



Appendix 11.1 Breeding Birds Protection Plan

Lochluichart Wind Farm S42

Supporting Environmental Information Report

Bluebell Wind Limited

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Lochluichart Wind Farm Extension II & Grid Connection: Breeding Birds Protection Plan

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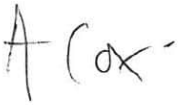
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Acknowledgement

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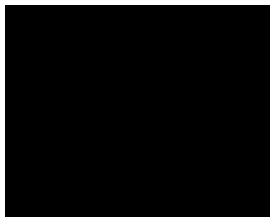
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Executive Summary

Contents	Summary
Site Summary	Mabbett and Associates Ltd (Mabbett) was commissioned by Bluebell Wind Farm Ltd to produce a Breeding Birds Protection Plan (BBPP) for the protection of bird species during the construction and operation of Lochluichart Wind Farm extension II and the overhead line to connect Lochluichart Wind Farm Extension II to the Corriemoillie substation (hereafter referred to as 'the site'). The site is located on the Lochluichart Estate, East Ross, Highland; 18 km north-west of Dingwall and immediately due south of the A835, centred at OSGR grid reference NH 3334 6686.
Proposals	The development consists of a five-turbine extension to the existing wind farm and a new grid connection comprising of a 33kV Overhead Line (OHL), to connect Lochluichart Wind Farm Extension II to Corriemoillie sub-station.
Survey Scope	The BBPP is required to ensure that legislative requirements pertaining to the identified bird species are upheld during construction and to discharge condition 9cix of the planning consent 21/02985/FUL for Lochluichart Wind Farm Extension II and conditions 9i and 9j of the Section 37 consent 22/00244/S37 for the grid connection. The BBPP provides detailed of the most recent pre-construction breeding bird surveys and outlines the key legislation, mitigation measures, and emergency procedures that should be followed to protect birds during construction.
Results	Bird surveys of the site have been conducted in 2023 and 2024 to discharge planning conditions for Lochluichart Windfarm Extension II. Surveys identified the potential for breeding raptors including kestrel and osprey, breeding red-throated diver, and breeding wader species including greenshank, golden plover, snipe, and woodcock. The site also offers the potential to support some woodland bird species such as crossbill, redwing and other common species.
Recommendations	The proposed development will result in the potential disturbance of breeding birds during the construction of the development. The following mitigation measures are identified to protect breeding birds: ▪ Works to be overseen by an Ecological/Environmental Clerk of Works (ECoW) who would have the authority to intervene during the works including the powers to stop works if necessary. ▪ Site access should be by marked tracks wherever possible & site speed limit to be obeyed. ▪ Toolbox talks highlighting the potential for breeding birds ▪ Vegetation clearance (including felling) to be undertaken outwith the breeding season, where possible. ▪ Nesting bird checks for raptors, divers and breeding birds to be carried out no more than 24 hours prior to vegetation clearance during breeding season. ▪ During construction, regular walkover breeding bird surveys must be carried out within at least 500m of works between April and August. ▪ If a nest is detected for any bird species, then an appropriate buffer zone would be employed to protect it from damage and/or disturbance. ▪ No construction shall take place (or any vehicle movements) within a minimum 750m exclusion zone of breeding red-throated divers. ▪ No construction shall take place (or any vehicle movements) within a minimum 750m exclusion zone of grouse leks before 9am in the months of April and May inclusive.

Table of Contents

Executive Summary	ii
Section 1.0: Introduction	1
1.1 Background	1
1.2 Site Summary	1
1.3 Planning requirements	1
1.4 Scope of the BBPP	2
Section 2.0: Methods	3
2.1 Desk Study	3
2.2 Existing Site Knowledge	3
2.3 Field Surveys	3
2.4 Limitations	5
Section 3.0: Results	6
3.1 Desk Study	6
3.2 Field Survey - 2023	7
3.3 Field Survey - 2024	9
3.4 Impact Assessment	12
Section 4.0: Protection Plan	13
4.1 Breeding Birds	13
4.2 Site Conditions	13
4.3 Potential Impacts	13
4.4 Mitigation Measures	14
4.5 Emergency Procedure	16
Section 5.0: References	17
Figures	18
Appendix A: 2023 Survey Dates and Weather Conditions	
Appendix B: 2024 Survey Dates and Weather Conditions	

