

Breeding Bird Survey

Findhorn Hinterland, Morayshire

Prepared for the Findhorn Hinterland Trust by

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26 August 2026



Supported by funding from the Highlands and Islands Environment Foundation



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Summary

The Survey shows that one hundred and ninety-seven pairs of birds, of twenty-seven species, bred on the Findhorn Hinterland in 2026, including four red and nine amber-listed Birds of Conservation Concern.

Breeding bird populations on the Findhorn Hinterland are considered to be of onsite significance only, in contrast to the national conservation significance of the dunes (as a whole) for lichens, invertebrates, and fungi.

Woodland contained the most bird species. The widespread presence of woodland bird species on the open dunes is of concern, however, as it reflects a loss of rare dune habitats through scrub encroachment.

Conversion of some gorse to dune grassland, if possible, would benefit red-listed gorse specialists.

A repeat bird survey is recommended in ten years' time.

1. Introduction

1.1 Background and Aim

I was commissioned to carry out a breeding bird survey by the Findhorn Hinterland Trust (FHT) on 1st May 2026. I have over thirty-five years' experience of breeding bird surveys, including as an RSPB employee (13 years) and independent ecological consultant (21 years).

The FHT has built up a substantial species database over the last decade, outlined in its most recent Local Biodiversity Action Plan (LBAP), including a bird species list compiled from casual records (Reed 2026). A systematic breeding bird survey, based on a robust and repeatable methodology, has not been undertaken, however. This survey serves to fill that gap and establish a firm baseline for future monitoring of breeding birds.

1.2 The Site

The FHT area, of 49ha, forms the southern part of the Findhorn Dunes, an area of around 130ha of dune land, located about 6km north of Forres in Morayshire. It lies to the east of the Village of Findhorn and to the north of the Park Eco-Village (Fig. 1).

Fig.1 FHT ownership boundary



The FHT's 2026 LBAP provides background on ecological context. Findhorn dunes are a rare sand dune ecosystem that is part of a coastline which is of international importance for wildlife. The Findhorn Hinterland area was certified as a Nature30 site by NatureScot in 2025, in recognition of its biodiversity value and the nature restoration work being carried out by the FHT. The dunes lie close to four nationally and internationally protected sites, important for birds, marine species, invertebrates, plants, fungi, coastal and woodland habitats. The bird interest protected by these designated sites is associated with wintering wildfowl and breeding osprey *Pandion haliaetus*.

Most of the FHT area is stabilised sand dunes, largely covered by gorse *Ulex europaeus*. Within the gorse are substantial areas of high-quality vegetated sand and single and dune heath, and natural dune grassland, recognised as priorities for action in the Scottish Biodiversity List. Encroaching scrub is controlled on these habitats, to protect rare and threatened specialist sand dune species. A dune restoration project was established in 2024, which has converted around 1ha of dense gorse to new bare sand which will be allowed to develop into the early successional stage habitats which are so important for dune specialist wildlife. Grassland areas are found mainly around the wind turbines area, in the eastern part of the site, and along firebreaks through the gorse, which are mowed annually.

The site also includes around 11ha of old pine plantation woodland, which has been under a process of ecological transformation, through tree thinning and the planting of native trees, since coming under the FHT's custodianship over twenty years ago.

The area is highly-valued by the local community and it is heavily used for informal recreation, mostly walking.

2. Survey Method

2.1 Desk Study

The 2026 LBAP includes results from a North East Scotland Biological Record Centre (NESBReC) data request. Many of the species of conservation concern listed are wildfowl and waders associated with wetland habitats on Findhorn Bay, with little ecological connection to Findhorn Dunes. The NESBReC report does, however, include red-listed linnet *Linaria cannabina* and yellowhammer *Emberiza citrinella*, known to be present in the FHT area.

Desk study included reference to the NBN Atlas, the books Breeding Birds of North-East Scotland (Francis & Cook 2011) and Birds of Moray and Nairn (Cook, 1992), and recent

Moray Bird Club reports. Information on national bird population trends was largely gathered online from the BTO's *BirdFacts* website pages.

