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# A83 Rest and Be Thankful

LTS EIAR VOLUME 4, APPENDIX 11.7 - BREEDING BIRD  
REPORT

Transport Scotland

A83AAB-AWJ-EAC-LTS\_GEN-RP-LE-000263

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# A11-7. Breeding Bird Report

## A11-7.1. Introduction

### Terms of Reference

- A11-7.1.1. AtkinsRéalis WSP Joint Venture (AWJV) was commissioned by Transport Scotland as part of the A83 Rest and Be Thankful Project (hereafter referred to as the Proposed Scheme), to prepare an Ornithology baseline report.
- A11-7.1.2. Volume 2, Chapter 4 - The Proposed Scheme, provides details of the construction works, the Receptor Sites and Natural Capital (NC) and Biodiversity Net Gain (BNG) enhancement sites. The findings for these enhancement sites are considered in Appendix 11.16 Enhancement Site Survey Report. They are not discussed within this report. The Proposed Scheme, excluding the NC and BNG enhancement areas, will be referred to as the Proposed Scheme (excl. NC & BNG) hereafter.

### Purpose of Report

- A11-7.1.3. This report is intended to provide baseline information regarding breeding birds to inform the Environmental Impact Assessment (EIA) Report for the Proposed Scheme.
- A11-7.1.4. The report presents ornithological information obtained during the following:
- review of Jacobs Aecom (2022) Access to Argyle and Bute (A83) Medium Term Solution Breeding Bird Survey Report
  - a desk-study undertaken from January to March 2023 by AWJV
  - further surveys and monitoring undertaken by AWJV between April and July 2023.

## A11-7.2. Legislation

- A11-7.2.1. See Appendix 11.3 Biodiversity Legislation, Policy and Guidance for species legislation.

### A11-7.3. Methodology

#### Desk Study

- A11-7.3.1. The geographical area for obtaining ecological data through desk studies has been determined using professional judgement and based on current good practice guidance within the [Chartered Institute for Ecology and Environmental Management \(CIEEM\) Ecological Impact Assessment guidance](#). Baseline data has been gathered from a range of sources through data requests and using online resources, as outlined below. This included data gathering in relation to statutory and non-statutory designated sites which are designated for bird species and/or assemblages. For species records collected, only recent records (i.e. those within 10 years of the date of producing this report) have been considered within the assessment. Information relating to protected areas across Scotland from [NatureScot SiteLink](#) was reviewed to identify relevant statutory designated sites for nature conservation within 2km of the Proposed Scheme, extending up to 6km from the Proposed Scheme for eagle species, and including European sites with a direct hydrological connection, where relevant.
- A11-7.3.2. Publicly available online resources were searched for records of protected and priority/notable bird species up to 6km from the Proposed Scheme in early 2023. Records received prior to 2013 have not been included as they are no longer considered to be relevant due to their age. Requests for bird records were submitted to the following organisations:
- [Argyll Biological Records Centre \(ABReC\)](#) was contacted on 16/01/2023 for bird records within a 2km buffer of the Proposed Scheme. However, due to staff illness, ABReC were not able to provide a full data search report. ABReC did, however, confirm their records could be downloaded from [National Biodiversity Network \(NBN\) Atlas](#) and used in any reports relating to the search
  - the [Royal Society for the Protection of Birds \(RSPB\)](#) was contacted on 16/01/2023 for records of Schedule 1 bird species within 2km of the Proposed Scheme, including black grouse leks

- a separate request was also made to the [Argyll Raptor Study Group \(ARSG\)](#) on 16/01/2023 for records of raptor species within 2km of the Proposed Scheme and extended up to 6km for eagle species.

A11-7.3.3. Information relating to golden eagle up to 6km from the Proposed Scheme is considered separately, within Appendix 11.1 Report to inform Habitats Regulations Appraisal and is not discussed further in this report.

### Field Survey

A11-7.3.4. The breeding bird survey area used to produce the baseline assessment, comprised the Proposed Scheme and all areas up to the following distances from the Proposed Scheme as shown in Volume 3, Figure 11.7 (as appropriate – refer to paragraph A11-7.3.6)

- Breeding bird assemblage – 500m field survey area
- Lekking black grouse – 1.5km field survey area
- Barn owl – up to 1km, although primarily within Glen Croe and lower lying areas as the surrounding area is all over 100m above sea level and has steep mountainsides on most aspects where there is less suitability for barn owl and lack of suitable roost or nest locations.

A11-7.3.5. Incidental records made during other field surveys for the Proposed Scheme have also been used in this assessment, where appropriate. Survey methods are detailed below.

### Breeding Bird Assemblage Surveys

A11-7.3.6. Breeding bird surveys were undertaken in 2023, covering the Proposed Scheme area and up to a 500m buffer, which was also used in previous surveys conducted by Jacobs and Aecom in 2022. This provided coverage of a large area given the topography of the site, and also allowed surveyors to gain good visibility of the survey area as a whole from positions at higher elevations. Large parts of the area surrounding the site on the west side of the glen and parts of the east side had areas of Sitka spruce plantation which are less suitable for many notable breeding birds.