Section 1.0: Introduction

1.1 Background

Mabbett and Associates Ltd (Mabbett) was commissioned by Bluebell Wind Farm Ltd to produce a Breeding Birds Protection Plan (BBPP) for the protection of bird species during the construction and operation of Lochluichart Wind Farm extension II and the overhead line to connect Lochluichart Wind Farm Extension II to the Corriemoillie substation (hereafter referred to as 'the site'). The BBPP is required to ensure that legislative requirements pertaining to the identified bird species are upheld during construction and to discharge condition 9cix of the planning consent 21/02985/FUL for Lochluichart Wind Farm Extension II and conditions 9i and 9j of the Section 37 consent 22/00244/S37 for the grid connection. A BBPP was produced by Mabbett in 2023, and this is an update to that report following additional surveys carried out in 2024.

The BBPP provides details of the most recent pre-construction breeding bird surveys and outlines the key legislation, mitigation measures, and emergency procedures that should be followed to protect birds during construction and has been produced in accordance with NatureScot guidance (NatureScot, 2016)

The BBPP is designed to give on-site guidance as to the actions that should be taken to avoid impacting on bird species, including nesting birds and what to do if a nest should be unexpectedly encountered. The BBPP will remain a live document, and an up-to-date copy will be kept on site.

1.2 Site Summary

The site is located on the Lochluichart Estate, East Ross, Highland; 18 km north-west of Dingwall and immediately due south of the A835, centred at OSGR grid reference NH3334 6686, at a maximum elevation of 500 m above sea level. The consented developments comprise of:

- Five wind turbines with a maximum blade tip height 149.9m, with associated foundations and hard standings;
- Onsite network of underground cables linking the turbines to a grid connection;
- Onsite access tracks connecting each turbine location;
- Onsite substation, if required, and control/maintenance building;
- Two borrow pits;
- Temporary works including a construction compound; and
- A 33 kV overhead line to connect Lochluichart Wind Farm Extension II to the Corriemoillie substation.

As these projects will be constructed simultaneously, they are being treated as one development. This document has been produced to allow the discharge of the relevant planning conditions for both planning consents.

1.3 Planning requirements

Planning permission for Lochluichart Wind Farm Extension II was granted on 30th January 2023 (21/02985/FUL), subject to 27 conditions; and planning permission for Lochluichart Grid connection was granted on 20th February 2023 (22/00244/S37), subject to 15 conditions.

1.3.1 Lochluichart Wind Farm Extension II (21/02985/FUL)

Condition 9cix of the consent for Lochluichart Wind Farm Extension states that:

No development shall commence until a finalised Construction Environmental Management Plan (CEMP) is submitted to and agreed in writing by the Planning Authority, in consultation with SEPA. The document shall include provision for: [...]

c) the following specific CEMP details:

- ix. A Breeding Bird Protection Plan (BBPP) and Species Protection Plans, with associated survey and monitoring requirements to be agreed by the Planning Authority, in consultation with NatureScot. This must be informed by a further pre-construction ecological survey for legally protected species which must be carried out at an appropriate time of year for the species, at a maximum of 12 months preceding commencement of construction, and a watching brief must then be implemented by the Ecological Clerk of Works (ECoW) during construction. The species that should be surveyed for*

include, but are not limited to, breeding birds, otter, pine marten, water vole, badger, red squirrel, and wildcat. The area that is surveyed should include all areas directly affected by construction plus an appropriate buffer to identify any species within disturbance distance of construction activity and to allow for any micro-siting needs. A communication plan must be provided to ensure all contractors are aware of the possible presence of protected species frequenting the site and the laws relating to their protection. This plan must detail a notification and stop the job commitment requirements.

