – 05/07/2024 06 – 09/08/2024	08:30	16:30	08:00

Seven Annex I / Schedule 1 species were recorded on Site across all survey types as shown in Table 15. Observations of all raptors recorded during these surveys are presented in Appendix A, Figure 7 refers.

Table 15: Breeding Status of Annex I and Schedule 1 Raptors Observed

Raptor species	Scientific Name	Breeding Raptor Surveys 2024	Breeding Bird Surveys 2023 – Raptor Status	Breeding Bird Surveys and Breeding Raptor Surveys 2024 – Raptor Status
Golden Eagle	<i>Aquila chrysaetos</i>	Non-breeding (6)	Non-breeding (3)	Non-breeding (5)
Hen Harrier	<i>Circus cyaneus</i>	Probable (1)	Possible (1) Non-breeding (8)	Probable (4) Non-breeding (18)
Merlin	<i>Falco columbarius</i>	Possible (1)	Possible (1) Non-breeding (5)	Possible (2) Non-breeding (10)
Osprey	<i>Pandion haliaetus</i>	Probable (1)	Confirmed (1) Possible (4) Non-breeding (3)	Probable (1) Non-breeding (3)
Peregrine	<i>Falco peregrinus</i>	Non-breeding	Non-breeding (1)	Non-breeding (1)
Red Kite	<i>Milvus milvus</i>	Non-breeding	Non-breeding (6)	Possible (1) Non-breeding (1)
White-tailed Eagle	<i>Haliaeetus albicilla</i>	Possible (1)	Non-breeding (3)	Non-breeding (4)

Tawny owl *Strix aluco* was also recorded during the specific raptor surveys, in addition to sightings of buzzard, kestrel and sparrowhawk.

4.2.4 Breeding Divers, Ducks and Grebes

Table 16 presents the results of breeding diver, duck and grebe surveys (focussing on sensitive species namely black-throated diver, red-throated diver, garganey *Anas querquedula*, black-necked grebe *Podiceps nigricollis*, Slavonian grebe *Podiceps auritus*, and common scoter *Melanitta nigra*) undertaken in 2023 and 2024 on the waterbodies listed under Section 3.3.4.

Table 16: Breeding Diver, Duck and Grebe Survey Results 2023 and 2024

Loch / Lochan	Easting	Northing	2023 Survey Results	2024 Survey Results
Loch Watten	322165	956229	No evidence of breeding by target species.	No evidence of breeding by target species.
Waterbody at Banniskirk Mains	317613	957160	No evidence of breeding by target species.	No evidence of breeding by target species.
Loch of Toftingall	319021	952332		No evidence of breeding by target species.
Loch Rangag	317795	941634	No evidence of breeding by target species.	No evidence of breeding by target species.

Loch / Lochan	Easting	Northing	2023 Survey Results	2024 Survey Results
Loch Stemster	318905	942353	No evidence of breeding by target species.	No evidence of breeding by target species.
Borgue Loch	312013	927073	No evidence of breeding by target species.	No evidence of breeding by target species.

It is noted that red-throated diver activity associated with breeding was recorded in 2024 during VP and breeding bird surveys. This is discussed further in Section 4.2.1 and in the Confidential Appendix. There was no other evidence for any other sensitive diver, duck or grebe species breeding along the route.

4.2.5 Breeding Woodland Grouse

Following a review of historic data, supplemented by anecdotal evidence from the local estates, black grouse surveys were undertaken during the 2024 breeding season (Figure 9, Appendix A and Table 17 refers).

Table 17: Black Grouse Survey Effort

Date	Observer	Survey Type	Survey Area	Start time	Stop time	Duration
01/05/2024	SS, TS, NE, SA, EH, KC, BM, LM	Dawn Lek Count	Kildonan Torrish	05:15	08:15	03:00
14/05/2024	SS, JL, NE, BM, TS	Dawn Lek Count	Kildonan Torrish	04:45	07:45	03:00

No black grouse leks and / or individual black grouse were recorded during the surveys.

4.2.6 Winter Goose Foraging

Table 18 shows the results from the goose foraging surveys carried out between November 2023 and April 2024. The Loch Watten area was chosen for goose foraging surveys due to the predominance of arable farmland in the locality, the proximity to the Caithness Lochs SPA and historic evidence of geese foraging in this area (Figures 10a – 10c, Appendix A refers).

Table 18: Loch Watten Goose Foraging Results

Species	Scientific Name	Field Number	No. of Birds Observed	Date	Mean Count across all Surveys
Greylag Goose	<i>Anser anser</i>	142	2	19/03/2024	0.3
		310	4	15/12/2023	2.7
		329	100	17/04/2024	16.7
		474	400	14/11/2023	66.7
		539	71	19/03/2024	11.8
Pink-footed Goose	<i>Anser brachyrhynchus</i>	550	100	19/03/2024	16.7
		594	100	19/03/2024	16.7
Whooper Swan	<i>Cygnus cygnus</i>	522	2	19/03/2024	0.3
		534	1	14/04/2024	0.2
		560	3	25/01/2024	0.5

For all species, there were relatively few observations of geese in the area, such that there was no identified patterns of use in the survey area.

4.2.7 Winter Goose and Swan Roost VPs

Table 19 summarises the VP survey effort across all VP locations from November 2023 to April 2024, inclusive. The specific details of each VP survey visit (date, time, duration, and surveyor) can be found in Appendix B, Table 43. A summary of the weather conditions during all of the VP surveys is presented in Appendix C, Table 45. Section 3.3.7 provides an explanation of the number of hours that were surveyed from each location.

Table 19: Winter Goose and Swan Roost Vantage Point Survey Effort

VP Number	Month						
	November 2023	December 2023	January 2024	February 2024	March 2024	April 2024	Total
GS 101	3	3	3	3	3	3	18
GS 102	3	3	3	3	3	3	18
GS 103	3	3	3	3	3	3	18

Winter Goose and Swan Roost Vantage Point Survey Results

Table 20 shows the number of birds of each individual species observed on the waterbody at the time of the survey.

Table 20: Number and Species of Geese and Swan observed on Waterbodies

VP Number	Month						
	November 2023	December 2023	January 2024	February 2024	March 2024	April 2024	
GS 101	0	0	0	0	0	0	
GS 102	6 Whooper swan	8 Whooper swan	0	0	0	0	
GS 103	0	0	2 Greylag goose	0	1 Greylag goose	0	

A total of 17 target species were recorded during VP surveys between November 2023 and April 2024. A summary of target species flights and flight times are presented in Table 21.

Appendix D, Table 48 details individual flight data for all target species. A complete species list with conservation status details of all species is included in Appendix E, Table 54.

The flight lines for these registrations are presented in Appendix A, Figures 12a – 12g, and include all ground registrations and heard-only registrations. Birds that were only heard, and not seen, are not included in Table 21. A summary of all point registrations (i.e. ground registrations and heard-only registrations) is included in Appendix F, Table 56.

Table 21: Summary Flight Data for Target Species

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Common gull	<i>Larus canus</i>	1	14	9	736	622	2
Cormorant	<i>Phalacrocorax carbo</i>	1	1	1	20	20	0
Curlew	<i>Numenius arquata</i>	2	2	1	40	40	0
Golden eagle	<i>Aquila chrysaetos</i>	1	1	1	187	187	1
Goldeneye	<i>Bucephala clangula</i>	1	4	13	339	0	0
Great black-backed gull	<i>Larus marinus</i>	2	2	1	34	28	0
Greylag goose	<i>Anser anser</i>	1	40	10	6,233	2,075	1
Herring gull	<i>Larus argentatus</i>	1	25	8	6,177	4,698	1
Lapwing	<i>Vanellus vanellus</i>	1	17	6	1,013	810	0
Osprey	<i>Pandion haliaetus</i>	1	1	1	35	35	0
Oystercatcher	<i>Haematopus ostralegus</i>	1	13	4	841	794	0
Pink-footed goose	<i>Anser brachyrhynchus</i>	1	200	21	104,908	86,763	2
Teal	<i>Anas crecca</i>	1	12	12	1,065	655	0
Tufted duck	<i>Aythya fuligula</i>	5	5	1	75	0	0
Unidentified goose		12	50	2	1,110	0	0
Unidentified yellow billed swan		6	6	1	120	0	0
Whooper swan	<i>Cygnus cygnus</i>	8	8	1	240	160	1

With reference to Figure 12d (Appendix A refers), there appears to be several whooper swan and greylag goose observations associated with Loch of Toftingall (GS102) suggestive that it is occasionally used as a roost by a small number of birds. Similarly

with regards Loch Stemster, there are several greylag and pink-footed geese recorded flying at risk height with a few observations of greylag goose on the loch itself (GS103).

4.2.8 Wintering Raptor Roost VPs

Table 22 summarises the VP survey effort across all VP locations from November 2023 to April 2024, inclusive. The specific details of each VP survey visit (date, time, duration, and surveyor) can be found in Appendix B, Table 43. A summary of the weather conditions during all of the VP surveys is presented in Appendix C, Table 45. Section 3.3.8 provides an explanation of the number of hours that were surveyed from each location.

Table 22: Winter Raptor Roost Vantage Point Survey Effort

VP Number	Month						Total
	November 2023	December 2023	January 2024	February 2024	March 2024	April 2024	
HH4	3	3	3	3	0	3	15
HH5	3	3	3	3	0	3	15
EA4	0	0	3	0	0	0	3
EA5	0	0	3	0	0	0	3
EA6	0	0	3	0	0	0	3
EA7	0	0	3	3	0	0	6
WE2	0	0	3	3	0	0	6

Winter Raptor Roost Vantage Point Survey Results

There were no recorded observations of the target raptor species (namely hen harrier, golden eagle, and white-tailed eagle) landing to roost. All observations were of birds flying.

A total of 16 target species were recorded during VP surveys between November 2023 and April 2024. A summary of target species flights and flight times are presented in Table 23.

Appendix D, Table 49 details individual flight data for all target species. A complete species list with conservation status details of all species is included in Appendix E, Table 54.

The flight lines for these registrations are presented in Appendix A, Figures 14a – 14g, and include all ground registrations and heard-only registrations. Birds that were only heard, and not seen, are not included in Table 23. A summary of all point registrations (i.e. ground registrations and heard-only registrations) is included in Appendix F, Table 67.

Table 23: Summary Flight Data for Target Species

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Common gull	<i>Larus canus</i>	1	15	20	3,202	2,842	0
Cormorant	<i>Phalacrocorax carbo</i>	1	2	5	228	155	1
Curlew	<i>Numenius arquata</i>	10	10	1	2,260	2,260	0
Golden eagle	<i>Aquila chrysaetos</i>	1	1	1	180	180	0
Golden plover	<i>Pluvialis apricaria</i>	18	18	1	1,116	1,116	1
Great black-backed gull	<i>Larus marinus</i>	1	2	5	502	370	0
Greylag goose	<i>Anser anser</i>	2	37	7	7,910	1,735	0
Hen harrier	<i>Circus cyaneus</i>	1	1	4	399	248	1
Herring gull	<i>Larus argentatus</i>	1	30	7	29,436	27,854	0
Lesser black-backed gull	<i>Larus fuscus</i>	1	1	1	62	62	0
Osprey	<i>Pandion haliaetus</i>	1	1	1	695	640	0
Pink-footed goose	<i>Anser brachyrhynchus</i>	1	1	1	22	22	0
Ptarmigan	<i>Lagopus mutus</i>	1	1	1	10	0	0
Short-eared owl	<i>Asio flammeus</i>	1	1	1	101	101	0
Unidentified large gull		1	18	7	1,337	1,337	0
White-tailed eagle	<i>Haliaeetus albicilla</i>	1	1	4	516	456	1

Hen harrier flight activity was recorded at both HH4 and HH5, but with only three flights recorded between the two VPs, not in sufficient quantity to provide evidence that hen harrier were roosting in this area. There were no observations of hen harrier landing to roost, with all records relating to individual birds flying over.

There was no evidence of other target raptor species landing to roost at any of the other winter roosts.

4.2.9 Individual Species Accounts of Recorded Activity

Arctic skua - Red listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the Scottish Biodiversity List (SBL).

Three flights (one in each of June, July and September 2023) of Arctic skua were recorded during the surveys, with only one flight of three birds observed crossing the alignment: one flight north of Loch Rangag and two flights south-west of Knockally together with a bird heard calling. The level of recorded of flight behaviour is not enough to identify the possible location of a colony, but the surrounding moorland within easy reach of the coast at the locations of the observed behaviour do provide suitable habitat (Figure 4l, maps 4 and 7, Appendix A refers).

Barn owl – Green listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981).

Four flights of barn owl were recorded in June 2023, none of which were observed crossing the alignment: one at risk height and three below risk height, and all over moorland / agricultural fields to the south-west of Braehungie. Scattered agricultural buildings and ruined buildings in the wider area offer suitable nesting locations, with the surrounding land offering suitable foraging resource (Figure 4b, map 5, Appendix A refers).

Black-headed gull - Amber listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024), and the species is on the SBL.

Nine flights of black-headed gull were observed (three in August 2023, one in November 2023, one in December 2023, one in March 2024, two in May 2024, and one in July 2024), all at risk height: one flying south to the east of Loch of Toftingall, three flights at Loch Stemster, two flights south of Loch Rangag, two flights north of Badnagie, and one flight to the west of Badnagie (Figure 4f, maps 2, 4 and 6, Appendix A refers). Flights in these locations are expected given the proximity of the coast, large inland lochs and agricultural fields. Of these, only one flight of one bird was observed crossing the alignment.

Common gull - Red listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024).

A total of 508 flights of common gull were observed (seven in May 2023, 71 in June 2023, 20 in July 2023, 85 in August 2023, eight in September 2023, one in October 2023, four in November 2023, six in December 2023, nine in January 2024, 57 in February 2024, 74 in March 2024, 30 in April 2024, 100 in May 2024, 33 in June 2024, one in July 2024, and two in August 2024) with the majority at risk height with observed flight activity running parallel to the A9 between Latheron and Thurso. This can be explained by the open grass/shrub, and farmland which provide adequate foraging with the various scattered lochans providing potential roost or loafing sites, even though no roosts were recorded. Of these, 83 flights (minimum flock size 1 bird, maximum flock size 23 birds) were observed crossing the alignment, with the majority of flight activity recorded crossing the alignment at Lochs Rangag and Stemster.

Further south there is evidence that this species is travelling inland from the east coast with substantial amounts of activity recorded at Dunbeath, Borgue, Ousdale and along the Helmsdale River (Figure 4d, Appendix A refers).

Common tern - Amber listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024), the species is on the SBL and is protected under Annex I of the Birds Directive.

Five flights of common tern were recorded during the surveys (one in June 2023, two in August 2023, one in September 2023, and one in May 2024), all of which were at risk height. Of these, only one flight of two birds was observed crossing the alignment. Two

were observed flying south past Cnoc Dubh near Loch Rangag, one flying north-west past Cnoc Breac (north of Badnagie), one flying around Creag na Cuinge at Ousdale, and one flying north-west past Asc na Grèine (north of Brora) (Figure 4l, maps 4, 5, 6, 8, 9, and 12, Appendix A refers). There was no breeding behaviour observed with all flights being ranging flights.

Cormorant - Green listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024). The breeding population of cormorant is a qualifying feature of the East Caithness Cliffs SPA.

Eleven flights of cormorant were recorded during the surveys, seven at risk height and four flights below (one in August 2023, one in October 2023, three in November 2023, three in December 2023, one in February 2024, one in March 2024, and one in May 2024). Of these, only one flight of one bird was observed crossing the alignment. One flight was recorded flying north past the entrance to Halsary Wind Farm, following the A9, and two were observed flying south towards Loch Rangag. The majority of the activity focussed on Loch Rangag with one flight heading north-west towards Loop Burn, and four flights heading south-east over the loch itself. Three flights (below risk height) were observed following the River Helmsdale (Figure 4l, maps 2, 3, 4, and 11, Appendix A refers). Given the proximity of the coast and the SPA, it is considered that the recorded flight activity can be attributed to the SPA population.

Curlew - Red listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL.

A total of 136 flights of curlew were recorded during the surveys, predominantly at risk height or below (12 in May 2023, 44 in June 2023, three in August 2023, 24 in March 2024, seven in April 2024, 45 in May 2024, and one in June 2024). Of these, 14 flights (minimum flock size 1 bird, maximum flock size 2 birds) were observed crossing the alignment, with the majority of flight activity recorded crossing the alignment around Borgue. Most flightlines were over pasture with notable activity recorded around Backlass Hill, south of Tacher, and around Borgue. A number of heard-only registrations were also recorded from similar habitat around Badnagie and Dunbeath (Figure 4m, maps 1 – 8 and 10, Appendix A refers). Flight behaviour would appear to align with breeding territories, with one confirmed and a number of probable and possible territories (records from 2023 and 2024) identified in this area (Figures 5c and 6c, Appendix A refers).

Eider – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

One flight of eider was observed (in August 2023), at risk height at Loch Rangag, and this did not cross the alignment. Further registrations were recorded at Loch of Toftingall (Figure 4i, maps 2 and 4, Appendix A refers). No breeding behaviour was recorded.

Golden eagle – Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL and is protected under Annex I of the Birds Directive as well as under Schedule 1 of the WCA (1981). The breeding population of golden eagle is a qualifying feature of the Caithness and Sutherland Peatlands SPA.

A total of 36 flights were recorded (four in May 2023, four in June 2023, four in August 2023, one in September 2023, two in November 2023, two in December 2023, 11 in February 2024, and eight in May 2024), with individuals recorded at and above risk height. Of these, ten flights (minimum flock size 1 bird, maximum flock size 3 birds) were observed crossing the alignment. Twenty-five of the flights were at risk height and were seen all along the route with high activity being just inland of Helmsdale. The spiralling

flight patterns seen are likely associated with using thermals to gain height (Figure 4b, maps 1, 2, 4, 5, 6, 7, 8, 9, 10, 11 and 12, Appendix A refers). No breeding behaviour was recorded. Given the proximity of the SPA, it is considered that the recorded flight activity associated with the north of Section A may be attributed to the SPA population. One golden eagle flight of one bird was also observed during the winter goose and swan roost VPs, flying at risk height and crossing the alignment south of Banniskirk House (Section 4.2.7 refers, and Figure 12a, map 1, Appendix A refers).

Winter roost sites VPs were also carried out for this species focussing on historic/known roost sites. No roost sites were identified; however, one flight was recorded (at risk height) to the south of the Berriedale Water, north of Meall na Caorach in the vicinity of EA5 (Section 4.2.8 refers, and Figure 14a, map 2, Appendix A refers).

Goldeneye – Red listed in BoCC5 (Stanbury *et al.*, 2021). The non-breeding population of goldeneye is a qualifying feature of the Moray Firth SPA.

Nine flights of goldeneye (at or below risk height) were recorded (one in February 2024, seven in March 2024, and one in July 2024) with notable activity around Loch Rangag, with individuals on the water of Loch of Toftingall also recorded (Figure 4i, maps 2 and 4, Appendix A refers). No flights were observed crossing the alignment. No evidence of breeding was recorded.

Golden plover – Green listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL and is protected under Annex I of the Birds Directive. The breeding population of golden plover is a qualifying feature of the Caithness and Sutherland Peatlands SPA / Ramsar, Dunbeath Peatlands SSSI and Strathmore Peatlands SSSI.

A total of 18 flights were recorded during the surveys, with 16 at risk height (one in May 2023, one in June 2023, five in July 2023, two in August 2023, one in September 2023, one in December 2023, one in January 2024, four in February 2024, one in March 2024, and one in April 2024). Of these, three flights (minimum flock size 2 birds, maximum flock size 6 birds) were observed crossing the alignment. Most flightlines were over moorland and pasture with notable activity recorded around Spittal Hill, Loch Rangag, Ousdale, and Asc na Grèine (north of Brora), with single flights at Hill of Leodebest and Borgue Loch (Figure 4m, maps 1, 4, 5, 7, 8, 9 and 12, Appendix A refers). While no confirmed breeding was identified, possible and probable territories were identified in 2023. Given the proximity of the SPA / Ramsar and SSSIs, it is considered that some of the flight activity can be attributed to the SPA / Ramsar and SSSIs population. Nine of the 18 flights occurred outwith the breeding season (March – July) and are therefore unlikely to relate to the SPA breeding population.

Goosander – Green listed in BoCC5 (Stanbury *et al.*, 2021).

Four flights of goosander (predominantly below risk height) were recorded (two in December 2023, one in January 2024, and one in March 2024) with flights along the Loop Burn south of Tacher, River Helmsdale, and one bird flying at risk height parallel to the A9 at Borgue. Activity was also noted at Borgue Loch with individuals also loafing on the water (Figure 4i, maps 3, 7 and 10, Appendix A refers). No flights were observed crossing the alignment.

Goshawk - Green listed in BoCC5 (Stanbury *et al.*, 2021). This species is protected under Schedule 1 of the WCA (1981).

Four flights of goshawk were recorded (one in September 2023, one in February 2024, one in April 2024, and one in July 2024) with all activity at risk height and centred

around the conifer plantation surrounding Loch of Toftingall (Figure 4c, maps 1 and 2, Appendix A refers). No flights were observed crossing the alignment. No evidence of breeding was recorded although given the suitable habitat it is possible birds are breeding in this plantation.

Great black-backed gull - Red listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024). The breeding population of great black-backed gull is a qualifying feature of the East Caithness Cliffs SPA.

A total of 121 flights were recorded during surveys (one in May 2023, six in June 2023, seven in July 2023, five in August 2023, two in November 2023, five in December 2023, 15 in January 2024, 26 in February 2024, 20 in March 2024, 13 in April 2024, 13 in May 2024, six in June 2024, one in July 2024, and one in August 2024) with the majority being at risk height. Of these, 39 flights (minimum flock size 1 bird, maximum flock size 5 birds) were observed crossing the alignment. Notable activity was observed running parallel to the A9 between Latheron and Thurso, with the majority of flight activity recorded crossing the alignment around Smerral. This can be explained by the open grass / shrub, and farmland which provide adequate foraging with the various scattered lochans providing potential roost or loafing sites, even though no roosts were recorded.

Further south there is evidence that this species is travelling inland from the east coast with substantial amounts of activity recorded at Dunbeath, Borgue, and along the Helmsdale River (Figure 4f, maps 1, 2, 3, 4, 5, 6, 7, 8, 10 and 12, Appendix A refers). Given the proximity of the coast and the SPA, it is considered that much of the recorded flight activity can be attributed to the SPA population; however, 53 flights occurred outwith the breeding season (March – August) and so not all activity would be attributable to the SPA population

Greenshank - Amber listed in BoCC5 (Stanbury *et al.*, 2021) and is protected under Schedule 1 of the WCA (1981). The breeding population of greenshank is a qualifying feature of the Caithness and Sutherland Peatlands SPA / Ramsar, and Dunbeath Peatlands SSSI.

Four flights, at and below risk height, were recorded during the surveys (two in May 2023, and two in May 2024) and all were of short duration, with additional registrations of individuals on the ground and / or heard calling. No flights were observed crossing the alignment. The area of most notable activity was around Allt Caol (north-east of Tacher), with a further flight recorded south-west of Borgue (Figure 4n, maps 3, 6, 7 and 8, Appendix A refers). Given the proximity of the SPA / Ramsar, and the SSSI, it is considered that the recorded activity can be attributed to the SPA / Ramsar and SSSI population.

Greylag goose - Amber listed in BoCC5 (Stanbury *et al.*, 2021). The non-breeding population of greylag goose is a qualifying feature of the Caithness Lochs SPA / Ramsar and Loch Scarmclate SSSI.

