

# **WLC 20003 – Glen Clova Woodland Creation Project**

## **Breeding Bird Survey Report**

22/09/2020

Prepared By:



Wildlife Consulting Ltd | Ecology | Environmental Consultancy

Company Number: SC620396

<b>1</b>	<b>Intorduction</b> .....	<b>Error! Bookmark not defined.</b>
<b>1.1</b>	<b>Background</b> .....	<b>2</b>
<b>1.2</b>	<b>Site Description</b> .....	<b>2</b>
<b>2</b>	<b>Legislation and Conservation Status</b> .....	<b>3</b>
<b>2.1</b>	<b>The Birds Directive</b> .....	<b>3</b>
<b>2.2</b>	<b>The Wildlife and Countryside Act 1981 (as amended)</b> .....	<b>3</b>
<b>2.3</b>	<b>Nature Conservation Scotland Act</b> .....	<b>3</b>
<b>2.4</b>	<b>UK Birds of Conservation Concern</b> .....	<b>4</b>
<b>2.5</b>	<b>UK Biodiversity Framework</b> .....	<b>4</b>
<b>3</b>	<b>METHODS</b> .....	<b>5</b>
<b>3.1</b>	<b>Desk Study</b> .....	<b>5</b>
<b>3.2</b>	<b>Breeding Bird Survey</b> .....	<b>5</b>
<b>3.3</b>	<b>Black Grouse Survey</b> .....	<b>6</b>
<b>3.4</b>	<b>Breeding Raptor Survey</b> .....	<b>6</b>
<b>3.5</b>	<b>Territory Mapping</b> .....	<b>6</b>
<b>3.6</b>	<b>Survey Limitations</b> .....	<b>6</b>
<b>4</b>	<b>RESULTS</b> .....	<b>7</b>
<b>4.1</b>	<b>Desk Study</b> .....	<b>7</b>
	4.1.1 Statutory Designated Sites	7
	4.1.2 Background Records	8
<b>4.2</b>	<b>Survey Results</b> .....	<b>8</b>
	4.2.1 Breeding Bird Survey	8
	4.2.2 Black Grouse Survey	9
	4.2.3 Breeding Raptor Survey	9
<b>5</b>	<b>Appraisal and Recommendations</b> .....	<b>10</b>
<b>5.1</b>	<b>Designated Sites and Golden Eagle</b> .....	<b>10</b>
<b>5.2</b>	<b>Black Grouse</b> .....	<b>11</b>
<b>5.3</b>	<b>Peregrine</b> .....	<b>11</b>
<b>5.4</b>	<b>Barn Owl</b> .....	<b>12</b>
<b>5.5</b>	<b>Curlew</b> .....	<b>12</b>
<b>5.6</b>	<b>Lapwing</b> .....	<b>13</b>
<b>5.7</b>	<b>Redshank</b> .....	<b>13</b>
<b>5.8</b>	<b>Snipe</b> .....	<b>14</b>
<b>5.9</b>	<b>Golden plover, dunlin, oystercatcher and common sandpiper</b> .....	<b>14</b>
<b>5.10</b>	<b>Remaining Birds of Conservation Concern</b> .....	<b>14</b>
<b>5.11</b>	<b>Other Species</b> .....	<b>15</b>
<b>5.12</b>	<b>General Mitigation Measures for Birds</b> .....	<b>15</b>
<b>6</b>	<b>APPENDICES</b> .....	<b>16</b>
<b>6.1</b>	<b>Appendix 1: Bird Species recorded during 2020 Field Survey</b> .....	<b>16</b>
<b>6.2</b>	<b>Appendix 2 Survey Conditions</b> .....	<b>18</b>

## Tables

<b>Table 4-1: Sites Designated for Ornithological Interest</b> .....	<b>7</b>
<b>Table 4-2: Breeding Bird Survey Results</b> .....	<b>8</b>

# 1 Introduction

## 1.1 Background

Wildlife Consulting Ltd (WLC) was commissioned by GKD Galbraith Group to undertake a breeding bird survey and assessment in respect of a site at Glen Clova, Angus in 2020.

The site lies within the Cairngorms Massif Natural Heritage Zone (NHZ 11)<sup>i</sup> at the head of Glen Clova, in the Angus glens. The central Ordnance Survey Grid Reference for the site is located at NO 31300 73500.

There are plans to undertake a woodland creation project at the site. The final woodland species assemblage is yet to be determined but it is understood planting will largely comprise native broadleaf, some native pinewood and potentially a small proportion of commercial conifer woodland. The boundary of the site is illustrated on Figure 1a, along with potential woodland creation areas and potential peatland restoration areas. The maximum extent of the potential woodland creation areas extends to an area of approximately 950 hectares (ha). Peatland restoration areas are not being assessed as part of the current commission.

This report describes the methods and results of the breeding bird survey, which was completed between April and June 2020. It also discusses potential impacts on birds within the site boundary and surrounding area and makes recommendations to mitigate potential impacts on this group.

Species names used in this report follow the British List<sup>ii</sup>, which is maintained by the British Ornithologists' Union (BOU), with all species referred to by their British vernacular name.

