A9 DUALLING
PERTH TO INVERNESS

Appendix A12.6

Birds

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

ATKINS mouchel

Table of contents

Chapter Pages

Tables

Figures

1. Introduction

1.1.1. This technical appendix presents the findings of data collection for birds which has been undertaken to inform the DMRB Stage 3 assessment for the Proposed Scheme. It builds upon the Proposed Scheme's Stage 2 Scheme Assessment Report and associated technical appendix[i], which used desk study data and the Preliminary Ecological Appraisal (PEA), undertaken by CH2M Hill in 2015,[ii] to identify important bird habitats and species that could be affected by the Proposed Scheme[1].

1.1.2. This DMRB Stage 3 assessment includes a desk study and results of detailed field surveys for wintering birds and breeding birds. Scottish crossbill *Loxia scotica* and capercaillie *Tetrao urogallus* were studied specifically, survey work for the former being incorporated into the wintering and breeding bird surveys, and independent field surveys undertaken for the latter. The assessment identifies important habitats within the Survey Area which may be affected by the Proposed Scheme. In order to identify important areas for birds, the following objectives were set:

- identify statutory and non-statutory designated sites for birds
- determine which bird species use habitats within the Survey Area
- identify important species (see paragraph 1.1.3 and 1.1.4 below)
- map the use of habitats by these important species to identify areas that support them over winter and during the breeding season

1.1.3. For the purpose of this assessment, important bird species are defined as those which are either listed on the Scottish Biodiversity List (SBL)[2], are identified as Red or Amber Birds of Conservation Concern (BoCC)[3], are Annex I listed species on Directive 2009/147/EC (the Birds Directive), and / or are those listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended in Scotland).

1.1.4. Capercaillie has been given specific consideration in this appendix due to the particular rarity of this species and because the Cairngorms National Park, which is in the vicinity to the Proposed Scheme, is a UK stronghold for capercaillie.

1.1.5. This Appendix presents the methods and results for the desk study and field surveys, and discusses the significance of the results in respect of the Proposed Scheme.

[1] A9 Dualling Perth to Inverness: Environmental Appraisal Report Stage 2. Appendix A11.5 - Bird Report.
[2] http://www.biodiversityscotland.gov.uk/advice-and-resources/scottish-biodiversity-list/
[3] Eaton et al. (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.

2. Methods

2.1. Desk study

Designated sites

2.1.1. Information for the following designated sites and search areas has been collected:

- International sites designated for birds (Special Protection Area (SPA) and Wetlands of International Importance (Ramsar sites)) – 10km from the Proposed Scheme
- National sites designated for birds (Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR)) – 2km from the Proposed Scheme and
- Non-statutory designated sites (Local Wildlife Site, Site of Importance for Nature Conservation (SINC)) – 1km from the Proposed Scheme

2.1.2. Information regarding the location of designated sites has been obtained from the following sources:

- Multi-Agency Geographic Information for the Countryside (MAGIC) website[iii]
- Scottish Natural Heritage (SNH) 'SiteLink'[iv]
- SNH 'Interactive Map'[v]

2.1.3. Information on non-statutory designated sites has been sourced from the Highland Biological Recording Group (HBRG) and North-east Scotland Biological Recording Centre (NESBReC).

Biological records and consultation

2.1.4. Biological records of birds were requested covering 1km from the existing A9 (the Study Area). A response was received from the following organisations:

- Forestry Commission Scotland
- HBRG
- NESBReC
- Highland Raptor Study Group
- Scottish Wildlife Trust
- SNH - provided various documents concerning bird species and, in conjunction with the Royal Society for the Protection of Birds (RSPB), provided records of capercaillie

2.1.5. Important capercaillie habitat was identified through consultation with SNH and the RSPB, and a review of existing habitat information. SNH and the RSPB have provided the following information within the 1km search area:

- records of capercaillie, including known lek sites within 1km of the existing A9
- the location and distribution of woodland that could support capercaillie within 1km of the existing A9

2.1.6. Gareth Marshall, the RSPB capercaillie officer, has also been contacted to assist in identifying important areas for capercaillie.

Limitations

2.1.7. The desk study results returned from NESBReC, Forestry Commission Scotland, SNH, and the RSPB as of May 2016 have provided relatively few bird records. A number of correspondents have not responded to the data request (Scottish Wildlife Trust and the Highland Raptor Study Group); whilst others do not hold bird records (HBRG). The exception is capercaillie, for which SNH and the RSPB has supplied detailed records. The absence of records received is not considered a significant constraint to the DMRB Stage 3 Assessments required due to the level of survey undertaken within the Survey Area as part of this assessment.

2.2. Field Survey

2.2.1. Fieldwork comprised surveys for wintering and breeding birds which were undertaken between November 2015 and July 2016. Specific surveys for capercaillie were also undertaken during February 2016. The following sections describe the methods employed for these surveys.

Defining the Survey Area

Wintering and breeding birds

2.2.2. The extent of the area covered by the bird surveys is modified from that defined by the habitat suitability assessment undertaken for the DMRB Stage 2 assessment. In that study, habitat within 250m of the Proposed Scheme was mapped and cross referenced with the requirements of species that winter and breed in the Cairngorms. Those habitats which supported only common and widespread species (i.e. those species which are found in similar habitats throughout the UK, and which are not of particular conservation concern) were defined as being of low conservation importance, whereas those which supported species on the SBL were defined as being of high conservation importance. The majority of the Survey Area fell into the latter category and could support priority species of high conservation importance.

2.2.3. The DMRB Stage 2 habitat suitability assessment relied upon readily available data including aerial photography, and the Proposed Scheme's PEA[vi]. To determine whether this was the correct model of habitats to define the bird Survey Area, in November 2015 the survey team visited the section of the A9 between Tomatin and Moy to classify habitats within 250m based on their value to the area's wintering and breeding bird community.

2.2.4. Land within 250m of the Proposed Scheme was assigned to one of three categories:

- *High conservation importance*: areas with habitats that could support SBL species.
- *Low conservation importance*: areas classified as high priority by the Stage 2 desk study, reclassified as low priority when visited the survey team as, on investigation, it was determined they could not support SBL species (i.e. habitats did not conform to the desk study information, and were, on inspection, not suitable habitat for SBL species).
- *No access*: areas where physical access was impossible access due to steep cliffs or difficult terrain.

2.2.5. The Survey Area was defined as those habitats classified, after visit by the survey team, to be of high conservation priority, within 250m of the Proposed Scheme. The Survey Area is presented on Figure 12.10a-k and 12.11a-k.

Capercaillie

2.2.6. The Survey Area for the capercaillie habitat suitability assessment and subsequent presence / absence surveys encompassed land within 1km of the Proposed Scheme. This Survey Area was determined in consultation with Gareth Marshall, the RSPB / SNH capercaillie officer.

Wintering bird survey method

Transect walks

2.2.7. Wintering birds were located by walking transects through the Survey Area parallel to the Proposed Scheme. Transects were defined so that surveyors covered the Survey Area as completely as possible. In addition, land a further 250m from the Survey Area (and therefore up to 500m from the Proposed Scheme) was viewed by telescope to observe any larger species further away, such as raptors, geese and other water fowl. In woodland within the 250m to 500m zone, where views were restricted, clearings and vantage points were used where possible to gain viewing distance.

2.2.8. All birds seen and/or heard were recorded on maps, noting the species observed, their locations and their numbers (i.e. pairs of birds or the size of flocks. This allowed the use of each habitat type by wintering bird species to be determined. The location of all species of bird encountered, either by sight or sound, during the survey was recorded on a map using standard British Trust for Ornithology (BTO) codes.

2.2.9. Monthly visits were undertaken through the winter between December 2015 and March 2016. Three survey teams were used on each visit and covered all transects in the Survey Area in a single day. Dates of visits are presented in Table A2.1 along with weather conditions encountered on each visit. Surveys started an hour following dawn and continued for roughly three hours.

