Scottish & Southern Electricity Networks

TRANSMISSION

Dunoon to Whistlefield (non s37) OHL Works Environmental Appraisal

Appendix I - Ornithology Baseline Report

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TRANSMISSION

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LIST OF ABBREVIATIONS

ARSG	Argyll Raptor Study Group
BoCC	Birds of Conservation Concern
BTO	British Trust for Ornithology
CIEEM	Chartered Institute of Ecology and Environmental Management
CRA	Collison Risk Area
CSBGCSG	Central Scotland Black Grouse & Capercaillie Study Group
EIA	Environmental Impact Assessment
EU	European Union
FLS	Forestry and Land Scotland
GET	Golden Eagle Topography
LBAP	Local Biodiversity Action Plan
LNCS	Local Nature Conservation Site
LNR	Local Nature Reserve
LoD	Limit of Deviation
OIA	Ornithological Impact Assessment
OHL	Overhead Line
PAT	Predicted Aquila Territories
PRC	Potential Risk of Collision
RSPB	Royal Society for the Protection of Birds
SBL	Scottish Biodiversity List
SNH	Scottish Natural Heritage (now NatureScot)
SPA	Special Protection Area
SPI	Standardised Preference Index
SSEN	Scottish and Southern Electricity Networks Transmission
SSSI	Site of Special Scientific Interest
VP	Vantage Point

1. INTRODUCTION

1.1 Background

1.1.1 WSP UK Ltd (WSP) was commissioned by Scottish and Southern Electricity Networks Transmission (SSEN Transmission) to undertake baseline ornithology surveys for a new 132 kV twin circuit Overhead Line (OHL) running between Loch Long and Dunoon Substation located on the Cowal peninsula, Argyll and Bute, Scotland (hereafter the 'Rebuild Project'). The areas covered by the ornithological survey concurrently encompassed the areas associated with the Dunoon to Whistlefield OHL Works Environmental Appraisal (EA) (hereafter the 'Proposed Development'), specifically:

- upgrades required to the special crossing structures or their foundations (Towers 12 - 15), including access where necessary;
- reconductoring of the existing Loch Long crossing, replacing the wires which carry the current and the associated fittings and fixtures, but re-using the four existing special structures which support the Loch Long crossing span; and
- removal of the existing OHL conductors and dismantling of redundant towers.

1.1.2 The very small area at the eastern extreme of the Proposed Development not covered by the Rebuild Project survey effort is discussed further under limitations.

1.1.3 The Proposed Development is the focus of this document. The location of the Proposed Development is shown in **Figures 6.11 to 6.14 and Confidential Figure 6.15.** This Ornithology Baseline Report (this 'Report') and **Confidential Figure 6.15** details the breeding locations of specially protected birds (listed under Schedule 1 of the Wildlife and Countryside Act 1981) that are potentially vulnerable to persecution. This information should not be released into the public domain with distribution restricted to the minimal number of persons/ bodies required to administer and assess the application.

1.2 Scope of Report

1.2.1 This Report provides details of the methods and results of the Ornithology Study conducted to inform the Environmental Appraisal (EA) for the Proposed Development. The Report concentrates on Target Species recorded in and around the Site which fall into at least one of the following categories:

- birds listed on Annex I of the EU Birds Directive (Annex I)[1];
- birds listed on Schedule 1of the Wildlife and Countryside Act 1981 (as amended) (Sch1)[2];
- species that are qualifying features of international or European designated sites of nature conservation importance for birds (i.e. Special Protection Areas (SPAs) and Wetlands of International Importance (Ramsar Sites)) in proximity or potentially connected to the Site;
- species listed on the Scottish Biodiversity List (SBL)[3];
- Red-listed Birds of Conservation Concern (BoCC) (Stanbury et al., 2021)[4]; and
- bird species selected for action under the Argyll and Bute Biodiversity Action Plan 2010 -2015 (Draft) (Local Biodiversity Action Plan (LBAP)[5].

[1] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Codified version). Available online at : https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147 (Accessed November 2021).