## 1.2 Site Description

The land within the Site boundary lies within the steep Glen Clova valley. The River South Esk flows through the centre of the Glen in a south easterly direction. A number of steep tributaries run down the glen from the north and south and into the main stem of the River South Esk. The majority of the river flood plain comprises open marshy ground, but there are also existing areas of woodland in the flood plain in the north west and in the south east of the site. The land rises steeply on the northern and southern sides of Glen Clova, where habitats largely comprise moorland, scree and steep cliffs as well as smaller areas of conifer and broadleaf woodland. Loch Brandy lies in the north of the site. The single track B955 carriageway runs through the site allowing vehicular access to the Glen Clova Hotel and other buildings that lie within the site.

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<sup>i</sup> SNH has identified 21 Natural Heritage Zones which cover the Scottish mainland and the islands, with the aim of developing an integrated approach to the management and sustainable use of the natural heritage in each zone, which take into consideration local, social and economic aspirations.

<sup>ii</sup> British Ornithologists' Union. (2017). The British List: A Checklist of Birds of Britain (9th edition). Ibis 160: 190-240.

## **2 Legislation and Conservation Status**

As reference is made in this report to legislation protecting bird species, as well as conservation status, a brief overview of the relevant legislation and conservation lists is provided below.

### **2.1 The Birds Directive**

Annex I of Directive 2009/147/EC on the conservation of wild birds<sup>iii</sup> (known as the 'Birds Directive') lists bird species that are of conservation importance at a European level. Bird species listed on Annex I are protected from deliberate disturbance, particularly during the period of breeding and rearing young. This refers specifically to disturbance levels that would affect delivery of the objectives of the Birds Directive, which means that the impact of disturbance must not adversely affect a species' conservation status. One of the main provisions of the Directive is the identification and classification of SPAs for rare or vulnerable Annex I bird species, as well as for all regularly occurring migratory species.

### **2.2 The Wildlife and Countryside Act 1981 (as amended)**

The Wildlife and Countryside Act 1981 (as amended)<sup>iv</sup> (hereinafter referred to as WCA) is the primary legislation protecting animals, plants, and certain habitats in the UK, including all wild birds and their nests, eggs and chicks. Under this legislation, it is an offence to intentionally or recklessly kill, injure or take any wild bird or their eggs, or to take, damage, destroy, obstruct or otherwise interfere with the nest of any wild bird while it is in use or being built.

Additional protection of birds at or around their nests is afforded to rare breeding species in the UK, and/or species under threat of human persecution. These species are listed on Schedule 1 of the Act, which have additional legal protection from disturbance while breeding. Further protection to some Schedule 1 species is afforded under Schedule 1A, which protects birds from intentional or reckless harassment at any time (i.e. all year round), and Schedule A1 which protects birds nest sites/eyries from harm on a year round basis.

### **2.3 Nature Conservation Scotland Act**

The Act sets out a series of measures which are designed to conserve biodiversity and to protect and enhance the natural heritage of Scotland. In doing so, the Act provides the principal legislative components of a new, integrated, system for nature conservation within Scotland. The measures in the Act also have relevance beyond Scotland, and provide for the conservation of Scotland's natural environment within a wider British, European and global context.

The Act also locates the conservation of biodiversity and of Scotland's natural environment within a wider British, European and global context. In relation to biodiversity in particular, it requires public bodies and office-holders to consider the effect of their actions at a local, regional, national and international level. Measures relating to the protection of species and habitats also recognise the importance of the wider international context.

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<sup>iii</sup> <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:020:0007:0025:EN:PDF>

<sup>iv</sup> <http://www.legislation.gov.uk/ukpga/1981/69>

## 2.4 UK Birds of Conservation Concern

The UK Birds of Conservation Concern (BoCC) is a periodic national review assessing the population and trends for UK breeding bird species. It uses a traffic light system to indicate an increasing level of conservation concern. Species that have a declining range and/or population, or that are vulnerable to population effects due to their small population size, are Red-listed or Amber-listed, depending on the extent of the decline or vulnerability, while those which are stable, increasing, or experiencing only small declines are Green-listed<sup>∨</sup>.

The UK Biodiversity Action Plan (UK BAP) was published in 1994, and was the UK Government's response to the Convention on Biological Diversity (CBD), which the UK signed up to in 1992 in Rio de Janeiro. The CBD called for the development and enforcement of national strategies and associated action plans to identify, conserve and protect existing biological diversity, and to enhance it wherever possible.

## 2.5 UK Biodiversity Framework

The 'UK Post-2010 Biodiversity Framework', published in July 2012, succeeds the UK BAP and 'Conserving Biodiversity – the UK Approach', and is the result of a change in strategic thinking following the publication of the CBD's 'Strategic Plan for Biodiversity 2011–2020' and its 20 'Aichi Targets', at Nagoya, Japan in October 2010, and the launch of the EU Biodiversity Strategy (EUBS) in May 2011. The Framework demonstrates how the work of the four countries and the UK contributes to achieving the Aichi Targets, and identifies the activities required to complement the country biodiversity strategies in achieving the Targets. The UK Biodiversity Framework lists 59 priority bird species (referred to in this report as UKBF species).

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<sup>∨</sup> Eaton, M.A., Aebischer, N.J., Brown, A., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A., and Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. *British Birds* 108, 708-746.

## 3 METHODS

### 3.1 Desk Study

A desk study was carried out at the start of the commission and ahead of the field survey. Information sources used for this study are described below:

- Google Earth (<http://earth.google.co.uk>) - aerial imagery was obtained and used to inform the field survey;
- SNH Sitelink (<http://gateway.snh.gov.uk/sitelink/>) - sitelink was used to determine the location of any statutory sites designated for nature conservation and their qualifying features; and
- Multi Agency Geographical Information Centre (MAGIC) interactive mapping tool.