- A11-7.3.7. Surveys were undertaken utilising an adapted version of the [Common Bird Census \(CBC\) methodology as described in Gilbert \*et al\*](#) and with reference to the [Bird Survey and Assessment Steering Group Bird Survey Guidelines](#). Surveyors followed a walked transect route that was designed to give suitable coverage of the survey area. The direction in which the transect was walked was varied between visits to optimise detection and minimise recording bias. Four visits were made between April and July 2023. This was considered to be a sufficient number of visits based on the habitats present and results of previous surveys. Surveys were undertaken during favourable weather conditions with mostly light and occasionally moderate winds, no heavy precipitation and good visibility. This method effectively records a ‘snapshot’ sample of the numbers and distribution of all bird species present within and using the survey area on any particular visit.
- A11-7.3.8. Survey visits were mostly carried out in the early morning, avoiding the period immediately after sunrise. One evening visit was made, in line with the Bird Survey Guidelines, with the aim of recording any activity by species not readily recorded by conventional surveys early in the morning and also activity of species whose activity continues past sunset.
- A11-7.3.9. The surveyors, with the aid of 8x or 10x binoculars, recorded all observations of birds by either sight or sound by walking through the survey area at a slow and steady pace. The positions of the recorded birds were plotted as accurately as possible on a digital map (using ArcGIS FieldMaps), i.e. a ‘visit map’. Standard [British Trust for Ornithology \(BTO\) species and breeding behaviour codes](#) were used for mapping species and details including sex and age (e.g. juvenile, immature, or adult) and bird activity (including singing, alarm calling, nest-building, carrying food and faecal sacs, territorial disputes and aggressive interactions, copulation, foraging, loafing, and in flight) were recorded where relevant. Environmental conditions, e.g. weather and visibility were also recorded. Survey dates and conditions are provided in A11-7.5.7. Annex 11.7.A.
- A11-7.3.10. For the purpose of this assessment, priority bird species are defined as those which are:

- listed in Annex 1 of Directive 2009/147/EC (the Birds Directive)
- breeding species listed on the citation of any designated site within the desk study area detailed in Appendix 11.4 Designated Sites and Terrestrial Habitat Report
- species listed on Schedules 1, A1 and 1A [of the Wildlife and Countryside Act 1981 \(as amended\)](#)
- Red or Amber listed species on the Birds of Conservation Concern 5 (BoCC) – see below
- species listed on the [Scottish Biodiversity List](#);
- species listed on [Argyll and Bute Local Biodiversity Action Plan \(LBAP\)](#) or the [Loch Lomond and the Trossachs National Park LBAP](#) – see below.

A11-7.3.11. For the purposes of this report, breeding bird species are taken as those being present within the vicinity of the Proposed Scheme (i.e. within the desk study search area and/or survey area) during the breeding season, i.e. 1 March to 31 August inclusive, and have a population status of resident breeder, migrant breeder, casual breeder, naturalized breeder or hybrid breeder within the [Argyll Bird Checklist](#).

## Black Grouse Surveys

### Habitat Suitability Survey

A11-7.3.12. Black grouse habitat suitability surveys were conducted in April 2023, with the aim of identifying areas of habitat suitable to support black grouse leks within 1.5km of the Proposed Scheme and thereby establish where any suitable breeding habitat may occur. An initial desk-based review of potentially suitable habitat was conducted, consulting aerial photography and Ordnance Survey maps, as well as the previous breeding bird survey report, followed by a ground truthing exercise. The ground truthing exercise involved surveyors visiting the potentially suitable areas and digitally mapping extent of suitable habitat, while recording additional details such as topography, tree cover and vegetation composition. Survey dates and conditions are provided in A11-7.5.7. Annex 11.7.A

### Lek Survey

- A11-7.3.13. Following the habitat suitability surveys, suitable areas of habitat were surveyed for lekking (displaying) black grouse. Surveys were undertaken over three visits in April and May in both 2022 (by Jacobs / Aecom) and 2023 (by AWJV) and followed the methods outlined within the [CIEEM Bird Monitoring Methods guidance](#), with the aim of locating and characterising leks, including recording the numbers of lekking male birds and also any female birds in attendance.
- A11-7.3.14. Surveys commenced approximately one hour before dawn and were conducted during weather conditions conducive to detection of birds (good visibility, no to light winds, and no heavy precipitation). Surveys involved surveyors walking slowly, listening for lekking black grouse and scanning from suitable vantage point locations with binoculars. Survey dates and conditions are provided in A11-7.5.7. Annex 11.7.A.