A total of 190 flights, with the majority at and above risk height, were recorded during the surveys (seven in May 2023, 16 in June 2023, two in July 2023, six in August 2023, seven in September 2023, 11 in October 2023, 24 in November 2023, seven in December 2023, 13 in January 2024, 16 in February 2024, 33 in March 2024, 19 in April 2024, 24 in May 2024, and five in June 2024). Of these, 19 flights (minimum flock size 1 bird, maximum flock size 65 birds) were observed crossing the alignment. Notable activity was recorded north of Backlass Hill, flights running parallel to the A9 at Tacher, around Lochs Rangag and Stemster, around Badnagie and Dunbeath, at Borgue (including a

small number of individuals on Borgue Loch), at Ousdale (following the Ousdale Burn inland), and following the River Helmsdale (Figure 4g, maps 1, 3, 4, 5, 6, 7, 8, 9 and 11, Appendix A refers).

While the majority of activity was recorded during the migration months of April / May and September / October, flight activity was also recorded during the breeding season associated with confirmed territories around Loch Rangag (Figure 5c, Appendix A refers). (It is recognised that Caithness does support a small breeding population of this species.)

Winter goose foraging surveys also recorded individuals in fields to the south-west of Loch Watten, with a high mean count of 66.7 birds in Field 474, located south-east of Houstry of Dunn. A peak count of 400 individuals in November 2023 were recorded in Field 474 (Section 4.2.6 refers, and Figure 10a, Appendix A refers).

Winter goose roost VPs were also undertaken focussing on historic roost sites. Loch Stemster (GS103) was confirmed as a winter roost with a peak of 2 individuals observed in January 2024, with occasional use of Loch of Toftingall recorded (Section 4.2.7 refers, and Figure 12d, maps 2 and 3, Appendix A refers).

Observations of greylag goose were also recorded during winter raptor roost VPs with flight activity running parallel to the A9 south of Loch Rangag recorded, together with a small number of individuals landing on the waters (Section 4.2.8 refers, and Figure 14d, Appendix A refers).

Hen harrier – Red listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The breeding population is a qualifying feature of the Caithness and Sutherland Peatlands SPA.

A total of 99 flights, with the majority at and below risk height, were recorded during the surveys (13 in May 2023, 13 in June 2023, three in July 2023, eight in August 2023, 16 in September 2023, one in October 2023, one in November 2023, four in December 2023, seven in January 2024, five in February 2024, three in March 2024, six in April 2024, 17 in May 2024, one in June 2024, and one in July 2024). Activity was spread across the entire Spittal to Brora section of the alignment, with concentrations of activity observed to the north-east of Spittal Hill; around Backlass Hill; around Shielton, Halsary and Tacher; around Lochs Rangag and Stemster; around Braehungie; south of Achorn Road, Dunbeath; around Borgue and Borgue Loch; south-west of Berriedale Water; immediately east of the Glen Loth road; and around Asc na Grèine (north of Brora) (Figure 4c, maps 1 – 12, Appendix A refers). Of these, 12 flights (minimum flock size 1 bird, maximum flock size 1 bird) were observed crossing the alignment, with recorded flight activity crossing the alignment observed around Halsary and Borgue Loch.

Following breeding bird surveys in 2023 and 2024, one possible, and four probable territories respectively were subsequently identified (Section 4.2.2 refers, and Figures 5c and 6c, Appendix A refers).

Winter raptor roost VPs were also undertaken focussing on historic roost sites. To the south of Lochs Rangag and Stemster, there was a peak count of two in April 2024 at VPs HH4 and HH5, but there was no evidence of birds landing to roost (Section 4.2.8 and Figure 14b, map 1, Appendix A refers).

Herring gull - Red listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024), and the species is on the SBL. The breeding population of herring gull is a qualifying feature of the East Caithness Cliffs SPA.

A total of 678 flights, with the majority at risk height, were recorded during the surveys (14 in May 2023, 34 in June 2023, nine in July 2023, 23 in August 2023, three in September 2023, three in October 2023, one in November 2023, six in December 2023, 73 in January 2024, 129 in February 2024, 81 in March 2024, 92 in April 2024, 133 in May 2024, 53 in June 2024, and 24 in July 2024). Of these, 115 flights (minimum flock size 1 bird, maximum flock size 55 birds) were observed crossing the alignment. Notable activity was recorded at several waterbodies including Loch of Toftingall, Dunbeath Water, Borgue Loch, Ousdale Burn, and River Helmsdale, with the majority of flight activity recorded crossing the alignment observed at Lochs Rangag and Stemster. There was also a large number of flights recorded running parallel to the A9 between Latheron and Thurso. This can be explained by the open grass / shrub, and farmland which provide adequate foraging with the various scattered lochans providing potential roost and loafing sites, even though no roosts were recorded.

There was also substantial activity recorded over farmland to the north of the Dunbeath Water. This is expected as gulls come inland, usually following topographic features such as river channels, to forage in fields and freshwater (Figure 4e, maps 1 – 11, Appendix A refers).

In addition, eight flights of herring gull were observed during winter goose and swan roost VP surveys (two in February 2024, five in March 2024, and one in April 2024). Of these, one flight of 25 birds was observed crossing the alignment (Figure 12c, map 3, Appendix A refers).

Herring gull were recorded throughout the year and as such, not all activity would be attributed to the SPA population.

Two confirmed territories were identified from the results of the breeding bird surveys in 2024: the first to the south of Achorn Road, Dunbeath; and the second north-east of Borgue Loch (Figure 6c, Appendix A refers).

Lapwing – Red listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL.

A total of 93 flights of lapwing were recorded during the surveys (five in May 2023, eight in June 2023, two in July 2023, one in August 2023, two in September 2023, one in November 2023, one in December 2023, five in February 2024, 22 in March 2024, 12 in April 2024, 27 in May 2024, six in June 2024, and one in July 2024), with the majority at risk height. Of these, five flights (minimum flock size 1 bird, maximum flock size 12 birds) were observed crossing the alignment. Notable activity was recorded over farmland at Lochs Rangag and Stemster; around Braehungie; around the Achorn Burn and south of Achorn Road, Dunbeath; and around Borgue (Figure 4m, maps 1 – 8, 11, Appendix A refers). Much of the activity was during the breeding season, but there was a low level of activity associated with wintering/migrant birds.

Lesser black-backed gull – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

A total of 52 flights of lesser black-backed gull were recorded during the surveys (13 in May 2023, three in July 2023, one in August 2023, one in September 2023, two in November 2023, one in December 2023, 14 in February 2024, nine in March 2024, three in April 2024, one in May 2024, and four in June 2024), with the majority at risk height. Of these, 13 flights (minimum flock size 1 bird, maximum flock size 7 birds) were observed

crossing the alignment. Notable activity was recorded over farmland at Backlass Hill; Loch of Toftingall; at Lochs Rangag and Stemster; around Badnagie; around Borgue and Borgue Loch; Ousdale Burn; and River Helmsdale (Figure 4f, maps 1 – 11, Appendix A refers). No evidence of breeding was recorded.

Little grebe – Green listed on BoCC5 (Stanbury *et al.*, 2021).

Two flights of little grebe were recorded during the surveys (both in July 2024), both of which were below risk height, over Loch of Toftingall. Neither flight was observed crossing the alignment. Individuals were also observed at the edge of the loch (Figure 4k, map 2, Appendix A refers). No evidence of breeding was recorded though Loch of Toftingall does provide suitable foraging and nesting habitat.

Marsh harrier – Red listed on BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive.

One flight of one individual in September 2023 was recorded crossing the alignment – an individual flying north-east to the south of Tacher (Figure 4c, map 2, Appendix A refers). No evidence of breeding was recorded.

Merlin - Red listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The breeding population of merlin is a qualifying feature of the Caithness and Sutherland Peatlands SPA.

A total of 40 flights were recorded during the surveys (four in May 2023, ten in June 2023, eight in August 2023, three in September 2023, two in October 2023, three in January 2024, two in February 2024, two in March 2024, two in April 2024, and four in May 2024), the majority below and at risk height. Of these, six flights (each flight of one individual bird) were observed crossing the alignment. Except for a small number of flights around Spittal Hill, activity was regularly dispersed along the southern section of the Spittal to Brora section of the alignment between Dunbeath Water and Asc na Grèine (north of Brora) (Figure 4c, map 1, 6, 7, 8, 9, 11 and 12, Appendix A refers). Behaviour suggestive of a territory holding pair (i.e. repeated alarm calling by both male and female individuals) was repeatedly observed during surveys in 2023 to the west of Dunbeath, but no nest was identified (Figure 5c, Appendix A refers). Given the proximity of the SPA, it is considered that much of the flight activity can be attributed to the SPA population; however, there were seven flights during the non-breeding season, including three flights in one VP session in January which were likely to be of the same individual.

Mute swan – Green listed in BoCC5 (Stanbury *et al.*, 2021).

Four flights of mute swan were recorded during the surveys (one in July 2023, one in April 2024, and two in May 2024), below and at risk height. No flights were observed crossing the alignment. Activity was focussed on the lochan north-east of Spittal Hill and Loch of Toftingall, with individuals in flight and on the water recorded (Figure 4h, maps 1 and 2, Appendix A refers). No breeding behaviour was recorded but both waterbodies offer good potential foraging and nesting habitat.

No winter roosts were identified. Winter goose foraging surveys did record a small number of individuals in fields to the south-west of Loch Watten. A peak count of 3 individuals in January 2024 was recorded in Field 560, located immediately to the north of Watten (Section 4.2.6 refers, and Figure 10c, Appendix A refers).

Osprey – Amber listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive.

A total of 115 flights were recorded during the surveys (four in May 2023, 18 in June 2023, 17 in August 2023, 18 in May 2024, 19 in June 2024, 24 in July 2024, and 15 in August 2024), with the majority at risk height. Of these, 27 flights (minimum flock size 1 bird, maximum flock size 2 birds) were observed crossing the alignment. Notable activity was recorded at Loch of Toftingall (a known breeding location) and at Loch Rangag with the north-western edge of Rumster Forest being of note (Figure 4c, maps, 1, 2, 4, 5, 10, 11, 12, Appendix A refers). Breeding bird surveys in 2023 did identify a confirmed territory (Figure 5c, Appendix A refers).

Oystercatcher – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

A total of 83 flights of oystercatcher were recorded during the surveys (one in May 2023, 27 in June 2023, three in July 2023, two in August 2023, two in February 2024, six in March 2024, 14 in April 2024, 19 in May 2024, and nine in June 2024), the majority below and at risk height. Of these, two flights (minimum flock size 2 birds, maximum flock size 2 birds) were observed crossing the alignment. Notable activity was recorded south of Tacher; around Lochs Rangag and Stemster (including individuals on the ground); around Braehungie; north-west of Latheronwheel; and along the River Helmsdale (Figure 4m, maps 1, 3, 4, 5, 6, 7, 9, 10, and 11, Appendix A refers). A confirmed territory was identified following breeding bird surveys in 2023 along the shoreline of Loch Stemster.

Peregrine – Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The breeding population is a qualifying feature of the East Caithness Cliffs SPA.

Eight flights were recorded during the surveys (two in May 2023, one in June 2023, one in August 2023, one in September 2023, one in December 2023, one in April 2024, and one in May 2024), below, at and above risk height. Of these, two flights (each flight of one individual bird) were observed crossing the alignment. Activity was in close proximity to the coast around Newport, Ousdale Burn and to the north of Helmsdale (Figure 4c, maps 7, 8, 9 and 10, Appendix A refers). Given the proximity of the coast and the SPA, it is considered that nearly all the recorded activity can be attributed to the SPA population. However, one flight from VP2 in December is not likely to be from the East Caithness Cliffs SPA.

Pink-footed goose – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

A total of 52 flights of pink-footed goose, with the majority at and above risk height, were recorded during the surveys (16 in September 2023, four in October 2023, five in November 2023, ten in January 2024, four in February 2024, five in March 2024, and eight in April 2024). Of these, six flights (minimum flock size 30 birds, maximum flock size 120 birds) were observed crossing the alignment. Notable activity was recorded to the north of Lochs Rangag and Stemster, with further activity throughout the Spittal to Brora alignment (Figure 4g, maps 1, 3, 4, 5, 6, 7, 8, 9 and 12, Appendix A refers). The majority of flight activity was during the key migration months of April / May and September / October.

Winter goose foraging surveys also recorded individuals in fields to the south-west of Loch Watten, with a high mean count of 16.7 birds in Field 550 (north of Watten, on the

shore of Loch Watten), and Field 594 (east of Newton, and west-south-west of Watten). A peak count of 100 individuals in March 2024 was recorded in Field 550 and 594 (Section 4.2.6 refers, and Figure 10b, Appendix A refers).

Winter goose roost VPs were also undertaken focussing on historic roost sites. While pink-footed goose were recorded overflying Loch Stemster, no individuals were recorded on the water (Section 4.2.7 refers, and Figure 12d, maps 1 - 3, Appendix A refers). No winter roosts were identified for this species.

A single flight of pink-footed goose was also recorded during winter raptor roost VPs, flying east over land to the south of Loch Stemster (Section 4.2.8 refers, and Figure 14d, Appendix A refers).

Pochard – Red-listed on BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL.

Two flights of pochard were recorded during the surveys (both in December 2023), both at risk height, flying away from the Burn of Houstry at Badnagie, to the north of Dunbeath. Neither flight was observed crossing the alignment. Individuals were also recorded on Loch of Toftingall, but no breeding was identified (Figure 4j, maps 2 and 6, Appendix A refers).

Red-breasted merganser – Amber listed in BoCC5 (Stanbury *et al.*, 2021). The non-breeding population of red-breasted merganser is a qualifying feature of the Moray Firth SPA.

The non-breeding population of red-breasted merganser is a qualifying feature of the Moray Firth SPA. Two flights were recorded during the surveys (one in March 2024 and one in June 2024). Of these, one flight of 2 birds was observed crossing the alignment. The first flight was below rising to risk height as the individual flew off from the surface of Loch of Toftingall. The second was below risk height, following the River Helmsdale (Figure 4j, maps 2 and 10, Appendix A refers). Both water features offer suitable nesting and foraging habitat. Following breeding bird surveys in 2023 and 2024, a possible territory was identified (Figures 5c and 6c, Appendix A refers).

Red kite - Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive.

A total of 24 flights were recorded during the surveys (three in June 2023, nine in August 2023, seven in September 2023, two in November 2023, one in January 2024, one in March 2024, and one in April 2024), with the majority at and above risk height. Of these, four flights (each flight of one individual bird) were observed crossing the alignment. Notable activity was recorded at the western edge of Rumster Forest, and in the valley of the Dunbeath Water to the north of Dunbeath (Figure 4a, maps 1, 3, 4, 5, 6, 7, 8, 9, 11 and 12, Appendix A refers). A possible territory was identified to the west of Dunbeath, following breeding bird and raptor surveys in 2024 (Figure 6c, map 13, Appendix A refers). However despite this, most activity was recorded between August - April.

Winter raptor roost VPs were also undertaken focussing on historic roost sites (Section 4.2.8 refers). No red kite roost was subsequently identified.

Redshank - Amber listed in BoCC5 (Stanbury *et al.*, 2021).

Three flights of redshank were recorded during the surveys (one in June 2023, one in March 2024, and one in April 2024), with one flight at risk height and two below risk

height. No flights were observed crossing the alignment. All flights were observed around Loch Rangag (Figure 4n, map 4, Appendix A refers), with additional records relating to birds heard calling. Following breeding bird surveys in 2024, a possible territory was identified (Figure 6c, Appendix A refers).

Red-throated diver - Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The breeding population is a qualifying feature of the Caithness and Sutherland Peatlands SPA / Ramsar, and the non-breeding population is a qualifying feature of the Moray Firth SPA.

A total of 13 flights were recorded during the surveys (two in June 2023, one in June 2024, six in July 2024, and four in August 2024), 12 at risk height and one below risk height. Of these, three flights (each flight of one individual bird) were observed crossing the alignment. One flight was observed at Loch of Toftingall where another individual was observed loafing on the water, and another flight was recorded flying north along the line of the Causeymire Burn, north of Tacher. However, the majority of the activity was recorded during July 2024 with adults and a juvenile undertaking a number of short duration flights to the north-west of Helmsdale (Figure 4k, maps 2, 3 and 10, Appendix A refers), suggesting an active breeding territory.

Ringed plover – Red-listed on BoCC5 (Stanbury *et al.*, 2021).

Two flights of ringed plover were recorded during the surveys (both in May 2024), both at risk height, over Loch of Toftingall (Figure 4m, map 2, Appendix A refers). Neither flight was observed crossing the alignment. No evidence of breeding was recorded.

Sandwich tern - Amber-listed on BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Annex I of the Birds Directive.

One flight was recorded during the surveys (in September 2023) – one individual flying at risk height following the line of the River Helmsdale towards the coast (Figure 4l, map 10, Appendix A refers). This flight was not observed crossing the alignment. No breeding behaviour was recorded.

Short-eared owl - Amber-listed on BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Annex I of the Birds Directive. The breeding population is a qualifying feature of the Caithness and Sutherland Peatlands SPA.

Seven flights were recorded during the surveys (four in January 2024, two in February 2024, and one in May 2024), at and below risk height. No flights were observed crossing the alignment. Notable activity was observed to the south of Loch Stemster, and to the north-north-west of Badnagie. Both areas support large areas of grass moor habitat together with populations of vole, a favoured prey item (Figure 4b, maps 4 and 6, Appendix A refers). No breeding behaviour was observed but the area around Dunbeath extending north-east to Lochs Rangag and Stemster is known as a breeding location for this species and the species is notoriously difficult to locate during breeding surveys.

Winter raptor roost VPs were undertaken focussing on historic roost sites. During these surveys, a single individual was observed flying at risk height over ground to the south of Loch Rangag (Section 4.2.8 refers and Figure 14a, map 1, Appendix A refers).

Snipe – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

Ten flights of snipe were recorded during the surveys (three in June 2023, one in December 2023, one in January 2024, one in February 2024, two in March 2024, one in April 2024, and one in June 2024), all at risk height. No flights were observed crossing the alignment. Activity was observed south of Tacher and at Creag Marail (above Helmsdale), with a number of birds observed on the ground and heard calling (Figure 4m, maps 3 and 10, Appendix A refers). Following breeding bird surveys in 2023, a probable and four possible territories were identified (Figure 5c, Appendix A refers). The habitat along the Spittal to Brora section of the alignment supports suitable habitat for nesting and foraging, with the ground at Tacher considered exceptional due to the presence of a long, dense sward of predominantly grass species interspersed with a number of shallow watercourses.

Teal – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

Five flights of teal were recorded during the surveys (two in August 2023, and three in May 2024), both below and at risk height. No flights were observed crossing the alignment. Records include short flights at Loch of Toftingall with birds also observed loafing on the water, and a short flight to the west of Smerral (Figure 4i, maps 2 and 5, Appendix A refers). Following breeding bird surveys in 2023, two territories were identified: one at Loch Rangag, and the second at Borgue Loch (Figure 5c, maps 8, 9, 14 and 15, Appendix A refers).

Twelve flights of teal (below and at risk height) were also recorded during winter goose and swan roost VPs (one in December 2023, six in January 2024, one in February 2024, two in March 2024, and two in April 2024) at Loch of Toftingall and Loch Stemster, with individuals observed on the water confirming the lochs status as a roost site for this species (Figure 12e, maps 2 and 3, Appendix A refers). No flights were observed crossing the alignment.

Tufted duck - Green listed in BoCC5 (Stanbury *et al.*, 2021).

Nine flights of tufted duck were recorded during the surveys (one in September 2023, three in June 2024, and five in July 2024), below and at risk height. No flights were observed crossing the alignment. Activity was noted at Loch of Toftingall, with birds also observed loafing on the water. One flight was also recorded south of Tacher (Figure 4j, maps 2 and 3, Appendix A refers). Following breeding bird surveys in 2023 and 2024, a possible territory was identified at Loch of Toftingall (Figures 5c and 6c, map 3, Appendix A refers).

One flight of tufted duck was also recorded during winter goose and swan roost VPs (in February 2024), with individuals observed on the waters of Loch of Toftingall and Loch Stemster, confirming the lochs status as a roost site for this species (Figure 12e, maps 2 and 3, Appendix A refers). No flights were observed crossing the alignment.

Whimbrel - Red listed in BoCC5 (Stanbury *et al.*, 2021). The species is protected under Schedule 1 of the WCA (1981).

One flight at risk height was recorded during the surveys (in May 2024): one bird was recorded in May 2024 flying north-east to the south of Braehungie (Figure 4n, map 5, Appendix A refers). This flight was observed crossing the alignment. While this species is recorded as only breeding in the north of Scotland, the vast majority of records are from Orkney and Shetland Islands and there was no evidence of breeding during all surveys.

White-tailed eagle – Amber listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive.

A total of 21 flights were recorded during the surveys (three in June 2023, two in August 2023, one in September 2023, four in November 2023, one in December 2023, five in February 2024, one in March 2024, and four in May 2024), at and above risk height. Flight activity was recorded at Loch of Toftingall (and individuals were also observed perched in the surrounding trees); south of Loch Rangag; west of Borgue Loch; north-east of Ousdale; along the valley of the River Helmsdale; and north-west of Lothbeg (Figure 4b, maps 2, 4, 5, 7, 8, 9, 10 and 12, Appendix A refers). Of these, six flights (each flight of one individual bird) were observed crossing the alignment, with such activity observed south of Loch Rangag. Flight activity was also observed during the breeding raptor surveys in 2024, but no breeding behaviour was recorded (Figure 7, Appendix A refers).

Winter raptor roost VPs were also undertaken focussing on historic white-tailed eagle roost sites, with no roosts confirmed. During these surveys, activity was limited to four flights (in February 2024), at or above risk height, and all observed to the south and west of Loch Rangag (Figure 14a, map 1, Appendix A refers). Of these, only one flight of one bird was observed crossing the alignment.

Whooper Swan – Amber listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The non-breeding population is a qualifying feature of the Caithness Lochs SPA / Ramsar.

Two flights of whooper swan were recorded during the surveys (one in February 2024, and one in March 2024), both at risk height. Of these, one flight of one individual bird was observed crossing the alignment. Flights were observed east of the wood surrounding Loch of Toftingall, and south of Tacher (Figure 4h, maps 2 and 3, Appendix A refers).

Winter goose foraging surveys also recorded whooper swan individuals in fields on the shore of Loch Watten, with a high mean count of 0.3, 0.2 and 0.5 birds in Fields 522, 534, and 560 respectively (all located on the south-west shore of Loch Watten). A peak count of two individuals in Field 522 was observed in March 2024, one individual in Field 534 was observed in April 2024, and three individuals in Field 560 was observed in January 2024 (Section 4.2.6 refers, and Figure 10c, Appendix A refers).

Winter goose and swan roost VPs were also undertaken focussing on known historic roost sites. One flight of whooper swan was recorded in December 2023, flying both below and then at risk height (crossing the alignment) at Loch of Toftingall (Section 4.2.7 refers, and Figure 12d, map 2, Appendix A refers). Several individuals were also observed during the surveys on the waters of Loch of Toftingall (GS102), suggesting that it is occasionally used as a roost by a small number of birds.

Wigeon – Amber listed in BoCC5 (Stanbury *et al.*, 2021). The breeding population is a qualifying feature of the Caithness and Sutherland Peatlands SPA / Ramsar, and Strathmore Peatlands SSSI.

One flight at risk height before descending to below risk height was recorded during the surveys (in March 2024): one bird was recorded in March 2024 flying in from the west and landing on Loch Rangag (Figure 4j, map 4, Appendix A refers). This flight was not

observed crossing the alignment. Given the proximity of the SPA / Ramsar, and the SSSI, it is considered likely that this bird is from the SPA / Ramsar, and SSSI population. No breeding behaviour was recorded during breeding bird surveys in 2023 or 2024.

Woodcock - Red listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL.