Statutory sites designated for nature conservation were searched for within 10 km of the site and focused on the following designations:

- Special Protection Areas (SPAs);
- Special Areas of Conservation (SACs);
- Ramsar sites;
- Sites of Special Scientific Interest (SSSIs);
- Local Nature Reserves (LNRs); and
- RSPB reserves.

#### Background Records

Background records relating to raptor species listed on Schedule 1 of the WCA (Section 2.2), within 5 km of the site, within the last five years were requested from the Raptor Study Group (RSG). Background records of black grouse and waders were requested from the Royal Society for the Protection of Birds (RSPB).

### 3.2 Breeding Bird Survey

A three visit breeding wader survey was completed between April and June 2019 to identify breeding bird territories within the survey area, based on the Brown and Shepherd method<sup>vi</sup> as summarised in Gilbert et al., 1998<sup>vii</sup>.

The survey area comprised all open ground within the Estate Boundary. The surveyor walked a predetermined route ensuring that all points within the survey area were approached to within 100 m. 20-25 minutes were spent surveying each 500 m × 500 m of the survey area.

All birds seen and heard were recorded on large-scale maps using standard BTO species codes and symbology to denote behaviour<sup>vii</sup>, particularly where this related to breeding (e.g. singing, alarm calling, gathering nest material or food, feeding newly fledged young, etc.). If a singing or displaying bird was recorded at a particular location within the survey area on at least one of the two visits, it was assumed to be holding a territory and/or breeding.

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<sup>vi</sup> A. F. Brown & K. B. Shepherd (1993) A method for censusing upland breeding waders, *Bird Study*, 40:3, 189-195, DOI

<sup>vii</sup> Gilbert, G., Gibbons, D.W. & Evans, J. (1998) *Bird Monitoring Methods*. RSPB.

### 3.3 Black Grouse Survey

Black grouse lek surveys were carried out within suitable habitat within the estate boundary during spring 2020, following methodology detailed in Gilbert et al. (1998). Black grouse surveys were undertaken prior to the breeding bird surveys in April and May and commenced at sunrise, lasting for approximately two hours. All surveys were undertaken in favourable weather conditions (sunny and little to no wind).

### 3.4 Breeding Raptor Survey

Searches for breeding raptors were undertaken on the same days as the breeding bird survey visits based on methods set out in Hardey et al. (2013)<sup>viii</sup>. A combination of walkover surveys and short vantage point (VP) watches of suitable areas of breeding habitat were undertaken between to detect the presence of target raptor species (including owls). Disused buildings were also searched for the evidence of use by barn owl. Raptor surveys were undertaken under Schedule 1 licence.

All surveys commenced before 8 am (following completion of black grouse surveys in April and May) and lasted for up to seven hours. Weather conditions were logged at hourly intervals. Full details of survey timings and hourly weather conditions are provided in Appendix 2.

### 3.5 Territory Mapping

Upon completion of visits, territory mapping was undertaken for all Red Listed Bird Species of Conservation Concern (BOCC)<sup>ix</sup>, all wader species, all raptor species and all wildfowl species. The results of the territory mapping are illustrated on Figure 1a. Confidential raptor and black grouse records described separately in the Confidential Annex A1 and accompanied by Figures 1b and 1c. The full species list is presented in Appendix 1 **Error! Reference source not found.**

### 3.6 Survey Limitations

Survey coverage was limited to the extent of the Estate Boundary. This allowed for effective coverage of all potential woodland creation areas and a substantial buffer of up to 1 km of the majority of these areas. It was not possible to survey a buffer of the south east or a small section in the north west of the site as the potential woodland creation areas extended to the Estate Boundary here (see Figure 1a). Nonetheless it is considered that sufficient coverage was achieved to allow an assessment of a representative site baseline and field data were augmented by background records returned from the Desk Study, which included the wider area. Surveys were carried out in good weather conditions, (good visibility, low wind speeds and little or no rain). As such, it is considered that the conditions allowed for the collection of a robust dataset during the survey visits.

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<sup>viii</sup> Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). Raptors: a field guide to survey and monitoring (3rd Edition)

<sup>ix</sup> Eaton M.A., Aebischer N.J., Brown A.F., Hearn R.D., Lock L., Musgrove A.J., Noble D.G., Stroud D.A. and Gregory R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708–746.

## 4 RESULTS

### 4.1 Desk Study

#### 4.1.1 Statutory Designated Sites

Statutory designated sites located within 10 km of the development site are considered in this assessment. There are six sites designated wholly or partly on account of their ornithological interest that lie with the 10 km area of search, which are summarised in Table 4-1 below. Designated sites of nature conservation relating to ecology rather than ornithology are not included in this assessment.

Table 4-1: Sites Designated for Ornithological Interest

Site	Designation(s)	Distance from Site	Qualifying Features
Cairngorms Massif	SPA	On site	Designated for breeding golden eagle.
Caenlochan	SPA, SAC, SSSI	On site	Caenlochan qualifies as an SPA on account of its internationally important populations of golden eagle and dotterel. These species and the upland bird notification for part of its SSSI cited status. Caenlochan is also a SSSI and an SAC on account of the upland habitats it supports.
Glen Callater	SSSI	7 km NW	Although Glen Callater is primarily notified on account of its botanical interest the SSSI citation also lists the populations of breeding golden eagle, snow bunting and dotterel as well as ptarmigan, golden plover and dunlin.
Lochnagar	SPA	7.2 km NW	Designated for breeding dotterel.
Fafernie	SSSI	8.5 km NW	Notified on account of its breeding dotterel and upland breeding bird assemblage. Fafernie is also a composite feature of the Lochnagar SPA.
Garbh Choire	SSSI	9.6 km WNW	Although notified on account of its botanical interest. Garbh Choire is also a composite feature of the Cairngorms Massif SPA.