Table A2.1 Dates of the winter transect walks and weather conditions

Date	Start/End Time	Temperature °C	Cloud (Octas)	Wind (Beaufort)
08/12/2015	08:53/11:53	6	3	4
12/01/2016	08:49/11:49	2	8	1
23/02/2016	07:47/10:47	2	8	4
15/03/2016	06:52/09:52	6	0	1

WeBS counts

2.2.10. In addition to transect walks, water birds using Loch Moy were counted by walking the length of the shore and observing them with a telescope. Individual birds using the loch were recorded in a way analogous to that used in the BTO's Wetland Bird Survey (WeBS); individuals flying over and not using Loch Moy were not recorded.

2.2.11. Surveys began earlier in 2015 than the transect walks to cover the autumn migration, as well as the over wintering period. Counts were made monthly between September 2015 and March 2016. Dates of visits are presented in Table A2.2 along with weather conditions encountered on each visit. Surveys started an hour following dawn and continued for roughly three hours, normally until approaching midday.

Table A2.2: Dates of the WeBS counts and weather conditions

Date	Start/End Time	Temperature °C	Cloud (Octas)	Wind (Beaufort)
17/09/2015	07:11/10:11	12	6	4
29/10/2015	07:39/10:39	9	7	6
18/11/2015	08:20/11:20	5	8	1
08/12/2015	08:53/11:53	-4	8	2
12/01/2016	08:49/11:49	2	8	2
23/02/2016	07:47/10:47	0	8	2
15/03/2016	06:52/09:52	6	0	2

Breeding bird survey method

2.2.12. The method employed for breeding bird surveys broadly conformed to that used for the Common Bird Census (CBC) survey, devised and run between 1962 and 2000 by the British Trust for Ornithology[vii] (BTO). This method was originally designed to provide detailed information on bird population numbers in areas of farmland and woodland, but can be adapted to most habitats[4]. It has been modified for the purpose of this study to include heathlands, as this habitat is prominent in the Scottish highlands.

2.2.13. The Survey Area has been divided by habitat type into sites that can be surveyed in one morning, according to the Common Bird Census methodology (Marchant 1983). This states that 10-20ha of woodland or 50-100ha of farmland can be covered during one survey. The survey time coincided with the highest levels of bird activity from an hour after dawn until the transect was covered, which took approximately three hours. Surveys were not carried out in heavy rain, poor visibility or strong wind as birds are under-recorded in such conditions. The location of all species of bird encountered either by sight or sound during the survey was recorded on a map, using standard British Trust for Ornithology (BTO) codes. Further information such as sex and age where possible was also be recorded along with any activity, such as singing or nest building.

2.2.14. Transects commenced roughly an hour after dawn in order to coincide with peak bird activity, but to avoid dawn where song activity is high and can be difficult to prescribe to exact locations. As each transect was walked the surrounding lands were scanned (using binoculars and/or telescope) for all bird species ('notable' and otherwise) exhibiting breeding behaviour (singing males, displaying birds, adults carrying food/faecal parcels/nesting material, recently fledged young) within land either side of the transect line beside the Proposed Scheme. These were then noted on the field map with the appropriate BTO code (in addition to standard sex and behaviour notation). In addition, large birds undertaking mating displays, such as raptors, were recorded up to 500m from the Proposed Scheme where visibility allowed. In this manner transects allowed surveyors to record data that described the breeding bird community in the area in a robust manner.

2.2.15. Territory mapping was subsequently used to determine the extent of breeding territories of song birds in the area. This method has been extensively used in national surveys undertaken by the British Trust for Ornithology (BTO), and is presented in Bibby et al. (2000)[viii].

2.2.16. Survey maps were combined to produce determine the extent and distribution of breeding territories for important bird species along the survey transects. Registrations of birds were judged to be 'breeding' if a breeding territory was present, or other positive

[4] Gilbert et al. (1998). Bird Monitoring Methods: A Manual of Techniques for Key UK Species. RSPB, Sandy.

evidence of reproduction of a pair of birds was identified. Where birds were identified but their reproductive status could not be confirmed, they have been marked simply as "present". In addition, where a species was obviously not breeding, such it was seen flying over the site or just seen foraging, it has been marked as "not breeding".

2.2.17. Monthly visits were undertaken between April and July 2016. Three survey teams were used on each visit and covered all transects in Survey Area in a single day. Dates of visits are presented in Table A2.3 along with weather conditions encountered on each visit.

Table A2.3: Dates of the four visits and weather conditions

Date	Start/End Time	Temperature °C	Cloud (Octas)	Wind (Beaufort)
12/04/2016	06:32/09:32	4	8	1
17/05/2016	04:56/07:56	9	8	1
21/06/2016	04:08/07:08	10	8	1
05/07/2016	04:22/07:22	8	5	1

Capercaillie field surveys

Habitat suitability assessment

2.2.18. All areas of pine or mixed woodland within the Survey Area were visited to assess their suitability for supporting capercaillie. Areas of dense plantation with an impoverished ground flora and limited room for capercaillie to move through were assessed as unsuitable and were not subject to further presence / absence survey. All other pine or mixed woodland parcels which contained potentially suitable habitat, were subject to presence / absence survey.

Presence / absence survey

2.2.19. The most common sign left by capercaillie is droppings and all areas of suitable woodland within the Survey Area were surveyed for capercaillie droppings. Surveyors worked in pairs and walked through woodland, on tracks and rides wherever possible, as this is where both male and female capercaillie take grit from, hence evidence is more likely along these tracks. Where areas were not accessible along tracks, close attention was given to areas beneath large trees suitable for roosting and the holes found adjacent to the root plates of fallen trees where capercaillie are likely to make use of the open soil for dust baths.

2.2.20. Any droppings found were aged and assigned to the following categories:

- fresh – bright green and moist, sometimes with white uric acid smear at one end
- old – duller in colour and often dried out and breaking up

2.2.21. Droppings were also sexed using the following criteria:

- male – up to 8cm long and 1cm in diameter, i.e. wider than your little finger
- female – generally shorter, and narrower than your little finger

Determination of bird community importance

2.2.22. CIEEM (2016)[ix] criteria were used to determine the importance of the different communities of birds observed within the Survey Area, based on the data collected

during the 2015/16 surveys. Specific criteria against which bird communities have been evaluated include:

- biodiversity, including species richness, range and populations of plant and animal communities
- rarity and typicalness of communities
- stage/stability of ecological succession and community development trajectory
- position in an ecological or geographical unit
- potential and intrinsic value, ease of re-creation

2.2.23. Importance was characterised into geographical scale using the criteria in Table A2.4. This is the geographic scale at which a feature is important, in context with the wider landscape.

Table A2.4: The scale at which bird community importance is characterised

Importance	Criteria
International	**Ecosystems and Habitats** Ecosystems or habitats essential for the maintenance of: • internationally designated bird habitats or undesignated areas that meet the criteria for designation; and/or • viable populations of birds of international conservation concern. **Species** Bird species whose presence contributes to: • the maintenance of qualifying bird habitat, bird communities and assemblages that occur within internationally designated sites or within undesignated areas that meet the criteria for such designation.
National	**Ecosystems and Habitats** Ecosystems or habitats essential for the maintenance of: • qualifying bird communities and assemblages that occur within nationally designated sites or within undesignated areas that meet the criteria for such designation; and/or • viable populations of birds of national conservation concern. **Species** Bird species whose presence contributes to: • the maintenance of qualifying bird habitat, bird communities and assemblages that occur within nationally designated sites or within undesignated areas that meet the criteria for such designation; or • the maintenance and restoration of bird populations, communities and the ecosystem that support them at a national level, as defined in the Scottish Biodiversity Strategy (SBS) (Scottish Government, 2013, 2015).
Regional	**Ecosystems and Habitats** Ecosystems or habitats essential for the maintenance of: • bird communities and assemblages that occur within regionally important sites or localities listed as being of conservation importance in the Highland Biodiversity Action Plan (BAP) or Cairngorms Nature Action Plan (CNAP) (including Local Nature Reserves) or within undesignated areas that meet the criteria for such designation ; and/or • viable populations of birds of regional conservation concern. **Species**

Importance	Criteria
	Bird species whose presence contributes to: • the maintenance and restoration of bird populations, communities and the ecosystems that support them at a regional level, as defined in the Highland BAP or CNAP.
Authority Area	**Ecosystems and Habitats** Ecosystems or habitats essential for the maintenance of: • populations of birds of conservation concern within the authority area. **Species** Bird species whose presence contributes to: • the maintenance and restoration of bird populations, communities and the ecosystems that support them within the Inverness and Nairn Local BAP.
Local	**Ecosystems and Habitats** Ecosystems or habitats essential for the maintenance of: • populations of species of conservation concern within the local area (for example a Local Nature Reserve (LNR)). **Species** Species whose presence contributes to: • the maintenance and restoration of biodiversity and ecosystems at a local level.
Less than Local	**Ecosystems and Habitats** • Bird habitats or support ecosystems that do not meet the above criteria, i.e., supporting at least populations of birds of conservation concern within the local area. **Species** • Birds that are considered to be absent or do not meet any of the above criteria.