Information was supplied by the FHT on the presence of tawny owls and personal observations of birds from around 60 years ago (J. Caddy), and the location of a crow nest (A. Watson Featherstone). Jonathan Caddy, who lived at the Park Ecovillage as a child and adolescent in the 1960's and 70's, recalls a much more open sand dune landscape, with at least five pairs of shelducks on Findhorn dunes, along with nesting curlews, oystercatchers, and ringed plovers – and a pair of barn owls in a (demolished) structure in Wilkies Wood.

2.2 Bird Survey Method

A breeding bird 'territory mapping' method was used, based on the British Trust for Ornithology's Common Bird Census (CBC), which was first established in 1962 and has proved invaluable in tracking population trends among British birds since then (Gilbert et al. 2011).

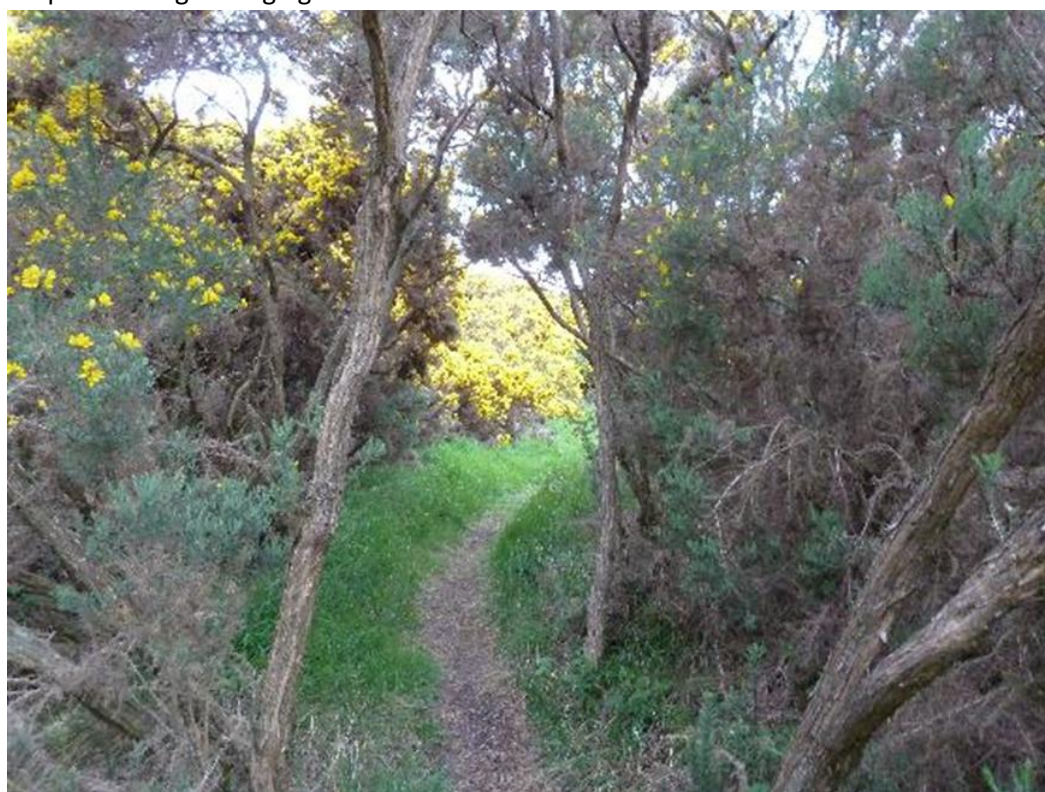
Bird species and activity were mapped on paper and clipboard, using mobile phone mapping to ensure exact positioning in the field - and to ensure that all records were within the FHT boundary. The survey method relies heavily on identification of bird species by song. Birds singing within the FHT ownership boundary were recorded as breeding within the boundary. Notes were made on other activities which may indicate breeding, including alarm calls, and carrying of nesting material, or food carrying.

Fig.1 View across a large gorse stand from a vantage point



The site was divided into two survey areas, each of which were visited three times between 4th May and 11th June, with at least a two-week interval between each visit. Three visits, in good weather conditions, is considered a minimum number in order to achieve accurate results. Ideally, a visit in April would have been included, but that was not possible in this case, due to late commissioning. This is not considered likely to affect the survey results, as the survey period coincided with the peak period of bird song.