#### 4.1.2 Background Records

The RSG supplied productivity details of three golden eagle eyries and 14 peregrine eyries over the last five years, located within 5km of the site. Records of two merlin territories were provided from the 10 km grid squares which include the site although specific locations were not provided. Full details are provided in Confidential Annex A1.

RSPB provided background records of eight wader species common sandpiper, curlew, dunlin, golden plover, lapwing, oystercatcher, redshank and snipe. All of which were confirmed as breeding within the site.

RSPB did not hold records of any black grouse for the area of search.

## 4.2 Survey Results

#### 4.2.1 Breeding Bird Survey

52 species of bird were recorded within the survey area during the three survey visits. Summaries for species for which territory mapping was undertaken are presented in Table 4-2 below and illustrated on Figure 1a.

Table 4-2: Breeding Bird Survey Results

Species	Legislative Protection and Conservation Status	Territories in Survey Area
Cuckoo	Red Listed	Two
Crossbill	WCA Schedule 1	One
Common Sandpiper	Amber Listed	One
Curlew	Red Listed	Three
Dunlin	Amber Listed, Birds Directive Annex 1	Two
Grey Wagtail	Red Listed	One
Golden Plover	Birds Directive Annex 1	Four
Lapwing	Red Listed	Four
Lesser Redpoll	Red Listed	Five
Mistle thrush	Red Listed	Three
Mallard	Amber Listed	One
Oystercatcher	Amber Listed	Seven
Redshank	Amber Listed	Two
Ring ouzel	Red Listed	Seven
Skylark	Red Listed	Five
Snipe	Amber Listed	Ten
Song thrush	Red Listed	Five
Teal	Amber Listed	One

Other species considered to have bred within the survey area comprised greylag goose<sup>x</sup>, red grouse, grey heron, common gull, woodpigeon, raven, coal tit, blue tit, great tit, willow warbler, goldcrest, wren, treecreeper, blackbird, robin, redstart, stonechat, wheatear, dipper, dunnock, pied wagtail, meadow pipit, chaffinch, greenfinch and siskin.

#### 4.2.2 *Black Grouse Survey*

Two black grouse leks (a main lek and a single male satellite lek) were recorded within the survey area. The main lek comprised nine males. A grey hen was also recorded within the survey area. Further details are included in Confidential Annex A1.

#### 4.2.3 *Breeding Raptor Survey*

The results of the breeding raptor survey are summarised below.

Two WCA Schedule 1 listed species (peregrine and barn owl) are considered likely to have bred within the survey area in 2020. Additionally, a golden eagle eyrie was confirmed within the survey area, although did not appear to be occupied in 2020. As golden eagle are also listed on Schedules 1A and A1 they have the additional protection from harassment and their eyries are also protected when unoccupied.

A single pair of peregrine were holding territory at an eyrie within the survey area and are considered likely to have bred.

A single barn owl territory was recorded within the survey area.

Full details of Schedule 1 Listed raptor locations are included in Confidential Annex A1.

Common a widespread raptor species were also considered to be breeding within the survey area with two buzzard, two kestrel and a single sparrowhawk territory recorded.

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<sup>x</sup> Greylag geese present here are considered to be feral breeding birds and not part of the wild Icelandic wintering population. As such they are of limited ornithological value and not considered further in this assessment.

## 5 Appraisal and Recommendations

### 5.1 Designated Sites and Golden Eagle

The site lies almost entirely within the Cairngorms Massif SPA (designated on account of its internationally important golden eagle population). Additionally, part of the northern section of the site lies within the Caenlochan SPA, which is ornithologically designated for internationally important populations of dotterel and golden eagle.

No records of dotterel were returned from the desk study or recorded on any of the survey visits. This species typically breeds on montane heath habitats at altitudes of 800 m above sea level or higher<sup>vii</sup>. Potential woodland creation areas for the project are all below 550 m above sea level. As such this species is unlikely to be affected and not considered further in this assessment.

Golden eagle breed within the site and will almost certainly hunt within the site. These birds are considered to be part of the SPA populations. As such, it is advised that a Habitats Regulations Appraisal (HRA) is undertaken for golden eagles associated with the Cairngorms Massif and Caenlochan SPAs.

Golden eagle is listed on Annex 1 of the Birds Directive and Schedules 1, 1A and A1 of the WCA and is therefore of high conservation value. It is green-listed due its current favourable conservation status at the national level. The latest population estimate in the UK was of 508 occupied nesting ranges in Scotland<sup>xi</sup>.

At a regional level, the Scottish Raptor Monitoring Scheme (SRMS) Report from 2018 shows that nine known breeding ranges in Angus were checked for occupancy in 2018, of which six were occupied by a pair and three of those were successful. During recent years, the population has remained stable indicating that the NHZ population is in favourable status.