[2] Schedule 1-listed species of the Wildlife and Countryside Act 1981. Available online at: http://www.legislation.gov.uk/ukpga/1981/69/schedule/1 (Accessed June 2022).

[3] NatureScot (2022). Scottish Biodiversity List. Available online at: https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy-and-cop15/scottish-biodiversity-list (Accessed 2 June 2022).

[4] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747

[5] Argyll and Bute Council (undated). The Argyll and Bute Local Biodiversity Action Plan 2010 – 2015. Available online: https://www.argyll-bute.gov.uk/sites/default/files/Unknown/AandB%20BAP%20Draft.pdf. (Accessed June 2022).

1.2.2 Other species which are typically recognised as being potentially vulnerable to the effects of OHL developments, but which do not fall under any of the above categories, such as certain wader and waterfowl species, were also recorded as Target Species. Passerines, regardless of conservation status, were not considered in detail as they are not considered to be vulnerable to impacts from OHL developments[6].

1.2.3 The conservation status of all species recorded to inform this Report is provided in **Annex 1**, together with scientific names. As a result, scientific names are not provided in the text unless not recorded during the desk study or during surveys.

[6] SNH (2016). Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds – Guidance (version 1).

2. METHODS

2.1 Desk Study

2.1.1 A review of existing data was undertaken as a desk-based exercise to identify ornithological records and designated sites within the Site and surrounding area to inform survey requirements and the ornithology baseline.

Designated Sites

2.1.2 Freely downloadable datasets were searched for information on statutory and non-statutory designated sites within a minimum of 2 km of the Site, in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines for Preliminary Ecological Appraisal (CIEEM, 2017)[7]. This search was extended to 10 km for European sites[8] and to 20 km for European sites designated for wintering geese (based on a maximum foraging range of 20 km for pink-footed and greylag geese)[9]. The search results were restricted to those designated areas with qualifying ornithological interests. Designated sites of interest and the appropriate search radii are as follows:

- Local Nature Conservation Sites
- Local Nature Reserves
- National Nature Reserves
- Sites of Special Scientific Interest (SSSI)

2 km

- SPAs
- Ramsar Sites

10 km

- Sites designated for overwintering geese (SPAs and Ramsar Sites)

20 km

2.1.3 Qualifying features of each site identified within the respective search radii were obtained from the NatureScot Site Link Portal[10]. Where measurements are presented in the findings, these represent the distance of the designated area from the closest point of the Site.

Consultation Exercise

2.1.4 To help inform the ornithological survey programme and the OIA, a consultation exercise was undertaken to request recent historical records of Target Species (i.e. records from the past 10 years (2012-2021 inclusive)) within 2 km of the Site for the Rebuild Project. The search was extended to within 6 km of the Site for golden eagle and white-tailed eagle to encompass the core range for these wider ranging species. The following ornithological interest groups were consulted for any relevant data they may hold:

- NatureScot;
- The Royal Society for the Protection of Birds (RSPB);
- Central Scotland Black Grouse & Capercaillie Study Group (CSBGCSG) (RSPB affiliated study group);
- Argyll Raptor Study Group (ARSG); and
- Forestry and Land Scotland (FLS).

2.1.5 Data were initially requested in November 2020 with an updated data request sent to all consultees in June 2022.

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

[8] European sites are a network of sites across the European Union designated for rare and threatened species, and rare natural habitat types, protected in their own right originally under the Birds Directive 2009/147/EC and the Habitats Directive 92/43/EEC and subsequently under the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021.

[9] SNH (2016). Assessing Connectivity with Special Protection Areas (SPAs) – Guidance, Version 3. SNH, Battleby.

[10] NatureScot (2021) Sitelink. Available online at: https://sitelink.nature.scot/home (Accessed November 2021).