1.3.2 Overhead Line Grid Connection (22/00244/S37)

Condition 9 of the Section 37 consent for the grid connection states that:

There shall be no commencement of development until finalised Construction Environmental Management Plans ("CEMP"s) are submitted to and agreed in writing by the Planning Authority in consultation with SEPA and other appropriate consultees as appropriate. These plans shall include: [...]

- i. A pre-construction survey for legally protected species carried out at an appropriate time of year for the species, at a maximum of 12 months preceding commencement of construction, and that a watching brief is then implemented by the Environmental clerk of Works ("ECoW") during construction. The area that is surveyed should include all areas directly affected by construction plus an appropriate buffer to identify any species within disturbance distance of construction activity and to allow for any micro-siting needs.*
- j. Bird Protection Plan and Species Protection Plan(s) as directed by the ECoW, with these to set out that:*
 - i. Any ground clearance or development should avoid the bird breeding season (01 April to 15 August). In the event that it is necessary to undertake any works within the breeding season, no more than 24-hours before works the area shall be subject to an ECoW pre-construction survey for raptors, diver and breeding bird surveys;*
 - ii. During construction, walkover breeding bird surveys must be carried out between 01 April to 15 August on a regular basis, to attempt to detect breeding territories and nests. If a nest is detected for any bird species, then an appropriate buffer zone, would be employed to protect it from damage and/or disturbance;*
 - iii. In the event that there is any evidence of red-throated divers breeding, no construction shall take place (or any vehicle movements) within a minimum 750m exclusion zone until the young have fledged or the breeding attempt has been confirmed as failed by a trained ecologist; and*
 - iv. In the event that there is any evidence of black grouse lek(s), no construction shall take place (or any vehicle movements) within a minimum 750m exclusion zone before 9am in the months of April and May inclusive;*

1.4 Scope of the BBPP

This BBPP includes the results of the baseline bird surveys undertaken to inform the planning applications for both sites, results of the pre-construction surveys carried out in 2023 and 2024, and the required protection measures for bird species which may be present onsite. It has been produced to meet the requirements of condition 9cix of the planning consent for Lochluichart Wind Farm Extension II and conditions 9i, 9j, and 13 of the Section 37 consent for the grid connection.

The objectives of this report are to:

- Highlight the presence of any relevant statutory designated sites notified for their ornithological interest.
- Outline the results of breeding moorland bird, diver and raptor surveys of the site carried out during periods 2011-2024.
- Identify the potential impacts on birds and set out the mitigation measures that are required during the construction of Lochluichart Wind Farm Extension II to safeguard bird populations local to the site.

Section 2.0: Methods

2.1 Desk Study

2.1.1 Designated Sites

NatureScot's SiteLink and DEFRA's MAGIC websites were reviewed to ascertain the locations of any statutory designated sites notified for their ornithological interest that are relevant to the construction of the development.

2.2 Existing Site Knowledge

The site assessment has been based on combination of baseline ornithological data from various surveys conducted at the site (Table 1).

Table 1: Sources of Baseline Ornithological Information Referred to by the BBPP.

Development	Data Source and Reference
Lochluichart Wind Farm	Lochluichart Wind Farm – Pre-construction Monitoring. 2011-2013
Lochluichart Wind Farm	Lochluichart Wind Farm – Operational Monitoring. 2014-2021
Lochluichart Wind Farm Extension II	Lochluichart Windfarm Extension II (Consented Development) – Baseline Surveys. 2015/2016
Lochluichart Wind Farm	Loch Luichart Wind Farm Breeding Bird Monitoring Survey Report 2017: Confidential Annex. (NRP, 2018)
Lochluichart Wind Farm	Loch Luichart Wind Farm: Comparison of ornithological survey data collected between 2014 and 2018 (NRP, 2019)
Lochluichart Wind Farm	Confidential Report on the Monitoring of Red Throated Divers at the Loch Luichart Wind Farm in 2019 (Galbraith, 2019)
Lochluichart Wind Farm	Confidential Report on the Monitoring of Red Throated Divers at the Loch Luichart Wind Farm in 2020 (Galbraith, 2020)
Corriemoillie Wind Farm	Pre-construction and HMP Monitoring. 2016-2021
Lochluichart Wind Farm Extension II	Lochluichart Windfarm Extension II S37 Application - Baseline Surveys. 2021
Lochluichart Wind Farm Extension II	Lochluichart Windfarm Extension II and S37: pre-construction surveys. 2023

2.3 Field Surveys

This BBPP has been based on a combination of all available baseline data, and the pre-construction surveys undertaken in 2023 and 2024, the results of which are detailed in this report.