The potential woodland creation areas lie approximately 100 m from a golden eagle eyrie and there is a risk that planting in this area could cause disturbance to this species while breeding (a breeding season of February – August inclusive for golden eagle)<sup>xii</sup>, or harassment on a year round basis due to this species inclusion within Schedule 1A of the WCA. Ruddock and Whitfield (2007)<sup>xiii</sup> recommend a disturbance buffer of 750 m – 1000 m in relation to golden eagle. It may be feasible to reduce this distance where there is no direct line of site to an eyrie, however, it is recommended that the woodland creation design area for the project evolves to avoid

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<sup>xi</sup> Challis, A., Eaton, M., Wilson, M.W., Holling, M., Stevenson, A. & Stirling-Aird, P. (2019). Scottish Raptor Monitoring Scheme Report 2018. BTO Scotland, Stirling.

<sup>xii</sup> Scottish Natural Heritage (2017) Recommended bird survey methods to inform impact assessment of onshore wind Farms. SNH. Battleby.

<sup>xiii</sup> Ruddock, M, and Whitfield, D.P. (2007). A review of Disturbance Distances in Selected Bird Species: A report from Natural Research (Projects) Ltd to Scottish Natural Heritage.

disturbance to golden eagle. It is recommended a Breeding Bird Protection Plan (BBPP) sets out detailed measures to mitigate adverse effects to this species.

## 5.2 Black Grouse

Black grouse is a UKBAP priority species and is red-listed due to long-term historical population decline in the UK, including a severe decline over the last 25 years. It is also listed in the Tayside Local Biodiversity Action Plan and is therefore considered to be of medium nature conservation value. The British population was estimated at 5,078 males in 2005<sup>xiv</sup>, of which 66% were found in Scotland. This represented a decline of 22% in the British population since 1995/96.

At the regional level, data are not available for the Cairngorms Massif NHZ. In 2005, the North East Scotland population was estimated at 1,550 males, representing a decline in that region of 9 % since 1995/96<sup>xv</sup>. The same source cites Angus as a stronghold for this species.

Both the main lek of nine males is present and the single bird satellite lek lie within the potential woodland creation areas and it is recommended design mitigation is applied to avoid planting woodland on existing lek sites.

Young black grouse feed almost entirely on invertebrates for the first three weeks of their lives, after that gradually moving onto a herbivorous diet<sup>xvi</sup>. Low density tree and shrub planting would provide suitable foraging and breeding habitat for black grouse. The creation of wetter areas by digging small scrapes in adjacent open habitats would provide suitable niches for invertebrate communities, thus providing an essential food source for young birds dependent on a higher protein intake. Additionally, the incorporation of irregularly shaped 'feathered' edges to areas of woodland planting would provide suitable nesting opportunities for female black grouse (grey hens). It is recommended details of measures to safeguard black grouse and enhance habitats for this species are set out in the BBPP.

## 5.3 Peregrine

Peregrine is listed on Annex 1 of the Birds Directive and Schedule 1 of the WCA and is therefore of high conservation value. It is green-listed due its current favourable conservation status at the national level. The Scottish population has been estimated as approximately 600 pairs<sup>xv</sup>.

At a regional level, the Scottish Raptor Monitoring Scheme (SRMS) Report from 2018 shows that 41 known breeding ranges in Angus were checked for occupancy in 2018, of which 15 were occupied by a pair and five of those were successful. During recent years, the population has remained stable, indicating that the NHZ population is in favourable status.

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<sup>xiv</sup> Sim, I.M.W., Eaton, M.A., Setchfield, R.P., Warren, P.K. and Lindley, P. (2008). Abundance of male black grouse *Tetrao tetrix* in Britain in 2005, and change since 1995-96. *Bird Study* 55, 304-313.

<sup>xv</sup> Forrester, R. W., Andrews, I. J., McInerney, C. J., Murray, R. D., McGowan, R. Y., Zonfrillo, B., Betts, M.W., Jardine, D.C. & Grundy, D.S. (eds) (2007). *The Birds of Scotland*. The Scottish Ornithologists' Club, Aberlady.

<sup>xvi</sup> <http://www.snh.gov.uk/protecting-scotlands-nature/species-action-framework/species-action-list/black-grouse/>

The potential woodland creation areas lie approximately 200 m from an active peregrine eyrie, recorded during the 2020 field survey. Background data supplied by RSG confirms six peregrine eyries within the Estate Boundary however only two of these sites have been confirmed as active within the last five years.

There is a risk that woodland planting could cause disturbance to this species while breeding (defined for peregrine as March – August inclusive)<sup>xii</sup>. Ruddock and Whitfield recommend a disturbance buffer of 500 m – 750 m in relation to peregrine<sup>xiii</sup>. It may be feasible to reduce this distance where there is no direct line of site to an eyrie, however, it is recommended that the woodland creation design area for the project evolves to avoid disturbance to breeding peregrine. It is recommended the BBPP sets out detailed measures to mitigate adverse effects to this species.

## 5.4 Barn Owl

Barn owl is listed on Schedule 1 of the WCA and is therefore of high conservation value. It is green-listed due its current favourable conservation status at the national level. It is estimated that Scotland supports 1000 pairs<sup>xv</sup>.

At a regional level, the Scottish Raptor Monitoring Scheme (SRMS) Report from 2018 shows that eight nests sites were checked for occupancy in Angus in 2018, of which five were occupied by a pair and three of those were successful<sup>xi</sup>. During recent years, the population has remained stable indicating that the NHZ population is in favourable status.