### Barn Owl Surveys

- A11-7.3.15. Buildings within the survey area were assessed for their potential to support barn owl breeding sites and/or roost sites. Suitable buildings were identified during a Preliminary Ecological Walkover survey in 2021 (by Jacobs Aecom) and then subject to internal and external building inspections in 2022 (by Jacobs Aecom) and 2023 (by AWJV). Building inspections were made with reference to the methodology set out in the guidance document [Barn Owl Survey Methodology and Techniques for use in Ecological Assessment by Sawyer](#), comprising visual searches of suitable buildings during which evidence of barn owl activity such as feathers, droppings, pellets and cavities, ledges and lofts suitable for breeding was sought. Trees within the vicinity of the Proposed Scheme were also assessed. Survey dates and conditions are provided in A11-7.5.7. Annex 11.7.A.
- A11-7.3.16. All surveys were led by suitably qualified ornithologists, who are considered competent to undertake breeding bird surveys in accordance with [CIEEM's Competency Framework](#).

## Survey Limitations

- A11-7.3.17. An absence of desk study records for a particular species does not necessarily convey an absence of such species in that area but is often a facet of under-recording and/or reporting to the relevant local environmental records centre. Furthermore, birds are highly mobile, and many species migrate and are liable to occur in atypical habitats and situations while doing so (with observations being more likely to get reported to local environmental record centres).
- A11-7.3.18. Overwintering species can be recorded during the general breeding season (1 March to 31 August) whilst on passage, therefore this may not be indicative of a species breeding within a particular area, e.g. wintering thrushes and certain wader species. As such, records of scarce bird species in atypical habitats should be treated with caution and do not necessarily convey that the habitat supports breeding populations of those species. The desk study provides an overview of the species already recorded within the survey area and has been used to help inform the requirement for field surveys. As such, this is not considered to be a constraint to the interpretation of the desk study records.
- A11-7.3.19. Ornithological surveys are affected by a variety of factors which affect the presence of birds, such as season, weather, climate, migration patterns, food availability, species behaviour, and the presence of predators. Therefore, bird surveys for the Proposed Scheme may not have produced a complete bird list and the absence of evidence of any particular species within the survey area (or a part of the survey area) should not be taken as conclusive proof that the species is not present or that it will not be present in the future, particularly as bird species are generally mobile. In addition, only one evening survey visit was undertaken (in accordance with survey guidance, as outlined in paragraph A11-7.3.7) and, therefore, crepuscular and nocturnal bird species, such as owls, may have been under-recorded. The above limitation has been addressed through taking a precautionary approach within the territory analysis exercise.
- A11-7.3.20. It is generally recommended that breeding bird survey visits undertaken for a site should be spread evenly between March and early July; however, given the location of the Proposed Scheme, mid-April was considered an appropriate



period to start due to anticipated and preceding temperatures. It is possible that bird species that can breed earlier in the year may have been missed or under-recorded, such as mistle thrush, barn owl, corvids and tawny owl (the scientific names for species recorded are available in Annex 11.7.B) but given the aforementioned anticipated and preceding temperatures this is considered unlikely. This minor limitation has also been addressed through taking a precautionary approach within the territory analysis exercise, e.g. when considering the breeding status of certain species where limited information is available, 'possible breeding territory' has been assigned.

- A11-7.3.21. Access was limited in several parts of the survey area due to factors such as steep terrain, lack of landowner permission, presence of very dense forestry plantation, and ongoing slope stabilisation works on the A83. Where access was restricted, it was not always possible to obtain accurate counts of flocks of birds within certain areas as individuals were occasionally obscured by landscape features or vegetation. It is also possible that certain cryptic or inconspicuous species, such as dunnock or snipe, were under-recorded during certain visits. Additionally, certain species within the very dense forestry plantation areas may have been missed or under-recorded as both access and visibility from forest paths were limited. However, in some cases, the topography around the Proposed Scheme was considered to lend itself to detection of birds, where surveyors were able to scan from high vantage points or scan upwards from the floor of Glen Croe. Access limitations are not considered to have had a significant effect on the survey results; dense forestry plantation blocks and steep, bare slopes generally support a lower diversity and lower numbers of birds due to their generally low habitat suitability and birds in forest habitats are considered more likely to occupy forest edges, which were accessible to surveyors. Given that works are generally confined to the vicinity of existing roads (where access constraints were generally not present or limited) and that works are limited on the steep slopes above the A83 and not proposed for the forestry areas (where access was more limited and habitats are less suitable), access limitations are not considered to have had a significant effect on the evaluation.

- A11-7.3.22. Defining breeding status is less precise and more difficult for species which range widely within, or beyond, any one survey area (such as raptors and corvids), or for species which do not exhibit much territorial behaviour (in particular semi-colonial species such as linnet) or certain breeding evidence such as singing (such as corvids and waterfowl).
- A11-7.3.23. Extremely minor edits were made to the scheme boundary during finalisation of the EIAR (totalling less than 0.25 ha collectively), but these have not been taken into account in area calculations. These areas have been checked against species records to confirm that they would not make any changes to requirements for licences or other mitigation. This is not considered to create any significant limitations on the impact assessment.
- A11-7.3.24. Despite these limitations, it is considered that the information provided, the precautionary approach and subsequent analysis has given a fair representation of the breeding bird assemblage present within the survey area during the breeding season.