2.3.1 Previous surveys

Data from the ornithological field surveys, which were undertaken as part of baseline data gathering for the site and as part of ongoing operational monitoring for the existing wind farms, are reported in full in the EIA chapter and technical appendices and are not reported further in this document, although the survey results have informed the mitigation approach.

2.3.2 Pre-Construction Surveys

The following ornithological field surveys were undertaken in 2023 and 2024:

- Moorland breeding bird survey of the site and 500 m buffer;
- Breeding diver survey of the site and 1 km buffer;
- Black grouse surveys of the site within 1.5 km buffer; and
- Breeding raptor survey of the site an 2 km buffer.

2023 survey dates and weather conditions are presented in Appendix A, 2024 dates and weather conditions are presented in Appendix B, and survey areas are shown in Figure 1. Survey methods are detailed further in Sections 2.3.3 – 2.3.5.

2.3.3 Moorland Breeding Bird Survey

The adapted Brown and Shepherd (1993) method was used to survey for moorland breeding bird (upland wader species) territories, with four visits being made between mid-April and early July (inclusive), in accordance with (SNH, 2017). This methodology ensured that every part of the survey area was visited to within 100 m, the surveyor walking parallel transects 200 m apart over each 500 m² quadrat and spending 20 to 25 minutes within each quadrat, with the survey route varied between visits. Regular stops were made to scan and listen for birds. Surveys were carried out between 08:00 and 18:00 and in favourable weather conditions as far as possible, and all wader species were recorded. Additional species were also noted as appropriate, such as raptors and notable passerines. Birds were recorded on electronic maps for accuracy, using standard BTO codes for species and activity as per Gilbert et al (1998).

2.2.3.1 Territory Analysis

Following the surveys, all survey data was analysed in order to estimate the number of breeding territories for all wader species recorded during the moorland bird surveys. These included species listed as qualifying features of the SPAs within the vicinity. Many of these species are listed on one or more of the following:

- Annex I of the Birds Directive;
- Schedule 1 of the Wildlife and Countryside Act 1981 (as amended);
- The Scottish Biodiversity List;
- The Highland Biodiversity Action Plan; and
- Red and Amber list Birds of Conservation Concern.

Data was collected digitally using the Qfield mobile phone app for accuracy of location and QGIS software was used to collate species records. Simultaneous registrations were used to denote different wader territories, with reference to Calladine et al (2009). A distance of 500 m for all species was used to define separate territories of the same species, with the exception being 200 m for Dunlin. In some cases, the ecology and behaviour of certain species, together with the habitat they were seen in was used to deviate from these distances, using professional judgement as appropriate. In accordance with BTO survey guidance, the following behaviours were used to classify possible, probable or confirmed territories:

- Probable breeding
 - Pair observed in suitable nesting habitat in breeding season;
 - Permanent Territory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more apart at the same place or many individuals on one day;
 - Courtship and display;
 - Visiting probable nest site;
 - Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby; and
 - Nest building.
- Confirmed breeding
 - Distraction-Display or injury feigning;
 - Used Nest or eggshells found (occupied or laid within period of survey);
 - Recently fledged young (nidicolous species) or downy young (nidifugous species);
 - Adults entering or leaving nest-site in circumstances indicating an occupied nest;
 - Adult carrying faecal sac or food for young;
 - Nest containing eggs; and
 - Nest with young seen or heard.