The barn owl nest site lies on a woodland edge and is surrounded by open ground to the south. There is the risk that planting the land to the immediate south of the barn owl nest site would reduce the suitability of this nest site in the future once trees mature and a canopy forms. There is also the risk of disturbance to breeding barn owl. Ruddock and Whitfield<sup>xiii</sup> recommend a disturbance buffer of 50 m – 100 m in relation to barn owl which is relatively tolerant of disturbance. It is recommended that the woodland creation design area for the project evolves to avoid disturbance to breeding barn owl and that the final woodland planting design allows for an area of continued open habitat to the south of the nest location. It is recommended the BBPP sets out detailed measures to mitigate adverse effects to this species

## 5.5 Curlew

The curlew is a UKBF priority species and is red-listed due to moderate long-term historical population decline in the UK, including a severe decline over the last 25 years. The UK breeding population was estimated at 105,000 pairs<sup>xvii</sup>. The British Trust for Ornithology's (BTO) Breeding Bird Survey indicates that the decline has been most severe in Scotland.

At the regional level, data are not available for the Cairngorms Massif NHZ. The BTO Breeding Bird Survey map<sup>xviii</sup> indicates that the area is a stronghold for the species with relatively high population density. Based on the national breeding population, the regional population is

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<sup>xvii</sup>Baker, H., Stroud, D.A., Aebischer, N.J., Cranswick, P.A., Gregory, R.D., McSorley, C.A., Noble, D.G. and Rehfisch, M.M. (2006). Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 99, 25-44.

<sup>xviii</sup> [www.bto.org](http://www.bto.org)

therefore likely to number several thousand pairs, but due to historical and recent declines, is considered to be in unfavourable conservation status.

The amount of habitat lost to the potential woodland creation is negligible in relation to the overall size of suitable breeding habitat available either in the local area or within the Cairngorms Massif NHZ. The majority of curlew territories recorded lie in the River South Esk flood plain and only one lies within the potential woodland creation areas. It is predicted that sufficient suitable habitat will remain to maintain the local curlew population and that should a pair of curlew be displaced from the site by woodland planting, it can be readily accommodated in the local area. As such, effects on this species are predicted to be negligible.

## 5.6 Lapwing

Lapwing is a UKBF priority species and is red-listed due to severe long-term historical population decline in the UK, including a severe decline over the last 25 years. The UK breeding population was estimated at 154,000 pairs<sup>xix</sup>. Despite their UK population trend, recent surveys in Scotland suggest that numbers of breeding lapwing on 'farmed' land are relatively stable. Repeat surveys between 1992 and 1993 (O'Brien 1996) and 1997/1998/2000 (O'Brien et al. 2002) recorded a non-significant population decline of 8 %. The Scottish population has been recently estimated at about 87,000 pairs<sup>xx</sup>.

At the regional level, data are not available for the Cairngorms Massif NHZ. The BTO Breeding Bird Survey map<sup>xxi</sup> indicates that the area supports a high population density for this species. Based on the national breeding population, the regional population is therefore likely to number > 500 pairs, but due to historical and recent declines, is considered to be in unfavourable conservation status.

The amount of habitat lost to potential woodland creation is negligible in relation to the overall size of suitable breeding habitat available, either in the local area or within the Cairngorms massif NHZ. All lapwing territories recorded lie in the River South Esk flood plain and none lie within the potential woodland creation areas. It is predicted that sufficient suitable habitat will remain to maintain the local lapwing population. As such, effects on this species are predicted to be negligible.

## 5.7 Redshank

Redshank is a UKBAP priority species and is amber-listed due to moderate long-term historical population decline in the UK. The Scottish population has been recently estimated at about 11,700-17,500 pairs<sup>xix</sup>.

At the regional level, data are not available for the Cairngorms Massif NHZ. The BTO Breeding Bird Survey map<sup>xviii</sup> indicates that the area supports a low-moderate population density for this

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<sup>xix</sup><http://blx1.bto.org/birdfacts/results/bob4930.htm>

<sup>xx</sup>Sheldon, R., Bolton, M., Gillings, S. & Wilson, A. (2004). Conservation Management of Lapwing *Vanellus vanellus* on Lowland Arable Farmland in the UK. British Ornithologists' Union, Ibis, 146 (Suppl. 2), 41–49

<sup>xxi</sup> [www.bto.org](http://www.bto.org)

species. Based on the national breeding population, the regional population is therefore likely to number < 300 pairs.

The amount of habitat lost to potential woodland creation is negligible in relation to the overall size of suitable breeding habitat available, either in the local area or within the Cairngorms massif NHZ. All redshank territories recorded lie in the River South Esk flood plain and none lie within the potential woodland creation areas. It is predicted that sufficient suitable habitat will remain to maintain the local redshank population. As such, effects on this species are predicted to be negligible.

## **5.8 Snipe**

The snipe is amber-listed because it is listed as a species of European Conservation Concern. The UK breeding population was estimated at 59,300 pairs with over 100,000 birds present during the winter<sup>xx</sup>. The trend in the upland and moorland strongholds of the species is not fully known, but the BTO Breeding Atlas (1988-91) documented range loss widely in Wales, Northern Ireland and Scotland<sup>xxi</sup>. However, the BTO Breeding Bird Survey<sup>xxi</sup> indicates that the breeding population has increased in Scotland in recent years.