2.2 Ornithology Surveys

2.2.1 A suite of ornithology surveys was undertaken from December 2020 to August 2021 (inclusive) following methodologies recommended by NatureScot (formally Scottish Natural Heritage (SNH)) (SNH, 2017)[11]. Surveys were undertaken across the Route Corridor plus a maximum survey buffer of 2 km (the Survey Area). The surveys were coordinated and managed by WSP and undertaken by a combination of WSP surveyors and Carroll Ecology Ltd with each surveyor having a minimum of three years' experience undertaking bird surveys in upland habitats. Each surveyor possessed, or were named agents on, a Schedule 1 bird survey licence issued by NatureScot. Survey areas described below are shown on **Figure 6.11**.

2.2.2 As the Proposed Development comprises removal of an existing OHL, and localised works involving the reconductoring of the existing Loch Long crossing at four tower locations, no assessment of potential impacts to birds through collision risk is considered necessary. Therefore, details of flight activity surveys relevant to the Rebuild Project are not included here.

Moorland Breeding Bird Survey

2.2.3 The Route Corridor plus a surrounding 500 m buffer was surveyed for moorland and lowland breeding birds between April and July 2021'. The surveys followed a modified version of the Brown and Shepherd methodology (Brown and Shepherd, 1993)[12] as summarised in Gilbert et al. (1998)[13] and involved four rounds of surveys undertaken between mid-April and early July as recommended by SNH (2017)[11]. Surveys were targeted on areas of open moorland and lowland grassland/ agriculture with the methodology developed to target waders and waterbirds.

2.2.4 During each visit the surveyors covered the survey area on foot to within at least approximately 100 m of all relevant parts of the survey area. The behaviour of all birds seen or heard during the surveys was recorded on large-scale maps using standard British Trust for Ornithology (BTO) coding and notation. Survey visits were undertaken in good, clear weather conditions (wind less than Beaufort force 5). **Annex 2 - Table 2-1** presents summarised details of the moorland breeding bird surveys undertaken.

2.2.5 All breeding bird survey records were entered into ArcView GIS software. These were then analysed in order to identify the minimum number of probable or confirmed breeding territories for all waders and wildfowl recorded. For wading birds, this was done following the methods of Brown and Shepherd (1993) whereby breeding territories were assigned on the basis of at least one registration of birds engaging in territorial behaviour including displaying, singing or alarm calling, distraction displays, territorial disputes or the detection of eggs, nests or young. Where possible, simultaneous registrations of birds displaying such behaviour were used to identify different territories. Where this was not possible, such registrations which were from the same survey visit and were within 500 m of each other (200 m for dunlin) were assumed to be associated with the same territory, while registrations beyond this distance from one another were considered to be from separate, neighbouring territories. For registrations from different survey visits, birds within 1 km of each other (500 m for dunlin) were assumed to be from the same territory.

2.2.6 Based on the territory analysis procedure detailed above, the estimated number of breeding territories held by Target Species was identified within the survey area. The location of each territory marks the estimated centre point of the territory.

2.2.7 To give an indication of passerine diversity within the moorland bird survey area a passerine species list was collated during the surveys.

[11] Scottish Natural Heritage (2017). Recommended bird survey methods to inform impact assessment of onshore windfarms. SNH Guidance. SNH, Battleby.
[12] Brown, A.F. and Shepherd, K, B. (1993). A method for censusing upland breeding waders. Bird Study, 40:3 189-195.
[13] Gilbert, G., Gibbons D.W., and Evans, J. (1998). Bird Monitoring Methods. RSPB, Sandy.

Scarce Breeding Bird Survey

2.2.8 The Route Corridor plus a surrounding buffer of 2 km was surveyed for scarce breeding birds between early April and mid-August 2021. Scarce breeding birds were principally defined as raptors listed on Annex I of the EU Birds Directive or Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

2.2.9 Survey protocols broadly followed the standard methodologies for assessing raptor populations set out by Hardey et al. (2013)[14]. The surveys involved at least four survey visits undertaken to determine presence, territory occupation and breeding success. **Annex 2 - Table 2-2** presents summarised details of the scarce breeding bird surveys undertaken.