### Breeding Status

- A11-7.3.25. Registrations of birds were judged to be 'breeding', 'probable breeding', 'possible breeding', or 'non-breeding' according to the [BTO breeding status codes](#) in Table A11-7 below. Breeding behaviour includes displaying, singing, territorial activity, agitated or defensive behaviour or pairs of adults together. Breeding territories have been analysed for priority species only. Breeding territories were determined by grouping individual records for each species where an individual had been recorded on multiple occasions in the same location.

**Table A11-7.1 – Registrations required to assess breeding status, definitions taken from the BTO species and breeding behaviour codes**

Breeding status	Registration description
Breeding territory	Two registrations of a particular species displaying breeding behaviour within a territory range over the total survey period. Breeding behaviour includes displaying, singing, territorial activity, agitated or defensive behaviour, or a pair of adults together.
Breeding territory	A single record of a nest containing eggs or young, or adults observed at a nest.
Breeding territory	A single record of adults carrying nest material, food or faecal sac.
Breeding territory	Two records of an elusive species (e.g. nocturnal species such as owls or woodcock) within a territory range over the total survey period.
Probable breeding territory	Present in suitable habitat in the same location (within normal territory range) on two occasions.
Probable breeding territory	Displaying breeding behaviour on one occasion only.
Possible breeding territory	Present in suitable habitat on one occasion only.
Non-breeding	Present in habitat not suitable for breeding.
Non-breeding	Immature birds (e.g. herring gulls first breed at four years of age).

## A11-7.4. Results

### Desk Study

#### Designated Sites

- A11-7.4.1. One European site designated for its ornithological interest, the Glen Etive and Glen Fyne Special Protection Area (SPA) was identified within the desk study area. The Glen Etive and Glen Fyne SPA is a large, predominantly upland site in the south-west Highlands of Scotland covering 81,372.90ha. The site rises from sea level to over 1,100m and encompasses a diverse range of habitats including heather moorland, rough grassland, blanket bog, native woodland, montane heaths and exposed rock and scree. There are also numerous freshwater lochs and river systems. It is located c.1.8km to the north of the Proposed Scheme and is designated for its golden eagle populations. This is displayed in Volume 3, Figure 11.1 Designated sites.
- A11-7.4.2. No national or local sites designated for ornithological reasons were identified within the relevant desk study area(s).

#### Ornithological Records

- A11-7.4.3. A search of publicly available data, accessed via the NBN Atlas website, with permission from the ABRc, highlighted records of a number of bird species within the relevant desk study area(s) for the Proposed Scheme. These included species of conservation concern, as well as those generally considered to be more common/widespread. Species noted were generally reflective of those recorded during the surveys and typical of the habitat types present. These included cuckoo, meadow pipit, song thrush, swallow, kestrel, peregrine, wren, blackbird, chaffinch, robin, raven, hooded crow, dipper and goldeneye.
- A11-7.4.4. No records of Schedule 1 bird species within 2km were returned by the RSPB.
- A11-7.4.5. Records of nest sites for sparrowhawk (one record), golden eagle (three records) and raven (two records) within the relevant search areas were returned by ARSG. For golden eagle records, further detail is available in the Appendix 11.1 Report to inform Habitats Regulations Appraisal.

A11-7.4.6. A black grouse feather was noted incidentally during an unrelated site survey in 2021 (by Jacobs Aecom) within the north-eastern extent of the Proposed Scheme survey area.

### Field Surveys

A11-7.4.7. A total of 40 bird species were recorded within the survey area (Proposed Scheme footprint and 500m buffer). These 40 species are discussed below and carried through into the evaluation section below.

A11-7.4.8. Nineteen priority species were recorded within the survey area. Of these, 18 species were recorded during the breeding bird surveys and one species (long-eared owl) was recorded incidentally during other site surveys (refer to Annex 11.7.C). Priority species recorded within the survey area during surveys are shown in Table A11-7.2.

**Table A11-7.2 - Conservation Status of Bird Species in the Proposed Scheme Area**

Species	Schedule 1	BoCC (Birds of Conservation Concern) Red List	BoCC Amber List	SBL (Scottish Biodiversity List)	Locally Very Scarce
Common Crossbill	Yes	N/A	N/A	N/A	N/A
Cuckoo	N/A	Yes	N/A	Yes	N/A
Grasshopper Warbler	N/A	Yes	N/A	Yes	N/A
Tree Pipit	N/A	Yes	N/A	Yes	N/A

Species	Schedule 1	BoCC (Birds of Conservation Concern) Red List	BoCC Amber List	SBL (Scottish Biodiversity List)	Locally Very Scarce
Lesser Redpoll	N/A	Yes	N/A	N/A	N/A
Mistle Thrush	N/A	Yes	N/A	N/A	N/A
Whinchat	N/A	Yes	N/A	N/A	N/A
Song Thrush	N/A	N/A	Yes	Yes	N/A
Common Sandpiper	N/A	N/A	Yes	N/A	N/A
Dunnock	N/A	N/A	Yes	N/A	N/A
Grey Wagtail	N/A	N/A	Yes	N/A	N/A
Kestrel	N/A	N/A	Yes	N/A	N/A
Mallard	N/A	N/A	Yes	N/A	N/A
Meadow Pipit	N/A	N/A	Yes	N/A	N/A
Snipe	N/A	N/A	Yes	N/A	N/A