Three flights of woodcock were recorded during the surveys (two in December 2023, and one in January 2024), with all flights occurring below risk height. No flights were observed crossing the alignment. The sightings were north of Tacher, south of Borgue, and the last at Ousdale together with a second bird observed on the ground (Figure 4n, maps 2, 3, 7, 8 and 9, Appendix A refers). The flights were recorded during the winter months. No breeding behaviour was recorded during breeding bird surveys in 2023 or 2024.

4.3 Section B – Brora to Loch Buidhe

4.3.1 Flight activity – VPs

While VP surveys were conducted over a wide area to accommodate all possible design iterations, reporting and assessment is based on those VP locations that overlook the final route design.

Table 24 summarises the VP survey effort across all VP locations from May 2023 to August 2024, inclusive. The specific details of each VP survey visit (date, time, duration, and surveyor) can be found in Appendix B, Table 44. A summary of the weather conditions during all of the VP surveys is presented in Appendix C, Table 46. Section 3.3.1 provides an explanation of the number of hours that were surveyed from each location.

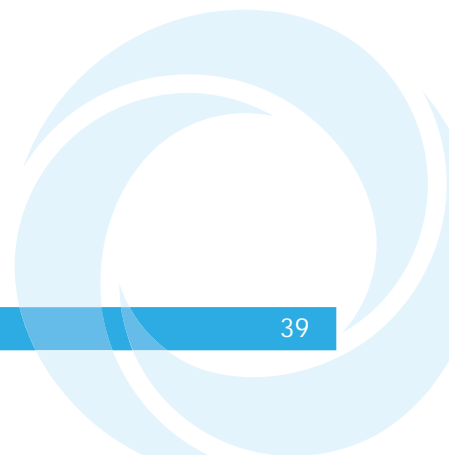


Table 24: Vantage Point Survey Effort (May 2023 – August 2024)

VP Number	Month				Total hours in breeding season 2023	Month						Total hours in non-breeding season 2023 / 2024	Month						Total hours in breeding season 2024	Total hours across breeding season 2023 and breeding season 2024
	May 2023	June 2023	July 2023	August 2023		September 2023	October 2023	November 2023	December 2023	January 2024	February 2024		March 2024	April 2024	May 2024	June 2024	July 2024	August 2024		
38	6	3	0	15	24	6	3	3	15	3	6	36	3	0	6	3	0	0	12	36
39	6	0	0	18	24	12	0	6	6	0	12	36	6	6	0	0	0	0	12	36
40	6	0	6	12	24	6	6	4	6	7	7	36	0	6	6	0	0	0	12	36
41	6	3	3	12	24	6	6	3	9	6	6	36	3	6	3	0	0	0	12	36
44	0	12	0	12	24	0	0	12.5	8.5	4	11	36	1	9	8	0	0	0	18	42
47	6	0	6	12	24	6	5	6	7.5	6	5.5	36	2	0	10	0	0	0	12	36
50	0	12.5	0	12.5	25	0	0	7.25	12	0	16.75	36	7	6.5	6	0	0	0	19.5	44.5
52	6	6	0	12	24	12	5	3	5.5	6	6.5	38	6	6	0	0	0	0	12	36
53	6	0	18	0	24	0	0	16.5	9	0	10.5	36	6	6	0	0	0	0	12	36
54	6	6	3.5	8.5	24	18	3	0	0	3	12	36	3	6	3	0	0	0	12	36
55	6	6	6	6	24	0	0	16.5	9	5	6	36.5	6	6	0	0	0	0	12	36
56	6	6	0	12	24	12	0	6	9	6	3	36	6	6	0	0	0	0	12	36
57	6	6	6	6	24	12	0	3.5	9.75	4	7	36.25	6	3	3	0	0	0	12	36
58	6	6	6	6	24	12	0	2.5	3	0	18.5	36	5.5	6	0.5	0	0	0	12	36

VP Number	Month					Total hours in breeding season 2023	Month						Total hours in non-breeding season 2023 / 2024	Month					Total hours in breeding season 2024	Total hours across breeding season 2023 and breeding season 2024
	May 2023	June 2023	July 2023	August 2023	September 2023		October 2023	November 2023	December 2023	January 2024	February 2024	March 2024		April 2024	May 2024	June 2024	July 2024	August 2024		
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	0	0	9	9

Vantage Point Survey Results

A total of 40 target species were recorded during VP surveys between May 2023 and August 2024. A summary of target species flights and flight times are presented in Table 25.

Appendix D, Table 50 details individual flight data for all target species. A complete species list with conservation status details of all species is included in Appendix E, Table 54.

The flight lines for these registrations are presented in Appendix A, Figures 16a – 16n, and include all ground registrations and heard-only registrations. Birds that were only heard, and not seen, are not included in Table 25. A summary of all point registrations (i.e. ground registrations and heard-only registrations) is included in Appendix F, Table 68.

Table 25: Summary Flight Data for Target Species

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Black grouse	<i>Lyrurus tetrix</i>	1	1	1	3	0	0
Black-headed gull	<i>Chroicocephalus ridibundus</i>	1	2	5	227	74	1
Black-throated diver	<i>Gavia arctica</i>	2	2	2	210	170	0
Brent goose	<i>Branta bernicla</i>	4	4	1	480	0	0
Common gull	<i>Larus canus</i>	1	20	120	21,092	18,867	35
Common tern	<i>Sterna hirundo</i>	2	2	1	64	64	1
Cormorant	<i>Phalacrocorax carbo</i>	1	1	7	443	150	2
Curlew	<i>Numenius arquata</i>	1	60	41	15,089	13,576	3
Dunlin	<i>Calidris alpina</i>	1	2	2	61	13	0
Golden eagle	<i>Aquila chrysaetos</i>	1	2	22	4,206	1,550	2
Goldeneye	<i>Bucephala clangula</i>	1	4	2	155	0	0
Golden plover	<i>Pluvialis apricaria</i>	1	20	12	675	548	1
Great black-backed gull	<i>Larus marinus</i>	2	40	3	2,130	2,040	1
Greenshank	<i>Tringa nebularia</i>	1	1	1	7	0	0
Greylag goose	<i>Anser anser</i>	1	500	106	687,836	459,192	16
Hen harrier	<i>Circus cyaneus</i>	1	2	26	2,109	1,570	7
Herring gull	<i>Larus argentatus</i>	1	88	106	39,829	34,773	29

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Lapwing	<i>Vanellus vanellus</i>	1	40	18	5,463	5,322	1
Lesser black-backed gull	<i>Larus fuscus</i>	1	2	2	195	195	2
Little grebe	<i>Tachybaptus ruficollis</i>	1	2	2	26	6	0
Little gull	<i>Hydrocoloeus minutus</i>	6	6	1	390	390	1
Merlin	<i>Falco columbarius</i>	1	1	8	311	188	1
Mute swan	<i>Cygnus olor</i>	2	2	1	168	168	1
Osprey	<i>Pandion haliaetus</i>	1	2	19	3,073	2,379	5
Oystercatcher	<i>Haematopus ostralegus</i>	1	2	9	420	399	3
Peregrine	<i>Falco peregrinus</i>	1	1	1	90	60	0
Pink-footed goose	<i>Anser brachyrhynchus</i>	1	200	27	95,336	28,501	0
Red-breasted merganser	<i>Mergus serrator</i>	1	1	1	42	42	1
Red kite	<i>Milvus milvus</i>	1	4	172	20,765	12,927	29
Red-throated diver	<i>Gavia stellata</i>	1	1	1	85	56	0
Shag	<i>Phalacrocorax aristotelis</i>	1	1	1	97	30	1
Shelduck	<i>Tadorna tadorna</i>	1	4	7	232	221	0
Snipe	<i>Gallinago gallinago</i>	1	1	5	69	58	2
Teal	<i>Anas crecca</i>	2	16	2	304	160	0
Unidentified duck		3	3	1	9	0	0
Unidentified goose		1	50	6	3,247	3,227	1
Unidentified gull		1	12	3	1,555	667	0
Unidentified large gull		2	40	3	1,780	1,540	0
White-tailed eagle	<i>Haliaeetus albicilla</i>	1	1	2	26	20	1
Wigeon	<i>Anas penelope</i>	19	23	2	1,035	1,035	0

4.3.2 Breeding Bird Surveys

2023

As detailed in Table 26, a total of two Brown and Shepherd (1993) breeding bird survey visits (three at the locations of the proposed substations) were carried out across multiple days between April and July (inclusive) for the 2023 breeding season. The study area for this survey included the site boundary plus a 500m buffer (Appendix A, Figures 17a – 17c refers).

Table 26: Breeding Bird Survey Effort 2023

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
1	Gordonbush Estate / Sutherland Estate	05/05/2023	JW, FT, SS, DB, RP, AK	09:00	17:00	08:00
1	Gordonbush Estate / Sutherland Estate	09/05/2023	AK, DB	09:15	16:45	07:30
1	Cambusmore Estate	10/05/2023	CMK, AK, DMK, AW, DB	08:45	16:30	07:45
1	Morvich Estate	15/06/2023	CMK, YMK, DB, AW, JL	09:15	17:00	07:45
1	Morvich Estate	16/06/2023	CMK, YMK, DB, JL	09:15	16:45	07:30
1	Loch Buidhe Substation	14/06/2023	YMK, JL	09:30	16:30	07:00
2	Morvich Estate	03/07/2023	RB, AK, CMK, WG	09:00	16:45	07:45
2	Morvich Estate	04/07/2023	RB, AK, CMK, WG, AW	08:45	16:45	08:00
2	Sutherland Estate	05/07/2023	RB, CMK, AK, AW, WG	08:30	16:30	08:00
2	Sutherland Estate	06/07/2023	RB, CMK, AK, AW, WG	09:00	16:30	07:30
2	Cambusmore Estate	07/07/2023	JW, DMK, AB, KMQ, TB	08:45	16:45	08:00
2	Gordonbush Estate	07/07/2023	RB, CMK, AK, AW, WG	09:00	16:15	07:15
2	Loch Buidhe Substation	10/07/2023	CMK, AK	09:15	16:15	07:00
3	Loch Buidhe Substation	24/07/2023	AB, AW	08:30	16:00	07:30

A total of 94 species were recorded in 2023 breeding season. Table 27 presents each of the species in terms of their breeding status and conservation value (NatureScot 2018) (Figures 17a – 17c, Appendix A refers).

Table 27: Breeding Bird Survey Recorded Species 2023

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
BK	Black grouse	<i>Lyrurus tetrix</i>			Yes	Red	Non-breeding (1)
B.	Blackbird	<i>Turdus merula</i>				Green	Confirmed (1) Probable (1) Possible (5) Non-breeding (15)
BC	Blackcap	<i>Sylvia atricapilla</i>				Green	Probable (1) Possible (3) Non-breeding (4)
BH	Black-headed gull	<i>Chroicocephalus ridibundus</i>			Yes	Amber	Non-breeding (2)
BT	Blue tit	<i>Cyanistes caeruleus</i>				Green	Confirmed (1) Possible (9) Non-breeding (27)
BF	Bullfinch	<i>Pyrrhula pyrrhula</i>			Yes	Amber	Possible (2) Non-breeding (5)
BZ	Buzzard	<i>Buteo buteo</i>				Green	Possible (6) Non-breeding (32)
C.	Carrion crow	<i>Corvus corone</i>				Green	Possible (4) Non-breeding (23)
CH	Chaffinch	<i>Fringilla coelebs</i>				Green	Probable (4) Possible (45) Non-breeding (44)
CC	Chiffchaff	<i>Phylloscopus collybita</i>				Green	Probable (2) Possible (6) Non-breeding (6)
CT	Coal tit	<i>Parus ater</i>				Green	Probable (1) Possible (15) Non-breeding (49)
CM	Common gull	<i>Larus canus</i>				Amber	Non-breeding (19)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
CS	Common sandpiper	<i>Actitis hypoleucos</i>				Amber	Probable (1) Possible (9) Non-breeding (17)
CX	Common scoter	<i>Melanitta nigra</i>	Yes	Yes	Yes	Red	Non-breeding (1)
CA	Cormorant	<i>Phalacrocorax carbo</i>				Green	Non-breeding (2)
CR	Crossbill	<i>Loxia curvirostra</i>		Yes		Green	Possible (1) Non-breeding (7)
CK	Cuckoo	<i>Cuculus canorus</i>			Yes	Red	Confirmed (1) Possible (6) Non-breeding (23)
DN	Dunlin	<i>Calidris alpina</i>		Yes	Yes	Red	Non-breeding (1)
D.	Dunnock	<i>Prunella modularis</i>				Amber	Confirmed (1) Possible (2) Non-breeding (9)
E.	Eider	<i>Somateria mollissima</i>				Amber	Non-breeding (2)
FP	Feral pigeon	<i>Columba livia</i>				Green	Non-breeding (1)
F.	Fulmar	<i>Fulmarus glacialis</i>				Amber	Confirmed (1)
GA	Gadwall	<i>Anas strepera</i>				Amber	Non-breeding (1)
GW	Garden warbler	<i>Sylvia borin</i>				Green	Possible (1)
GC	Goldcrest	<i>Regulus regulus</i>				Green	Probable (1) Possible (24) Non-breeding (16)
EA	Golden eagle	<i>Aquila chrysaetos</i>	Yes	Yes	Yes	Green	Non-breeding (1)
GP	Golden plover	<i>Pluvialis apricaria</i>	Yes		Yes	Green	Possible (3) Non-breeding (6)
GO	Goldfinch	<i>Carduelis carduelis</i>				Green	Possible (2) Non-breeding (7)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
GH	Grasshopper warbler	<i>Locustella naevia</i>				Red	Possible (3) Non-breeding (1)
GB	Great black-backed gull	<i>Larus marinus</i>				Amber	Non-breeding (3)
GS	Great spotted woodpecker	<i>Dendrocopos major</i>				Green	Possible (1) Non-breeding (4)
GT	Great tit	<i>Parus major</i>				Green	Possible (10) Non-breeding (14)
GR	Greenfinch	<i>Carduelis chloris</i>				Red	Possible (1) Non-breeding (3)
GK	Greenshank	<i>Tringa nebularia</i>		Yes		Amber	Possible (1)
H.	Grey heron	<i>Ardea cinerea</i>				Green	Non-breeding (9)
GL	Grey wagtail	<i>Motacilla cinerea</i>				Amber	Possible (1)
GJ	Greylag goose	<i>Anser anser</i>		Yes *		Amber	Confirmed (2) Non-breeding (1)
* Listed under Schedule 1 Part II (in Outer Hebrides, Caithness, Sutherland and Wester Ross only)							
HH	Hen harrier	<i>Circus cyaneus</i>	Yes	Yes	Yes	Red	Possible (2) Non-breeding (2)
HG	Herring gull	<i>Larus argentatus</i>			Yes	Red	Possible (2) Non-breeding (5)
HC	Hooded crow	<i>Corvus cornix</i>			Yes	Green	Non-breeding (8)
HM	House martin	<i>Delichon urbicum</i>				Red	Possible (1) Non-breeding (5)
HS	House sparrow	<i>Passer domesticus</i>			Yes	Red	Non-breeding (3)
JD	Jackdaw	<i>Corvus monedula</i>				Green	Possible (1) Non-breeding (5)
J.	Jay	<i>Garrulus glandarius</i>				Green	Non-breeding (4)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
K.	Kestrel	<i>Falco tinnunculus</i>			Yes	Amber	Confirmed (1) Possible (1) Non-breeding (6)
L.	Lapwing	<i>Vanellus vanellus</i>			Yes	Red	Non-breeding (7)
LI	Linnet	<i>Linaria cannabina</i>			Yes	Red	Non-breeding (1)
LG	Little grebe	<i>Tachybaptus ruficollis</i>				Green	Non-breeding (1)
LT	Long-tailed tit	<i>Aegithalos caudatus</i>				Green	Possible (3) Non-breeding (6)
MA	Mallard	<i>Anas platyrhynchos</i>				Amber	Confirmed (8) Possible (6) Non-breeding (12)
MP	Meadow pipit	<i>Anthus pratensis</i>				Amber	Confirmed (25) Probable (104) Possible (174) Non-breeding (238)
ML	Merlin	<i>Falco columbarius</i>	Yes	Yes	Yes	Red	Confirmed (1) Possible (1) Non-breeding (5)
M.	Mistle thrush	<i>Turdus viscivorus</i>				Red	Possible (5) Non-breeding (7)
MH	Moorhen	<i>Gallinula chloropus</i>				Amber	Confirmed (2) Non-breeding (2)
MS	Mute swan	<i>Cygnus olor</i>				Green	Non-breeding (1)
OP	Osprey	<i>Pandion haliaetus</i>	Yes	Yes	Yes	Amber	Confirmed (1) Non-breeding (4)
OC	Oystercatcher	<i>Haematopus ostralegus</i>				Amber	Non-breeding (8)
PH	Pheasant	<i>Phasianus colchicus</i>				Green	Possible (1) Non-breeding (6)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
PW	Pied wagtail	<i>Motacilla alba</i>				Green	Non-breeding (4)
RN	Raven	<i>Corvus corax</i>				Green	Possible (1) Non-breeding (30)
RM	Red-breasted merganser	<i>Mergus serrator</i>				Amber	Possible (2) Non-breeding (1)
RG	Red grouse	<i>Lagopus lagopus scotica</i>			Yes	Green	Confirmed (2) Probable (2) Non-breeding (5)
KT	Red kite	<i>Milvus milvus</i>	Yes	Yes	Yes	Green	Possible (3) Non-breeding (8)
FR	Redpoll	<i>Carduelis flammea</i>			Yes	Red	Confirmed (1) Probable (1) Possible (15) Non-breeding (40)
RT	Redstart	<i>Phoenicurus phoenicurus</i>				Amber	Confirmed (1) Possible (1) Non-breeding (1)
RH	Red-throated diver	<i>Gavia stellata</i>	Yes	Yes	Yes	Green	Possible (1) Non-breeding (2)
RB	Reed bunting	<i>Emberiza schoeniclus</i>			Yes	Amber	Confirmed (1) Possible (3) Non-breeding (8)
RP	Ringed plover	<i>Charadrius hiaticula</i>				Red	Possible (1) Non-breeding (1)
R.	Robin	<i>Erithacus rubecula</i>				Green	Probable (1) Possible (13) Non-breeding (24)
RO	Rook	<i>Corvus frugilegus</i>				Amber	Non-breeding (3)
SM	Sand martin	<i>Riparia riparia</i>				Green	Non-breeding (5)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
SW	Sedge warbler	<i>Acrocephalus schoenobaenus</i>				Amber	Possible (3) Non-breeding (1)
SU	Shelduck	<i>Tadorna tadorna</i>				Amber	Non-breeding (1)
SV	Shoveler	<i>Anas clypeata</i>				Amber	Non-breeding (1)
SK	Siskin	<i>Carduelis spinus</i>			Yes	Green	Probable (1) Possible (27) Non-breeding (70)
S.	Skylark	<i>Alauda arvensis</i>				Red	Confirmed (3) Probable (22) Possible (99) Non-breeding (14)
SN	Snipe	<i>Gallinago gallinago</i>				Amber	Possible (5) Non-breeding (5)
ST	Song thrush	<i>Turdus philomelos</i>			Yes	Amber	Possible (7) Non-breeding (3)
SH	Sparrowhawk	<i>Accipiter nisus</i>				Amber	Confirmed (1) Non-breeding (2)
SF	Spotted flycatcher	<i>Muscicapa striata</i>			Yes	Red	Probable (1) Non-breeding (1)
SG	Starling	<i>Sturnus vulgaris</i>				Red	Non-breeding (1)
SC	Stonechat	<i>Saxicola torquata</i>				Green	Confirmed (3) Probable (4) Possible (12) Non-breeding (37)
SL	Swallow	<i>Hirundo rustica</i>				Green	Possible (4) Non-breeding (18)
SI	Swift	<i>Apus apus</i>				Red	Non-breeding (13)
T.	Teal	<i>Anas crecca</i>				Amber	Non-breeding (1)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
TP	Tree pipit	<i>Anthus trivialis</i>			Yes	Red	Possible (1) Non-breeding (7)
TS	Tree sparrow	<i>Passer montanus</i>			Yes	Red	Non-breeding (3)
TC	Treecreeper	<i>Certhia familiaris</i>				Green	Possible (1) Non-breeding (3)
	Unidentified gull						Non-breeding (1)
W.	Wheatear	<i>Oenanthe oenanthe</i>				Amber	Confirmed (2) Possible (2) Non-breeding (10)
WC	Whinchat	<i>Saxicola rubetra</i>				Red	Confirmed (2) Possible (1) Non-breeding (1)
WH	Whitethroat	<i>Sylvia communis</i>				Amber	Possible (2) Non-breeding (1)
WW	Willow warbler	<i>Phylloscopus trochilus</i>				Amber	Confirmed (1) Probable (11) Possible (81) Non-breeding (60)
WK	Woodcock	<i>Scolopax rusticola</i>			Yes	Red	Non-breeding (1)
WP	Woodpigeon	<i>Columba palumbus</i>				Amber	Possible (7) Non-breeding (32)
WR	Wren	<i>Troglodytes troglodytes</i>				Amber	Confirmed (2) Probable (21) Possible (93) Non-breeding (55)
Y.	Yellowhammer	<i>Emberiza citrinella</i>			Yes	Red	Probable (1) Possible (3) Non-breeding (2)

2024

As detailed in Table 28, a total of two Brown and Shepherd (1993) breeding bird survey visits (three at the Loch Buidhe substation including extended area) were carried out from April to July (inclusive) for the 2024 breeding season. The study area for this survey included the site boundary plus a 500m buffer (Appendix A, Figures 18a – 18c refers).

Table 28: Breeding Bird Survey Effort 2024

Visit Number	Survey Area	Date	Surveyor	Start time	Stop time	Duration
1	Sutherland Estate	16/04/2024	SA, BM, SS, NE	08:45	16:45	08:00
1	Sutherland Estate	17/04/2024	FC, SA, BM	09:00	17:00	08:00
1	Sutherland Estate	18/04/2024	BM, NE	09:00	16:45	07:45
1	Loch Buidhe Substation	25/04/2024	LM, KC, JL, BM	09:15	16:15	07:00
1	Morvich Estate	29/04/2024	LM, BM, SS, KC	08:45	16:45	08:00
1	Morvich Estate	30/04/2024	EH, BM	09:00	17:00	08:00
2	Loch Buidhe Substation	06/06/2024	LM, KC, JL, BM	09:30	17:00	07:30
2	Sutherland Estate	24/06/2024	BM, SA, KC	08:30	17:00	08:30
2	Sutherland Estate	25/06/2024	BM, SA, KC	08:45	16:45	08:00
2	Sutherland Estate	26/06/2024	KC, BM, SA	08:45	17:00	08:15
2	Morvich Estate	28/06/2024	BM, SA, KC	09:15	17:00	07:45
3	Loch Buidhe Substation	29/07/2024	KC, JL, PB, WG, EH	09:30	16:30	07:00

A total of 70 species were recorded in 2024 breeding season. Table 29 presents each of the species in terms of their breeding status and conservation value. (NatureScot 2018) (Figures 18a – 18c, Appendix A refers).