2.2.10 The surveys primarily comprised targeted VP watches over potentially suitable habitats and walkovers focussing effort in areas previously identified with concentrations of bird activity as well as other areas of suitable nesting and foraging habitat such as heather moorland, waterbodies, craggy rock faces, cliffs and steep sided burns. The locations of recent historical nest sites provided by consultees were also inspected during the walkover surveys. The locations of any nest sites or nesting/ territorial activity by scarce breeding birds was recorded, as were any sightings and signs of activity (e.g. prey remains, faecal splashing, plucking posts and pellets). All observations of scarce breeding bird species or sightings of any associated field signs and the locations of flight lines were mapped using standard BTO symbols and activity codes.

Lekking Black Grouse Survey

2.2.11 The Route Corridor plus a surrounding buffer of 1.5 km was surveyed to determine the presence or likely absence of lekking black grouse. The survey protocol followed the methodology detailed in Gilbert et al. (1998)[13]. Two rounds of surveys were conducted between late March and mid-May 2021 and involved walkovers covering all areas of suitable habitat (e.g. areas of short grassland such as in-bye pastures or moorland particularly near young or sparse forest edges). **Annex 2 - Table 2-3** presents summarised details of the lekking black grouse surveys undertaken.

2.2.12 Surveys were undertaken around sunrise up to approximately two hours after dawn in dry and calm conditions with good visibility. Surveyors sought to cover all areas to within 500 m in search of lekking male black grouse and any attending females. Any identified leks were observed from suitable vantage points to avoid disturbance and the number of males (not just displaying birds) and females seen in the lekking area were recorded on each visit. The grid reference and details of any observations or signs of black grouse were also recorded. Birds located 200 m or more apart were considered to represent separate lek sites.

Winter Walkover Survey

2.2.13 The Route Corridor plus a surrounding buffer of 500 m was surveyed to determine the presence of non-breeding Target Species. The survey focused on open areas of moorland and lowland grassland/ agricultural areas with three survey visits undertaken between late November 2020 and early March 2021. The survey was undertaken by a combination of drive around, walkover and ad hoc VPs from suitable locations. The surveyors covered the ground that so that all areas were visited within at least 250m and recorded the species, number and behaviour of Target Species following the methodology described above. **Annex 2 - Table 2-4** presents summarised details of the Winter Walkover Surveys undertaken.

2.3 Assumptions and Limitations

2.3.1 The extreme eastern extent of the Proposed Development where proposed works comprise track upgrades, is outwith all survey buffers for the Rebuild Project. Therefore, a complete set of baseline data

[14] Hardey et al. (2013). Raptors. A Field Guide for Surveys and Monitoring – Third Edition. The Stationery Office

is not available to inform assessment of this small area of the Proposed Development comprising approximately 120 m of track. For one species considered most sensitive to impacts from the Proposed Development, golden eagle, data requested during the desk study extended to 6 km, therefore incorporating this area.

2.3.2 The lack of baseline data is not considered a significant limitation given the limited extent of the Proposed Development footprint in this area. Further to this, pre-construction bird surveys as part of the Bird species Protection Plan (Bird SpPP) will incorporate this area. Please refer to the EA report for the Proposed Development for further details.

3. RESULTS

3.1 Desk Study

Designated Sites

3.1.1 Only two designated sites with ornithological qualifying features were located within 2 km of the Site, namely the Holy Loch Local Nature reserve (LNR) and Local Nature Conservation Site (LNCS). These designated sites encompass overlapping areas and are notable for estuarine habitats that support an overwintering shorebird assemblage. The designated sites are located approximately 790 m east of the Site. No European sites were identified within the search parameters identified in Paragraph 2.1.2.

Consultation Exercise

3.1.2 Records of Target Species provided by the consultees are described below and shown in **Confidential Figure 6.15.**

NatureScot

3.1.3 NatureScot provided reports for two separate golden eagle ranges that overlap with the proposed OHL alignment (Austin et al. 2015[15,16]). The proposed OHL alignment crosses the south-eastern extent of territories G/A22 and G/C1 between Towers 1 and 20 and 21 and 29 respectively (territory extents shown on **Confidential Figure 6.15**). Range extents and use as predicted by the Predicted Aquila Territories (PAT) model, however, are considered to have key limitations based on information subsequently gathered from satellite tagging golden eagles. The predicted range extents, however, are based on the location of golden eagle breeding sites. Therefore, while the exact range extents and predicted use of territories derived from the PAT model is not reliable it is assumed, for the purposes of this assessment, that the proposed OHL alignment passes through two golden eagle territories (based on known location of breeding sites and proximity to the proposed OHL alignment).