Species	Schedule 1	BoCC (Birds of Conservation Concern) Red List	BoCC Amber List	SBL (Scottish Biodiversity List)	Locally Very Scarce
Willow Warbler	N/A	N/A	Yes	N/A	N/A
Woodpigeon	N/A	N/A	Yes	N/A	N/A
Bullfinch	N/A	N/A	Yes	N/A	N/A
Wren	N/A	N/A	Yes	N/A	N/A
Long-eared Owl	N/A	N/A	N/A	N/A	Yes

- A11-7.4.9. No species listed on Annex I of the Birds Directive or species listed on Schedules 1A or A1 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the survey area.
- A11-7.4.10. Of the 19 priority species recorded within the survey area, three species are confirmed as breeding or considered to have bred, and 16 species are considered to be potentially breeding (i.e. probable or possible breeders) within the survey area. This is detailed in A11-7.5.7. Annex 11.7.C and also shown in Volume 3, Figure 11.7.E - Breeding Birds Territories.
- A11-7.4.11. At times when surveyors were required to gain access to the survey area from outside of the survey area, priority species were noted displaying breeding evidence adjacent to or further outside of the 500m survey buffer. Species included those that were also recorded within the survey area in addition to those that weren't. Notably, merlin, an Annex 1 and Schedule 1 species was

recorded flying low across a hillside to the west of the Proposed Scheme and additional likely territories of crossbill were noted.

- A11-7.4.12. The 21 non-priority species recorded comprise relatively abundant and widespread BoCC Green List species, typical of the upland and forestry habitats present within the survey area (see Volume 3, Figure 11.7). Breeding evidence of varying levels was recorded for these species, across the different habitats within the Proposed Scheme. A small sand martin colony was also noted within an exposed sand bank adjacent to the OMR.
- A11-7.4.13. The full species list recorded within the survey area is provided in Annex B, a summary of the priority species recorded within the survey area and their conservation status and legal protection is provided in Annex 11.7.C, and the survey results maps and territory map are shown in Volume 3, Figure 11.7.

### Description of Breeding Bird Activity and Assemblages

- A11-7.4.14. The assemblage of breeding birds is considered to be largely typical of upland habitats with open hillside and areas of woodland, trees and scrub within both the south-west Highlands and further afield in the Highland region.
- A11-7.4.15. Priority species associated with open and grassland habitats include meadow pipit, whinchat tree pipit, cuckoo, and, in wetter areas, snipe and grasshopper warbler.
- A11-7.4.16. Two species, common sandpiper and grey wagtail were recorded in association with watercourses.
- A11-7.4.17. Woodland and scrub habitats supported crossbill, lesser redpoll, cuckoo, dunnock, long-eared owl, mistle thrush, song thrush, willow warbler, woodpigeon and wren.
- A11-7.4.18. May was the peak month for bird registrations, as temperatures increased from April and migrant species arrived in greater numbers many birds were advertising/defending territories, with others already demonstrating nesting behaviour. This level of vocal activity began to drop throughout June and July



as birds concentrated on rearing young and the young of early breeders had fledged. Wren, robin, chaffinch, goldcrest, willow warbler and meadow pipit were the most frequently recorded species with three of these (wren, willow warbler and meadow pipit all being amber-list BoCC).

### Black Grouse Surveys

- A11-7.4.19. Several areas of habitat considered suitable for black grouse were noted during the desk-based assessment and subsequent ground truthing exercise. These comprised areas containing a mosaic of bilberry, heather, young, scattered plantation, woodland edge habitat and/or forest rides, with open areas suitable for lekking displays. These were scattered across the survey area, but none were within the works footprint. The black grouse habitat suitability survey results are provided in Volume 3, Figure 11.7.F - Black Grouse Habitat Suitability.
- A11-7.4.20. No black grouse leks were recorded and no individuals were observed during any of the surveys, and it is, therefore, considered unlikely that any lek sites are present within 1.5km of the Proposed Scheme.