Table 29: Breeding Bird Survey Recorded Species 2024

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
BK	Black grouse	<i>Lyrurus tetrix</i>			Yes	Red	Non-breeding (2)
B.	Blackbird	<i>Turdus merula</i>				Green	Possible (4)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
BT	Blue tit	<i>Cyanistes caeruleus</i>				Green	Confirmed (1) Possible (6)
BF	Bullfinch	<i>Pyrrhula pyrrhula</i>			Yes	Amber	Non-breeding (1)
BZ	Buzzard	<i>Buteo buteo</i>				Green	Possible (9) Non-breeding (18)
C.	Carrion crow	<i>Corvus corone</i>				Green	Non-breeding (15)
CH	Chaffinch	<i>Fringilla coelebs</i>				Green	Probable (15) Possible (27) Non-breeding (5)
CC	Chiffchaff	<i>Phylloscopus collybita</i>				Green	Probable (1) Possible (1)
CT	Coal tit	<i>Periparus ater</i>				Green	Confirmed (1) Probable (2) Possible (17) Non-breeding (20)
CM	Common gull	<i>Larus canus</i>				Amber	Non-breeding (12)
CS	Common sandpiper	<i>Actitis hypoleucos</i>				Amber	Probable (1) Possible (3) Non-breeding (1)
CX	Common scoter	<i>Melanitta nigra</i>	Yes	Yes	Yes	Red	Non-breeding (2)
CR	Crossbill	<i>Loxia curvirostra</i>		Yes		Green	Non-breeding (2)
CK	Cuckoo	<i>Cuculus canorus</i>			Yes	Red	Probable (2) Possible (7) Non-breeding (1)
CU	Curlew	<i>Numenius arquata</i>			Yes	Red	Possible (3) Non-breeding (1)
D.	Dunnock	<i>Prunella modularis</i>				Amber	Possible (1) Non-breeding (8)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
GC	Goldcrest	<i>Regulus regulus</i>				Green	Probable (3) Possible (15) Non-breeding (4)
GP	Golden plover	<i>Pluvialis apricaria</i>	Yes		Yes	Green	Possible (2)
GB	Great black-backed gull	<i>Larus marinus</i>				Amber	Non-breeding (1)
GT	Great tit	<i>Parus major</i>				Green	Possible (7) Non-breeding (4)
H.	Grey heron	<i>Ardea cinerea</i>				Green	Non-breeding (1)
GL	Grey wagtail	<i>Motacilla cinerea</i>				Amber	Non-breeding (1)
GJ	Greylag goose	<i>Anser anser</i>		Yes *		Amber	Confirmed (1) Possible (1) Non-breeding (5)
* Listed under Schedule 1 Part II (in Outer Hebrides, Caithness, Sutherland and Wester Ross only)							
HH	Hen harrier	<i>Circus cyaneus</i>	Yes	Yes	Yes	Red	Possible (2) Non-breeding (2)
HG	Herring gull	<i>Larus argentatus</i>			Yes	Red	Probable (1) Possible (2) Non-breeding (8)
HS	House sparrow	<i>Passer domesticus</i>			Yes	Red	Possible (1)
J.	Jay	<i>Garrulus glandarius</i>				Green	Non-breeding (2)
K.	Kestrel	<i>Falco tinnunculus</i>			Yes	Amber	Possible (2) Non-breeding (7)
L.	Lapwing	<i>Vanellus vanellus</i>			Yes	Red	Probable (1) Non-breeding (6)
LI	Linnet	<i>Linaria cannabina</i>			Yes	Red	Non-breeding (1)
LT	Long-tailed tit	<i>Aegithalos caudatus</i>				Green	Non-breeding (1)
MG	Magpie	<i>Pica pica</i>				Green	Non-breeding (1)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
MA	Mallard	<i>Anas platyrhynchos</i>				Amber	Confirmed (1) Probable (1) Possible (1) Non-breeding (1)
MP	Meadow pipit	<i>Anthus pratensis</i>				Amber	Confirmed (3) Probable (31) Possible (124) Non-breeding (82)
ML	Merlin	<i>Falco columbarius</i>	Yes	Yes	Yes	Red	Non-breeding (4)
M.	Mistle thrush	<i>Turdus viscivorus</i>				Red	Confirmed (1) Possible (1) Non-breeding (3)
OP	Osprey	<i>Pandion haliaetus</i>	Yes	Yes	Yes	Amber	Possible (1) Non-breeding (6)
OC	Oystercatcher	<i>Haematopus ostralegus</i>				Amber	Possible (3) Non-breeding (2)
PH	Pheasant	<i>Phasianus colchicus</i>				Green	Possible (1)
PW	Pied wagtail	<i>Motacilla alba</i>				Green	Possible (4) Non-breeding (1)
PG	Pink-footed goose	<i>Anser brachyrhynchus</i>				Amber	Non-breeding (2)
RN	Raven	<i>Corvus corax</i>				Green	Non-breeding (12)
RG	Red grouse	<i>Lagopus lagopus scotica</i>			Yes	Green	Possible (2) Non-breeding (5)
KT	Red kite	<i>Milvus milvus</i>	Yes	Yes	Yes	Green	Possible (2) Non-breeding (8)
FR	Redpoll	<i>Carduelis flammea</i>			Yes	Red	Possible (1) Non-breeding (6)
RK	Redshank	<i>Tringa totanus</i>				Amber	Possible (2) Non-breeding (1)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
RE	Redwing	<i>Turdus iliacus</i>		Yes	Yes	Amber	Non-breeding (2)
RB	Reed bunting	<i>Emberiza schoeniclus</i>			Yes	Amber	Probable (1) Possible (1) Non-breeding (2)
RP	Ringed plover	<i>Charadrius hiaticula</i>				Red	Non-breeding (2)
R.	Robin	<i>Erithacus rubecula</i>				Green	Probable (2) Possible (13) Non-breeding (8)
SK	Siskin	<i>Carduelis spinus</i>			Yes	Green	Possible (21) Non-breeding (18)
S.	Skylark	<i>Alauda arvensis</i>				Red	Probable (14) Possible (54) Non-breeding (6)
SN	Snipe	<i>Gallinago gallinago</i>				Amber	Possible (4) Non-breeding (6)
ST	Song thrush	<i>Turdus philomelos</i>			Yes	Amber	Possible (1)
SH	Sparrowhawk	<i>Accipiter nisus</i>				Amber	Non-breeding (2)
SC	Stonechat	<i>Saxicola torquata</i>				Green	Confirmed (1) Possible (9) Non-breeding (7)
SL	Swallow	<i>Hirundo rustica</i>				Green	Non-breeding (4)
T.	Teal	<i>Anas crecca</i>				Amber	Non-breeding (2)
TC	Treecreeper	<i>Certhia familiaris</i>				Green	Possible (1) Non-breeding (1)
TU	Tufted duck	<i>Aythya fuligula</i>				Green	Non-breeding (1)
	Unidentified finch						Non-breeding (1)
	Unidentified gull						Non-breeding (1)

BTO Code	Common Name	Scientific Name	EU Birds Directive: Annex 1	Schedule 1 Wildlife & Countryside Act 1981	Scottish Biodiversity List (SBL)	Birds of Conservation Concern (BoCC)	Breeding Status (possible, probable, confirmed, or non-breeding)
W.	Wheatear	<i>Oenanthe oenanthe</i>				Amber	Non-breeding (4)
WH	Whitethroat	<i>Sylvia communis</i>				Amber	Confirmed (1) Possible (2) Non-breeding (1)
WS	Whooper swan	<i>Cygnus cygnus</i>	Yes	Yes	Yes	Amber	Non-breeding (1)
WW	Willow warbler	<i>Phylloscopus trochilus</i>				Amber	Probable (13) Possible (57) Non-breeding (11)
WP	Woodpigeon	<i>Columba palumbus</i>				Amber	Possible (2) Non-breeding (7)
WR	Wren	<i>Troglodytes troglodytes</i>				Amber	Confirmed (1) Probable (6) Possible (30) Non-breeding (10)

4.3.3 Breeding Raptor Surveys

A total of 34 breeding raptor survey days were carried out over five months during the 2024 breeding season as detailed in Table 30. (Breeding raptor surveys were not commissioned in 2023.) The survey included a 2km buffer encompassing the Site, extending to 6km in the case of eagles, where access permitted.

Table 30: Breeding Raptor Survey Effort 2024

Survey Area	Date	Start time	Stop time	Duration
Sutherland Estate	18/04/2024 24 – 28/06/2024	09:15	16:45	07:30
Morvich Estate	29 – 30/04/2024 08/07/2024	09:00	16:00	07:00
Cambusmore Estate including Loch Buidhe	25/04/2024 06 – 07/06/2024 02/08/2024	09:00	16:00	07:00

Four Annex I / Schedule 1 species were recorded on Site across all survey types as shown in Table 31. Observations of all raptors recorded during these surveys are presented in Appendix A, Figure 19 refers.

Table 31: Breeding Status of Annex I and Schedule 1 Raptors Observed (South)

Raptor species	Scientific Name	Breeding Raptor Surveys 2024	Breeding Bird Surveys 2023 – Raptor Status	Breeding Bird and Breeding Raptor Surveys 2024 – Raptor status
Hen Harrier	<i>Circus cyaneus</i>	Possible (1) Possible (1)	Possible (2) Non-breeding (3)	Possible (2) Non-breeding (2)
Merlin	<i>Falco columbarius</i>	Non-breeding	Confirmed (1) Possible (1) Non-breeding (5)	Non-breeding (4)
Osprey	<i>Pandion haliaetus</i>	Probable (1)	Confirmed (1) Non-breeding (4)	Possible (1) Non-breeding (6)
Red Kite	<i>Milvus milvus</i>	Possible (1) Possible (1)	Possible (3) Non-breeding (8)	Possible (2) Non-breeding (8)

4.3.4 Breeding Divers, Ducks and Grebes

Table 32 presents the results of breeding diver, duck and grebe surveys (focussing on sensitive species namely black-throated diver, red-throated diver, garganey *Anas querquedula*, black-necked grebe *Podiceps nigricollis*, Slavonian grebe *Podiceps auritus*, and common scoter *Melanitta nigra*) undertaken in 2023 and 2024 on the waterbodies listed under Section 3.3.4.

Table 32: Breeding Diver, Duck and Grebe Survey Results 2023 and 2024

Loch / Lochan	Easting	Northing	2023 Survey Results	2024 Survey Results
Loch an Tubairnach	287598	908877	No evidence of breeding by target species.	No evidence of breeding by target species.
An Dubh-lochan	288052	907749	No evidence of breeding by target species.	
Loch Brora	285354	907046	No evidence of breeding by target species.	
Loch Horn	279809	906040	No evidence of breeding by target species.	No evidence of breeding by target species.
Loch nan Caorach	280348	902032	No evidence of breeding by target species.	No evidence of breeding by target species.
Loch Lunndaidh	278437	900838	No evidence of breeding by target species.	No evidence of breeding by target species.
Loch Farlary	277229	905057		No evidence of breeding by target species.
Loch Salachaidh	276207	903657		No evidence of breeding by target species.
Loch Ruagaidh	273311	899409	No evidence of breeding by target species.	
Loch Laoigh	273120	895980	No evidence of breeding by target species.	No evidence of breeding by target species.
Loch Buidhe	266262	898440	No evidence of breeding by target species.	No evidence of breeding by target species.

Observed red-throated diver activity is discussed further in Section 4.3.1 and in the Confidential Appendix.

In addition, in early 2024, a proposed deviation to the route alignment brought the design closer to Loch Farlary. Given the presence of suitable vegetation at the loch edge, as part of breeding diver, duck and grebe surveys undertaken in 2024, a single dawn VP survey was undertaken in May 2024 (Table 33 refers). Only a single vantage point survey was undertaken at this location because the viewshed of this VP location covered a proposed route deviation that was never progressed.

The specific details of the VP survey visit (date, time, duration, and surveyor) can be found in Appendix B, Table 44. A summary of the weather conditions during the VP survey is presented in Appendix C, Table 46. Section 3.3.4 provides an explanation of the number of hours that were surveyed.

Table 33: Diver Vantage Point Survey Effort

VP Number	May 2024	Total
300	3	3

Diver Vantage Point Survey Results

A total of 4 target species were recorded during the VP survey from May 2024. A summary of target species flights and flight times are presented in Table 34.

A single male red-throated diver was observed flying away from the loch in a southerly direction. As surveys were discontinued from this location as the proposed route deviation in this area was not progressed, the lack of survey data means no conclusions regarding breeding activity can be drawn. However, a precautionary stance is recommended as, at the very least, the loch is being used by the species as part of a wider foraging resource.

Appendix D, Table 53 details individual flight data for all target species. A complete species list with conservation status details of all species is included in Appendix E, Table 54.

The flight lines for these registrations are presented in Appendix A, Figure 28, and include all ground registrations and heard-only registrations. Birds that were only heard, and not seen, are not included in Table 34. A summary of all point registrations (i.e. ground registrations and heard-only registrations) is included in Appendix F, Table 71.

Table 34: Summary Flight Data for Target Species

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Curlew	<i>Numenius Arquata</i>	1	1	1	38	38	0
Greylag goose	<i>Anser anser</i>	2	7	5	824	484	0
Lapwing	<i>Vanellus vanellus</i>	3	3	2	228	228	0
Red-throated diver	<i>Gavia stellata</i>	1	1	1	51	51	0

4.3.5 Breeding Woodland Grouse

Following a review of historic data, supplemented by anecdotal evidence from the local estates, black grouse surveys in breeding season 2024 were undertaken at five locations (Figure 21, Appendix A and Table 35 refers).

Table 35: Black Grouse Survey Effort

Date	Observer	Survey Type	Survey Area	Start time	Stop time	Duration
18/04/2024	JL, CS, NE, BM, SA, LM, FC	Dawn Lek Count	Sutherland	05:50	08:50	03:00
25/04/2024	SA, TS, LM, KC, BM	Dawn Lek Count	Loch Buidhe	05:30	08:30	03:00
30/04/2024	SS, TS, NE, SA, EH, KC, BM	Dawn Lek Count	Morvich	05:15	08:15	03:00
08/05/2024	FC, WG, LM, KC, SA, SS	Dawn Lek Count	Sutherland	05:00	08:00	03:00
16/05/2024	TS, BM, JL, NE	Dawn Lek Count	Loch Buidhe	04:45	07:45	03:00

No leks were identified nor any black grouse observed, however, at least one bird was heard calling on the 30th April 2024 around the woodland to the north of Morvich Lodge.

Incidental Observations

On the 10th May 2024, during transit to VP 57, four male black grouse were recorded at 270424 898685 (to the east of Brae Cottage in Strath Carnaig).

4.3.6 Winter Goose Foraging

Tables 36 and 37 shows the results from the goose foraging surveys carried out between November 2023 and April 2024 (Figures 22a – 22b, Appendix A refers). Doll to Brora was chosen due to the presence of arable farmland and anecdotal goose observations from ERM. Strathfleet was chosen due to the presence of arable farmland and anecdotal goose observations from estates.

Table 36: Doll to Brora Goose Foraging Results

Species	Scientific Name	Field Number	No. of Birds Observed	Date	Mean Count across all Surveys
Greylag Goose	<i>Anser anser</i>	711	148	15/03/2024	24.7
		715	80	02/02/2024	13.3
		732	8	10/01/2024	1.3
Pink-footed Goose	<i>Anser brachyrhynchus</i>	716	60	10/01/2024	23.5
		716	81	15/04/2024	
		721	91	02/02/2024	15.5
		721	2	02/02/2024	

Species	Scientific Name	Field Number	No. of Birds Observed	Date	Mean Count across all Surveys
		723	19	10/01/2024	3.2

For all species, there was no identified patterns of use in the survey area.

Table 37: Strath Fleet Goose Foraging Results

Species	Scientific Name	Field Number	No. of Birds Observed	Date	Mean Count
Greylag Goose	<i>Anser anser</i>	3	150	13/03/2024	25
		8	40	02/02/2024	6.7
		25	30	13/03/2024	5
		39	200	13/03/2024	33.3
		40	60	13/03/2024	10
		42	180	02/02/2024	30
Pink-footed Goose	<i>Anser brachyrhynchus</i>	39	30	02/02/2024	5
		43	26	02/02/2024	4.3
		44	300	02/02/2024	50
		50	30	02/02/2024	5
		52	300	15/12/2023	91.7
			250	02/02/2024	

It is noted that pink-footed goose were recorded in Field 52 on two separate occasions: in December 2023 (a flock of 300) and again in February 2024 (a flock of 250). This was the only field which had more than one observation of foraging in it.

4.3.7 Winter Goose and Swan Roost VPs

Table 38 summarises the VP survey effort across all VP locations from November 2023 to April 2024, inclusive. The specific details of each VP survey visit (date, time, duration, and surveyor) can be found in Appendix B, Table 47. A summary of the weather conditions during all of the VP surveys is presented in Appendix C, Table 46. Section 3.3.7 provides an explanation of the number of hours that were surveyed from each location.

Table 38: Winter Goose and Swan Roost Vantage Point Survey Effort

VP Number	Month						Total
	November 2023	December 2023	January 2024	February 2024	March 2024	April 2024	
GS 104	3	3	0	0	0	0	6
GS 105	0	6	3	3	3	3	18
GS 106	3	3	3	3	3	3	18
GS 107	3	3	0	3	3	6	18

	Month						
GS 108	3	3	3	3	3	3	18
GS 110	3	3	3	3	3	3	18

Winter Goose and Swan Roost Vantage Point Survey Results

Table 39 shows the number of birds of each individual species observed on the waterbody at the time of the survey.

Table 39: Number and Species of Geese and Swan observed on Waterbodies

	Month					
VP Number	November 2023	December 2023	January 2024	February 2024	March 2024	April 2024
GS 104	0	0	0	0	0	0
GS 105	0	7 Greylag goose	0	0	3 Whooper swan	0
GS 106	0	0	0	0	0	0
GS107	0	2 Whooper swan	0	3 Whooper swan	4 Mute swan	1 Mute swan 6 Whooper swan
GS108	0	3 Greylag goose	11 Greylag goose	10 Greylag goose 170 Pink-footed goose	5 Whooper swan	18 Greylag goose
GS110	0	0	0	0	0	0

A total of 17 target species were recorded during VP surveys between November 2023 and April 2024. A summary of target species flights and flight times are presented in Table 40.

Appendix D, Table 61 details individual flight data for all target species. A complete species list with conservation status details of all species is included in Appendix E, Table 51.

The flight lines for these registrations are presented in Appendix A, Figures 24a – 24g, and include all ground registrations and heard-only registrations. Birds that were only heard, and not seen, are not included in Table 40. A summary of all point registrations (i.e. ground registrations and heard-only registrations) is included in Appendix F, Table 69.

Table 40: Summary Flight Data for Target Species

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Black-throated diver	<i>Gavia arctica</i>	1	1	1	25	25	0
Common gull	<i>Larus canus</i>	1	5	4	287	32	0
Cormorant	<i>Phalacrocorax carbo</i>	1	1	1	70	0	0
Goldeneye	<i>Bucephala clangula</i>	1	1	1	5	0	0
Goosander	<i>Mergus merganser</i>	8	8	1	248	248	0
Greylag goose	<i>Anser anser</i>	1	140	24	55,809	28,209	2
Herring gull	<i>Larus argentatus</i>	1	25	10	2,897	988	0
Lapwing	<i>Vanellus vanellus</i>	1	2	3	123	123	0
Lesser black-backed gull	<i>Larus fuscus</i>	1	1	1	51	51	0
Merlin	<i>Falco columbarius</i>	1	1	1	37	37	0
Osprey	<i>Pandion haliaetus</i>	1	1	9	2,899	2,802	1
Pink-footed goose	<i>Anser brachyrhynchus</i>	1	170	12	25,521	25,521	0
Red kite	<i>Milvus milvus</i>	1	2	10	2,374	2,324	0
Shelduck	<i>Tadorna tadorna</i>	1	1	1	52	26	0
Teal	<i>Anas crecca</i>	1	74	4	1,253	1,249	0
Tufted duck	<i>Aythya fuligula</i>	1	1	1	29	0	0
Whooper swan	<i>Cygnus cygnus</i>	2	2	1	30	20	0

4.3.8 Wintering Raptor Roost VPs

Table 41 summarises the VP survey effort across all VP locations from November 2023 to April 2024, inclusive. The specific details of each VP survey visit (date, time, duration, and surveyor) can be found in Appendix B, Table 44. A summary of the weather conditions during all the VP surveys is presented in Appendix C, Table 46. Section 3.3.8 provides an explanation of the number of hours that were surveyed from each location.

Table 41: Winter Raptor Roost Vantage Point Survey Effort

VP Number	Month						Total
	November 2023	December 2023	January 2024	February 2024	March 2024	April 2024	
HH1	3	3	3	3	0	3	15
HH2	3	3	3	3	0	3	15
HH3	3	3	3	3	0	3	15
KT1	3	3	3	3	0	3	15
KT2/3	3	3	3	3	0	3	15
EA1	0	0	0	3	0	0	3
EA2	0	0	3	3	0	0	6
EA3	0	0	3	0	0	0	3
WE1	0	0	3	3	0	0	6

Winter Raptor Roost Vantage Point Survey Results

There were no recorded observations of the target raptor species (namely hen harrier, red kite, golden eagle, and white-tailed eagle) landing to roost. All observations were of birds flying,

A total of 15 target species were recorded during VP surveys between November 2023 and April 2024. A summary of target species flights and flight times are presented in Table 42.

Appendix D, Table 52 details individual flight data for all target species. A complete species list with conservation status details of all species is included in Appendix E, Table 52.

The flight lines for these registrations are presented in Appendix A, Figures 26a – 26g, and include all ground registrations and heard-only registrations. Birds that were only heard, and not seen, are not included in Table 42. A summary of all point registrations (i.e. ground registrations and heard-only registrations) is included in Appendix F, Table 70.

Table 42: Summary Flight Data for Target Species

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
Barn owl	<i>Tyto alba</i>	1	1	1	900	900	0
Black grouse	<i>Lyrurus tetrix</i>	1	3	3	22	9	0
Black-headed gull	<i>Chroicocephalus ridibundus</i>	1	1	2	221	53	0
Common gull	<i>Larus canus</i>	1	5	8	2,063	825	0
Curlew	<i>Numenius</i>	2	2	1	56	56	0

Species	Scientific Name	Min. No. of Birds	Max. No. of Birds	No. of Flights	Total Bird Seconds	At Risk Bird Seconds	No. of flights crossing the alignment at collision risk height
	<i>arquata</i>						
Goosander	<i>Mergus merganser</i>	2	2	2	90	90	0
Greylag goose	<i>Anser anser</i>	8	28	3	6,008	1,220	0
Herring gull	<i>Larus argentatus</i>	2	33	7	12,955	3,938	0
Merlin	<i>Falco columbarius</i>	1	1	1	30	30	1
Oystercatcher	<i>Haematopus ostralegus</i>	2	2	2	74	74	0
Pink-footed goose	<i>Anser brachyrhynchus</i>	13	63	3	9,260	0	0
Red kite	<i>Milvus milvus</i>	1	6	36	7,378	5,661	5
Short-eared owl	<i>Asio flammeus</i>	1	1	1	8	0	0
Whooper swan	<i>Cygnus cygnus</i>	2	2	1	30	30	0
Woodcock	<i>Scolopax rusticola</i>	1	1	1	8	0	0

4.3.9 Individual Species Accounts of Recorded Activity

Barn owl – Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981).

During winter raptor roost VP surveys, an individual barn owl was observed flying at risk height to the west of Brae Cottage in Strath Carnaig, and to the north of the alignment (Figure 26a, map 5, Appendix A refers). Brae Cottage, and other scattered properties in the Strath, provide suitable nesting opportunities for this species, and the adjacent land (especially further to the east where there is agricultural grazing land) provides suitable foraging.

Black grouse – Red listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the Scottish Biodiversity List (SBL).

One flight below collision risk height was observed in May 2023 close to Socach Hill, during the VP surveys (Figure 16k, map 1, Appendix A refers). In addition, during winter raptor roost VPs, there were three flights observed in the valley of the Abhainn an t-Sratha Charnaig burn close to the forest (one in December 2023, and two in February 2024), one of which was at risk height, resulting in 9 at-risk height flight seconds (Section 4.3.8 and Figure 26f, maps 1 and 2, Appendix A refers). No flights were observed crossing the alignment.

During black grouse surveys (Section 4.3.5 and Figure 21, Appendix A refers), there were no observations of leks or breeding activity within the observation area, however, birds were heard calling on 30th April 2024 around woodland on the north side of Strath Fleet.

There was an incidental observation on 10th May 2024 (recorded during transit to VP57) of four male black grouse in Strath Carnaig.