3.1.4 NatureScot also provided results from a recent Golden Eagle Topography model (GET) run across the entire Scottish land mass (including islands). The GET model predicts the air space use of golden eagles based on topography alone[17]. The model is based on GPS telemetry readings gained from tagged juvenile eagles in Scotland. The GET model is considered superior to the PAT model at predicting space use, for both dispersing juveniles and territorial adults[18]. The GET model predicts space used based on a standardised preference index (SPI) score ranging from the lowest predicted use, SPI, to the highest predicted use SPI 10. The GET model predicted a high level of use (SPI scores of 8, 9 and 10) across much of the open upland habitats and woodland edge within the identified territories and along and adjacent to the proposed OHL alignment. Any SPI scores of six or greater are likely to be important for golden eagles, so long as the ground is open. The GET model does not predict territorial ranges for PAT territories G/C1 and G/A22 as an accurate prediction of territory extents is only possible tracking territorial birds (e.g., with satellite tags).

Royal Society for the Protection of Birds

3.1.5 Five records of black grouse (all males with a maximum of two birds per record) were provided from three locations. All records were over 1 km from the proposed OHL alignment.

[15] Austin, S., Fielding, A. H. and Haworth, P. F (2015a). G/C1 Golden eagle range report – Natural Heritage Zone 14 "Argyll West and Islands". Scottish Natural Heritage Commissioned Report No. 827.

[16] Austin, S., Fielding, A. H. and Haworth, P. F (2015b). G/A22 Golden eagle range report – Natural Heritage Zone 14 "Argyll West and Islands". Scottish Natural Heritage Commissioned Report No. 859.

[17] Fielding, A, H., Haworth, P, F., Anderson, D., Benn, S., Dennis, R., Weston, E and Whitfield, A, P (2019). A simple topographical model to predict Golden Eagle *Aquila chrysaetos* space use during dispersal. IBIS, 162(2); 400-415

[18] NatureScot (2021). NatureScot statement on modelling to support the assessment of forestry and wind farm impacts on golden eagles. Available online: https://www.nature.scot/doc/naturescot-statement-modelling-support-assessment-forestry-and-wind-farm-impacts-golden-eagles. (Accessed on June 2022).

Central Scotland Black Grouse & Capercaillie Study Group

3.1.6 Eleven black grouse records were provided from five locations comprising 10 records of males and one of a female. All records were of either one or two birds. All records were in the vicinity of the central section of the proposed OHL alignment and were provided at 1 km and 100 m spatial resolution). Four of the locations are within 1 km of the proposed OHL alignment.

Argyll Raptor Study Group

3.1.7 Records of the following species were returned:

- Golden eagle - four nest sites from three known breeding sites were returned. Records were provided from 2019 to 2022 inclusive for the following three breeding sites:
  - Carrick: two nest sites were provided, located approximately 1.2 km and 7.5 km north-west of the Site. Both nest sites are located within the G/A22 golden eagle territory, as predicted by PAT modelling[15,16]. The more distant nest site was occupied in 2019. 2020 and 2020 with breeding only successful (e.g. young fledged) in 2021. The closer nest site was occupied in 2022 when breeding was not successful.
  - Garrachra: the only nest site provided is located approximately 3.3 km north-west of the Site. The nest site was occupied every year from 2019 to 2021 (inclusive) with one young successfully fledged in every year except 2019. No data was provided for 2022.
  - Giant's Knowe: the only nest site provided was approximately 3 km south of the Site. This is a new site first identified in 2022 where breeding was unsuccessful.
- Hen harrier - records from four known breeding sites monitored since 2015 were provided. Three records were provided at a spatial scale of 1 km grid squares and one record provided at 100 m scale. Two breeding sites were identified from 1 km grid squares within c. 500m of the Site at its northern and southern extents, neither of which have been confirmed breeding since 2015. Since 2015 breeding has only been confirmed at two sites over separate years (2016 and 2020) with both sites over 1 km from the Site.
- Peregrine falcon – records from one breeding site monitored in 2021 were provided. The breeding site is approximately 1.1 km west of the Site and was occupied in 2021.
- Barn owl - records from seven known breeding sites were returned at a spatial scale of 100 m grid squares. Of the five breeding sites checked in 2021 no signs of birds were recorded at any of them. Three records were within 500 m of the Site at the southern end. All records were located in woodland.