Limitations

Wintering and breeding bird surveys

2.2.24. Surveys were undertaken at an appropriate time of year for recording wintering and breeding birds and in suitable weather conditions. Access was not possible within an area with steep cliffs and difficult terrain to the north of the Proposed Scheme (see Figure 12.10a-k and 12.11a-k). This area represents a relatively small proportion of the Survey Area, and comprises upland heath, a habitat found in other parts of the Survey Area. The survey results from other areas of heathland habitat have allowed the value of this inaccessible area to be inferred despite the fact it could not be visited.

2.2.25. Otherwise, no significant limitations to the bird surveys have therefore been encountered and the results accurately reflect the wintering and breeding bird assemblage supported within the Survey Area.

Capercaillie

2.2.26. The capercaillie surveys were undertaken at an appropriate time of year for undertaking the habitat suitability assessment, and for identifying capercaillie signs and individuals. No access restrictions were encountered. There are therefore no significant limitations to the capercaillie assessment and the results of this study are considered to be accurate.

3. Results

3.1. Desk study

Designated sites

3.1.1. There is one statutory designated site within 10km of the Proposed Scheme that has been specifically designated with respect to its importance to birds: Loch Ashie SPA is 8.5km to the west of the Proposed Scheme and during the breeding season the area regularly supports 1.4% of GB breeding population of Slavonian grebe.

3.1.2. No other statutory or non-statutory designated sites are present within the Study Area.

Biological records

3.1.3. NESBReC has returned the following records of birds within the Study Area which are presented in Table A3.1.

Table A3.1 Records of birds within the Study Area returned by NESBReC

Species	OS Grid reference	Date	Number of records
Golden eagle *Aquila chrysaetos*	NH73	1996 and 2000	3
Kestrel *Falco tinnunculus*	NH73	2000	2
Red kite *Milvus*	NH79303070	2001	1

3.1.4. No records of birds were returned from the CNPA, Forestry Commission Scotland, or the Scottish Wildlife Trust. NBRG does not hold records of birds.

3.2. Field Survey

Wintering birds

Walked transects

3.2.1. Fifty-two species of bird were recorded during the wintering bird surveys and these are presented along with their abundance in Table A3.2 below. This includes 25 species which are considered important, including 16 which are listed on the SBL (some of these are also listed as BoCC) and nine listed only as BoCC.

3.2.2. Seventeen of the 52 species were not predicted to occur in the Survey Area as their wintering ranges do not overlap the Scottish highlands[5]. However, the presence of these species can partly be explained by the presence of farmland and residential development in the Survey Area, which provides wintering foraging habitat assumed to be absent by the studies that define published wintering ranges of bird species. For example greylag goose *Anser anser*, oystercatcher *Haematopus ostralegus* and skylark *Alauda arvensis* use agricultural pasture in the Survey Area to feed, but would otherwise be absent from the highlands during winter. The presence of starlings, long associated with farm yards, is also explained by this difference.

3.2.3. In addition, eight of the species that were not predicted based on wintering ranges were observed only in March, when birds start to return to the highlands to breed. (Total

[5] Based on a review of Snow and Perrins

numbers of individual birds observed in March were almost double that observed in the other survey months; see Illustration A3.1 below). Thus the difference between the expected and observed bird community can be explained by the wider range of habitats in the Survey Area than assumed by published data, and by the transition from winter to the breeding season.

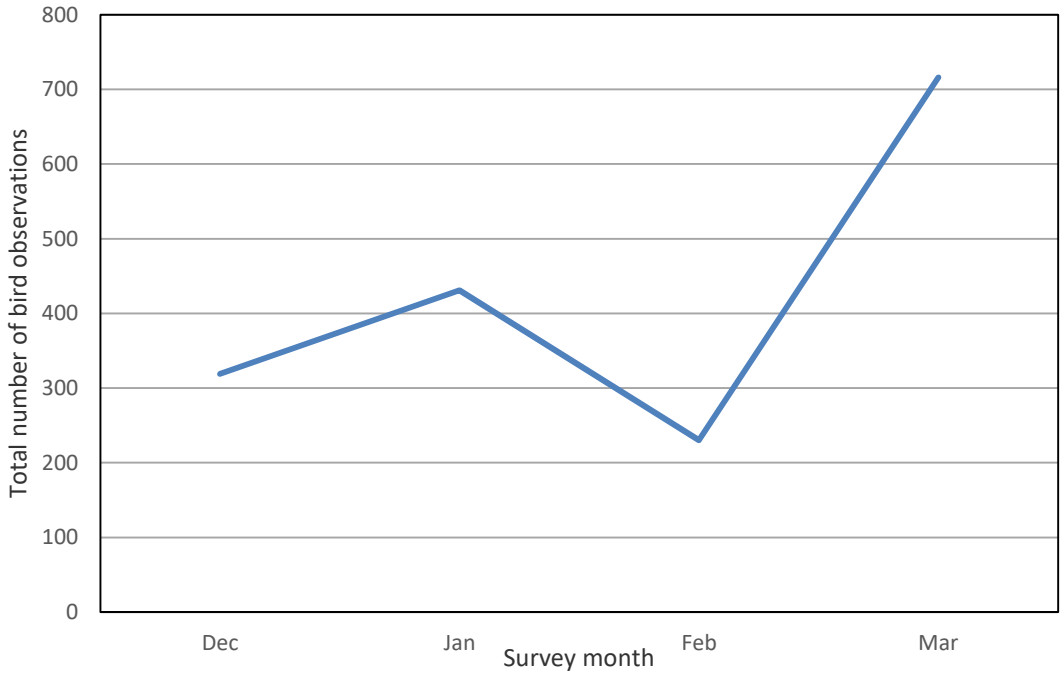
3.2.4. Table A3.2 highlights the seventeen species not predicted by the desk study (highlighted in light blue), and the revised composition of important wintering birds. It reveals that 10 species not expected from the desk study are on the SBL, the total number of observed species on the list being sixteen. In addition, 10 species are BoCC Red listed, and 14 species are BoCC Amber listed. SBL species are shown on Figure 12.11a-k.