Black-headed gull - Amber listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024), and the species is on the SBL.

Five flights in total were observed for this species (one in August 2023, and four in January 2024), all located over or close to agricultural fields within or around the valley of the River Fleet (Figure 16f, map 4, Appendix A refers). Of these, only one flight of one bird was observed crossing the alignment. There was no evidence of breeding in the vicinity of the alignment. Three of the flights included flight time at risk height.

In addition, there were two flights observed for this species in January 2024 during the winter raptor roost VP surveys around the settlement of Rogart, resulting in 53 seconds of flight activity at risk height (Figure 26c, map 3, Appendix A refers). Neither flight was observed crossing the alignment.

There are no sites designated for this species within the landscape surrounding the alignment.

Black-throated diver - Amber listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. They are also a qualifying feature of the Lairg and Strath Brora Lochs SPA / SSSI, and the Caithness and Sutherland Peatlands SPA / Ramsar.

There were two flights observed for this species (one in May 2023, and one in August 2023): one in the vicinity of Loch Brora (and an additional individual recorded loafing on the water); and the other (potentially a commuting flight between a breeding loch and the sea but no breeding was recorded) near to East Clyne (Figure 16k, maps 1 and 2, Appendix A refers). Neither flight was observed crossing the alignment. These two flights resulted in a total of 170 at-risk flight seconds.

There was one additional flight observed in April 2024 during the winter goose and swan roost VPs recorded close to Loch Brora, resulting in 25 flight seconds at risk height (Figure 24f, map 2, Appendix A refers). The flight was not observed crossing the alignment. Given the proximity of the Lairg and Strath Brora Lochs SPA / SSSI, and the Caithness and Sutherland Peatlands SPA / Ramsar, it is possible that these flights are all from individuals of the SPA / SSSI and / or SPA / Ramsar populations.

Brent goose - Amber listed in BoCC5 (Stanbury *et al.*, 2021).

There was one observation of a flock of four Brent geese in August 2023 flying along Loch Brora above risk height (Figure 16h, map 2, Appendix A refers). There were no other observations for this species from any other surveys. The species is not known to winter in the area, but can be recorded on migration.

There are no sites designated for this species within the landscape surrounding the alignment.

Common gull - Red listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024).

There were 120 flights observed for this species during the VP surveys (12 in May 2023, six in June 2023, eight in July 2023, 27 in August 2023, six in October 2023, 11 in November 2023, nine in January 2024, 11 in February 2024, two in March 2024, six in April 2024, four in May 2024, and 18 in June 2024). Of these, 35 flights (minimum flock size 1 bird, maximum flock size 20 birds) were observed crossing the alignment. There was a large

concentration of flight activity associated with agricultural fields within the River Fleet valley (Figure 16d, maps 3 and 4, Appendix A refers). Other concentrations of activity were associated with Loch Brora (Figure 16d, map 2, Appendix A refers) and Loch Salachaidh and its hinterland, associated with a colony on an island in the loch (Figure 16d, map 3, Appendix A refers). Observations varied from single birds to flocks of up to 20 birds, resulting in 18,867 at-risk flight seconds.

In addition, there were four flights recorded during the winter goose and swan roost VP surveys (one in January 2024, one in February 2024, and two in April 2024) resulting in 32 at risk flight seconds (Figure 24c, maps 2 and 5, Appendix A refers). None of these flights were observed crossing the alignment. One of these flights was within the River Fleet valley and the remaining flights were associated with Loch Brora.

There were eight flights of up to five birds resulting in 825 at risk flight seconds observed in January 2024 during the winter raptor roost VP surveys; all flights were concentrated around the settlement at Rogart (Figure 26c, map 3, Appendix A refers). None of these flights were observed crossing the alignment.

There are no sites designated for this species within the landscape surrounding the alignment. However, there is a known colony located on an island within Loch Salachaidh and they can also nest on gravel bars in rivers, which may explain their occurrence in fields around the River Fleet.

Common tern - Amber listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024), the species is on the SBL and is protected under Annex I of the Birds Directive.

There was one flight observed in August 2023, which comprised of two birds flying inland up a burn valley just north of Achrimsdale (Figure 16l, map 1, Appendix A refers), resulting in 64 seconds of at risk height flight activity. This flight was observed crossing the alignment. These birds were possibly on a ranging flight or flying towards one of the many inland lochans in the area to forage. Forrester (Forrester & Andrews, 2007) notes that common tern can nest inland on loch islands in Caithness.

There are no sites designated for this species within the landscape surrounding the alignment.

Cormorant - Green listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024).

There were seven flights recorded during the VP watches (two in August 2023, one in October 2023, one in November 2023, and three in December 2023), all of individual birds either within the River Fleet valley (2 birds) or over Loch Brora (5 birds) (Figure 16l, maps 2 and 4, Appendix A refers), resulting in 150 at risk flight seconds. Of these, two flights (each of one individual bird) were observed crossing the alignment.

In addition, there was one observation of a single bird in December 2023 during the winter goose and swan roost VP surveys (Figure 24f, map 2, Appendix A refers), flying over and landing on Loch Brora, with all flight activity of this bird below collision risk height. This flight was not observed crossing the alignment.

While the breeding population of cormorant is a qualifying feature of the East Caithness Cliffs SPA, the separation distance between the SPA and the recorded activity on this section of the route would suggest that the recorded flight activity is not from individuals of the SPA population.

Curlew - Red listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL. The non-breeding population of curlew is a qualifying feature of the Dornoch Firth and Loch Fleet SPA / Ramsar.

Forty-one flights of this species, individual birds and flocks up to 60 birds strong, were recorded during the VP surveys (one in May 2023, 12 in November 2023, five in December 2023, four in January 2024, two in February 2024, three in March 2024, and 14 in April 2024), the majority being located in the River Fleet valley during the non-breeding season and associated with foraging activity within the surrounding agricultural fields (Figure 16m, maps 3 and 4, Appendix A refers). Of these, three flights (minimum flock size 1 bird, maximum flock size 16 birds) were observed crossing the alignment. Much of this flight activity was at collision risk height resulting in 13,576 seconds of at risk activity. Given the timing and the proximity to the Dornoch Firth and Loch Fleet SPA it is likely much of this activity was of birds from the SPA population.

There was one observation of curlew in flight in May 2024 during the solitary diver VP survey, resulting in 38 seconds of at-risk flight activity beside Loch Farlary (Figure 28, Appendix A refers). This flight was not observed crossing the alignment. In addition, there was one flight of two birds observed in April 2024 during the winter raptor roost VP surveys, resulting in 56 seconds of at risk height flight activity, within a field close to Rogart (Figure 26g, map 3, Appendix A refers). This flight was not observed crossing the alignment.

There were three possible breeding territories located within the survey area; none of the flight activity described appears to be related to these locations.

Dunlin – Red listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL. The *schinzii* subspecies is also an Annex I listed species.

There were two flights recorded during the VP surveys (one in May 2023, and one in July 2023): one flight below risk height at the western end of Loch Buidhe; and one at risk height at Cnoc na Gamhna (Figure 16n, maps 3 and 6, Appendix A refers). Neither flight was observed crossing the alignment. No breeding behaviour was identified during any other surveys although both records occurred during the breeding season.

Dunlin are associated with a number of designated sites in the area: Caithness and Sutherland Peatlands SPA / Ramsar (breeding population), Dornoch Firth and Loch Fleet SPA / Ramsar (non-breeding population), Dunbeath Peatlands SSSI (breeding population) and Strathmore Peatlands SSSI (breeding population). The closest designated site to this section of the alignment is the Dornoch Firth and Loch Fleet SPA / Ramsar. However, the location and timing of the flights appears to suggest they would be from the upland breeding population, and as such would not form part of the SPA population.

Golden eagle – Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL and is protected under Annex I of the Birds Directive as well as under Schedule 1 of the WCA (1981).

Twenty-two flights were observed (two in May 2023, two in June 2023, six in July 2023, two in August 2023, one in December 2023, two in January 2024, four in February 2024, one in March 2024, and two in April 2024), resulting in 1,550 at-risk bird seconds of flight activity (Figure 16b, maps 1 – 6, Appendix A refers). Of these, two flights (each of one individual bird) were observed crossing the alignment. Flights were spread along the route of the alignment, focused mainly on the slopes of hills leading down to Straths.

There was a notable focus of activity around Cnoc Bad a' Chrasgaidh, with most records occurring in the breeding season, although the majority of flight activity was well above risk height.

No breeding behaviour was identified during any other surveys. While there was a small number of lights recorded in the vicinity of Ben Horn, no breeding was identified.

Winter raptor roost VPs were also undertaken focussing on historic roost sites. However no golden eagle activity was recorded, suggesting that the roosts were not active.

Caithness and Sutherland Peatlands SPA is designated for the breeding golden eagle population. However, this site is over 10km to the north-east of the area of highest activity and therefore given the ranging behaviour of territory holding birds, observations on this section of the route would not relate to the SPA population.

Goldeneye – Red listed in BoCC5 (Stanbury *et al.*, 2021).

There were two flights of this species observed during the VP surveys (one in October 2023, and one in January 2024) over Loch Brora, both of which were below 5m in height (Figure 16i, map 2, Appendix A refers), and neither was observed crossing the alignment. In addition, there were several observations of birds on the water notably at Loch Brora and An Dubh-lochan (Figure 16i, maps 1 and 2, Appendix A refers).

There was also one short flight in December 2023 below the risk window observed during the winter goose and swan roost VPs over Loch an Tubairnaich (Figure 24e, map 1, Appendix A refers), which did not cross the alignment.

Moray Firth SPA is designated in part for its non-breeding population of goldeneye. However, goldeneye winter in freshwater lochs across Scotland and as such it is likely that these birds are not associated with the SPA population.

Golden plover – Green listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL and is protected under Annex I of the Birds Directive.

Twelve flights of this species were observed (two in May 2023, one in October 2023, three in November 2023, one in February 2024, one in March 2024, and four in April 2024), with flocks varying from one to 20 individuals, resulting in 548 at risk bird seconds of flight activity. Of these, one flight of 8 birds was observed crossing the alignment. Activity was widespread between the hills to the west and north of Achrimsdale down to Strath Fleet (Figure 16m, maps 1 – 4, Appendix A refers). In addition, there were three possible breeding attempts on the slopes of Meall Coire Aghaisgeig in 2023 (Section 4.3.2 and Figure 17c, map 4, Appendix A refers).

The breeding population of golden plover is a qualifying feature of the Caithness and Sutherland Peatlands SPA / Ramsar, Dunbeath Peatlands SSSI, Strathmore Peatlands SSSI, and Coir' an Eoin SSSI.

The breeding season foraging range for golden plover is reported to be a core range of 3km, with a maximum range of 11km (SNH, 2016a). As a result, while it cannot be ruled out that birds could form part of the SPA breeding population, given the suitable habitats present and evidence of breeding closer to the OHL route than the SPA, it is unlikely SPA birds were being observed in these locales. The closest point of the SPA is at the Coir' an Eoin SSSI, which is approximately 7 – 8km north of the area with most recorded activity.

Goosander – Green listed in BoCC5 (Stanbury *et al.*, 2021).

No flights of this species were observed during VP surveys.

There was also one short flight in April 2024 at risk height observed during the winter goose and swan roost VPs at the mouth of the River Fleet (Figure 24e, map 5, Appendix A refers), which did not cross the alignment.

There were also two short flights in January 2024 at risk height observed during the winter raptor roost VPs flying along the Abhainn an t-Sratha Charnaig, to the north of the alignment (Figure 26e, map 5, Appendix A refers). Neither flight was observed crossing the alignment.

Great black-backed gull - Red listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024).

There were three flights of this species observed during the VP surveys (one in August 2023, one in January 2024, and one in May 2024), one within Strath Carnaig and two within Strath Fleet (Figure 16f, maps 4 and 5, Appendix A refers). Of these, one flight of two birds was observed crossing the alignment. Flocks varied from two individuals up to 40 birds, resulting in 2,040 at risk bird seconds. Most of the at risk flight activity can be attributed to a flock of 40 birds within Strath Fleet observed on 31/01/2024 (2,000 seconds).

The breeding population of great black-backed gull is a qualifying feature of the East Caithness Cliffs SPA, as well as forming part of the seabird assemblage (breeding colony) at Berriedale Cliffs SSSI. However, wintering flocks of birds using the area may be made up of individuals from a number of different colonies and locations and so cannot be said to be from any particular SPA / designated site.

Greenshank - Amber listed in BoCC5 (Stanbury *et al.*, 2021), and is protected under Schedule 1 of the WCA (1981).

Only one flight by this species was observed during the VP surveys in May 2024: this was a flight by a single individual on the shore of Loch Buidhe that did not cross the alignment (Figure 16n, maps 5 and 6, Appendix A refers). All observed flight activity was below risk height. In addition, there was one possible breeding attempt by this species in 2023 on the edge of Loch Horn (Section 4.3.2 and Figure 17c, map 5, Appendix A refers).

The breeding population of greenshank is a qualifying feature of the Caithness and Sutherland Peatlands SPA / Ramsar, and Dunbeath Peatlands and Strathmore Peatlands SSSIs. The breeding season foraging range for greenshank is reported to be a core range of 2km, with a maximum range of 3km (SNH, 2016a). Since the areas in which the birds were observed are over 3km from the designated sites mentioned above, these individuals would not form part of the SPA population.

Greylag goose - Amber listed in BoCC5 (Stanbury *et al.*, 2021).

There were 106 observed flights by greylag goose during the VP surveys (five in May 2023, one in July 2023, seven in August 2023, one in October 2023, 22 in November 2023, two in December 2023, four in January 2024, 20 in February 2024, ten in March 2024, 20 in April 2024, eight in May 2024, and six in June 2024), with most activity centred around Loch Brora and Strath Fleet, with fewer observations made around Loch Buidhe, Loch Salachaidh and Cnoc na Gamhna (Figure 16g, maps 1 – 6, Appendix A refers), consisting of individual birds and flocks up to 500 in number. Of these, 16 flights (minimum flock size 1 bird, maximum flock size 80 birds) were observed crossing the

alignment. These observations were made primarily between the months of November and April.

There were observations of 24 flights of greylag goose during the winter goose and swan roost VP surveys (two in November 2023, three in December 2023, two in January 2024, three in February 2024, seven in March 2024, and seven in April 2024), resulting in 28,209 seconds of at risk flight activity, with flocks varying from individual birds to flocks of up to 140 birds. Of these, two flights (minimum flock size 1 bird, maximum flock size 73 birds) were observed crossing the alignment. Most activity was centred around Loch Buidhe, Strath Fleet and Loch Brora (Figure 24d, maps 2 - 6, Appendix A refers). However, individuals were only recorded on the water at the mouth of the River Fleet (GS108), suggesting its use as a current roost site.

There were observations of three flights of greylag goose during the winter raptor roost VP surveys (one in November 2023, and two in February 2024), resulting in 1,220 seconds of at risk flight activity, with flocks varying from eight birds up to 28 birds. No flights were observed crossing the alignment. The majority of at risk flight activity was associated with birds using Strath Lunndaidh and Loch Lunndaidh (Figure 26d, map 5, Appendix A refers).

Winter goose foraging surveys were carried out at two locations: Doll to Brora and Strath Fleet. Greylag goose were observed on a number of occasions (Section 4.3.6 refers, and Figure 22a, Appendix A refers), with a high mean count of 24.7 birds in Field 711 (immediately adjacent to Brora), and 33.3 birds in Field 39 (west of Golspie Links and south of the Far North Railway Line).

Peak counts of 148 individuals in Field 711 were observed in March 2024, and 200 individuals in Field 39 observed in March 2024.

Five observations of greylag goose flights were made during the solitary Diver VP survey in May 2024 at Loch Farlary (Figure 28, Appendix A refers). Flock size varied from two to seven birds, resulting in 484 seconds of at risk flight activity. None of the flights were observed crossing the alignment.

It is noted that Caithness and Sutherland support a breeding population of greylag goose. Evidence of this was recorded during breeding bird surveys in 2023 and 2024, with confirmed territories identified at Strath Fleet and Loch Ruagaidh (Figure 17c, map 8, Appendix A refers).

The non-breeding population of greylag goose is a qualifying feature of Dornoch Firth and Loch Fleet SPA / Ramsar. The maximum foraging range for greylag goose during the winter season is reported to be 15 - 20km (SNH, 2016a). Consequently, many of the birds observed, particularly those within Strath Fleet, within the winter months are highly likely to be birds from the SPA population.

Hen harrier – Red listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and listed on Annex I of the Birds Directive.

Twenty-six flights were recorded during the VP surveys (seven in May 2023, one in July 2023, two in August 2023, one in September 2023, two in October 2023, one in January 2024, one in February 2024, five in March 2024, two in April 2024, and four in May 2024), with the greatest level of activity observed north of Achrimsdale and at Strath Carnaig (Figure 16c, maps 1 – 6, Appendix A refers). Of these, seven flights (minimum flock size 1

bird, maximum flock size 2 birds) were observed crossing the alignment, with the majority recorded around Strath Carnaig.

Following breeding bird surveys in 2023 and 2024, and breeding raptor surveys in 2024, two possible territories were identified in Strath Carnaig, and in the vicinity of Cnoc Bad a' Chrasgaidh (Sections 4.3.2 and 4.3.3 refers, and Figure 17c, map 9, Figure 18c, map 7, and Figure 19, maps 13 - 16, Appendix A refers).

Winter raptor roost VPs were also undertaken focussing on historic roost sites. However, no hen harrier activity was recorded, suggesting that the roosts were not active.

The breeding population of hen harrier is a qualifying feature of the Caithness and Sutherland Peatlands SPA, and the Strath Carnaig and Strath Fleet Moors SPA / SSSI. Given the location of the recorded activity, it is considered extremely likely that the observed birds are from the Strath Carnaig and Strath Fleet Moors SPA / SSSI population. Nearly all records came from the breeding season so are likely to relate to the SPA / SSSI population.

Herring gull - Red listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024), and the species is on the SBL.

One hundred and six flights of herring gull were observed during the VP surveys (four in June 2023, six in July 2023, five in August 2023, ten in December 2023, 33 in January 2024, 28 in February 2024, nine in March 2024, seven in April 2024, and four in May 2024), with flock size varying from individuals up to 88 birds. Of these, 29 flights (minimum flock size 1 bird, maximum flock size 27 birds) were observed crossing the alignment. The majority of this activity was in and around Strath Fleet, either associated with the agricultural fields in the valley bottom, or over the slopes running up from the valley floor towards Cnoc Bad a' Chrasgaidh (Figure 16e, maps 1 – 5, Appendix A refers), resulting in 34,773 at risk bird seconds of flight activity.

There were 10 herring gull flights observed during the winter goose and swan roost VP surveys (one in December 2023, one in February 2024, four in March 2024, and four in April 2024), with flock size varying between single birds up to flocks of 25 birds. None of these flights were observed crossing the alignment. Activity was concentrated around Loch Brora, with the remaining activity focused on waterbodies in Strath Fleet (Section 4.3.7 refers, and Figure 24c, maps 2 and 5, Appendix A refers), resulting in 988 at risk bird seconds of flight activity.

Seven observations of herring gull were made during the winter raptor roost VP surveys (five in February 2024, and two in April 2024), with all activity centred around the settlement at Rogart (Section 4.3.8 refers, and Figure 26c, map 3, Appendix A refers). None of the flights was observed crossing the alignment. Flock size varied from 2 to 33 birds, resulting in 3,938 at risk flight seconds of activity. Taken together with observations from other surveys, this would appear to be a regular route as opposed to a roost location.

Following breeding bird surveys in 2023 and 2024, two possible, one probable and one possible territories respectively, were subsequently identified (Section 4.3.2 refers, and Figures 17c and 18c, Appendix A refers).

The breeding population of herring gull is a qualifying feature of the East Caithness Cliffs SPA, as well as forming part of the seabird assemblage (breeding colony) at Berriedale Cliffs SSSI. It is considered possible that some of the birds observed in the breeding

season will be birds belonging to populations from these designated sites, however, there will also be juveniles and non-breeding adults alongside breeding birds.

Lapwing – Red listed in BoCC5 (Stanbury *et al.*, 2021), and the species is on the SBL.

Eighteen flights of lapwing were observed during the VP surveys (one in January 2024, two in February 2024, six in March 2024, and nine in April 2024) with all activity recorded in Strath Fleet, with the majority at risk height (Figure 16m, maps 2, 3 and 4, Appendix A refers). Of these, one flight of 6 birds was observed crossing the alignment.

Following breeding bird surveys in 2024, one probable territory was subsequently identified (Section 4.3.2 refers, and Figure 18c, Appendix A refers). Recorded activity from surveys in 2023 and the remainder of activity from 2024 surveys were attributed to non-breeding individuals.

There were two observations of lapwing in flight (both at risk height) during the solitary diver VP survey in May 2024 around Loch Farlary (Section 4.3.4 refers, and Figure 28, Appendix A refers). Neither flight was observed crossing the alignment. In addition, three flights (all at risk height) were recorded (two in January 2024, and one in April 2024) during winter goose and swan roost VPs at Loch Lunndaidh and the mouth of the River Fleet (Figure 24g, maps 4 and 5, Appendix A refers).

Lesser black-backed gull – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

Two flights of lesser black-backed gull (one of 1 bird and the second of 2 birds) were observed during the VP surveys (one in December 2023, and one in April 2024), both at risk height (Figure 16f, maps 2 – 4, Appendix A refers). Both flights were observed crossing the alignment. One was recorded flying north over the hills at Strath Fleet, and the other was observed flying north over Loch Brora. There were also two observations of birds on the waters of Loch Brora.

There was also one flight of one individual bird observed flying north at risk height over Loch Brora in March 2024 during winter goose and swan roost VP surveys (Section 4.3.7 refers, and Figure 24c, map 2, Appendix A refers). This flight was not observed crossing the alignment.

Little grebe – Green listed on BoCC5 (Stanbury *et al.*, 2021).

Two flights of little grebe were observed in April 2024 during the VP surveys (Figure 16k, map 4, Appendix A refers). Neither flight was observed crossing the alignment. One was recorded at risk height and the other below risk height, and both were observed flying north-west along Strath Fleet. Two individuals were also observed on the waters of Loch Brora (Figure 16k, map 2, Appendix A refers). There was no recorded evidence of breeding behaviour.

Little gull – Green listed on BoCC5 (Stanbury *et al.*, 2021). The species is protected under Schedule 1 of the WCA (1981).

A single flock of six little gull was observed in August 2023 flying at risk height, south over Strath Fleet (Figure 16f, map 4, Appendix A refers), and was observed crossing the alignment. This is a passage species in Britain which can be observed around the coastlines.

Merlin - Red listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The breeding population of merlin is a qualifying feature of the Caithness and Sutherland Peatlands SPA.

Eight flights were recorded during the VP surveys (one in May 2023, two in July 2023, one in August 2023, one in March 2024, and three in April 2024), with the majority recorded flying at risk height (Figure 16c, maps 1 – 6, Appendix A refers). Of these, one flight of one individual bird was observed crossing the alignment. They were seen flying north-east of Achrimsdale, in Strath Brora, south of Cnoc na Gamhna, and in Strath Carnaig.

Flight activity was observed during the breeding raptor surveys (Figure 19, maps 13 and 14, Appendix A refers). However, as this species was confirmed breeding in this area following breeding bird surveys in 2023, it is possible that this flight activity was from breeding merlin, but behaviour associated with breeding was not observed in 2024 (Section 4.3.2 refers, and Figures 17c and 18c, Appendix A refers).

There was a single observation of merlin recorded during winter goose and swan roost VP surveys in March 2024. The flight was not observed crossing the alignment. The individual was observed flying west over Loch Buidhe at risk height (Section 4.3.7 refers, and Figure 24b, map 6, Appendix A refers).