2.3.4 Breeding Raptor Survey

A survey was undertaken to record the presence of breeding raptor species within a 2 km buffer to the site. Species listed on Annex I of the Birds Directive and Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) were sought, together with other species such as red and amber listed birds of

conservation concern. Four visits were made between late March and July. Where confirmed or potential breeding activity was noted, during both raptor walkover survey and any other surveys, specific methodologies for the relevant species were employed on subsequent visits, as per Hardey et al (2013) and nest sites were monitored via vantage point watches from a suitable distance for their success. Signs of raptor presence, such as feeding remains, feathers and old nests were also recorded as appropriate. Data was collected digitally using background maps to ensure accuracy of location, particularly where nest sites were noted.

2.3.5 Breeding Diver Survey

Walkover surveys for red-throated diver and black-throated diver were undertaken on all waterbodies considered to provide suitable nesting habitat within a 1 km radius of the site. The survey area was covered during the moorland bird surveys and the raptor surveys, to avoid unnecessary disturbance of the site. Surveyors conducted initial watches from a safe distance in order to establish the presence of any divers on the waterbodies or their banks. Where divers were observed, their behaviour and activity were recorded digitally to ensure accuracy of location. Signs such as display, copulation and birds leaving the water to go ashore were taken to indicate breeding attempts.

Where no divers were observed at a suitable waterbody, the perimeter of the waterbody was walked to identify whether any breeding attempts had been made; evidence suggesting previous or failed breeding attempts was considered to include nest scrapes, broken eggshells and remains of young in addition to signs such as feathers from diver species.

2.3.6 Black Grouse Survey

Surveys are carried out between the end of March and mid-May at each site. These follow the survey methodology in Gilbert et al. 1998. Each visit is carried out from one hour before dawn to 07:00. The surveys are carried out using binoculars or a telescope from distances of 100-500m to avoid disturbance to the lek. Surveys are conducted only on mornings when weather conditions are suitable, with good visibility and light winds.

2.4 Limitations

All parts of the specified areas were accessed and all surveys were carried out at suitable times and in suitable weather conditions, therefore there are not considered to be any significant limitations to the surveys.

Section 3.0: Results

3.1 Desk Study

3.1.1 Designated Sites

The site lies within 10 km of four special protection areas (SPA) (NatureScot, 2023) designated for birds as shown in Figure 1 and Table 2.

Table 2: Statutory designated sites within 10 km of the site.

Site Name	Designation	Distance & Orientation	Designated Features
Glen Affric to Strathconon	SPA	2.3 km south	supports a population of European importance of: Golden eagle (<i>Aquila chrysaetos</i>) (10 active territories in 2003, 2.2% of the GB population).
Beinn Dearg	SPA	4.2 km north	Supports a nationally important population of: Dotterel (<i>Charadrius morinellus</i>) (average of 22 pairs between 1987 to 1993, representing 3% of the British breeding population).
Achanalt Marshes	SPA	6.4 km south-west	Supports a summer population of national importance of: Wood sandpiper (<i>Tringa glareola</i>) (3 breeding pairs between 1991-1995, representing 50% of the British breeding population). The site is also of interest for its assemblage of breeding waterfowl which includes, wigeon (<i>Anas penelope</i>) (6 pairs), teal (<i>Anas crecca</i>) (5 pairs), mallard (<i>Anas platyrhynchos</i>) (14 pairs), tufted duck (<i>Aythya fuligula</i>) (10 pairs), oystercatcher (<i>Haematopus ostralegus</i>) (3 pairs), lapwing (<i>Vanellus vanellus</i>) (3 pairs), dunlin (<i>Calidris alpina</i>) (3 pairs), snipe (<i>Gallinago gallinago</i>) (7 pairs), curlew (<i>Numenius arquata</i>) (7 pairs), redshank (<i>Tringa totanus</i>) (6 pairs), greenshank (<i>Tringa nebularia</i>) (4 pairs) and common sandpiper (<i>Actitis hypoleucos</i>) (5 pairs).
Ben Wyvis	SPA	8.4 km east	Supports a nationally important population of: Dotterel (Average of 20 pairs between 1987 and 1993, representing 2% of the British breeding population). Ben Wyvis SPA supports an important assemblage of montane species, including two further Annex 1 species: golden eagle (1 pair) and golden plover (<i>Pluvialis apricaria</i>) (13 pairs). Other montane species which breed on the site are ptarmigan (<i>Lagopus muta</i>) (10 pairs) and ring ouzel (<i>Turdus torquatus</i>) (1 pair).