Forestry and Land Scotland

3.1.8 FLS provided high level information on the potential presence of a breeding pair of white-tailed eagle in the Ardgarten Peninsula area and records of hen harrier but no evidence of breeding.

3.2 Ornithology Surveys

Moorland Breeding Bird Survey

3.2.1 The only breeding territories recorded during the moorland breeding bird survey were two common sandpiper territories along the River Eachaig. The territory centre points were located approximately 500 m south and 650 m west of the closest point of the Site respectively. No territories were recorded in the open upland areas of the survey area. Two snipe and a single curlew were recorded in the upland areas during surveys undertaken in April 2021, however as no further observations were recorded during the remaining surveys no breeding territories were present. Breeding territories are shown in **Figure 6.12** and a passerine species list is provided in **Annex 2 – Table 2-5**.

Scarce Breeding Bird Survey

3.2.2 No territories of scarce breeding birds were recorded. Observations of scarce breeding birds, including those recorded during the moorland breeding bird survey, are summarised below:

- Golden eagle – a single adult in flight approximately 1.5 km west of the proposed OHL alignment. No breeding sites were located in the vicinity of breeding locations provided by the ARSG (from those provided within the Survey Area).
- Hen harrier – two records of individual hunting males near the proposed OHL alignment in the northern and central areas. No breeding sites were in the vicinity of breeding locations provided by the ARSG (from those provided within the Survey Area).
- Osprey – flight by an individual bird over woodland at the southern end of the proposed OHL alignment.
- Barn owl – the breeding sites provided by the ARSG were visited during the surveys. Based on their locations it was assumed that all records related to artificial nest boxes. No sign of any nest boxes was recorded among otherwise unsuitable nesting habitat (conifer plantation or clear-fell) at four of the sites and two dilapidated nest boxes were recorded at two sites.

Lekking Black Grouse Survey

3.2.3 The survey identified two black grouse leks, both occupied by single males, in the central section of the Survey Area. One lek was located directly adjacent to the proposed OHL alignment and the other approximately 1.2 km west of the proposed OHL alignment.

3.2.4 The following observations of black grouse were also recorded during the flight activity surveys, moorland breeding bird surveys and winter walkover surveys respectively:

- Two records of individual lekking male black grouse recorded during the flight activity surveys in February from VP1 (birds were heard calling, not in flight).
- A single male black grouse was flushed in July 2021 during the moorland breeding bird surveys from upland habitat approximately 500 m west of the proposed OHL alignment at the northern end.
- Six records of black grouse comprising 12 birds were recorded within 1 km of the proposed OHL alignment at the northern end. These records included a total of 8 birds, comprising two groups of three males (one confirmed as lekking) and two females recorded during a single survey in December 2020.

3.2.5 The above black grouse records are displayed in **Figure 6.13.**

Winter Walkover Survey

3.2.6 Eight Target Species were recorded during the winter walkover surveys (**Table 3-3**). Records are described further below and shown in **Figure 6.14** (except black grouse records, which are shown on **Figure 6.13**).

- Golden eagle – an adult pair and a single adult recorded at the northern end of the survey area during December and February respectively.
- Curlew – five records comprising 21 birds, all of which were recorded on or adjacent to Finart Bay at the eastern edge of the survey area.
- Oystercatcher - five records comprising 76 birds, all of which were recorded on or adjacent to Finart Bay at the eastern edge of the survey area.
- Redshank - three records comprising seven birds, all of which were recorded at Finart Bay at the eastern edge of the survey area.