Table A3.2 Species and counts for each survey visit, and peak counts for each observed species. Highlighted rows indicate species not predicted by the desk study

Species	SBL Listed	BoCC	Dec-15	Jan-16	Feb-16	Mar-16	Peak Count
Blackbird *Turdus merula*			4	2	1	6	6
Blue Tit *Cyanistes caeruleus*			5	2	8	6	8
Bullfinch *Pyrrhula pyrrhula*	Y	Amber	21	10	3	4	21
Buzzard *Buteo buteo*			1	4	4	5	5
Carrion Crow *Corvus corone*			1	3	2	2	3
Chaffinch *Fringilla coelebs*			4	2	13	41	41
Coal Tit *Periparus ater*			97	17	59	32	97
Common Gull *Larus canus*		Amber	0	0	0	162	162
Crested Tit *Lophophanes cristatus*		Amber	1	0	0	0	1
Crossbill *Loxia* sp.			0	0	0	4	4
Curlew *Numenius arquata*	Y	Amber	0	0	0	9	9
Dunnock *Prunella modularis*	Y	Amber	2	0	0	4	4
Fieldfare *Turdus pilaris*		Red	4	2	12	0	12
Goldcrest *Regulus regulus*			9	12	3	14	14
Goldfinch *Carduelis carduelis*			0	0	0	1	1
Great Spotted Woodpecker *Dendrocopos major*			0	1	0	1	1
Great Tit *Parus major*			0	2	7	12	12
Greenfinch *Carduelis chloris*			1	0	3	1	3
Grey Heron *Ardea cinerea*			1	0	0	0	1
Grey Wagtail *Motacilla cinerea*		Amber	0	0	0	4	4
Greylag Goose *Anser anser*		Amber	0	4	13	119	119
Hen Harrier *Circus cyaneus*	Y	Red	0	0	1	0	1
Herring Gull *Larus argentatus*	Y	Red	13	3	0	2	13
Jackdaw *Corvus monedula*			40	251	39	31	251
Jay *Garrulus glandarius*			2	0	0	0	2

Species	SBL Listed	BoCC	Dec-15	Jan-16	Feb-16	Mar-16	Peak Count
Kestrel *Falco tinnunculus*	Y	Amber	0	0	0	1	1
Lapwing *Vanellus vanellus*	Y	Red	0	0	0	57	57
Lesser Redpoll *Carduelis cabaret*	Y	Red	16	0	0	0	16
Linnet *Carduelis cannabina*	Y	Red	16	0	0	0	16
Long-tailed Tit *Aegithalos caudatus*			20	5	2	4	20
Mallard *Anas platyrhynchos*		Amber	0	0	0	2	2
Meadow Pipit *Anthus pratensis*		Amber	3	2	0	5	5
Mistle Thrush *Turdus viscivorus*		Amber	0	0	2	7	4
Oystercatcher *Turdus iliacus*			0	0	0	32	32
Pheasant *Phasianus colchicus*			2	0	1	2	2
Pied Wagtail *Motacilla alba*			0	0	0	5	5
Raven *Corvus corax*			1	0	0	2	2
Red Grouse *Lagopus lagopus*	Y	Amber	21	20	32	19	32
Redwing *Turdus iliacus*	Y	Red	0	3	0	0	3
Robin *Erithacus rubecula*			5	3	5	40	40
Rook *Corvus frugilegus*			0	1	0	1	1
Siskin *Carduelis spinus*	Y		0	0	1	7	7
Skylark *Alauda arvensis*	Y	Red	0	0	0	2	2
Snipe *Gallinago gallinago*			3	0	1	5	5
Song Thrush *Turdus philomelos*	Y	Red	0	0	0	4	4
Starling *Sturnus vulgaris*	Y	Red	0	65	0	0	65
Stock Dove *Columba oenas*		Amber	0	0	0	1	1
Stonechat *Saxicola torquata*			3	3	0	0	3
Treecreeper *Certhia familiaris*			3	3	7	4	7
Wood Pigeon *Columba palumbus*			4	0	2	37	37
Woodcock *Scolopax rusticola*	Y	Amber	1	1	0	0	1
Wren *Troglodytes troglodytes*			10	8	1	13	13

Illustration A3.1 - Total numbers of birds observed across all species during the survey. Numbers are substantially higher in March due to the onset of the bird breeding season



WeBS counts

3.2.5. Twelve species were identified using Loch Moy and are presented in Table A3.3. One of these species, scaup, is SBL and BoCC Red listed and seven others are listed as Amber BoCC.

3.2.6. Greylag goose and teal were the most significant species found using the loch, with greatest numbers during autumn migration, but with some birds returning during spring. Other species were using the loch throughout winter, including mallard, wigeon and goldeneye. Remaining species were occasional observations of small numbers (less than 5) and Loch Moy is not an important site for these species during migration nor during the winter period. A single scaup observed during the November visit, likely a stopover migrant, was the only SBL species recorded.

Table A3.3: Species and counts for each WeBS survey visit, and peak counts for each observed species. Highlighted rows indicate species not predicted by the desk study.

Species	SBL Listed	BoCC	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Peak Count
Cormorant *Phalacrocorax carbo*			0	0	1	0	0	0	1	1
Dipper *Cinclus cinclus*			0	0	1	0	0	1	0	1
Goldeneye *Bucephala clangula*		Amber	0	0	4	0	7	5	2	7
Goosander *Mergus merganser*			0	0	3	0	0	0	0	3

Species	SBL Listed	BoCC	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Peak Count
Grey heron *Ardea cinerea*			3	1	1	0	0	0	1	3
Greylag goose *Anser anser*		Amber	0	72	0	0	2	20	8	72
Mallard *Anas platyrhynchos*		Amber	20	20	0	0	4	2	2	20
Mute swan *Cygnus olor*		Amber	2	0	0	0	0	0	0	2
Oystercatcher *Turdus iliacus*		Amber	0	0	0	0	0	0	2	2
Scaup *Aythya marila*	Yes	Red	0	0	1	0	0	0	0	1
Teal *Anas crecca*		Amber	10	186	0	0	0	5	0	186
Wigeon *Anas penelope*		Amber	0	3	0	0	2	0	0	3

Bird community composition

3.2.7. A total of 60 bird species were recorded during the wintering bird transects and WeBS surveys. These 60 species represent the wintering bird community of the Survey Area. This community can be broken down into distinct groups of species, which are described in Table A3.4. Information about the biology and ecology of individual species is taken from Snow and Perrins (1998)[6].

Table A3.4: Description of the results and bird community composition

Species	Comment
Waterfowl (Ten species: cormorant, golden eye, goosander, grey heron, greylag goose, mallard, mute swan, scaup, teal, wigeon)	Relatively few species fell into this grouping. Greylag geese were observed grazing on pasture within the Survey Area, and also in numbers on Loch Moy and likely to belong to wild (rather than feral) populations. The large numbers seen in March likely represent migrating animals stopping off to feed on their migration north. Greylag goose is a Bird of Conservation Concern[7] (BoCC) Amber list species. Goldeneye and goosander were seen wintering on Loch Moy likely because it is sheltered and offers food resources throughout winter; however the majority of these birds will move to more favourable wintering grounds outside the Highlands. Goldeneye is a BoCC amber list species. Likewise, the pair of mallards seen in March during walked transects were probably a roaming breeding pair looking for somewhere to nest as this species was not observed at other times during the survey. Mallards were also common on Loch Moy during winter. This is a BoCC Amber list species. Lastly, a single grey heron seen in December during walked transects was likely passing through on its way to more favourable wintering grounds. The Survey Area offers few areas for this species to feed and breed. However, several further individuals were seen around Loch Moy. Grey heron is a BoCC Amber list species.

[6] Snow, D. W. & Perrins, C. M. (1998). The Birds of the Western Palearctic Concise Edition.
[7] Eaton, M., N. Aebischer, A. Brown, R. Hearn, L. Lock, A. Musgrove, D. Noble, D. Stroud and R. Gregory (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.