Fig.2 Footpath through a large gorse stand



Visits took place between 0530 and 1100, to coincide with peak bird activity (Table 1). Weather forecasts were carefully monitored to avoid rainy and windy days. Starting points and direction of travel were varied on each visit to ensure that all parts of the area received a visit in the earliest part of the morning. Wherever possible, the ground was covered to a resolution of 50m, which is easily sufficient to detect all singing species likely to be found. In the few places where this was not possible, due to large impenetrable stands of gorse, I paused at prominent vantage points, to observe and listen. It soon became clear that by using this method even the largest gorse stands could be surveyed accurately, in combination with surveying from the many footpaths running through the gorse (Figs.1,2).

The CBC method is mainly aimed at diurnal passerine bird species, though it often detects breeding raptors (which have their own species-specific survey methods). CBC does not include nocturnal birds, such as owls. In this case, as I cover the area for the Scottish Raptor Monitoring Scheme, I visit the woodland anyway to monitor sparrowhawk *Accipiter nisus* and long-eared owls *Asio otus*. In addition to the three survey visits, a sparrowhawk nest

was checked occasionally, and five late evening visits were made to listen for calling long-eared owls, both of which have nested in the area over at least the last two decades (pers.obvs.).

Table 1. Site visit details

Date	Time	Cloud (8ths)	Wind (Beaufort)	Precipitation	Temp (C)
04/05/26	0530-1030	1	3, W	0	4-13
06/05/26	0600-1030	1	0	0	1-9
18/05/26	0520-1050	4	0	0	2-12
22/05/26	0600-1030	6	1, S	0	14-20
01/06/26	0600-1045	8	1, E	0	11-13
05/06/26	0530-0915	4	2, W	0	11-13

Numbers of pairs of semi-colonial nesting species, including linnet and goldfinch *Carduelis carduelis*, are difficult to estimate accurately through the CBC method, as a single singing bird may represent several others. For these species, estimates of breeding numbers were made, based on the number of adults seen around likely nesting locations.

Crossbills *Loxia curvirostra* are often heard in the Hinterland woodland areas. These birds usually breed very early in the year, however. They have their own survey method and are not covered by the CBC, and none were heard calling during the Survey.

Magpies *Pica pica* and carrion crows *Corvus corone* are also difficult to monitor using the CBC method, as these secretive, intelligent, and wide-ranging species do not sing. Finding nests of these species is possible, but would be overly time-consuming, for 'green-listed' species of least conservation concern (Birds of Conservation Concern/BoCC). Estimates of nesting locations of breeding pairs of crows were made on alarm calls and 'guarding' behaviour.

The adjoining Park ecovillage contains diverse breeding bird habitats, including gardens, buildings and woodland. Notes were made, in passing, of additional bird species outside the FHT boundary.

2.3 Evaluation

Evaluation of conservation significance was based on the UK's Birds of Conservation Concern system, which is a traffic-light assessment produced by a coalition of leading conservation and monitoring organisations, including the RSPB and the British Trust for Ornithology. The latest BoCC review classifies 245 regularly occurring bird species, into Red, Amber, or Green lists, based on the severity of their population declines, historical losses, and international

threat status (BoCC 5, 2021). In addition to BoCC, the government's Scottish Biodiversity List (SBL) provides additional guidance on bird species priorities.

3. Survey Results

3.1 Birds

One hundred and ninety-seven pairs of birds, of twenty-seven species were recorded during the survey, collated in Tables 2-5, below, and shown on Map 1, Appendix 1. Breeding bird locations will be incorporated within the FHT's Geographic Information System (GIS).

Tables 2-5 reflect the conservation status of the various species, as determined by the BoCC list. Table 2 contains the species of highest conservation concern (red). Table 3 second tier species of conservation concern (amber). Table 4, those species which are considered to be in good conservation status (green). Scottish Biodiversity List species (2020) are also indicated.