At the regional level, data are not available for the Cairngorms Massif NHZ. The BTO Breeding Bird Survey map indicates that the Cairngorms Massif is not a stronghold for the species, therefore based on the national breeding population, the regional population is likely to number up to 2,000 pairs. As the population has increased in Scotland and nationally in recent years, the regional population is considered likely to be in favourable conservation status.

The amount of habitat lost to the development infrastructure is negligible in relation to the overall size of suitable breeding habitat available either in the local area or within the Cairngorms Massif NHZ. It is predicted that sufficient suitable habitat will remain to maintain the local snipe population and that should low numbers of snipe be locally displaced from the site, they can be readily accommodated in the local area.

## **5.9 Golden plover, dunlin, oystercatcher and common sandpiper**

Of the four remaining wader species present within the survey area all records (and territories) relating to golden plover and dunlin are confined to the higher plateaus and located over 500 m from potential woodland creation areas. Oystercatcher are very tolerant of disturbance and are known to be very opportunistic in their nesting habitats, successfully breeding on roundabouts and on busy university campuses, even directly outside well used buildings (Colin Nisbet pers. Obs.). The single common sandpiper territory was confined to the banks of the River South Esk. As such, these species are unlikely to be adversely affected by the woodland creation project.

## **5.10 Remaining Birds of Conservation Concern**

The remainder of the breeding bird species of conservation concern recorded are not considered to be very sensitive to disturbance effects. Remaining BOCC were generally limited to small numbers of skylark, song thrush, mistle thrush, cuckoo and lesser redpoll). Ring ouzel, although

present in slightly higher numbers with seven territories recorded nested on scree and crags and areas generally unsuitable for tree planting, so are also unlikely to be adversely affected.

### **5.11 Other Species**

The localised displacement of a small number of common species into neighbouring land is predicted to have no detectable effect on their local or regional populations in the long-term.

### **5.12 General Mitigation Measures for Birds**

In order to avoid the potential for risk of harm to nesting birds, it is recommended that works are timed to either avoid the breeding season altogether, or Scheduled to start before the breeding season starts (ideally before mid-March) so that birds returning to the area to breed can choose a territory/nest location away from potentially disturbing activities. In the event this is not possible, prior to the commencement of clearance works, all suitable nesting habitat should first be checked by an experienced ecological clerk of works (ECoW). All active bird nests and dependent young are protected under the WCA. If an active nest is confirmed to be present, an exclusion zone should be erected around the nest until all dependent young have fledged, or if the ECOW confirms that the nest is no longer active.



## 6 APPENDICES

### 6.1 Appendix 1: Bird Species recorded during 2020 Field Survey

<i>Common name</i>	<i>Scientific Name</i>	<i>Conservation Status</i>
Greylag Goose	<i>Anser anser</i>	Amber
Mallard	<i>Anas platyrhynchos</i>	Amber
Teal	<i>Anas crecca</i>	Amber
Black Grouse	<i>Lyrurus tetrix</i>	Red
Red Grouse	<i>Lagopus lagopus</i>	Amber
Grey Heron	<i>Ardea cinerea</i>	-
Sparrowhawk	<i>Accipiter nisus</i>	-
Buzzard	<i>Buteo buteo</i>	-
Oystercatcher	<i>Haematopus ostralegus</i>	Amber
Lapwing	<i>Vanellus vanellus</i>	Red
Golden Plover	<i>Pluvialis apricaria</i>	Ann1
Curlew	<i>Numenius arquata</i>	Red
Dunlin	<i>Calidris alpina</i>	Amber; Ann1
Snipe	<i>Gallinago gallinago</i>	Amber
Common Sandpiper	<i>Actitis hypoleucos</i>	Amber
Redshank	<i>Tringa totanus</i>	Amber
Common Gull	<i>Larus canus</i>	Amber
Woodpigeon	<i>Columba palumbus</i>	-
Cuckoo	<i>Cuculus canorus</i>	Red
Golden Eagle	<i>Aquila chrysaetos</i>	Sch1.1/1.1A/A1; Ann1
Barn Owl	<i>Tyto alba</i>	Sch1.1
Kestrel	<i>Falco tinnunculus</i>	Amber
Merlin	<i>Falco columbarius</i>	Red; Sch1.1; Ann1
Peregrine	<i>Falco peregrinus</i>	Sch1.1; Ann1
Raven	<i>Corvus corax</i>	-
Coal Tit	<i>Parus ater</i>	-
Blue Tit	<i>Cyanistes caeruleus</i>	-
Great Tit	<i>Parus major</i>	-
Skylark	<i>Alauda arvensis</i>	Red; Sec41
Willow Warbler	<i>Phylloscopus trochilus</i>	Amber
Goldcrest	<i>Regulus regulus</i>	-
Wren	<i>Troglodytes troglodytes</i>	-
Treecreeper	<i>Certhia familiaris</i>	-
Ring Ouzel	<i>Turdus torquatus</i>	Red
Blackbird	<i>Turdus merula</i>	-
Song Thrush	<i>Turdus philomelos</i>	Red
Mistle Thrush	<i>Turdus viscivorus</i>	Red