Species	Comment
	Mute swan, scaup and wigeon were seen only from individual sightings or in small numbers (2-3 individuals) on the WeBS surveys. Scaup is a SBL species due to its rarity in the UK and a >25% decline in recent decades in the Scottish population; it is also a BoCC Red list species. Wigeon is a BoCC amber list species. Loch Moy was a significant migratory stop over for teal with a peak count of 186 individuals from October 2015. However this species vacated the area after this time, although some returned during the spring migration. Teal is a BoCC amber list species.
Raptors (3 species: hen harrier, buzzard, kestrel)	Buzzard is a resident species in the Survey Area and was observed throughout winter in more or less stable numbers. A hen harrier was seen hunting over moorland during February and may represent a resident bird. However, given the single record, and disturbance from game keepers, it is unlikely that this species uses the Survey Area frequently. Hen harrier features on the SBL as it is a red listed BoCC with the target of avoiding negative impacts on this species. A single record of a kestrel from March indicates this species is absent in winter, but may come to the area to breed. This is a SBL species due to its BoCC amber listing as the species is known to be in decline.
Game birds (2 species: red grouse, pheasant)	Red grouse are common in the Survey Area as they are bred for shooting, and the population found here is supported by breeding and release. The moorland to the west of the A9 within the Survey Area is managed in this way. Red grouse are on the SBL as there have been declines of >25% of the population of this species in the last 25 years and due to its BoCC Amber listing. Pheasant are non-native and bred for shooting. Individuals observed in the Survey Area are from artificially reared populations, and have spread into the area.
Waders/gulls (7 species: oystercatcher, lapwing, snipe, woodcock, curlew, common gull, herring gull)	Snipe and woodcock were present throughout the winter. Habitat within the Survey Area provides winter foraging habitat for these waders, particularly marsh to the west of the A9.Woodcock was not recorded in March and is likely to use the area to overwinter, but not to breed. Snipe numbers peaked in March and this species likely breeds in the Survey Area as well. Oystercatcher, lapwing and curlew were absent from the Survey Area throughout the winter, arriving only in March at the start of the breeding season. Habitat within the Survey Area provides foraging resources, and likely also breeding habitat once temperatures warm. Lapwing, curlew and woodcock are on the SBL due to their presence on the BoCC, and declines of >25% in Scotland in the last 25 years. (Snipe and oystercatcher are also BoCC species). The two gull species (common gull, herring gull; both BoCC Amber listed) were only observed from individuals flying over the Survey Area, and they were not seen using habitats there directly.
Pigeons and woodpeckers (3 species: stock dove, wood pigeon, great spotted woodpecker)	Wood pigeon is one of the most common and widespread bird species in the UK, but the data show number significantly increase in March when temperatures in the highlands become favourable for breeding. Stock dove (a BoCC Amber list species) also returns to the area at this time and may breed within the Survey Area, as the only observations of this species are from March. Great spotted woodpecker uses woodland in the Survey Area and is resident, recorded on two out of the four survey months. Only a single individual was observed on each visit.

Species	Comment
Passerines - Larks, pipits, wagtails, dipper (Four species: skylark, meadow pipit, grey wagtail, pied wagtail)	Skylark and meadow pipit occupied grassland and moorland habitat, but the former species was absent throughout most of the survey season, arriving in March at the start of the breeding season, whereas the latter was resident throughout the winter and uses the area for foraging habitat and shelter. Skylark is SBL listed as it is given Red BoCC status. Meadow pipit is BoCC Amber listed. Grey and pied wagtails were absent throughout the coldest period of winter (December to February), and were only observed in March, presumably returning to breed once the weather starts warming. Therefore, the Survey Area is not important for these species as a winter foraging site. Both species were associated with areas of wet grassland, common on the east side of the scheme. Grey wagtail is BoCC Red listed. Dipper was occasionally seen feeding around Loch Moy on the WeBS surveys, but was not observed closer to the A9.
Passerines – migratory thrushes (Four species: mistle thrush, song thrush, redwing and fieldfare)	Redwing and fieldfare breed mainly in Scandinavia and come south to the UK to forage over the winter. They used the Survey Area for feeding, with pasture land particularly favoured by fieldfare. By March, they were no longer observed, and had migrated north to their breeding areas. Mistle thrush and song thrush are resident through much of their range but northern populations are migratory, and observations from the Survey Area were from later in the survey (February and March), indicating they vacate they Survey Area in winter and return to breed in the spring. Redwing and song thrush are SBL species, the former due to a >25% decline in Scotland in the past 25 years, and the latter due to its listing on the UK BAP. They are both BoCC red listed, and both are also covered by a commitment of the government to avoid negative impacts on their populations. Fieldfare is BoCC red listed, and mistle thrush BoCC amber listed.
Passerines – “garden” birds (13 species: wren, Dunnock, robin, blackbird, long-tailed tit, blue tit, great tit, starling, chaffinch, greenfinch, goldfinch, linnet, bullfinch)	These species represent the most common and widespread song birds in the UK. They occur in a wide variety of habitats, and are often associated with farmland and residential areas where they inhabit the mix of trees, scrub, hedgerows, gardens and ruderal habitat that predominates there. In the Survey Area, these species were associated with houses and gardens (particularly on bird feeders), farm buildings and woodland/scrub adjacent such developments. The majority of garden birds were resident, and observed throughout the survey timeframe, indicating human developments in the Survey Area are particularly important for maintaining these species throughout the winter months. Dunnock, starling, linnet and bullfinch are SBL species due to their BoCC status.
Passerines - stonechat	This species was observed using grassland and moorland habitat in the northern end of the scheme during December and January, but was not recorded during February or March. It is clear that the Survey Area supports this species at least through part of the winter.
Passerines – woodland species (Five species: goldcrest, coal tit, treecreeper, siskin, lesser redpoll)	These are all common and widespread woodland bird species. Goldcrest, coal tit and treecreeper were frequently encountered throughout the winter and are residents. Siskin was only encountered as spring approached, but is a resident species in the wider area, likely moving into the Survey Area as winter eases. Lesser redpoll (BoCC red listed) was present at the start of the survey but migrated south for the winter, and was not recorded in March so the survey gave no indication as to whether this species returned to breed.

Species	Comment
	Siskin and lesser redpoll are SBL species due to >25% decline in numbers in the last 25 years.
Passerines – corvids (Five species: jay, jackdaw, rook, carrion crow, raven)	Corvids are mainly scavengers and occur in large numbers (jackdaw was the most frequently encountered bird during the survey), often needing to be controlled for agricultural or conservation purposes. The five species observed are resident in the Scottish Highlands. Traps for carrion crow were set by landowners in the Survey Area during February and March for the purpose of protected breeding lapwing. Ravens were not seen using the Survey Area, only flying high over it.
Passerines – crested tit	This is a pinewood specialist bird and although it is common in such habitats throughout Europe, the Scottish highlands are the only part of the UK where this species if found. Thus, it is of particular conservation value and is BoCC amber listed. It is a resident species, breeding in coniferous woodland such as the mature plantation found in the Survey Area. There was a single record of this species from the Survey Area.
Passerines – Crossbill sp.	Crossbills were observed only in March and associated with woodland and woodland edge habitat. The individuals observed in March had vacated the Survey Area for the winter months, and returned to breed, indicating all those recorded were common crossbill whose ecology fits this pattern, rather than Scottish crossbill, which is resident throughout winter and mainly confined to old growth and primary forest rather than the plantation woodland present in the Survey Area[8]. Common crossbill is known to breed earlier than other species to take advantage of the standing crop of pine cone seeds which cannot be accessed by other species over winter; it's crossed bill specialising in extracting these and allowing it to rear its young early in the season.

Breeding Birds

3.2.8. During the surveys 52 species of bird were recorded and these are shown along with their assessed breeding status in Table A3.5. However, on no single visit were more than thirty-nine species recorded. This indicates that there are a number of passage species which may be using the area either infrequently for foraging (such as raptors), have large territories which may extend outside of the Survey Area, or are present in low numbers and are therefore recorded infrequently.

3.2.9. The results of the wintering bird surveys show that common crossbill *Loxia curvirostra*, rather than Scottish crossbill, was the only crossbill species found in the Survey Area. Common crossbill are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended in Scotland). This is the only species listed on Schedule 1 recorded during the breeding bird surveys.

3.2.10. Table A3.5 shows the list of species identified by the breeding bird survey. It highlights the 12 species not predicted by the desk study (highlighted in blue), five of which are on the SBL. The total number of SBL species is 11. In addition nine species are BoCC Red listed, and 15 species BoCC Amber listed. SBL species are shown on Figure 12.10a-k.

[8] A third species, the parrot crossbill *Loxia pytyopsittacus*, is a frequently encountered vagrant species in the highlands, but does not breed or winter here in numbers. It can be identified in the field, and none were observed during survey.