Table 2. Bird survey results. Red-listed BoCC (*Scottish Biodiversity List)

Species	Number of pairs	Habitat	Notes
Greenfinch	6	Woodland, scattered trees in gorse	Scattered across site
Redpoll*	1	Woodland	Eastern end of Wilkies Wood
Linnet*	11	Gorse & grassland	In the west and east
Yellowhammer*	3	Gorse & grassland	In the west and east

Table 3. Bird survey results. Amber-listed BoCC (*Scottish Biodiversity List)

Species	Number of pairs	Habitat	Notes
Shelduck	1	Sand & shingle	Heathneuk dune restoration area
Sparrowhawk	1	Woodland	Wilkies Wood
Willow warbler	25	Woodland/isolated trees in gorse	Throughout the site
Common whitethroat	2	Gorse edge	Dune ridge above Heathneuk dune restoration area
Wren	16	Woodland, gorse	Throughout site

Song thrush*	1	Woodland, gorse & grassland	Turbines area
Duncock*	7	Woodland, gorse	Throughout site
Meadow pipit	1	Dune heath	Satellite site on sea shore
Bullfinch*	1	Woodland	Eastern end of Wilkies Wood

Table 5. Bird survey results. Green-listed BoCC

Species	Number of pairs	Habitat	Notes
Magpie	1	All	In gorse to north of N.Whins dune ridge
Carrion crow	3	Woodland, scattered trees in gorse	In Wilkies Wood and two pines within dense gorse
Wood pigeon	12	Woodland, scattered trees in gorse	Scattered across site
Treecreeper	1	Woodland	Western end of Wilkies Wood
Goldcrest	9	Woodland, scattered trees in gorse	Throughout the site
Chiff chaff	8	Woodland, scattered trees in gorse	Scattered across site
Pied wagtail	1	Grassland	In the pony field (close-grazed turf)
Blackbird	6	Woodland, scattered trees in gorse	
Robin	26	Woodland, gorse	Throughout the site
Blue tit	5	Woodland	
Coal tit	9	Woodland, scattered trees in gorse	Throughout the site
Great tit	6	Woodland, scattered trees in gorse	Scattered across site
Chaffinch	24	Woodland, scattered trees in gorse	Throughout the site

Goldfinch	10	Woodland, scattered trees in gorse	Throughout the site
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No long-eared owls – which although green-listed, are specially protected under Schedule 1 of the Wildlife and Countryside Act - were found to be breeding in Wilkies Wood in 2026, but green-listed tawny owls (likely to represent a single pair) were reported by FHT as calling earlier in the year.

No common crossbills (green-listed) were heard during the Survey and are unlikely to have bred this year. If they had been breeding, it is likely that feeding parties containing newly fledged juveniles would have been encountered.

Crested tits *Lophophanes cristatus* have been noted by the FHT in the breeding season in recent years in Wilkies Wood, but were not encountered during the Survey. Being a very active and vocal species, had they been present it is highly likely that they would have been detected.

Green-listed species noted as being present but not breeding included swallows *Hirundo rustica*, sand martin *Riparia riparia*, and great spotted woodpecker *Dendrocopos major*. Swallows were seen foraging over the Hinterland but no evidence of breeding was found. Sand martins were seen foraging along the beach of the small satellite site to in the north of the Hinterland, but sand cliffs here were unsuitable for nesting due to slumping. Evidence of great-spotted woodpecker was noted on standing deadwood throughout the woodland area, but no evidence of breeding was found.

Additional red and amber-listed species noted to be breeding in the adjoining Park Ecovillage included house sparrow *Passer domesticus*, house martin *Delichon urbicum*, starling *Sturnus vulgaris* and oystercatcher *Haematopus ostralegus* - as well as green-listed swallow and blackcap *Sylvia atricapilla*. The ecovillage provides a rich mosaic of habitats for breeding birds, including elements which are absent, or relatively sparse, on the Hinterland, such as buildings, gardens with broadleaved shrubs, and regularly mown grassland.

3.2 Other wildlife

Notable records of other wildlife during the survey include four sightings red squirrel *Sciurus vulgaris* and a sighting of a brown hare *Lepus europaeus* (in the middle of the woodland). Both are SBL species.