### Barn Owl Surveys

- A11-7.4.21. No confirmed or potential barn owl breeding sites were recorded during the surveys. Several confirmed and potential barn owl roost sites were recorded within the vicinity of the Proposed Scheme, comprising the structures listed below which are listed using their structure codes, a system used to label all structures across the Proposed Scheme:
- BB2 (confirmed roost site)– Large open-sided barn adjacent to OMR. This building is considered unsuitable for breeding due to a lack of ledges/cavities and regular use for hay storage; however, suitable perches provide roosting opportunities. Evidence recorded during survey comprised faecal splashing and a fresh pellet fragment. The landowner reported previous presence of pellets
  - BB3 (potential roost site) – Barn adjacent to OMR. No suitability for breeding due to exposed nature of building and lack of ledges/cavities. No evidence recorded in 2023 (during AWJV survey). The landowner has reported

observing barn owl perched in this building and it is considered likely it is used as an occasional roost site

- BB4 (potential roost site) - Open-fronted wooden shed with metal roof. The structure is unlikely to support breeding due to a lack of ledges, elevated flat areas, or cavities
- BB5 (potential roost site) - Open-sided cattle shed considered suitable for roosting due to presence of suitable perches. Considered unsuitable for breeding due to exposed nature of building and lack of ledges/cavities. No evidence recorded during time of survey as internal inspection was not possible due to presence of cattle
- BB10 (confirmed roost site) - A dilapidated barn at the northern extent of the works area (High Glen Croe) with collapsed roof and deteriorating stone walls; evidence of barn owl included heavy faecal splashing and pellets of varying ages, implying that this roost site is frequently used.

A11-7.4.22. All of the roost sites/potential roost sites are adjacent to or within the direct vicinity of suitable foraging habitat present within the floor of Glen Croe. None of the buildings found to support roosts were found to contain cavities, lofts or ledges suitable for breeding, and all were relatively exposed either due to the nature of the buildings or dilapidation.

A11-7.4.23. All the structures identified above had Emergence/Re-entry surveys carried out on them to identify use of roosts by bats; during these surveys no barn owls were observed using the surrounding area for foraging or using the structures as roosts. Details of these surveys can be seen in Volume 4, Appendix 11.11 Bat report.

A11-7.4.24. The barn owl habitat suitability/roost assessment survey results are provided in Volume 3, Figure 11.7.G - Barn Owl Habitat Suitability.

## A11-7.5. Discussion and Conclusion

### Summary of Breeding Bird Assemblage

A11-7.5.1. Of the 19 priority bird species recorded within the survey area, all are considered to be breeding or potentially breeding. Most of these species were recorded at relatively low densities, with relatively low peak counts, with the

exception of willow warbler, wren and meadow pipit which are all considered common/widespread/abundant breeders in the [most recently published Argyll Bird Report](#). Peak counts were considered likely to be in line with similar habitats across Argyll for the majority of species.

- A11-7.5.2. As a precaution, long-eared owl is considered to be a breeding species in the survey area, although it is considered to be locally scarce and under-recorded. The 2022 ARSG Annual Report estimates that Argyll supports 50 – 100 pairs, with 11 known breeding sites in 2022. The confirmed territory within the Proposed Scheme survey area, therefore, equates to 1 – 2% of the estimated Argyll population and 8.3% of known breeding sites in Argyll.
- A11-7.5.3. Crossbill is a Schedule 1 species and demonstrate irruptive breeding behaviour, generally only breeding in good numbers in years with a good supply of seed cones. A single probable territory was noted within the survey area, with other singing birds recorded outside of the survey area.

### Black Grouse

- A11-7.5.4. Based on the survey results, it is considered unlikely that the survey area is used by lekking black grouse, but that foraging and roving birds may be present occasionally. Black grouse have been the subject of past targeted conservation efforts run as part of the Loch Lomond and the Trossachs National Park LBAP.

### Barn Owl

- A11-7.5.5. No barn owl breeding sites were recorded within the survey area, and all buildings present within the vicinity of the Proposed Scheme that were located within areas where disturbance to nests sites could be possible were considered to have low to negligible suitability for breeding. It is, therefore, considered that barn owl is not breeding within any of the buildings assessed and these are instead used as occasional to frequent roost sites with suitable foraging habitat available adjacent in the floor of Glen Croe.

### Conclusion

- A11-7.5.6. The survey area supports a range of breeding bird species, including those that are notable for their protected or conservation concern status (Schedule 1 of Wildlife and Countryside Act 1981 (as amended), SBL species and/or equivalent Red List and Amber List BoCC).

### Report Validity

- A11-7.5.7. The survey results in this baseline report are valid for 3 years post survey in line with [CIEEM lifespan of reports guidance](#). Surveys are recommended to be repeated should the time between survey and work commencing reach beyond this 3-year period.

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# Annexes

## Annex 11.7.A. Survey Information

**Table A11-7.3 – Survey dates, times, and weather conditions at start of survey**

Weather condition scales are shown in the table below the survey information table.