Table A3.5: Breeding birds recorded over the four field surveys from April to July 2016

Species	SBL	BoCC	Apr-16	May-16	Jun-16	Jul-16	Breeding Status
Blackbird *Turdus merula*			Y	Y	Y	Y	Breeding
Blackcap *Sylvia atricapilla*					Y		Present
Blue Tit *Cyanistes caeruleus*			Y	Y	Y	Y	Breeding
Bullfinch *Pyrrhula pyrrhula*	Yes	Amber	Y		Y		Breeding
Buzzard *Buteo buteo*			Y	Y	Y		Present
Canada Goose *Branta canadensis*				Y			Present
Carrion crow *Corvus corone*					Y		Present
Chaffinch *Fringilla coelebs*			Y	Y	Y	Y	Breeding
Chiffchaff *Phylloscopus collybita*						Y	Present
Coal Tit *Periparus ater*			Y	Y	Y	Y	Breeding
Common Crossbill *Loxia curvirostra*			Y		Y	Y	Breeding
Common Gull *Larus canus*		Amber	Y	Y	Y	Y	Breeding
Common sandpiper *Actitis hypoleucos*		Amber			Y	Y	Breeding
Cuckoo *Cuculus canorus*	Yes	Red		Y			Present
Curlew *Numenius arquata*	Yes	Red	Y	Y	Y	Y	Breeding
Dunnock *Prunella modularis*	Yes	Amber	Y	Y	Y	Y	Breeding
Goldcrest *Regulus regulus*			Y	Y	Y	Y	Breeding
Goldfinch *Carduelis carduelis*						Y	Present
Great spotted woodpecker *Dendrocopos major*					Y		Present
Great Tit *Parus major*			Y	Y	Y	Y	Breeding
Greenfinch *Carduelis chloris*				Y	Y	Y	Present
Grey Heron *Ardea cinerea*			Y			Y	Not breeding
Grey Wagtail *Motacilla cinerea*		Red	Y	Y	Y		Present

Species	SBL	BoCC	Apr-16	May-16	Jun-16	Jul-16	Breeding Status
Greylag Goose *Anser anser*		Amber	Y	Y	Y		Breeding
House Martin *Delichon urbica*		Amber		Y	Y	Y	Breeding
Jackdaw *Corvus monedula*			Y	Y		Y	Breeding
Kestrel *Falco tinnunculus*		Amber			Y		Not breeding
Lapwing *Vanellus vanellus*	Yes	Red	Y	Y	Y	Y	Breeding
Lesser Redpoll *Carduelis cabaret*	Yes	Red		Y		Y	Breeding
Long-tailed tit *Aegithalos caudatus*			Y		Y		Breeding
Mallard *Anas platyrhynchos*		Amber	Y	Y	Y	Y	Breeding
Meadow Pipit *Anthus pratensis*		Amber	Y	Y	Y	Y	Breeding
Mistle Thrush *Turdus viscivorus*		Red	Y	Y	Y	Y	Breeding
Oystercatcher *Turdus iliacus*		Amber	Y	Y	Y	Y	Breeding
Pheasant *Phasianus colchicus*			Y	Y	Y		Present
Pied Wagtail *Motacilla alba*			Y		Y	Y	Breeding
Red Grouse *Lagopus lagopus*	Yes	Amber	Y	Y	Y	Y	Breeding
Robin *Erithacus rubecula*			Y	Y	Y	Y	Breeding
Sand Martin *Riparia riparia*				Y	Y	Y	Not breeding
Siskin *Carduelis spinus*	Yes		Y	Y	Y	Y	Breeding
Skylark *Alauda arvensis*	Yes	Red	Y	Y			Breeding
Snipe *Gallinago gallinago*		Amber	Y		Y	Y	Breeding
Song Thrush *Turdus philomelos*	Yes	Red	Y	Y	Y	Y	Breeding
Sparrowhawk *Accipiter nisus*						Y	Present
Spotted Flycatcher *Muscicapa striata*	Yes	Red		Y		Y	Breeding
Swallow *Hirundo rustica*				Y	Y		Breeding
Teal *Anas crecca*		Amber	Y				Not breeding

Species	SBL	BoCC	Apr-16	May-16	Jun-16	Jul-16	Breeding Status
Treecreeper *Certhia familiaris*			Y	Y		Y	Present
Wigeon *Anas penelope*		Amber	Y				Present
Willow Warbler *Phylloscopus trochilus*		Amber	Y	Y	Y	Y	Breeding
Wood Pigeon *Columba palumbus*			Y	Y	Y	Y	Present
Wren *Troglodytes troglodytes*			Y	Y	Y	Y	Breeding

Scottish Biodiversity List and Schedule 1 Species

3.2.11. Of the 105 bird species listed on the SBL, 11 were recorded during the breeding bird surveys. There were nine Red List BoCC species and 15 Amber List BoCC species. The breeding status of these species within the Survey Area is discussed in Table A3.6.

Table A3.6: SBL listed species recorded in the Survey Area

Species	Assessment
Red Grouse	Red grouse are found on the heathland estate, south of the A9 at Moy (west of Lynbeg) and within the area to the west of the A9 at Dalmagarry. Individuals were regularly recorded in these two areas. At Moy, a group of three was identified during the April surveys, and a family recorded in June. At Dalmagarry, a pair was recorded in April. Access to this area was restricted in June and July by the landowner due to the breeding grouse on the moorland. Red grouse were not recorded anywhere else within the Survey Area. Red grouse are on the SBL as there have been declines of >25% of the population of this species in the last 25 years. The breeding population in the UK is generally found in marsh, bogs and heathland and this was found to be the case during the surveys. Family party was recorded for this species, and 4+ territories were identified.
Lapwing	Lapwings were recorded as individuals, pairs and groups of threes in all suitable breeding habitat of heath grassland and moorland fringe on all of the survey dates. Lapwing is found on the SBL due to their presence on the BoCC, and declines of >25% in Scotland in the last 25 years. Lapwing are breeding in the Survey Area, with 11+ territories identified.
Curlew	Curlew were recorded as individuals, pairs and groups in suitable breeding habitat of heath grassland on all of the survey dates. At least three pairs were recorded holding territories on the area to the West of Lynbeg, whilst an adult was observed mobbing a common gull close to the disused quarry north of Moy during the June surveys. Curlew are on the SBL as there have been declines of larger than 25% of the population of this species in the last 25 years. Curlew are breeding in the area, with 9+ territories identified within heath, grass and moorland habitat.
Cuckoo	Male cuckoos were recorded singing in the woodlands north of Moy during the May surveys. Cuckoos can leave the UK on migration as early as the start of June[9], therefore records of this species are generally not found during later surveys, and this was observed during the surveys.

[9] https://www.bto.org/science/migration/tracking-studies/cuckoo-tracking/what-have-we-learnt

Species	Assessment
	Cuckoos are brood parasites, and females can lay eggs in up to 50 nests per year[10], and therefore it should be considered that this species may be present within all its common breeding habitats i.e. where its host species commonly nest. Host species are most likely to be dunnock and meadow pipit. No breeding territories were identified. Cuckoo is listed on the SBL due to it being listed on the UKBAP.
Skylark	Three individual skylark were recorded in April, and a single bird was recorded singing in May. Skylark are most frequently found breeding in moorland and open grasslands, however there have been rapid declines in northern skylark populations in Scotland between 2006 and 2011, though the overall population is relatively stable11. The skylark shares much of its habitat with the meadow pipit which was recorded extensively within suitable habitat throughout the Survey Area and appears to be the dominant species within these areas. This species breeds on the site with 3+ territories identified. Skylark is SBL listed as it is found on the Red list of BoCC.
Song thrush	Song thrush were recorded 5 times in April, 8 times in May, 10 times in June and six times in July within woodland and woodland fringe sites. A single individual was recorded on moorland West of Lynbeg in June and it is likely that this individual was foraging as there is no suitable breeding habitat at this location. During the May survey, a song thrush was observed carrying nesting material in the pine woodland between the railway line and A9 at Moy. Song thrush is an SBL species due to their BoCC Red listing, and is also covered by a commitment of the government to avoid negative impacts on their populations. Song thrush breeds in the Survey Area with 7+ territories identified.
Spotted flycatcher	A spotted flycatcher was observed in the woodland surrounding Tomatin in May and July. In neither case were these individual birds singing or calling. Spotted flycatchers tend to breed in open woodland (both deciduous and coniferous) or at woodland edges where they can hunt from suitable perches. Various studies have placed pair density between 50 and 100 pairs/km in woodland12 and so it is possible that these records are two separate birds within the Tomatin area. Spotted flycatcher breeds in the Survey Area, with 1+ territories identified. Spotted flycatcher is listed on the SBL because it is listed as a UKBAP species.
Dunnock	Dunnocks were recorded twice in April, twice in May, four times in June and three times in July. Only twice across surveys were individuals recorded in an area which may be considered the same territory. This species was recorded at woodland fringe and within the boundaries of the A9 and the railway, where its favoured breeding habitat of scrub[13] is commonly found within the Survey Area. Males were recorded singing in suitable breeding habitat, but no further evidence of breeding was recorded. Dunnock is an SBL species due to its BoCC status, which is indicative of a marked decrease in the UK population, though the general breeding trend within Scotland is of a steady increase since 1994. Dunnock breeds within the Survey Area, with 7+ territories identified[10].
Bullfinch	A bullfinch was observed carrying food during the June surveys in the area of woodland between the railway and A9 at Moy. This record confirms breeding,