4. Evaluation and Discussion

The Survey shows that there are four red-listed (21 pairs) and nine amber-listed (67 pairs) Birds of Conservation Concern breeding on the Findhorn Hinterland (Tables 3 & 4). Despite their BoCC and SBL statuses, all red and amber listed species breeding on the Hinterland remain widespread in the Scottish countryside and the small populations found on the Hinterland are of onsite conservation significance only (as opposed to being of local, regional, or national significance).

In conservation terms, the bird interest of the site is low compared to the national significance of the Findhorn dunes as a whole for lichens, invertebrates and fungi. It is worth emphasising that gardens associated with the adjoining Park Ecovillage also provide valuable breeding bird habitats, supporting additional red and amber-listed bird species. These populations, although not surveyed, will still be of only of onsite significance, however.

Of the red-listed species within the Hinterland area, two species strongly associated with gorse, yellowhammer (three pairs) and linnet (eleven pairs), are red-listed due to population declines associated mainly with the intensification of agriculture. Red-listed greenfinch *Chloris chloris* (six pairs), a woodland edge and garden bird, has suffered a nearly 70% population decline in Scotland since the 1990s, likely due to disease associated with garden bird feeders. Redpoll *Acanthis flammea* (1 pair), a woodland bird strongly associated with birch, has declined in the UK as a whole by 89% since 1970. In Scotland, however, the long-term trend has been more stable, with a roughly 15% decline in recent years, largely attributed to severe weather events like the 2018 Beast from the East' (BTO).

The greatest numbers and variety of breeding birds were found in the woodland areas, and associated with isolated and scattered trees within extensive gorse stands (Tables 2-5). The conservation significance of this finding must be placed in context, however. In Scotland, woodland birds, in general, are in good conservation status, with numbers increasing by 66% since 1994, largely as a result of increasing woodland cover, in response to government policies. This is in contrast to the UK as a whole, where woodland birds have declined by around 32% since 1970, mostly in England, largely due to a decline in woodland management and increased deer browsing (BTO Indicators for Scotland).

Of the six amber-listed species found in the woodland, the pair of sparrowhawks were notable, successfully fledging three young (Fig.3). The UK sparrowhawk population recovered from a population crash associated with pesticides in the 1950s and 60s, but has declined again, by around 25%, since the mid-1990s. Population trends in Scotland

specifically, however, are believed to be relatively stable, though due to a small sample size, confidence in this assessment is not high (BTO).

It was interesting to see the male and female sparrowhawks hunting over the open dunes early in the season (as far as the beach), a reflection of the numbers of passerines present here, including sand martins nesting on beach sand cliffs. The stretch of sea shore at the small rectangular FHT 'satellite site' was found to be unsuitable for sand martin nesting, due to sand and shingle slumping.

Fig. 3. Female sparrowhawk feeding chicks, Wilkies Wood, July 2026



The sparrowhawk nest was within an area with high levels of human activity and it is clear that the birds must have habituated to this. Care was taken by the FHT, however, not to share the nest location widely, as uncontrolled scrutiny of the nest could easily have caused the parent birds to desert the nest, the chicks to fledge prematurely, or for the parents to avoid the area in future.

Another notable amber-listed woodland/scattered tree species, with twenty-five pairs, is willow warbler. This species has increased in Scotland by 77% in recent decades. Once again, this is in strong contrast to the situation in the rest of the UK, where the population has suffered a more than 40% UK decline between 1994 and 2018, significantly associated with increasing summer temperatures.

While no crossbills were encountered, it should be noted that crossbills are highly nomadic, opportunistic breeders. Breeding locations are dependent on conifer seed availability, which varies from year to year. It is also worth noting that the (less common and amber-listed) Scottish crossbill *Loxia scotica*, is known to breed in nearby (c.2km) Culbin forest, and so could potentially occasionally nest on the Hinterland. Confidently identifying the difference between these two closely-related species is difficult, however, and ideally is supported by acoustic or biometric evidence.

Woodland work carried out by FHT over the last twenty years is likely to have significantly improved conditions for breeding birds, through creating a much greater diversity of nesting and foraging opportunities, including dense scrub woodland, soft woodland edges, standing deadwood, and the installation of nest boxes.