There was a further observation of a single individual recorded in December 2023 during winter raptor roost VP surveys. The individual was observed flying in a north-easterly direction before banking and flying away to the south-west, crossing the alignment, in Strath Carnaig (Section 4.3.8 refers, and Figure 26b, map 5, Appendix A refers).

Mute swan – Green listed in BoCC5 (Stanbury *et al.*, 2021).

There was a single observation of a flight of mute swan recorded during the VP surveys (in November 2023), and four observations of individuals on Loch Brora (Figure 16h, maps 2 and 3, Appendix A refers). Two individuals were observed flying away from Loch Lunndaigh in a north-westerly direction at risk height, crossing the alignment. The loch also had intermittent observations of this species present during VP and winter goose and swan roost VP surveys (Figure 24d, maps 4 and 5, Appendix A refers).

Osprey – Amber listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The breeding population of osprey is a qualifying feature of the Dornoch Firth and Loch Fleet SPA / Ramsar.

Osprey were consistently seen around six bodies of water: Loch Brora, Loch Horn, Loch Lunndaigh, River Fleet, and Loch Buidhe, with 19 flights recorded (five in June 2023, four in July 2023, five in August 2023, one in September 2023, three in April 2024, and one in May 2024) (Figure 16c, maps 1 – 6, Appendix A refers). Of these, five flights (minimum flock size 1 bird, maximum flock size 2 birds) were observed crossing the alignment. The majority of flights were at risk height, with some above.

During breeding bird surveys in 2023 and 2024, and breeding raptor surveys in 2024, breeding behaviour was observed in both years, resulting in the subsequent identification of territories associated with the forest to the south of Loch Buidhe (Figures 17c, 18c and 19, Appendix A refers). It is considered likely that the flight activity recorded from VP surveys is related to breeding osprey at Loch Buidhe. While theoretically a nest in this location could form part of the Dornoch Firth and Strath Fleet SPA population, it is on the edge of 10km to that SPA with other more suitable foraging habitat in closer proximity.

Nine flights of this species were also observed during winter goose and swan roost VP surveys, associated with Loch Brora, Loch Horn, Loch Lunndaigh, and the mouth of the

River Fleet (Section 4.3.7 refers, and Figure 24b, maps 2 – 5, Appendix A refers). All flights were recorded during surveys undertaken in April 2024. Of these, one flight of one bird was observed crossing the alignment.

Oystercatcher – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

There were nine flights from oystercatcher observed (one in May 2023, three in June 2023, one in July 2023, one in September 2023, one in March 2024, one in April 2024, and one in June 2024), totalling 420 total bird seconds, 399 of which were at risk height. Of these, three flights (minimum flock size 1 bird, maximum flock size 2 birds) were observed crossing the alignment. A significant amount of flightlines was recorded at risk height flying along the River Fleet, which has pasture suitable habitat for nesting (Figure 16m, maps 1 – 4, Appendix A refers).

Breeding bird surveys in 2024 resulted in the identification of three possible territories (Section 4.3.2 refers, and Figure 18c, Appendix A refers).

Two flights were also observed in April 2024 during winter raptor roost VPs (Section 4.3.8 refers, and Figure 26g, maps 1 and 3, Appendix A refers). Both flights were at risk height over fields to the north of Rogart, and were not observed crossing the alignment.

Peregrine – Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The breeding population is a qualifying feature of the East Caithness Cliffs SPA.

During VP surveys, a single flight was recorded in August 2023 for 90 seconds, 60 of which were at risk height. The individual was observed flying over Carrol Rock near Loch Brora (Figure 16c, map 2, Appendix A refers), and was not observed crossing the alignment. Carrol rock has cliff ledges, which is suitable nesting habitat for peregrine, although no activity for this species was observed during breeding bird, raptor and winter raptor roost VP surveys.

Pink-footed goose – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

Regular pink-footed goose activity was observed in two areas during the non-breeding season: Strath Brora and the River Fleet (Figure 16g, maps 1 – 6, Appendix A refers). A total of 27 flights between September 2023 and early May 2024 (one in September 2023, one in October 2023, two in November 2023, three in February 2024, eight in March 2024, 11 in April 2024, and one in May 2024) were recorded with a peak count of 200 birds. These equated to 95,336 total bird seconds, with 28,501 seconds recorded at risk height. At Dunrobin they were flying above risk height, likely migrating. No flights were observed crossing the alignment.

Winter goose foraging surveys were carried out at two locations: Doll to Brora and Strath Fleet. Pink-footed goose were observed on a number of occasions (Section 4.3.6 refers, and Figure 22b, Appendix A refers), with a mean count of 15.5 birds in Field 721 (immediately west of Brora), and 91.7 birds in Field 52 (between the Far North Railway Line and Ferry Road, Golspie).

Peak counts of 91 individuals in Field 721 were observed in February 2024, and 300 individuals in Field 52 observed in December 2023.

During winter goose and swan roost VP surveys, 12 flights were observed (four in November 2023, and eight in February 2024), all at risk height and all at the mouth of

the River Fleet (Section 4.3.7 refers, and Figure 24d, map 5, Appendix A refers). No flights were observed crossing the alignment.

During winter raptor roost VP surveys, three flights were observed in November 2023, all above risk height, and all flying south-east down Dunrobin Glen (Section 4.3.8 refers, and Figure 26d, map 4, Appendix A refers). No flights were observed crossing the alignment.

Red-breasted merganser – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

One flight was recorded during VP surveys: one bird was observed flying at risk height down Strath Fleet between Pittentrail and Morvich in March 2024 and crossed the alignment (Figure 16j, map 4, Appendix A refers).

Breeding bird surveys in 2023 resulted in the identification of two possible territories (Section 4.3.2 refers; Figure 17c, Appendix A refers).

During winter goose and swan roost VP surveys, individuals were recorded on the water at the mouth of the River Fleet (Figure 24e, map 5, Appendix A refers).

Red kite - Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive.

Flight activity was regularly recorded throughout the calendar year, with 172 flights recorded (six in May 2023, 26 in June 2023, two in July 2023, three in August 2023, five in September 2023, three in October 2023, 22 in November 2023, 23 in December 2023, 14 in January 2024, 31 in February 2024, 18 in March 2024, 14 in April 2024, and 5 in May 2024) over 16 months totalling 20,765 bird seconds, and 12,927 at risk flight seconds. Of these, 29 flights (minimum flock size 1 bird, maximum flock size 2 birds) were observed crossing the alignment. There was a peak count of four birds in September 2023. Activity was relatively widespread, but there was a significant concentration of flight activity observed over the River Fleet and adjacent areas between Rogart and Morvich, including Loch Ruagaidh (Figure 16a, Appendix A refers).

Breeding bird surveys in 2023 and 2024 resulted in the identification of three and two possible territories respectively (Section 4.3.2 refers; Figures 17c and 18c, Appendix A refers). Breeding raptor surveys in 2024 also resulted in the identification of possible territories in Strath Fleet (Section 4.3.3 refers and Figure 19, Appendix A refers).

Flights were also recorded during winter goose and swan roost VP surveys (one in November 2023, one in December 2023, one in January 2024, two in February 2024, four in March 2024, and one in April 2024), with most of the activity being at risk height (Section 4.3.7 refers; Figure 24a, maps 3 – 5, Appendix A refers). No flights were observed crossing the alignment. Many flights were observed at the mouth of the River Fleet, with some activity to the north near Loch Lunndaidh.

Flights were also recorded during winter raptor roost VP surveys (11 in November 2023, 12 in December 2023, six in January 2024, and seven in February 2024), with most of the activity being at risk height (Section 4.3.8 refers; Figure 26a, maps 2 – 6, Appendix A refers). Of these, five flights (each of one individual) were observed crossing the alignment. Many flights were recorded in Strath Carnaig and around Rogart. The latter is in a location where a historic roost has been previously identified, but there was no evidence of red kite landing to roost during roost surveys, but activity levels are high in this area.

Red-throated diver - Green listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive.

One red-throated diver was observed circling in flight over Loch Brora in August 2023 for 85 seconds - 56 seconds at risk height and 29 seconds above risk height (Figure 16k, map 2, Appendix A refers). This flight was not observed crossing the alignment. There is also a record of an individual sat on the loch immediately below this flight and a heard only record 1km south of this location. This is an appropriate breeding and nesting site as it is a freshwater body, but no breeding was identified at this location. Two adult birds were also observed in August 2023 loafing on the waters of An Dubh-lochan, approximately 2km east of Loch Brora.

Breeding bird surveys in 2023 resulted in the identification of a possible territory on Loch Horn (Section 4.3.2 refers; Figure 17c, map 5, Appendix A refers).

In early 2024, a proposed deviation to the alignment brought the design closer to Loch Farlary. Given the presence of suitable vegetation at the loch edge, as part of breeding diver, duck and grebe surveys undertaken in 2024, a single dawn VP survey was undertaken in May 2024 and a single male red-throated diver was observed flying away from the loch in a southerly direction (Figure 28, Appendix A refers). This flight was not observed crossing the alignment. As surveys were discontinued from this location as the proposed route deviation in this area was not progressed, the lack of survey data means no conclusions regarding breeding activity can be drawn. However, a precautionary stance is recommended as, at the very least, the loch is being used by the species as part of a wider foraging resource.

No other evidence of breeding behaviour of this species was recorded during breeding diver, duck and grebe surveys in 2023 and 2024.

Shag – Amber listed in The Status of the UK's breeding seabirds (Stanbury *et al.*, 2024). The breeding population of shag is a qualifying feature of the East Caithness Cliffs SPA, and Berriedale Cliffs SSSI. Both the breeding and non-breeding populations are a qualifying feature of the Moray Firth SPA.

One long flight from a solitary shag was recorded in August 2023 which was 97 seconds in duration, 30 seconds of which were at risk height (Figure 16l, maps 5 and 6, Appendix A refers). The flight was observed crossing the alignment. The individual was flying east over Loch Buidhe before being lost from sight near the peak of Meall a' Chaorainn.

Shelduck – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

Seven shelduck flights were recorded (one in May 2023, and six in April 2024) with a peak count of 4 birds. This equated to 232 bird seconds, 221 of which were at risk height. All flights were located over the River Fleet in an area just over 500m south-east of the alignment (Figure 16i, map 4, Appendix A refers). As such, no flights were observed crossing the alignment.

During winter goose and swan roost VP surveys, a single flight was observed flying below and at risk height over the mouth of the River Fleet in January 2024 (Section 4.3.7; Figure 24e, map 5, Appendix A refers). The flight was not observed crossing the alignment. A number of individuals were also recorded on the water at this location, suggesting its use as a roosting site.

Short-eared owl - Amber-listed on BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Annex I of the Birds Directive. The breeding population is a qualifying feature of the Caithness and Sutherland Peatlands SPA.

A single flight was observed in January 2024 below risk height during winter raptor roost VPs (Figure 26a, map 1, Appendix A refers). The observed flight was to the north of Farlary and west of Clais a' Chait, and as such, did not cross the alignment.

Snipe – Amber listed in BoCC5 (Stanbury *et al.*, 2021).

Individual snipe were recorded in flight on 5 occasions (one in May 2023, two in December 2023, one in February 2024, and one in May 2024), totalling 69 seconds, 58 of which at risk height. Of these, two flights (both of one individual bird) were observed crossing the alignment. Flight records were spread out along the route, as were a further 5 'heard only' records (Figure 16m, maps 1 – 4 and 6, Appendix A refers). This correlates with the findings of breeding bird surveys in 2023 and 2024 where 4 - 5 possible breeding territories were identified (Figures 17c and 18c, Appendix A refers).

Teal – Amber listed in BoCC5 (Stanbury *et al.*, 2021). The non-breeding population of teal is a qualifying feature of the Dornoch Firth and Loch Fleet SPA / Ramsar.

Two flights were observed on part of the River Fleet which directly adjoins Loch Fleet, in the non-breeding season. One flight was from two birds in March 2024 at risk height for 80 seconds and the other a flock of 16 in February below risk height for 9 seconds (Figure 16i, map 4, Appendix A refers). Neither flight was observed crossing the alignment. No breeding behaviour was recorded during breeding bird, and breeding diver, duck and grebe surveys in 2023 and 2024.

Four flights were recorded during winter goose and swan roost VP surveys with all activity recorded at the mouth of the River Fleet in January 2024 (Section 4.3.7 refers; Figure 24e, map 5, Appendix A refers). No flights were observed crossing the alignment.

Observations of this species loafing on Loch Buidhe were also recorded during winter raptor roost VP surveys (Figure 26e, map 1, Appendix A refers).

White-tailed eagle – Amber listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive.

Two short flights from individual birds were observed directly south and east of Cnoc Na Gamhna in November 2023 and March 2024 (Figure 16b, map 3, Appendix A refers). Total flight time was 26 seconds, 20 of which were of one bird at risk height crossing the alignment.

No activity was recorded during breeding bird surveys in 2023 and 2024, and similarly no observations during breeding raptor surveys in 2024.

Winter raptor roost VP surveys were undertaken focusing on known historical roost sites. However, no observations of white-tailed eagle were recorded.

Whooper swan – Amber listed in BoCC5 (Stanbury *et al.*, 2021), the species is on the SBL. The species is protected under Schedule 1 of the WCA (1981), and Annex I of the Birds Directive. The non-breeding population of whooper swan is a qualifying feature of the Caithness Lochs SPA / Ramsar.

During winter goose and swan roost VP surveys, one flight of whooper swan was recorded (Figure 24d, map 4, Appendix A refers). Two individuals were recorded flying

south-east over the Allt Strath Lunndaidh at risk height before descending below. Individuals were also recorded sitting on the water of Loch Lunndaidh (GS107) during the surveys suggesting that, at the very least, the loch is used as an intermittent roost site for this species.

In March 2024, five whooper swan were also recorded on the water at the mouth of the River Fleet (GS108), suggestive of this location being used as an occasional roost site.

In November 2023, one flight of whooper swan (flying north-east at risk height north-east of Rogart) was observed during winter raptor roost VP surveys (Figure 26d, map 3, Appendix A refers). This flight was not observed crossing the alignment.

Wigeon – Amber listed in BoCC5 (Stanbury *et al.*, 2021). The breeding population is a qualifying feature of the Caithness and Sutherland Peatlands SPA / Ramsar, and Strathmore Peatlands SSSI. The non-breeding population is a qualifying feature of the Dornoch Firth and Loch Fleet SPA / Ramsar.

Two flocks of wigeon were observed in succession, flying south-east over the River Fleet in November 2023. The flocks consisted of 19 and 23 birds and total flight time equated to 1,035 bird seconds, all of which were at risk height (Figure 16j, map 4, Appendix A refers). Neither flight was observed crossing the alignment.

No further observations of this species were recorded during breeding bird, and breeding diver, duck and grebe surveys in 2023 and 2024.

5 Conclusions

The route of the proposed OHL is passing through an area containing sensitive and specially protected bird populations and this is shown in the results of the surveys, which have been summarised in this report.

5.1 Section A Spittal to Brora

5.1.1 Designated Sites

There are a total of twelve designated sites designated for ornithological features found within the search area of the northern section:

- Caithness and Sutherland Peatlands SPA
 - Shielton Peatlands SSSI
 - Strathmore Peatlands SSSI
 - Dunbeath Peatlands SSSI
 - Coir' an Eoin
- Caithness Lochs SPA
 - Loch Scarmclate SSSI
- East Caithness Cliffs SPA
 - Berriedale Cliffs SSSI
- Moray Firth SPA
- Caithness and Sutherland Peatlands Ramsar
- Caithness Lochs Ramsar

5.1.2 Annex I /Schedule 1 Species

A total of 25 species listed on Annex I of the Birds Directive or Schedule 1 of the WCA were recorded in the northern section of the route. Greylag goose was recorded along the route; some of these would be from the population designated as Schedule 1.

Breeding was recorded in ten of the Annex I / Schedule 1 species. Osprey was the species with the highest number of territories along the route (a maximum of five, considering all possible/confirmed territories), while hen harrier and dunlin each had a maximum of four. Details on locations are provided in the Confidential Annex where appropriate. A maximum three golden plover territories were present in 2023, with two recorded in 2024. There were also three crossbill territories present in 2024, with one present in 2023.

Potential merlin territories were identified in two locations, while red-throated diver, red kite and Scottish crossbill each had one territory identified.

There were a number of Annex I and/or Schedule 1 species which occurred in suitable habitat but where no evidence of breeding was observed. For some of these species, such as goshawk and short-eared owl, it can be difficult to locate nests and as such, it is considered there could have been breeding territories present. The barn owl activity was in one locale so may have been linked to a territory holding individual or pair, given the presence of suitable buildings in the wider area.

Some species had potential to breed, but no evidence of breeding was observed and there was no indication that birds observed were territory holding – either too few sightings, or a bird out of season or possibly ranging far from its territory. Species which fell into this group were common tern, fieldfare, golden eagle, greenshank, peregrine, Sandwich tern and white-tailed eagle.

Finally, there were records of green sandpiper, little tern, marsh harrier, marsh warbler, storm petrel and whimbrel, which may have been of birds moving through the area during migration or vagrants.

5.1.3 Other species of conservation concern

A further 36 species which are categorised as red on BOCC 5 were recorded either during VPs or during walkover survey, and there were also four species which are qualifying features of SPAs along the route, but are not Annex I, Schedule 1 or BOCC 5 red listed.

Relatively large numbers of gulls, particularly herring, lesser black-backed and common gulls, together with smaller numbers of great black-backed gulls, were observed using the A9 between Latheron and Thurso as a flight corridor. Further south, the river valleys were seen to be used by gulls commuting inland (e.g., around Dunbeath). No colonies of gulls were identified; some territories were tentatively identified but may relate just to the occurrence of birds in the same place through several surveys. There was one record for kittiwake; it is very likely this was a bird from the SPA population.

Waders also were recorded along the route; of the red-listed species, lapwing was found in several specific areas, resulting in recording of 11 territories in 2023 and 3 present in 2024. Curlew was relatively common along the route, with a large number of flights observed on vantage point surveys, and 26 territories identified in 2023 and 16 in 2024. Ringed plover was present at Loch of Toftingal, but no breeding was observed. There were four records of woodcock during winter surveys but no evidence of breeding, which means they may be continental migrants.

Black grouse was not observed lekking, but was recorded on walkover surveys in both years, with one possible territory identified in 2023.

A small number of Arctic skuas and two great skuas were recorded. It was thought the Arctic skuas could be moving to and from an inland colony but if so, the colony was not within the survey area.

Goldeneye were observed on Loch of Toftingal and Loch Rangag but there was no evidence of breeding; however, this means they are unlikely to be from the Moray Firth SPA population. A small number of pochard were present on various waterbodies, but no breeding was observed.

There were also a number of red listed passerines found breeding in suitable habitat long the route. Skylark were ubiquitous with a maximum of just under 400 territories recorded in 2023. Others recorded breeding were greenfinch (maximum number of 5 in 2023), house martin (14 in 2023), house sparrow (14 in 2023) linnet (11 in 2023), mistle thrush (7 in 2023) redpoll (19 in 2023) reed bunting (5 in 2023), spotted flycatcher (5 in 2023), starling (13 in 2023), twite (1 in 2023), whinchat (1 in 2023) and yellowhammer (1 in 2023).

Other red listed passerines observed, but for which there was no evidence of breeding were ring ouzel (1 record), tree sparrow (5 records) and grasshopper warbler (1 record).

Cuckoo, particularly in 2024, were heard calling fairly frequently with 17 males calling in 2024 but only two in 2023. There was also one grey partridge record and 7 swifts recorded over two years.

5.2 Section B Brora to Loch Buidhe

5.2.1 Designated Sites

There are a total of eleven designated sites designated for ornithological features found within the search area of the southern section:

- Caithness and Sutherland Peatlands SPA
 - Coir' an Eoin SSSI
- Moray Firth SPA
- Lairg and Strath Brora Lochs SPA
 - Lairg and Strath Brora Lochs SSSI
- Dornoch Firth and Loch Fleet SPA
 - Loch Fleet SSSI
- Mount Alderwoods SSSI
- Strath Carnaig and Strath Fleet Moors SPA
 - Strath Carnaig and Strath Fleet Moors SSSI
- Caithness and Sutherland Peatlands Ramsar

5.2.2 Annex I /Schedule 1 Species

A total of 19 Annex I and/or Schedule 1 species were recorded during surveys in the Brora to Loch Buidhe section.

Evidence of breeding was recorded in six of these. Of the waders, golden plover was noted breeding on Meall Coire Aghhisheig, with three territories in 2023 and two in 2024. There was one greenshank territory near Ben Horn in 2023. Dunlin was observed, but no evidence of breeding was seen.

Hen harrier recorded two territories along the route, in both 2023 and 2024; merlin recorded two in 2023 but none in 2024. Osprey had one territory both in 2023 and 2024. Red kite was more common with three territories in 2023 and two in 2024. Golden eagle had a particular locus of activity around Cnoc Bad a Chrasgaidh, but there was no evidence for breeding there or any other locations along this section, including some historic sites. They were more commonly observed than white-tailed eagle, which was only recorded twice. Peregrine was seen on one occasion.

One lochan was found to hold breeding red-throated diver; they were seen in at least one more location. Only three flights of black-throated diver were observed, and no breeding was recorded.

One crossbill territory was identified in 2023.

Five other species had no evidence for breeding; common tern were seen flying inland and may have been commuting to breeding lochans. One small flock of little gull was recorded in August and is likely to have been migrant birds. There were records of common scoter in both years of the breeding bird surveys. Redwing and whooper swan

both had one record during walkover surveys and probable relate to birds which had wintered, but not yet departed for breeding grounds.

5.2.3 Other species of conservation concern

Twenty-seven species classified as red under BOCC 5 were recorded on the Brora to Loch Buidhe section of the route. Activity for many of them was centred around Strath Fleet / River Fleet. This included gull activity – herring, great black-backed (with a flight of 40 birds recorded) and common gulls, as well as wintering lapwing and curlew.

A colony of common gull was also present on Loch Salachaich.

No black grouse was observed lekking but one male was heard calling north of Strath Carnaigh and a party of males was present in May. There were a small number of other records.

Breeding waders included three curlew territories in 2023, and one lapwing territory also in 2023 and one in 2024. There was one ringed plover territory in 2023. Woodcock was recorded during breeding bird surveys but there was no evidence of breeding.

The only red-listed duck was goldeneye, mainly present on Loch Brora but with records on other waterbodies.

As with the Spittal to Brora section, a number of red-listed passerines were present. Skylark was once again ubiquitous, with 124 territories in 2023 and 68 territories in 2024. Seventeen redpoll territories were identified in 2023, but only one in 2024. Three grasshopper warbler were heard calling in 2023, and three whinchat and four yellowhammer territories were also recorded in that year. Five mistle thrush territories were present in 2023, and two in 2024. House martin, greenfinch, spotted flycatcher and tree pipit each recorded one territory. House sparrow recorded one territory in 2024, as did ring ouzel. Other passerines recorded with no evidence for breeding were linnet, starling and tree sparrow.

The only other red-listed species recorded was cuckoo, with nine calling males in 2024 and 13 records of swifts.