[10] http://blx1.bto.org/birdfacts/results/bob7240.htm
[11] Foster, S., Harrison, P., Buckland, S., Elston, D., Brewer, M., Johnston, A., Pearce-Higgins, J. & Marrs, S. (2013) Trend Note: Trends of Breeding Farmland Birds in Scotland. Scottish Natural Heritage.
[12] Stevens, D.K. (2008) The breeding ecology of the spotted flycatcher *Muscicapa striata* in lowland England. University of Reading. PhD Thesis – accessed from http://www.rspb.org.uk/Images/stevens_thesis_2008_tcm9-220228.pdf
[13] http://app.bto.org/birdfacts/results/bob10840.htm

Species	Assessment
	likely in this area of woodland. A second pair were recorded within this area on the same date and territory mapping carried out across the four survey dates implies 2+ territories are within the Survey Area. Bullfinch were not recorded away from the woodland at Moy. Bullfinch is an SBL species due to its BoCC status, however its general trend in Scotland is of a steady increase since 2000[14].
Lesser redpoll	In May, a lesser redpoll was recorded within birch woodland. In July, a male lesser redpoll was observed in the scrub at the coniferous woodland edge of the disused quarry north of Moy. These were the only record of this species during the surveys. The habitat surrounding the record is considered the favoured breeding habitat of this species[15] and the 2+ territories identified shows this species breeds in the Survey Area. Lesser redpoll is a SBL species due to a greater than 25% decline in numbers over the last 25 years.
Siskin	A total of four siskin were recorded in April, 12 in May, three in June and 14 in July. Included within the July totals, is a family of breeding pair with a juvenile that was recorded north of Moy. Siskin breed almost exclusively in pine woodlands and this species was closely associated with this habitat throughout the survey visits. This species breeds in the Survey Area, with 5+ territories identified. Siskin is a SBL species due to a greater than 25% decline in numbers over the last 25 years.

Birds of Conservation Concern

3.2.12. Surveyors recorded two species that are red listed on the BoCC and not listed on the SBL; mistle thrush and grey wagtail. These are discussed in Table A3.7.

Table A3.7: Red listed Birds of Conservation Concern which are not SBL listed recorded within the Survey Area

Species	Assessment
Mistle thrush	A mistle thrush was observed carrying food during the June surveys in the area of woodland between the railway and A9 at Moy. This record confirms breeding, likely in this area of woodland, although no breeding territories were identified. Mistle thrush were also recorded as individuals and in pairs.
Grey wagtail	Three grey wagtails, two adults and a juvenile, were observed on the bank of Allt Creag Bheithin. The presence of a juvenile confirms the breeding status of this species, although no breeding territories were identified. Grey wagtail breeding habitat is commonly riverbanks and moorland[16] so it is likely that this species is breeding close to where it was observed.

3.2.13. Surveyors recorded eleven species that are amber listed on the BoCC and not listed on the SBL. These are discussed in Table A3.8 in groupings of species where appropriate for clarity.

[14] https://www.bto.org/volunteer-surveys/bbs/latest-results/trend-graphs
[15] http://app.bto.org/birdfacts/results/bob16634.htm
[16] http://app.bto.org/birdfacts/results/bob10190.htm

Table A3.8: Amber listed Birds of Conservation Concern which are not SBL listed recorded within the Survey Area

Species	Assessment
Waterfowl (Four species: greylag goose, wigeon, teal, mallard)	Large groups of greylag geese were recorded in April, with a count of 20 being observed on the grassland adjacent to the junction of the A9 and B9154. Three pairs were recorded in the disused quarry north of Moy in April and 4 were recorded there in June. Groups were also recorded in May in the moorland north of Lynbeg (six) and adjacent to Tullochclury (pair). No individuals of this species were recorded in July. These results show the species is breeding in the Survey Area, with 5+ territories identified. Wigeon were only recorded during the April surveys. A pair of wigeon were observed on the heathland west of Lynebeg. This species predominantly breeds in Russia, but some breed in the highlands so it is possible that this was a pair of roaming breeders. Teal were also only recorded during the April surveys. Teal was flushed from the banks of Allt Creag Bheithin. Teal breed from May[17] onwards so it is likely that these birds were likely to be roaming breeders looking for somewhere to nest as this species was not observed at other times during the survey. Mallard were recorded in each month either within the heathland associated with the disused quarry north of Moy or (as a group of four) on the road adjacent. A pair was also recorded next to the River Findhorn in May and on the moorland by Lynbeg in June. From these results, mallard is considered to be breeding in the Survey Area, occupying 3+ territories.
Waders/Gulls (Four species: oystercatcher, common sandpiper, snipe, common gull)	Large groups of oystercatcher were recorded in April and July, with counts of 10 and 18 respectively being observed on the grassland adjacent to the junction of the A9 and B9154 during. Pairs were also recorded in the disused quarry north of Moy, on the moorland north of Lynbeg and adjacent to Tullochclury. These results show this species breeds in the Survey Area, with 13+ territories identified. Common sandpipers were recorded by the River Findhorn (two in June, three in July). This species breeds on pebble or sandy banks of rivers, lochs and lakes. This species breeds in the Survey Area, with one territory identified. A pair of snipe were recorded in the disused quarry north of Moy during the April surveys. Individuals were recorded in June and July in the quarry, on the moorland by Tullochclury and the moorland west of Lynbeg. Snipe breeds in the Survey Area, with 4+ territories identified. A common gull breeding colony is located immediately adjacent to the Survey Area on the southern slopes of Tom na h-Ulaidh. The number of this species fluctuated during the surveys and it is possible that this colony may extend into the Survey Area at times. This species was recorded throughout the Survey Area during each month, and it is considered likely that these records are associated with the breeding colony.
Passerines (Songbirds) (Three species: house martin, meadow pipit, willow warbler)	House martins were recorded nesting in a building associated with Lynemore house at approximate grid reference NH762339. Groups were recorded foraging within this area between May and July with a maximum count of five in May. This species is of Confirmed breeding status. Willow warblers were recorded extensively throughout suitable habitat within the survey area. No records of this species were observed during the April survey, however the average date of arrival for this species is 31st March, implying that the species may not have returned to its most northerly breeding grounds at the time of this survey. Totals of 25 records in May, 12 in June and 16 in July show a possible reduction after breeding in singing from the early arrivals in May. A juvenile (sighting of plumage) was recorded

[17] http://www.birdlife.org/datazone/speciesfactsheet.php?id=31027

Species	Assessment
	at grid reference NH751350 during the July survey. Therefore this species is assessed as being of Confirmed breeding status. Meadow pipits were recorded extensively throughout suitable breeding habitat of moorland, grass and heathland. 36 individuals were recorded in April, with 19 recorded in May, 35 recorded in June and 26 recorded in July. A meadow pipit nest was recorded during the June survey at grid reference NH786320, comprising one adult and three chicks. Therefore this species is assessed as being of Confirmed breeding status with 25+ territories recorded.
Raptors (1 species: Kestrel)	A kestrel was observed perched at approximate grid reference NH792312 on the south side of Tom na h-Ulaidh. This damp heath and moorland habitat is not suitable for kestrels to breed and therefore it is considered likely that this individual was hunting and breeding elsewhere. No other kestrels were recorded during the survey and it is considered that this species is of Non-breeding status within the survey area.