- Snipe – three records of individual birds recorded in the open upland areas in the centre and northern ends of the survey area.
- Mallard – two records comprising 13 birds recorded in Strath Eachaig.
- Red grouse – four records comprising seven birds recorded in the open upland areas in the central and southern sections of the survey area.

Table 3-1 Summary of winter walkover survey results

Species	Peak Count per Month*		
	December 2020	January 2021	February 2021
Golden eagle	2	0	1
Black grouse	8	4	0
Curlew	13	8	0
Oystercatcher	72	4	0
Redshank	6	1	0
Snipe	0	2	1
Mallard	13	0	0
Red grouse	0	6	1

* - December survey visit included one survey in November 2020 (22nd) and February survey included one survey in March (1st)

ANNEX 1 SPECIES LIST, CONSERVATION STATUS AND LEGAL PROTECTION

Table 1-1 Species list, conservation status and legal protection

Species	Scientific Name	Conservation Status*				
		Annex 1	Sch1	SBL	BoCC Red Listed	LBAP Priority Species
Barn owl	*Tyto alba*		✓	✓		
Black grouse	*Lyrurus tetrix*			✓	✓	✓
Blackbird	*Turdus merula*					
Blackcap	*Sylvia atricapilla*					
Blue tit	*Cyanistes caeruleus*					
Chaffinch	*Fringilla coelebs*					
Coal tit	*Periparus ater*					
Common sandpiper	*Actitis hypoleucos*					
Crossbill	*Loxia curvirostra*		✓			
Cuckoo	*Cuculus canorus*			✓	✓	✓
Curlew	*Numenius arquata*			✓	✓	✓
Dipper	*Cinclus cinclus*					
Dunnock	*Prunella modularis*			✓		
Goldcrest	*Regulus regulus*					
Golden eagle	*Aquila chrysaetos*	✓	✓	✓		✓
Golden plover	*Pluvialis apricaria*	✓		✓		✓
Goldfinch	*Carduelis carduelis*					
Grey heron	*Ardea cinerea*					
Hen harrier	*Circus cyaneus*	✓	✓	✓	✓	✓
Herring gull	*Larus argentatus*			✓	✓	
Hooded crow	*Corvus cornix*			✓		
House sparrow	*Passer domesticus*			✓	✓	
Jay	*Garrulus glandarius*					
Lesser black-backed gull	*Larus fuscus*					
Lesser redpoll	*Acanthis cabaret*			✓	✓	
Linnet	*Linaria cannabina*			✓	✓	
Long-tailed tit	*Aegithalos caudatus*					
Mallard	*Anas platyrhynchos*					
Meadow pipit	*Anthus pratensis*					
Mistle thrush	*Turdus viscivorus*				✓	

Species	Scientific Name	Conservation Status*				
		Annex 1	Sch1	SBL	BoCC Red Listed	LBAP Priority Species
Osprey	*Pandion haliaetus*	✓	✓	✓		✓
Oystercatcher	*Haematopus ostralegus*					
Peregrine	*Falco peregrinus*	✓	✓	✓		✓
Raven	*Corvus corax*					
Red grouse	*Lagopus lagopus scotica*			✓		✓
Red kite	*Milvus milvus*	✓	✓	✓		
Redshank	*Tringa totanus*					✓
Robin	*Erithacus rubecula*					
Rook	*Corvus frugilegus*					
Sand martin	*Riparia riparia*					
Siskin	*Spinus spinus*			✓		
Skylark	*Alauda arvensis*			✓	✓	✓
Snipe	*Gallinago gallinago*					
Song thrush	*Turdus philomelos*			✓		✓
Stonechat	*Saxicola rubicola*					
Swallow	*Hirundo rustica*					
Swift	*Apus apus*			✓	✓	✓
Tree pipit	*Anthus trivialis*			✓	✓	
Whinchat	*Saxicola rubetra*				✓	
White-tailed sea eagle	*Haliaeetus albicilla*	✓	✓	✓		
Willow warbler	*Phylloscopus trochilus*					
Woodpigeon	*Columba palumbus*					
Wren	*Troglodytes troglodytes*					