Twelve species found on the open dunes are associated with woodland habitats (Tables 2-5). This reflects the encroachment of trees, self-seeded from Wilkies Wood, along with the spread of gorse, due to reduced windspeed - the combination of which is a strategic threat to the national biodiversity significance of the dunes (Reed 2026).

Fig 4. Scots pines encroaching onto high priority sandy habitats



The FHT is actively controlling encroaching gorse and trees. Without this action, rare sand and shingle habitats would soon be lost, with a corresponding increase in woodland birds, but a loss of the lichen, invertebrate and fungi species for which the dunes are nationally important. The FHT's 2026 LBAP includes a policy to remove trees encroaching on sand and shingle habitats and it is evident that there is progress to be made on this policy in some areas (Fig.4). The LBAP policy is to allow trees to grow on in dense gorse, where dune heath habitat has already been lost, including the sparse scattering of isolated mature trees within large gorse stands. Potential eventual succession of dense gorse stands to scattered woodland is of less ecological concern than loss of open sandy habitats and will be interesting to monitor.

In gorse and grassland habitats, there were fewer numbers of red-listed linnet and yellowhammer than might be expected in such an extensive area of gorse. It seems likely that this reflects the relatively poor food availability on the surrounding sand and shingle habitats. The natural grassland, found around the turbines and along firebreaks is likely to provide the most significant foraging opportunities for these species and the current management regime of topping grassland in the winter, to control gorse encroachment, is likely to benefit them.

The FHT has been exploring opportunities to create more dune grassland, as a rare (SBL) habitat in itself, and to benefit specialist invertebrates. If this proved to be possible it would likely significantly improve foraging conditions for yellowhammer and linnet, through increasing the supply of accessible insects in the summer and seeds in the winter. Commuting feeding parties of linnets were seen flying towards Cullerne Gardens (a small market garden) and it is likely that agricultural weeds - such as chickweed *Stellaria media* and fat hen *Chenopodium album* - growing amongst vegetables there are an important food source for them (pers. obs.).

Under more natural conditions, with no trees and much less gorse – as would have existed until around 100 years ago (Reed 2026) - a more open sand and shingle landscape would have supported fewer bird species. Those few species which are likely to have bred would have been sand and shingle specialists, of greater conservation significance than the species found here now, due to the very restricted distribution of this habitat – reflected in the experience of long-term resident and FHT founder, Jonathan Caddy. These species included shelduck - one pair of which was noted on two occasions at the Heathneuk dune restoration area, and is likely to have nested in a rabbit burrow here. Also, ringed plover, which has bred on the more open shingle beyond the FHT boundary in recent years (pers. obs., Moray Bird Report 2023). Another shingle species, arctic tern, bred on the small FHT 'satellite' site (Appendix 1, Map 1.) up until the early 2000s, when scrub cover replaced their shingle nesting habitat (pers. obs., Cook 1992, Proctor 2023).

While the FHT is undertaking gorse removal to create bare sand for threatened lichen, invertebrate, and fungi populations, this is of too small a scale to benefit sand and shingle nesting birds, and it is not suggested that any attempt be made to create larger areas of bare sand for breeding birds. Likewise, it would probably not be a good use of resources to remove all scrub at the FHT satellite site, to encourage Arctic terns to return. In addition to being a very expensive action, this area lies on the Moray Coast trail, which is likely to have more (dog) walkers now than in the past, making it difficult for terns to nest successfully.

Monitoring breeding bird numbers is a means of measuring the health of the highest priority natural sand and shingle habitats. Increasing populations of woodland birds on these habitats would represent a decline in habitat quality. Removal of young trees on these habitats remains a high priority for the FHT.

The survey represents a reliable baseline for future monitoring. Given the onsite significance of bird populations, and the national significance of lichen, invertebrate and fungi, associated mainly with open dune habitats, however, a repeat bird survey in approximately ten years' time is considered to be appropriate.

5. Acknowledgements

I would like to thank Jonathan Caddy for sharing his memories of bird life on the dunes, and Alan Watson Featherstone comments on a draft of this report.

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Findhorn Hinterland Trust Breeding Bird Survey 2026

Appendix 1. Map 1. Breeding bird survey results