Other species

3.2.14. Common species including tits and finches were found throughout the area, breeding and foraging throughout suitable habitats including woodland and road boundaries.

3.2.15. Migrant warblers did not represent a significant proportion of sightings during the survey; however the most abundant species was willow warbler which was the most common migrant warbler. Blackcap and chiffchaff were recorded in June and July 2016 respectively, but these were single records.

3.2.16. Buzzard and sparrowhawk were both recorded within the Survey Area but no evidence of their breeding was recorded and it is likely that they use the area for foraging.

3.2.17. Jackdaw and carrion crow were both recorded during the breeding bird surveys. Jackdaws were observed nest building in May 2016 under the railway bridge adjacent to Loch Moy and this species was recorded frequently along the railway line. A single carrion crow was recorded during June 2016 survey in a field adjacent to the survey transect.

3.2.18. Sand martins were recorded in the Survey Area on three of the survey dates, but no suitable banks were observed to support a colony of this species within the Survey Area.

Capercaillie

Habitat suitability assessment

3.2.19. Woodland within the Survey Area was assessed for its suitability to support capercaillie. The woodland were classified into the following categories based on their suitability for supporting capercaillie:

- *High suitability habitat* – These areas generally contained mature pine woodland with a well-developed understory of heather and bilberry with an associated diverse ground-flora. These areas were also relatively extensive and exhibited connectivity to surrounded suitable woodland habitat.
- *Low suitability habitat* – These areas generally supported mature pine woodland, although the understory and ground flora were not very well developed i.e. areas of heather and bilberry were generally limited in extent.

- *Unsuitable habitat* – These areas supported very dense, coniferous plantation woodland which had an impoverished ground-flora and limited opportunity for capercaillie to move through them.

Presence / absence survey

3.2.20. The areas of high and low suitability woodland were subject to further presence absence survey for capercaillie. No signs of capercaillie or individual capercaillie were recorded during this survey. The species is considered to be absent from within the Survey Area.

4. Discussion and Conclusion

4.1. Habitat Appraisal

4.1.1. The survey transects were selected to represent the potentially important habitats present within the Survey Area and therefore concentrated on the wet grassland / heath / moorland mosaics and the pine and birch plantation woodlands. The species recorded during the wintering and breeding bird surveys are considered to be fairly typical of the region and habitat surveyed.

4.1.2. In winter much of the habitat in the area is vacated as cold temperatures reduce foraging opportunities for wintering species. Gardens and farmland are important habitats, whereas woodlands and moorland are vacated as the former present foraging opportunities the latter do not through winter. However, these areas are quickly re-colonised in February / March by resident birds, whose numbers are augmented by migrants.

4.1.3. Loch Moy is an important migratory stopover point for waterfowl such as teal, but also supports species such as goldeneye, grey heron and mallard throughout the winter, apart from when the loch freezes.

4.1.4. The heath and grassland habitats within the Survey Area support a range of species associated with these habitats. The open grassland is dominated by waders such as lapwing and oystercatcher, with meadow pipits being frequently recorded in dense territories in certain areas; especially that of the disused quarry north of Moy. The southern slopes of Tom na h-Ulaidh support a large common gull colony, as well as the other common species at the fringes. These habitats are also of importance for red grouse, though breeding numbers were lower than expected due to the fact that this species is bred for shooting, and the population found here is supported by breeding and release.

4.1.5. The woodland supports a community of species as would be expected, including finches, tits and thrushes. The diversity of migrant warblers was relatively low if compared to what would be expected in more lowland areas of the UK (including lowland Scotland). However, willow warbler was particularly abundant, and was the most common warbler registered during transect walks.

4.1.6. Common crossbills were recorded in three areas of pine plantation/woodland.

4.1.7. Figure 12.10 and 12.11 show the habitats which have been determined to be important for birds in the Survey Area. The areas shown are based on the detailed vegetation analysis (National Vegetation Classification survey) undertaken (see Figure 12.2).

4.2. Importance of bird community

Wintering birds

4.2.1. A total of sixty species were recorded during the wintering surveys; eight of those were waterfowl species seen exclusively on Loch Moy. Seventeen of the species are considered to be important as they are listed on the SBL. Thirteen species were also recorded which are identified as BoCC but which are not listed on the SBL.

4.2.2. Loch Moy is an important winter wildfowl refuge, and also a migratory stop over for species including large numbers of teal.

4.2.3. The majority of the species encountered during walked transects were relatively common garden or grassland/heathland birds, although it should be noted some species are BoCC listed or are on the SBL. In addition, Loch Moy supports water birds. This combination of species will only occur in the highlands where wooded valleys developed for agriculture and residential properties mix with the open moorland more typical of the highlands, and where lochs and other forms of open water are present. Such a mix of habitats is not uncommon, but patchy throughout the Scottish highlands.

4.2.4. The wintering bird community is therefore important at the Authority Area scale.

Breeding birds

4.2.5. A total of fifty-two species were recorded during the breeding bird surveys, of which eighteen species were confirmed to breed within or near the Survey Area, with a further 16 registered as having probable or possible breeding status (see Table A3.5). Amongst them, twenty-five of the species are considered important due to their legal protection, listing on the SBL, and / or listed as Red or Amber List BoCC.

4.2.6. One species listed Schedule 1 of the WCA was recorded, common crossbill, and this species is considered to be particularly sensitive as it is protected against disturbance during the breeding season were recorded during the surveys. No breeding territories were identified but the presence of juveniles can be used to infer that this species breeds in the Survey Area.

4.2.7. The common gull colony may be of some importance, due to the size and relative location. Common gulls predominantly breed in the north and west of Scotland, though the majority of locations are in Shetland or Orkney[18]. According to the 2009 Scottish Bird Report[19] (the most recent available online), the largest common gull colony recorded in the highlands that year was one hundred and twenty-three adults on nests, with the second comprising thirty adults on nests, and therefore it is possible that this site may be one of the largest in the region. It is worth noting that anecdotal evidence from conversations with the landowner states that the gulls have impacted upon the red grouse population in recent years and that they are taking precautions to dissuade the colony from breeding in that location.

4.2.8. The breeding bird community is composed of common and widespread garden birds, common passerines associated with grassland, heathland and woodland, common breeding waders and also several species of water fowl. (Although, despite the species being fairly common, many are SBL and BoCC listed.) Notable breeding species such as spotted flycatcher, common sandpiper, common crossbill and common gull. This mix of species reflects the mix of habitats (moorland, agricultural land, open water on Loch Moy, etc.) available to breeding birds, and the wet grassland/rush pasture habitat available to waders is of particular note as it allows lapwing and oystercatcher to breed here. Areas which support this mix of habitats are not uncommon in the Scottish highlands, but are patchily distributed and do not cover large areas. Thus, the breeding opportunities afforded by such a mixture of habitats are also patchy in their distribution.

4.2.9. The breeding bird community is therefore important at the Authority Area scale.

Capercaillie

4.2.10. The desk study and field surveys did not return any records or evidence of capercaillie. Consultation with Gareth Marshall of the RSPB indicated that this species is likely to be restricted to the woodland areas south of Slochd Summit, and does not extend into the

[18] http://jncc.defra.gov.uk/pdf/UKSPA/UKSPA-A6-83.pdf
[19] http://www.the-soc.org.uk/sbr.php

Survey Area. Therefore, although some suitable woodland habitat is present within the Survey Area, this species is considered likely to be absent based on the results of the desk study and field surveys. The Survey Area is assessed as being of Less than Local importance for this species.

Scottish crossbill

4.2.11. Evidence indicates that this species is not present in the vicinity of the scheme. The Survey Area is assessed as being of Less than Local importance for this species.

5. References

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