<i>Common name</i>	<i>Scientific Name</i>	<i>Conservation Status</i>
Robin	<i>Erithacus rubecula</i>	-
Redstart	<i>Phoenicurus phoenicurus</i>	Amber
Stonechat	<i>Saxicola rubicola</i>	-
Wheatear	<i>Oenanthe oenanthe</i>	-
Dipper	<i>Cinclus cinclus</i>	Amber
Dunnock	<i>Prunella modularis</i>	Amber
Grey Wagtail	<i>Motacilla cinerea</i>	Red
Pied Wagtail	<i>Motacilla alba ssp. yarellii</i>	Amber
Meadow Pipit	<i>Anthus pratensis</i>	Amber
Chaffinch	<i>Fringilla coelebs</i>	-
Greenfinch	<i>Chloris chloris</i>	-
Lesser Redpoll	<i>Acanthis cabaret</i>	Red
Common Crossbill	<i>Loxia curvirostra</i>	Sch1.1
Siskin	<i>Spinus</i>	-
Reed Bunting	<i>Emberiza schoeniclus</i>	Amber

**Key:**

*Red/Amber - Red or Amber listed on the UK Birds of Conservation Concern List*

*Sch1.1/1.1A/A1- Schedule 1 part 1, 1 part 1A or A1 of the Wildlife and Countryside Act 1981 (as amended)*

*Ann1 - Annex 1 of the Birds Directive*

## 6.2 Appendix 2 Survey Conditions

<i>Visit</i>	<i>Date</i>	<i>Survey start time</i>	<i>Survey end time</i>	<i>Hour</i>	<i>Wind speed</i>	<i>Wind direction</i>	<i>Rain</i>	<i>Cloud cover</i>	<i>Cloud height</i>	<i>Visibility</i>	<i>Frost</i>	<i>Snow</i>
1	16/04/20	06:00	13:00	1	2	SE	0	2	2	2	0	0
				2	2	SE	0	2	2	2	0	0
				3	2	SE	0	2	2	2	0	0
				4	2	SE	0	2	2	2	0	0
				5	2	SE	0	2	2	2	0	0
				6	2	SE	0	2	2	2	0	0
				7	2	SE	0	2	2	2	0	0
2	20/04/20	06:00	12:30	1	1	SE	0	1	2	2	0	0
				2	1	SE	0	1	2	2	0	0
				3	1	SE	0	1	2	2	0	0
				4	1	SE	0	1	2	2	0	0
				5	1	SE	0	1	2	2	0	0
				6	1	SE	0	1	2	2	0	0
				7	1	SE	0	1	2	2	0	0
3	04/05/20	05:15	12:15	1	3	W	0	5	2	2	0	0
				2	3	W	0	5	2	2	0	0
				3	3	W	0	5	2	2	0	0
				4	3	W	0	5	2	2	0	0
				5	3	W	0	5	2	2	0	0
				6	3	W	0	5	2	2	0	0
				7	3	W	0	5	2	2	0	0
4	8/05/20	05:00	12:00	1	2	W	0	6	2	2	0	0
				2	2	W	1	6	2	2	0	0
				3	2	W	0	6	2	2	0	0
				4	2	W	1	6	2	2	0	0
				5	2	W	0	6	2	2	0	0
				6	2	W	1	6	2	2	0	0
				7	2	W	1	6	2	2	0	0
5	13/05/20	05:00	12:00	1	3	NW	0	3	2	2	0	0
				2	3	NW	0	3	2	2	0	1
				3	3	NW	0	3	2	2	0	0
				4	3	NW	0	3	2	2	0	0
				5	3	NW	0	3	2	2	0	1
				6	3	NW	0	3	2	2	0	0

Visit	Date	Survey start time	Survey end time	Hour	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow
				7	3	NW	0	3	2	2	0	0
6	12/05/20	05:00	12:00	1	3	NW	0	4	2	2	0	1
				2	3	NW	1	4	2	2	0	0
				3	3	NW	0	4	2	2	0	1
				4	3	NW	0	4	2	2	0	0
				5	3	NW	0	4	2	2	0	0
				6	3	NW	1	4	2	2	0	0
				7	3	NW	0	4	2	2	0	0
7	01/06/20	08:30	14:30	1	2	W	0	2	2	2	0	0
				2	1	W	0	1	2	2	0	0
				3	2	W	0	1	2	2	0	0
				4	2	W	0	1	2	2	0	0
				5	2	W	0	1	2	2	0	0
				6	3	W	0	1	2	2	0	0
				7	2	W	0	1	2	2	0	0
8	02/06/20	08:30	14:30	1	3	W	0	4	2	2	0	0
				2	3	W	1	4	2	2	0	0
				3	3	W	0	4	2	2	0	0
				4	3	W	2	4	2	2	0	0
				5	3	W	0	4	2	2	0	0
				6	3	W	1	4	2	2	0	0
				7	3	W	1	4	2	2	0	0
9	08/06/20	08:30	14:30	1	3	NW	0	4	2	2	0	0
				2	3	NW	0	4	2	2	0	0
				3	3	NW	0	4	2	2	0	0
				4	3	NW	0	4	2	2	0	0
				5	3	NW	0	4	2	2	0	0
				6	3	NW	0	4	2	2	0	0
				7	3	NW	0	4	2	2	0	0

Wind speed: according to Beaufort Scale

Wind direction: according to 16-point compass

Cloud cover: in eights of sky (oktas)

Cloud height: 0 = <150m; 1 = 150-500m; 2 = >500m

Visibility: 0 = Poor (<1km); 1 = Moderate (1-2km); 2 = Good (>2km)

Rain: 0 = None; 1 = Drizzle/Mist; 2 = Light showers; 3 = Heavy showers; 4 = Heavy rain

Frost: 0 = None; 1 = Ground; 2 = All day

Snow: 0 = None; 1 = On site; 2 = High ground