Date	Survey type	Survey start/ end time	Sunrise/ sunset time	Temperature (°C)	Wind (Beaufort)	Rain	Cloud (Octas)
07/04/2022 (Jacobs)	Black Grouse Lek Survey	05:30 / 08:45	06:37	3-4	2	2	7
27/04/2022 (Jacobs)	Black Grouse Lek Survey	04:50 / 06:45	05:47	7	2	0	6
10/05/2022 (Jacobs)	Black Grouse Lek Survey	04:20 / 06:00	05:16	9-10	4	3	8
11/05/2022 (Jacobs)	Black Grouse Lek Survey	04:30 / 07:30	05:13	9	4	3	8

Date	Survey type	Survey start/ end time	Sunrise/ sunset time	Temperature (°C)	Wind (Beaufort)	Rain	Cloud (Octas)
05/04/2023	Black Grouse Habitat Suitability Assessment	N/A	N/A	N/A	N/A	N/A	N/A
25/04/2023	Black Grouse Lek Survey	19:45 / 21:30	20:47	9	2	0	4
26/04/2023	Black Grouse Lek Survey	04:45 / 06:47	05:43	5	2	0	2
27/04/2023	Black Grouse Lek Survey	04:40 / 06:55	05:41	6	2-4	1	8
16/05/2023	Black Grouse Lek Survey	03:57 / 06:45	05:00	9	2-4	0	4
17/05/2023	Black Grouse Lek Survey	03:59 / 06:40	04:58	10	2	0	2
26/04/2023	Breeding Bird Survey	06:43 / 11:05 18:53 / 21:57	05:43 20:49	8	2	0	2
27/04/2023	Breeding Bird Survey	06:39 / 11:15	05:41	9	2-4	1	8
22/05/2023	Breeding Bird Survey	05:50 / 11:00	04:50	10	2	0	1
23/05/2023	Breeding Bird Survey	04:45 / 10:55	04:48	10	1	0	5
24/05/2023	Breeding Bird Survey	05:57 / 11:00	04:57	11	2	0	0

Date	Survey type	Survey start/ end time	Sunrise/ sunset time	Temperature (°C)	Wind (Beaufort)	Rain	Cloud (Octas)
27/06/2023	Breeding Bird Survey	05:30 / 11:00	04:30	13	2-3	0/1	7
28/06/2023	Breeding Bird Survey	05:30 / 11:00	04:30	16	2-3	0/1	8
12/07/2023	Breeding Bird Survey	03:47 / 11:23	04:45	12	1	0	6
20/07/2023	Breeding Bird Survey	03:58 / 11:10	04:58	7	3	0	2
21/07/2023	Breeding Bird Survey	03:57 / 10:47	04:59	9	3	0	2
Various (completed during other site surveys)	Barn Owl Habitat Suitability Assessment	Various	N/A	N/A	N/A	N/A	N/A



### Weather Classification Scales

Wind (Beaufort)	Rain	Cloud (Octas)
<p>Wind speed score of 0-12 against Beaufort scale: 0 = calm, 2 = light breeze, 4 = Moderate breeze, 6 = strong breeze, 7 = High wind, 9 = Strong gale, 12 = Hurricane</p>	<p>Precipitation intensity on scale of 0-5: 0 = Dry, 1 = Light drizzle, 2 = Light rain, 3 = Moderate rain, 4 = Heavy rain, 5 = Torrential rain.</p>	<p>Cloud cover on a scale of 0-8: 0 = Sky completely clear, 4 = Sky half cloudy, 8 = Sky completely cloudy</p>

## Annex 11.7.B. Full Breeding Bird Survey Results

Table A11-7.4 – Full Breeding Bird Survey Results

Common name	Scientific name	Visit 1	Visit 2	Visit 3	Visit 4	Peak Count
blackbird	<i>Turdus merula</i>	1	2	0	1	2
blue tit	<i>Cyanistes caeruleus</i>	0	0	0	1	1
buzzard	<i>Buteo buteo</i>	1	3	0	2	3
canada goose	<i>Branta canadensis</i>	1	1	0	0	1
carrion crow	<i>Corvus corone</i>	1	3	4	0	4
chaffinch	<i>Fringilla coelebs</i>	6	12	14	1	14
coal tit	<i>Periparus ater</i>	3	1	0	1	3
common sandpiper	<i>Actitis hypoleucos</i>	1	1	0	0	1
crossbill	<i>Loxia</i> sp., likely curvirostra based on Proposed Scheme location	0	1	0	0	1

Common name	Scientific name	Visit 1	Visit 2	Visit 3	Visit 4	Peak Count
cuckoo	<i>Cuculus canorus</i>	0	2	0	0	2
dunnock	<i>Prunella modularis</i>	0	3	4	0	4
goldcrest	<i>Regulus regulus</i>	1	1	3	0	3
goldfinch	<i>Carduelis carduelis</i>	0	0	1	0	1
goosander	<i>Mergus merganser</i>	0	1	0	0	1
great tit	<i>Parus major</i>	1	0	0	0	1
grey heron	<i>Ardea cinerea</i>	1	1	1	0	1
grey wagtail	<i>Motacilla cinerea</i>	0	1	0	1	1
grasshopper warbler	<i>Locustella naevia</i>	0	0	0	1	1
hooded crow	<i>Corvus cornix</i>	4	4	3	2	4
kestrel	<i>Falco tinnunculus</i>	0	1	0	0	1
jay	<i>Garrulus glandarius</i>	0	1	0	0	1
lesser redpoll	<i>Acanthis cabaret</i>	0	1	0	0	1