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Figure 14a	-	Raptor VP Activity Kites, Eagles and Owls
Figure 14b	-	Raptor VP Activity Other Raptors
Figure 14c	-	Raptor VP Activity Gulls
Figure 14d	-	Raptor VP Activity Geese and Swans
Figure 14f	-	Raptor VP Activity Grouse, Divers, and Seabirds
Figure 14g	-	Raptor VP Activity Waders

Section B – Brora to Loch Buidhe

Figure 15	-	VP Locations and Viewsheds
Figure 16a	-	VP Activity Red Kite
Figure 16b	-	VP Activity Eagles and Owls
Figure 16c	-	VP Activity Other Raptors
Figure 16d	-	VP Activity Common Gull
Figure 16e	-	VP Activity Herring Gull
Figure 16f	-	VP Activity Other Gulls
Figure 16g	-	VP Activity Greylag and Pink-footed Geese
Figure 16h	-	VP Activity Other Geese and Swans
Figure 16i	-	VP Activity Ducks A
Figure 16j	-	VP Activity Ducks B
Figure 16k	-	VP Activity Grouse, Divers, and Grebes
Figure 16l	-	VP Activity Seabirds
Figure 16m	-	VP Activity Waders A
Figure 16n	-	VP Activity Waders B
Figure 17a	-	Meadow Pipit Breeding Territories 2023
Figure 17b	-	Skylark Breeding Territories 2023
Figure 17c	-	Breeding Bird Results 2023
Figure 18a	-	Meadow Pipit Breeding Territories 2024
Figure 18b	-	Skylark Breeding Territories 2024

Figure 18c	-	Breeding Bird Results 2024
Figure 19	-	Breeding Raptors Survey 2024
Figure 20	-	Breeding Diver, Ducks and Grebes – Survey Area
Figure 21	-	Black Grouse Survey Areas – 2024
Figure 22a	-	Greylag Goose Winter Foraging Results – Strathfleet and Doll to Brora
Figure 22b	-	Pink-footed Goose Winter Foraging Results – Strathfleet and Doll to Brora
Figure 23	-	Goose and Swan Winter Roost VP Locations and Viewsheds
Figure 24a	-	Goose and Swan VP Activity Kites, Eagles and Owls
Figure 24b	-	Goose and Swan VP Activity Other Raptors
Figure 24c	-	Goose and Swan VP Activity Gulls
Figure 24d	-	Goose and Swan VP Activity Geese and Swans
Figure 24e	-	Goose and Swan VP Activity Ducks
Figure 24f	-	Goose and Swan VP Activity Grouse, Divers, and Seabirds
Figure 24g	-	Goose and Swan VP Activity Waders
Figure 25	-	Raptor Winter Roost VP Locations and Viewsheds
Figure 26a	-	Raptor VP Activity Kites, Eagles and Owls
Figure 26b	-	Raptor VP Activity Other Raptors
Figure 26c	-	Raptor VP Activity Gulls
Figure 26d	-	Raptor VP Activity Geese and Swans
Figure 26e	-	Raptor VP Activity Ducks
Figure 26f	-	Raptor VP Activity Grouse, Divers, and Seabirds
Figure 26g	-	Raptor VP Activity Waders
Figure 27	-	Diver Vantage Point Location and Viewshed
Figure 28	-	Diver VP Activity Waders, Diver, and Goose



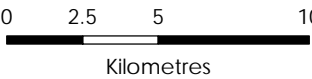
Beauly to Spittal



Figure 1
Site Location Plan

Key

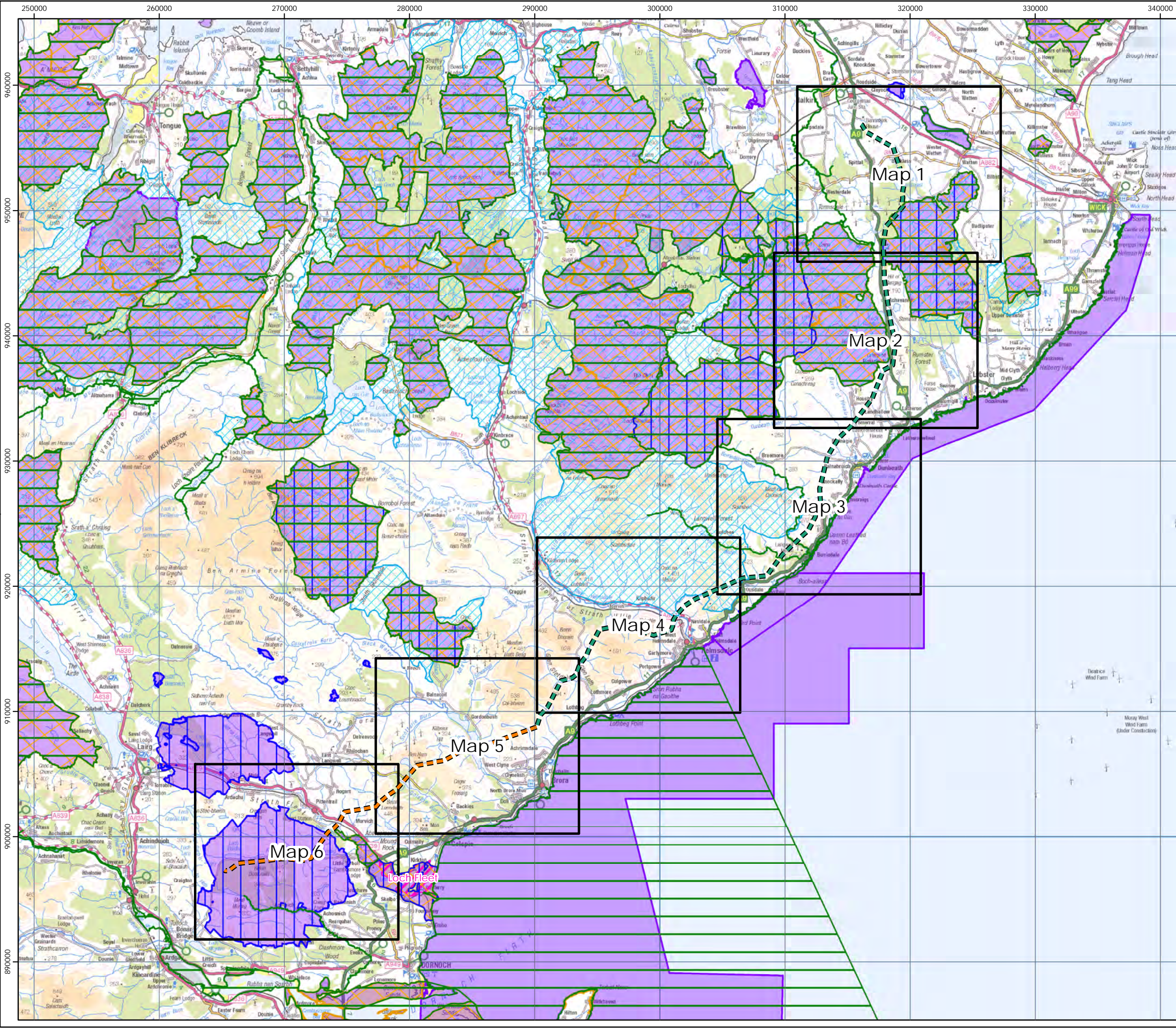
- OHL Alignment
- North (Spittal to Brora)
 - South (Brora to Loch Buidhe)



Scale @ A3:
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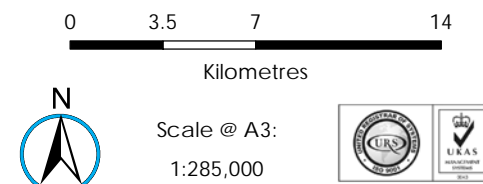


Beaulieu to Spittal

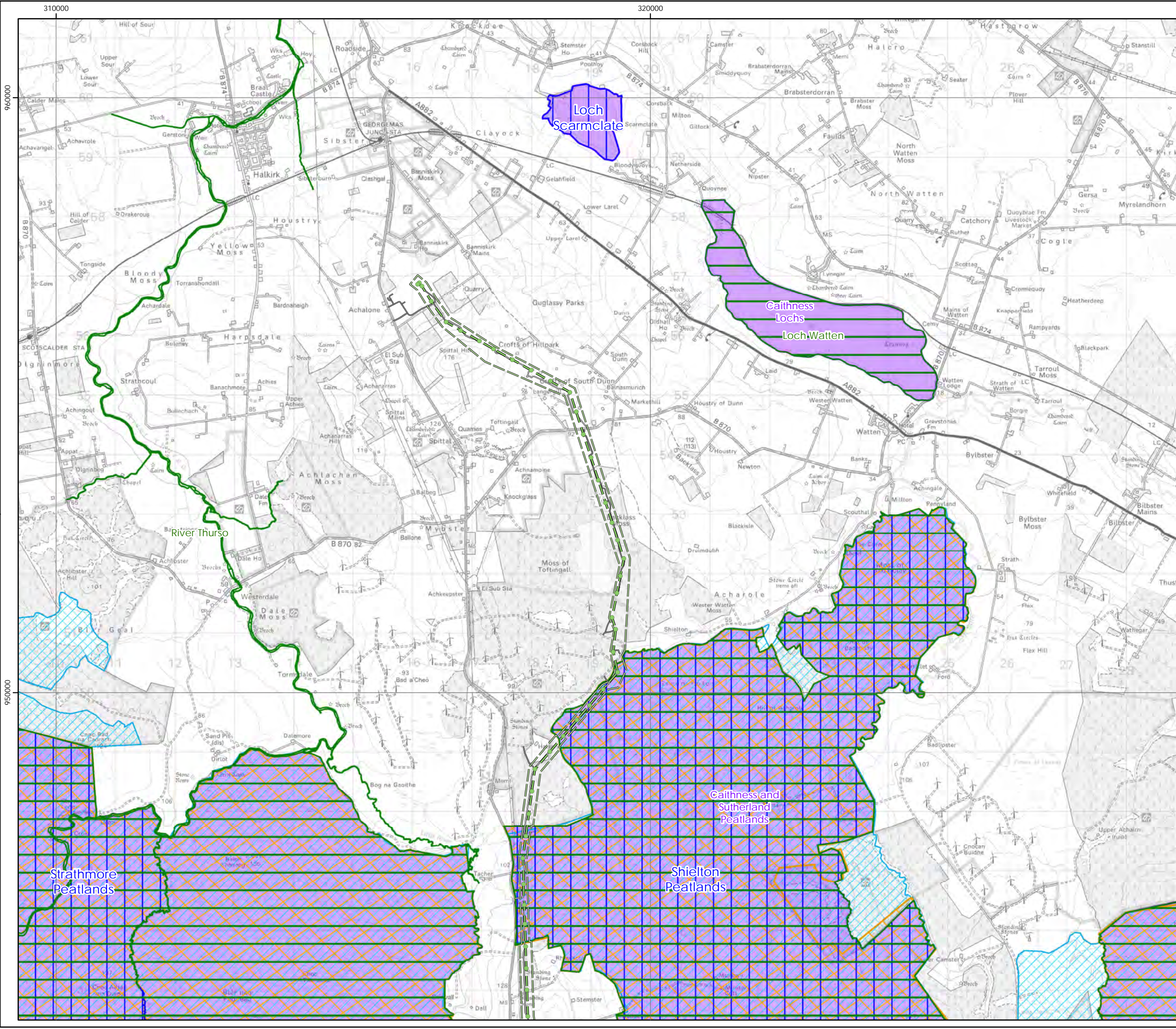


Figure 2
Designated sites - Overview

- Key
- OHL Alignment
- North (Spittal to Brora)
 - South (Brora to Loch Buidhe)
 - Caithness World Heritage Site
 - Special Area of Conservation
 - Special Protection Area
 - Site of Special Scientific Interest
 - Ramsar Wetland
 - Scottish Wildlife Trust Reserves



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Beauly to Spittal



Figure 2
Designated sites - Map 1

- Key**
- OHL Route Alignment and Tracks
 - OHL Alignment
 - Limit of Deviation for OHL (LoD)
 - Tower
 - Permanent access track
 - Temporary access track
 - Caithness World Heritage Site
 - Special Area of Conservation
 - Special Protection Area
 - Site of Special Scientific Interest
 - Ramsar Wetland



0 0.75 1.5 3
Kilometres



Scale @ A3:
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Figure 2
Designated sites - Map 2

Key

OHL Route Alignment and Tracks

- OHL Alignment
- Limit of Deviation for OHL (LoD)
- Tower
- Permanent access track
- Temporary access track

Designated Sites

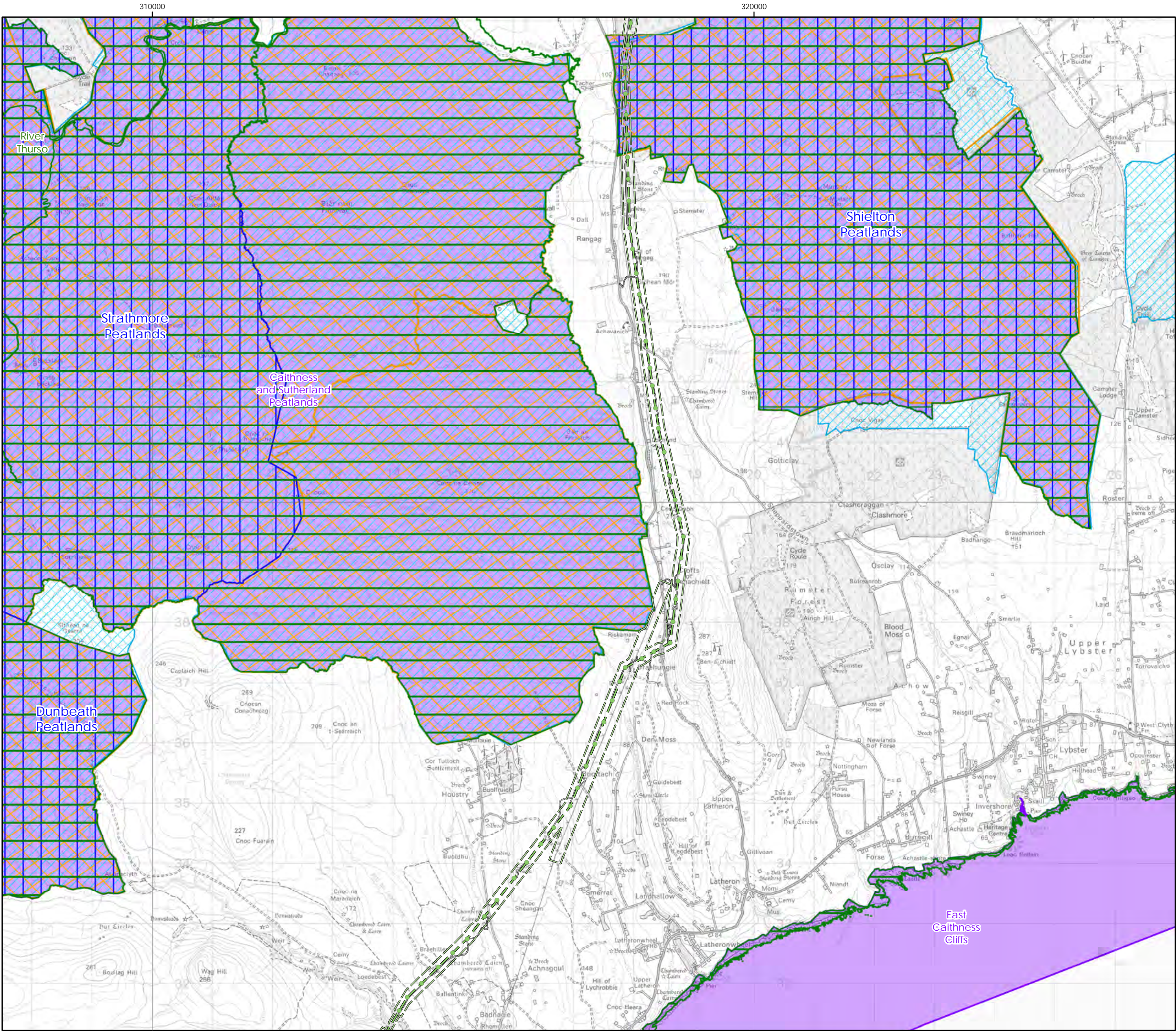
- Caithness World Heritage Site
- Special Area of Conservation
- Special Protection Area
- Site of Special Scientific Interest
- Ramsar Wetland

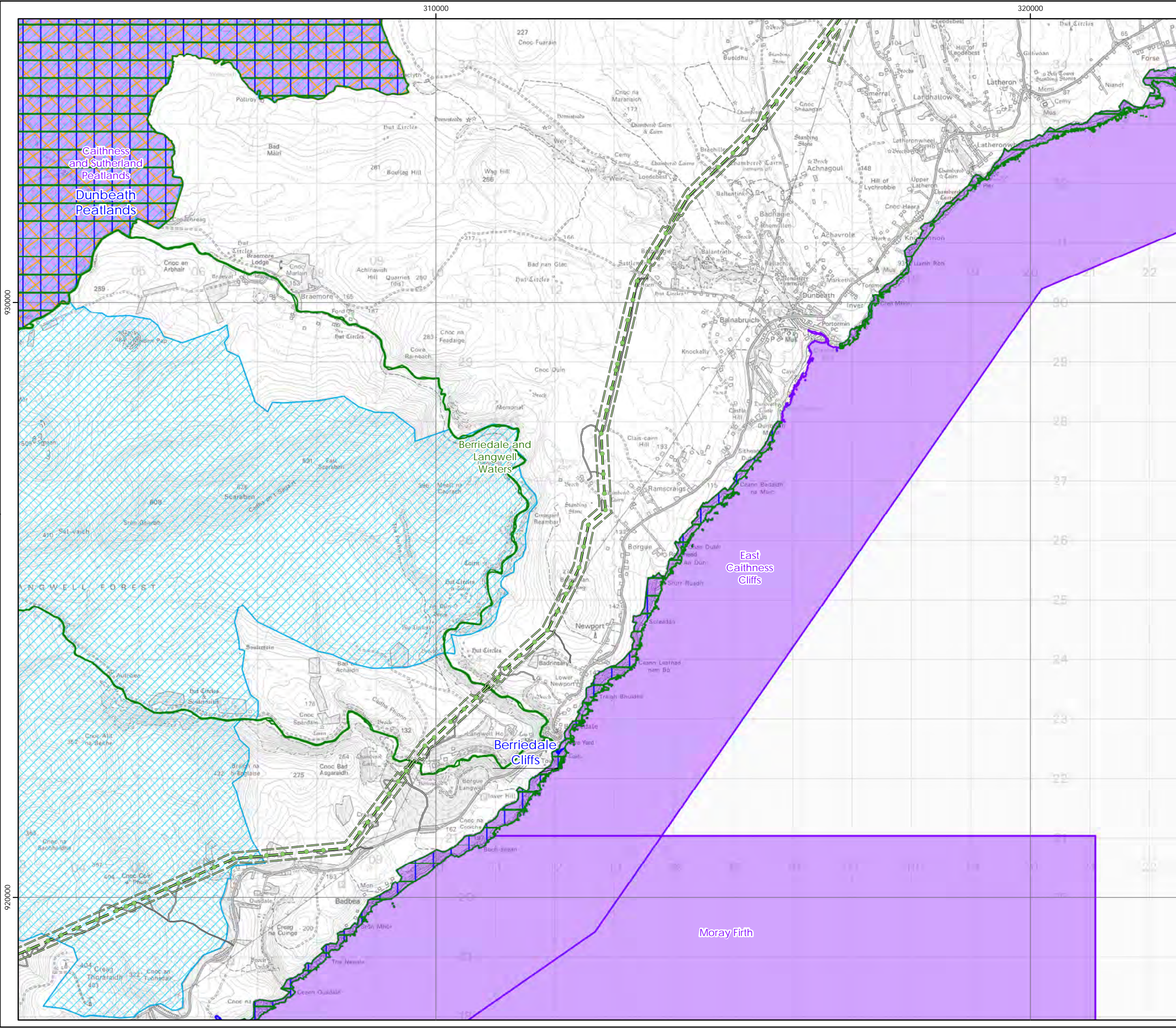


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Kilometres

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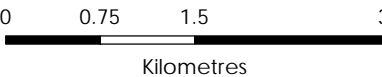


Beauly to Spittal



Figure 2
Designated sites - Map 3

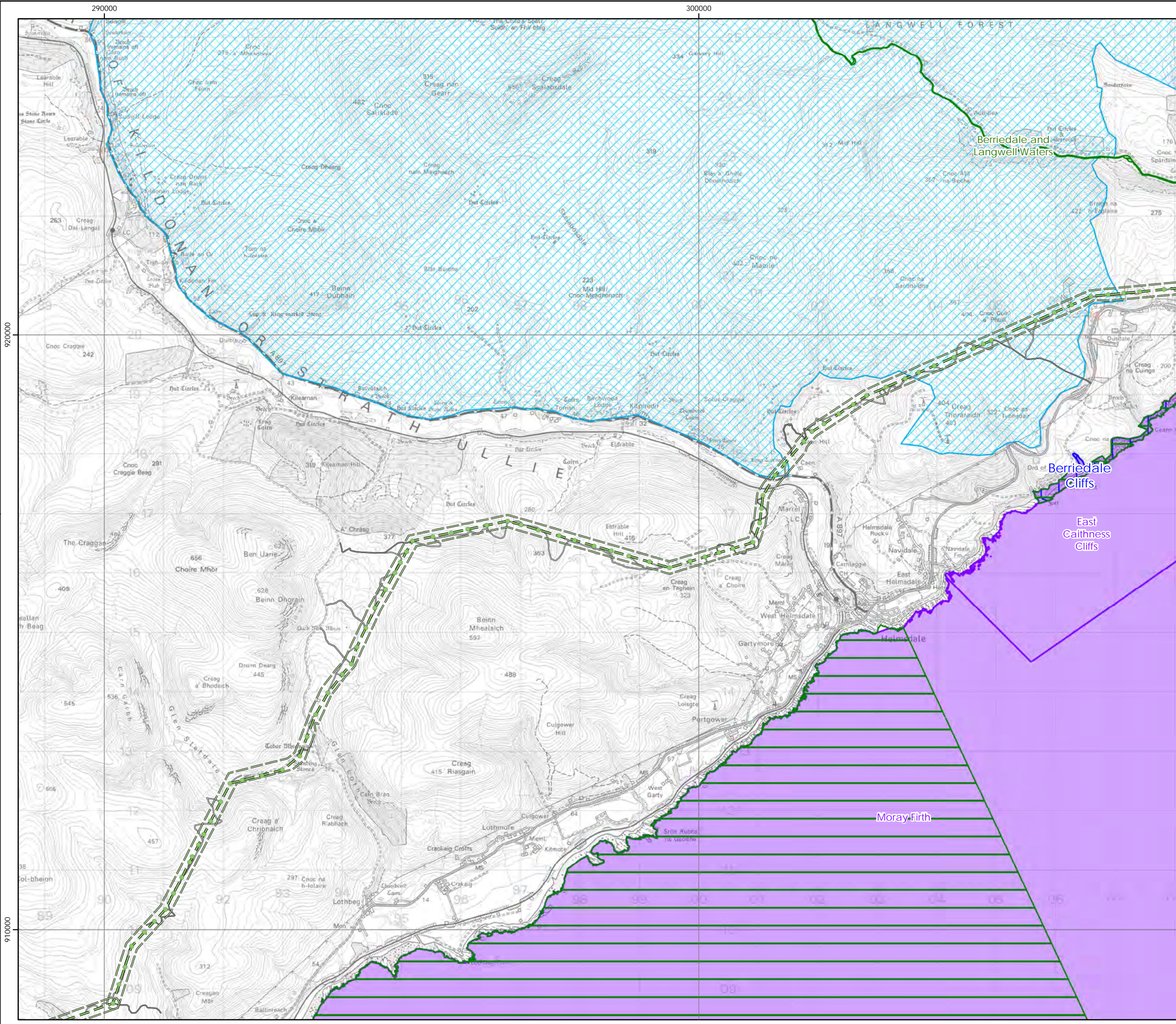
- Key**
- OHL Route Alignment and Tracks**
- OHL Alignment
 - Limit of Deviation for OHL (LoD)
 - Tower
 - Permanent access track
 - Temporary access track
 - Caithness World Heritage Site
 - Special Area of Conservation
 - Special Protection Area
 - Site of Special Scientific Interest
 - Ramsar Wetland