* - See paragraph 1.2.4 for definitions of conservation and legislative categories

ANNEX 2 ORNITHOLOGY SURVEY DETAILS

Table 2-1 Moorland breeding bird survey effort

Month	Date	Start time	End time	Duration (hrs)
April	24/04/2021	08:30	14:30	06:00
April	24/04/2021	08:00	14:00	06:00
April	30/04/2021	08:20	14:55	06:35
May	19/05/2021	07:15	13:15	06:00
May	19/05/2021	07:30	13:30	06:00
May	20/05/2021	06:00	12:00	06:00
June	16/06/2021	08:00	14:00	06:00
June	16/06/2021	08:30	14:30	06:00
June	18/06/2021	08:30	14:45	06:15
July	23/07/2021	08:30	14:30	06:00
July	23/07/2021	08:30	14:45	06:15
July	23/07/2021	08:30	14:30	06:00

Table 2-2 Scarce breeding bird survey effort

Month	Date	Start time	End time	Duration (hrs)
April	09/04/2021	08:30	15:30	07:00
April	15/04/2021	08:30	16:30	08:00
April	29/04/2021	09:25	16:10	06:45
May	20/05/2021	07:50	10:50	03:00
May	20/05/2021	07:30	10:30	03:00
May	28/05/2021	08:15	14:15	06:00
May	28/05/2021	12:00	18:00	06:00
June	10/06/2021	10:00	16:00	06:00
June	28/06/2021	08:45	14:45	06:00
July	27/07/2021	10:00	16:00	06:00
August	17/08/2021	10:05	16:05	06:00
August	17/08/2021	09:50	15:50	06:00

Table 2-3 Lekking black grouse survey effort

Month	Date	Start time	End time	Duration (hrs)
April	24/04/2021	05:00	08:00	03:00

Month	Date	Start time	End time	Duration (hrs)
April	24/04/2021	05:00	08:00	03:00
April	30/04/2021	04:40	07:40	03:00
May	19/05/2021	04:00	07:00	03:00
May	19/05/2021	04:15	07:15	03:00

Table 2-4 Winter walkover survey effort

Month	Date	Start time	End time	Duration (hrs)
November	24/11/2020	09:30	15:30	06:00
December	19/12/2020	09:00	15:00	06:00
December	19/12/2020	09:00	15:00	06:00
December	20/12/2020	12:00	15:00	03:00
December	20/12/2020	12:00	15:00	03:00
January	22/01/2021	09:00	15:00	06:00
January	22/01/2021	09:00	15:00	06:00
January	29/01/2021	09:00	14:00	05:00
January	29/01/2021	09:00	14:00	05:00
February	22/02/2021	08:00	15:30	07:30
March	01/03/2021	09:30	15:30	06:00
March	01/03/2021	09:00	15:00	06:00
March	01/03/2021	09:00	15:00	06:00

Table 2-5 Passerine species list (recorded during moorland breeding bird survey)

Species	Total Number of Individual Records
Meadow Pipit	779
Chaffinch	67
Woodpigeon	63
Skylark	56
Willow Warbler	47
Robin	36
Song Thrush	30
Hooded Crow	25
Lesser Redpoll	25
Tree Pipit	24
Mistle Thrush	20
Wren	20

Species	Total Number of Individual Records
Stonechat	19
Rook	17
Swallow	13
Cuckoo	12
House Sparrow	11
Coal Tit	10
Raven	10
Siskin	9
Long-tailed Tit	6
Crossbill	5
Linnet	5
Jay	4
Sand Martin	4
Whinchat	4
Dunnock	3
Blue Tit	2
Goldcrest	2
Goldfinch	2
Swift	2
Blackbird	1
Blackcap	1
Dipper	1