Common name	Scientific name	Visit 1	Visit 2	Visit 3	Visit 4	Peak Count
long-eared owl	<i>Asio otus</i>	0	0	0	1	1
mallard	<i>Anas platyrhynchos</i>	1	0	0	0	1
meadow pipit	<i>Anthus pratensis</i>	8	45	44	6	45
mistle thrush	<i>Turdus viscivorus</i>	0	2	0	0	2
pied wagtail	<i>Motacilla alba</i>	1	2	3	0	3
raven	<i>Corvus corax</i>	2	0	0	0	2
robin	<i>Erithacus rubecula</i>	2	12	5	1	12
sand martin	<i>Riparia riparia</i>	0	1	0	2	2
siskin	<i>Carduelis spinus</i>	0	1	3	0	3
snipe	<i>Gallinago gallinago</i>	0	0	1	1	1
song thrush	<i>Turdus philomelos</i>	1	2	1	1	2
stonechat	<i>Saxicola rubicola</i>	0	3	3	0	3
swallow	<i>Hirundo rustica</i>	0	2	2	0	2

Common name	Scientific name	Visit 1	Visit 2	Visit 3	Visit 4	Peak Count
tree pipit	<i>Anthus trivialis</i>	0	7	1	0	7
whinchat	<i>Saxicola rubetra</i>	0	2	0	0	2
willow warbler	<i>Phylloscopus trochilus</i>	0	6	13	0	13
woodpigeon	<i>Columba palumbus</i>	2	1	3	4	4
wren	<i>Troglodytes troglodytes</i>	1	17	20	5	20

## Annex 11.7.C. Breeding Bird Survey Result Summary

Table A11-7.5 – Breeding Bird Survey Results Summary for Species of Conservation Concern

Common name	Scientific name	Peak count (excludes juveniles)	Month(s) of peak count	Visits species recorded (out of 4)	Breeding status recorded	Conservation status
Common Sandpiper	<i>Actitis hypoleucos</i>	1	April, May	2	Possible breeding territory	Amber-list BoCC
Crossbill	<i>Loxia sp.</i> , likely <i>curvirostra</i> based on Proposed Scheme location	1	May	1	Probable breeding territory	Schedule 1
Cuckoo	<i>Cuculus canorus</i>	2	May	1	Possible breeding territory	SBL, Red-list BoCC
Dunnock	<i>Prunella modularis</i>	4	May	3	Possible breeding territory	SBL, Amber-list BoCC

Common name	Scientific name	Peak count (excludes juveniles)	Month(s) of peak count	Visits species recorded (out of 4)	Breeding status recorded	Conservation status
Grey Wagtail	<i>Motacilla cinerea</i>	1	May	3	Possible breeding territory	Amber-list BoCC
Grasshopper Warbler	<i>Locustella naevia</i>	1	July	1	Possible breeding territory	SBL, Red-list BoCC
Kestrel	<i>Falco tinnunculus</i>	1	May	1	Possible breeding territory	Amber-list BoCC
Lesser Redpoll	<i>Acanthis cabaret</i>	1	May	1	Probable breeding territory	Red-list BoCC

Common name	Scientific name	Peak count (excludes juveniles)	Month(s) of peak count	Visits species recorded (out of 4)	Breeding status recorded	Conservation status
Long-eared Owl	<i>Asio otus</i>	Species recorded incidentally during two bat surveys – breeding status: Confirmed when young heard calling. Not included in territory map.		N/A	Breeding territory	No formal status, however records of local interest to ARSG due to suspected under-recording
Mallard	<i>Anas platyrhynchos</i>	1	April	1	Possible breeding territory	Amber-list BoCC
Meadow Pipit	<i>Anthus pratensis</i>	45	May	4	Breeding territory	Amber-list BoCC



Common name	Scientific name	Peak count (excludes juveniles)	Month(s) of peak count	Visits species recorded (out of 4)	Breeding status recorded	Conservation status
Mistle Thrush	<i>Turdus viscivorus</i>	2	May	1	Possible breeding territory	Red-list BoCC
Snipe	<i>Gallinago gallinago</i>	1	June, July	1	Possible breeding territory	Amber-list BoCC
Song Thrush	<i>Turdus philomelos</i>	2	May	4	Possible breeding territory	SBL, Amber-list BoCC
Tree Pipit	<i>Anthus trivialis</i>	7	May	2	Possible breeding territory	SBL, Red-list BoCC
Whinchat	<i>Saxicola rubetra</i>	2	May	1	Breeding territory	Red-list BoCC
Willow Warbler	<i>Phylloscopus trochilus</i>	13	June	3	Breeding territory	Amber-list BoCC
Woodpigeon	<i>Columba palumbus</i>	4	July	4	Possible breeding territory	Amber-list BoCC

Common name	Scientific name	Peak count (excludes juveniles)	Month(s) of peak count	Visits species recorded (out of 4)	Breeding status recorded	Conservation status
Wren	<i>Troglodytes troglodytes</i>	20	June	4	Possible breeding territory	Amber-list BoCC