Scale @ A3:
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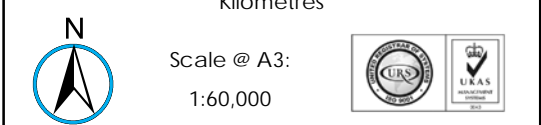
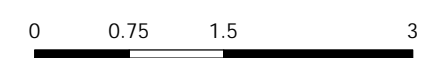


Beauly to Spittal

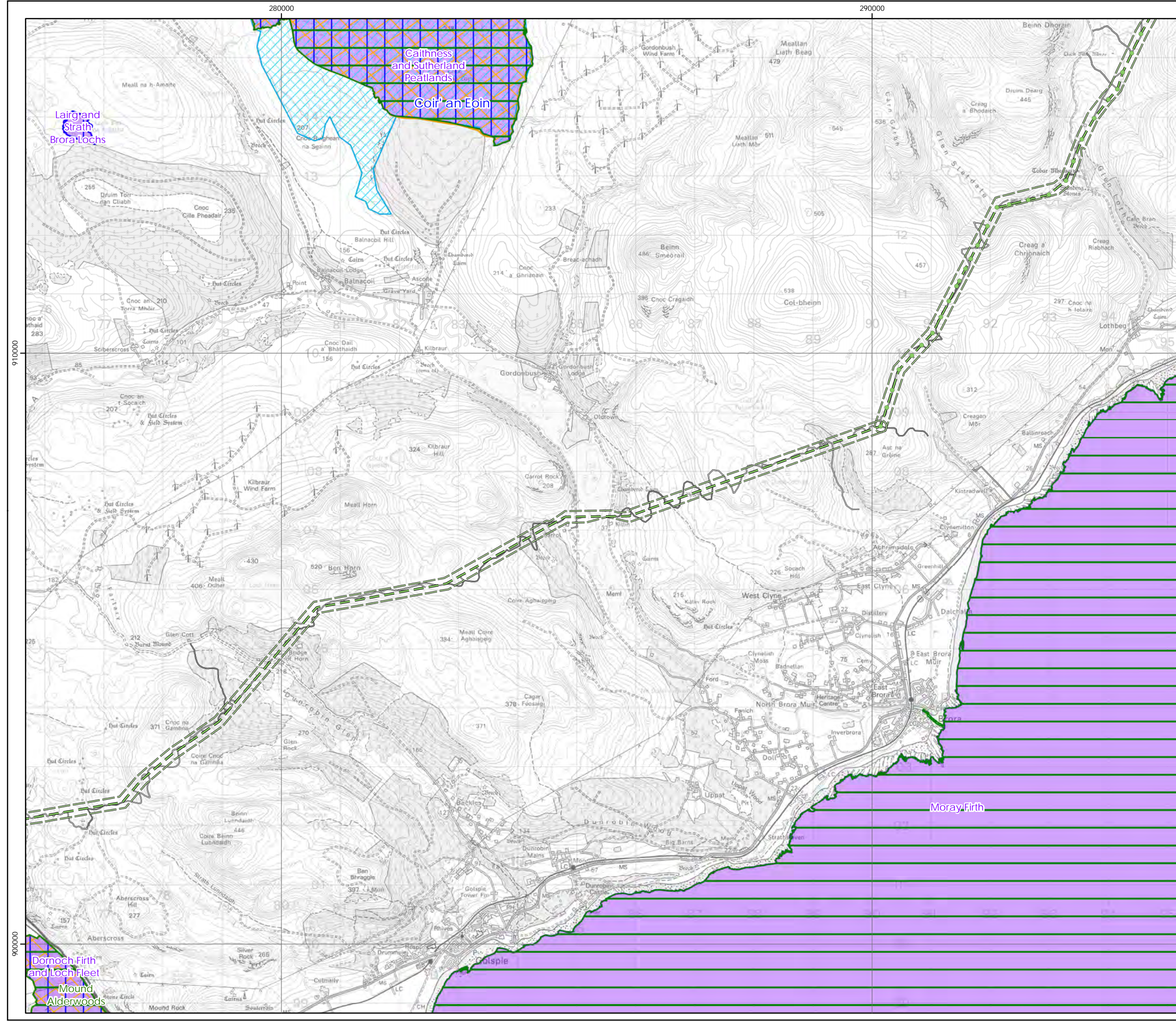


Figure 2
Designated sites - Map 4

- Key**
- OHL Route Alignment and Tracks**
- OHL Alignment
 - Limit of Deviation for OHL (LoD)
 - Tower
 - Permanent access track
 - Temporary access track
 - ▨ Caithness World Heritage Site
 - ▭ Special Area of Conservation
 - ▭ Special Protection Area
 - ▭ Site of Special Scientific Interest



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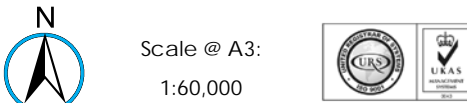
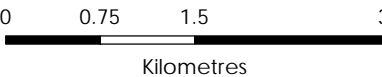


Beauly to Spittal



Figure 2
Designated sites - Map 5

- Key**
- OHL Route Alignment and Tracks**
- OHL Alignment
 - Limit of Deviation for OHL (LoD)
 - Tower
 - Permanent access track
 - Temporary access track
 - Cairn and Sutherland Peatlands
 - Special Area of Conservation
 - Special Protection Area
 - Site of Special Scientific Interest
 - Ramsar Wetland



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270000

280000

Beaulry to Spittal



Figure 2
Designated sites - Map 6

- Key
- OHL Route Alignment and Tracks
- OHL Alignment
 - Limit of Deviation for OHL (LoD)
 - Tower
 - Permanent access track
 - Temporary access track
 - Special Area of Conservation
 - Special Protection Area
 - Site of Special Scientific Interest
 - Ramsar Wetland
 - Scottish Wildlife Trust Reserves



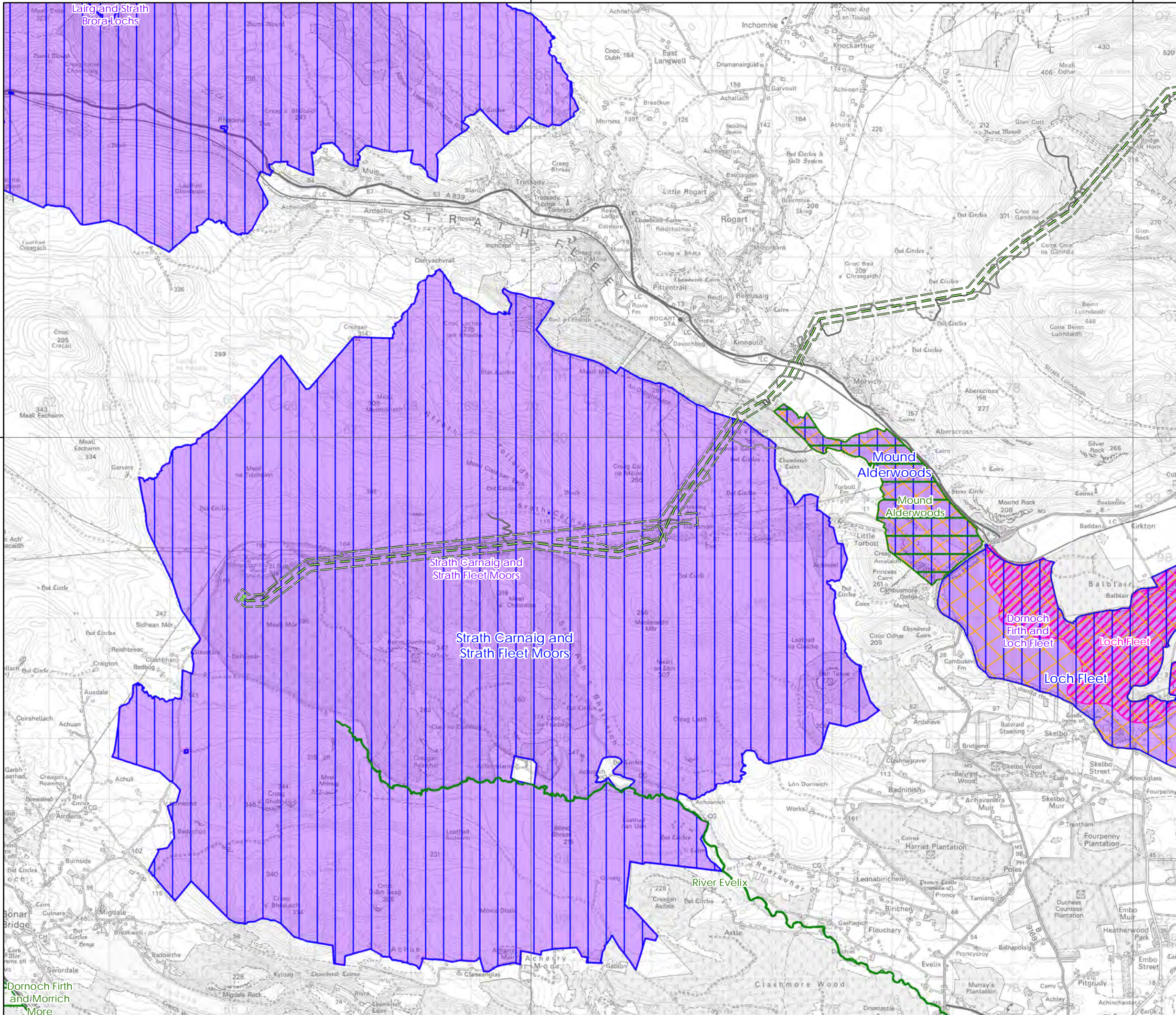
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900000

315000

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Beauly to Spittal



Figure 3
Vantage Point Locations
and Viewsheds - Map 1

Key

OHL Route Alignment and Tracks

- OHL Alignment
- Limit of Deviation for OHL (LoD)
- 500m buffer from LoD
- Tower
- Permanent access track
- Temporary access track
- Active Vantage Point

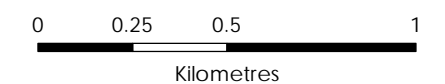
VP Viewshed

- 01
- 02
- 76

Generated using Ordnance Survey's Terrain 50 dataset that does not take into account the screening effects of buildings.

Observer height 1.5m above ground.
Viewshed height modelled 10m above ground.

Forestry has been used to screen visibility at a height of 10m using the Ordnance Survey OpenMapLocal Woodland dataset.



Scale @ A3:
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Beauly to Spittal



Figure 3
Vantage Point Locations and Viewsheds - Map 2

Key

OHL Route Alignment and Tracks

- OHL Alignment
- Limit of Deviation for OHL (LoD)
- 500m buffer from LoD
- Tower
- Permanent access track
- Temporary access track
- Active Vantage Point

VP Viewshed

- 02
- 05
- 06
- 76

Generated using Ordnance Survey's Terrain 50 dataset that does not take into account the screening effects of buildings.

Observer height 1.5m above ground.
Viewshed height modelled 10m above ground.

Forestry has been used to screen visibility at a height of 10m using the Ordnance Survey OpenMapLocal Woodland dataset.



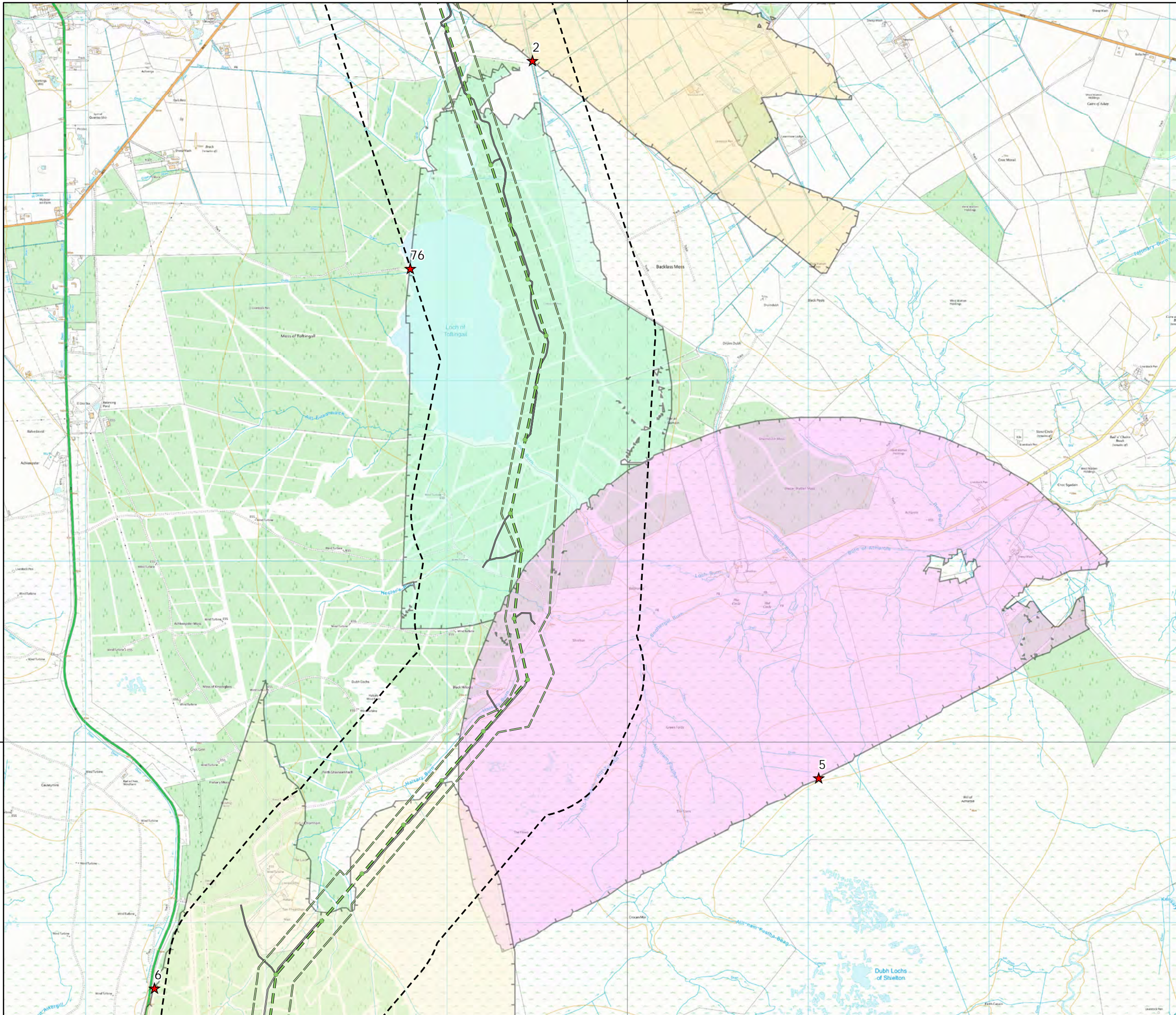
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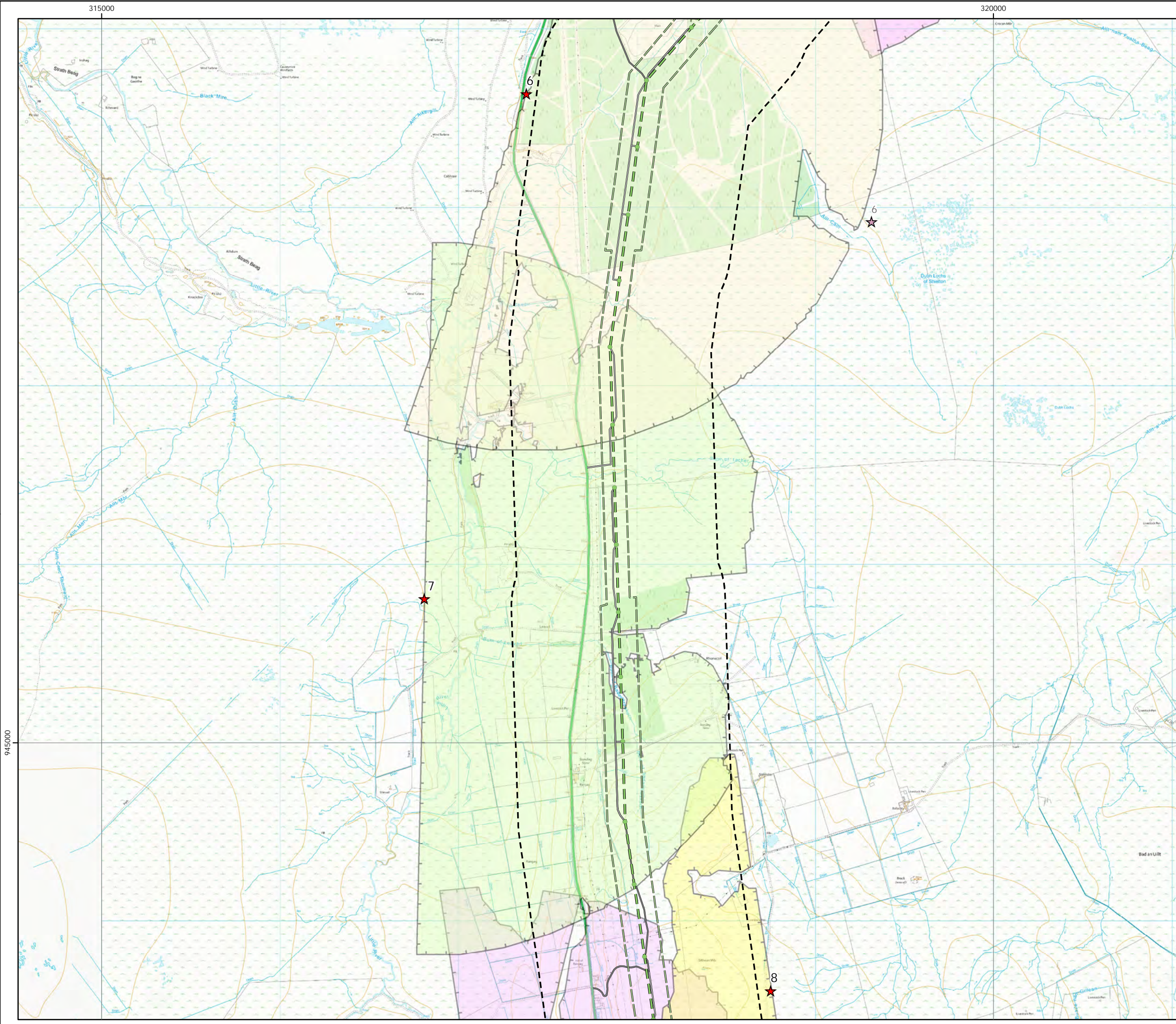
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UKAS

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Beauly to Spittal



Figure 3
Vantage Point Locations
and Viewsheds - Map 3

- Key**
- OHL Route Alignment and Tracks**
- OHL Alignment
 - Limit of Deviation for OHL (LoD)
 - 500m buffer from LoD
 - Tower
 - Permanent access track
 - Temporary access track
 - Active Vantage Point
 - Relocated Vantage Point
- VP Viewshed**
- 05
 - 06
 - 07
 - 08
 - 09

Generated using Ordnance Survey's Terrain 50 dataset that does not take into account the screening effects of buildings.

Observer height 1.5m above ground.
Viewshed height modelled 10m above ground.

Forestry has been used to screen visibility at a height of 10m using the Ordnance Survey OpenMapLocal Woodland dataset.



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Kilometres

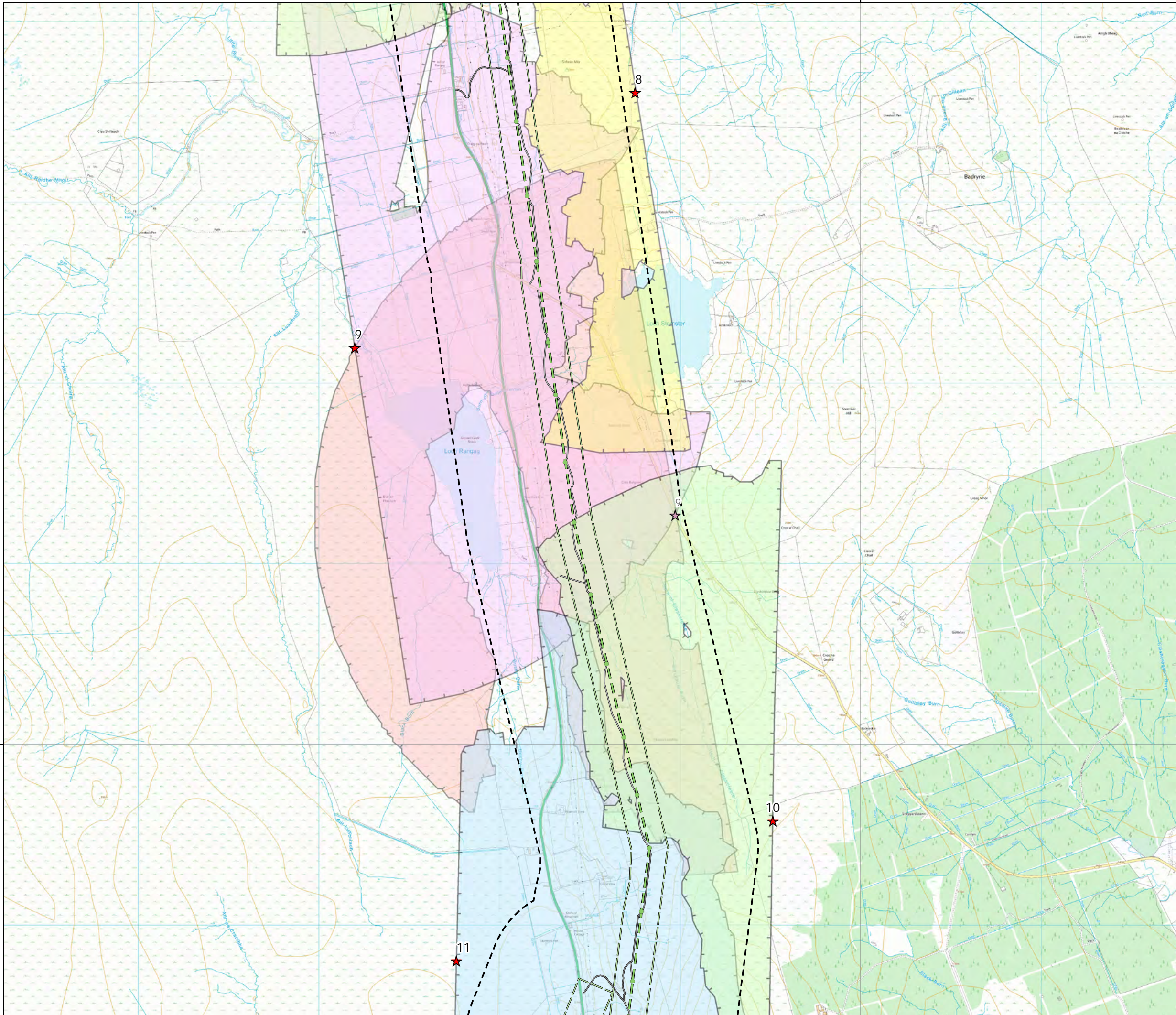
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UKAS

UKAS

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Beaulieu to Spittal



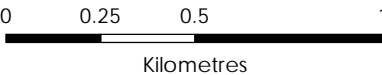
Figure 3
Vantage Point Locations
and Viewsheds - Map 4

- Key**
- OHL Route Alignment and Tracks
- OHL Alignment
 - Limit of Deviation for OHL (LoD)
 - 500m buffer from LoD
 - Tower
 - Permanent access track
 - Temporary access track
 - Active Vantage Point
 - Relocated Vantage Point
- VP Viewshed
- 07
 - 08
 - 09
 - 10
 - 11
 - 09 (alt)

Generated using Ordnance Survey's Terrain 50 dataset that does not take into account the screening effects of buildings.

Observer height 1.5m above ground.
Viewshed height modelled 10m above ground.

Forestry has been used to screen visibility at a height of 10m using the Ordnance Survey OpenMapLocal Woodland dataset.



Scale @ A3:
1:20,000



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