3.1.2 Previous Survey Results

The ornithological field surveys which were undertaken as part of baseline data gathering for the site, to inform the planning application, are shown in Table 1. The surveys are reported in full within these documents and are not reported further in this document although the survey results have informed the mitigation approach.

Previous results for red throated diver surveys and monitoring are displayed in Table 3 shown below.

Table 3: Summary of known breeding outcomes for red-throated diver within the study area (2014-2021).

Year	Breeding Outcomes
2021	Loch Coire Mhuilidh - failed, presumed at egg stage. Loch na Salach – successful to chick stage, fledging unknown. Birds also recorded at Loch Dubh Mor, Lochan Dubh Beag and Loch Bad Leabhraidh, but no evidence of breeding attempt
2020	Loch na Salach – failed, at egg stage. Birds also recorded at Loch nam Fiadh, but no evidence of breeding attempt.
2019	Loch Coire Mhuilidh – failed, at egg stage (nest located on diver raft). Loch na Salach – failed, presumably at chick stage. Birds also recorded at Loch nam Fiadh, but no evidence of breeding attempts.
2018	Loch Dubh Mor – failed, at the egg stage. Lochan Coire Muilidh – reattempt from Loch Dubh Mor, failed at the chick stage. Loch na Salach – failed, at chick stage.
2017	Loch Dubh Mor - successful, fledging two chicks. Loch na Salach – failed, at egg stage.
2016	Loch Dubh Mor – successful, fledging a single chick. Birds recorded at Loch na Salach, but no breeding attempt recorded.
2015	Loch Dubh Mor – failed, at egg stage. Loch Bad Leabhraidh – failed, at egg stage. Birds recorded at Loch na Salach – but no breeding attempt recorded
2014	Birds recorded at Loch na Salach – but no breeding attempt recorded.

3.2 Field Survey - 2023

3.2.1 Raptors

Four raptor species of conservation concern were recorded within the survey area; these are displayed in Figure 2. The species recorded were golden eagle (*Aquila chrysaetos*), merlin (*Falco columbarius*), kestrel (*Falco tinnunculus*), and osprey (*Pandion haliaetus*). Kestrel and Osprey were confirmed as breeding. No other raptor species were confirmed breeding within 2 km of the site boundary. Red kite (*Milvus milvus*) and buzzard (*Buteo buteo*) were recorded on site but these species are not of conservation concern and were not confirmed to be breeding.

3.2.1.1 Kestrel

Kestrel were recorded across the site nine times throughout the surveys. The flights and activity were focussed on the southern crag of Beinn nan Cabag where an active nest was identified. This is located approximately 1 km from the S37 consented route.

3.2.1.2 Osprey

Osprey were recorded as breeding on site on an overhead electrical transmission tower to the south of the A832 500m from the Corriemoillie substation. Although only recorded twice during the raptor surveys this nest was active on the last visit.

3.2.1.3 Other Raptor Species

Red kite were recorded throughout the site nine times, these birds did not display any behaviour which could be considered indicative of a breeding attempt. It is considered that there is minimal habitat present suitable for breeding red kite. Golden eagle were recorded six times and did not display any behaviour indicative of breeding. The habitat is suitable for golden eagle nesting. Buzzard were also recorded on site nine times throughout the surveys and merlin was recorded on site twice.

3.2.2 Divers

Red-throated diver have been recorded at Loch Dubh Mor, Loch Coire Mhuilidh and Loch na Salach. Breeding outcome is not yet known, and this report will be updated when the outcome is known. The interim results of the breeding diver surveys are shown on Figure 3.

3.2.3 Waders

Territories of moorland breeding birds are presented in Figures 4.1-4.5, with results summarised in Table 4. Four upland wading bird species, together with red grouse were recorded holding territories during the moorland breeding bird surveys.

Table 4: MBBS target species and numbers of territories 2023

Species	Conservation Status	Confirmed territories	Probable territories	Possible territories
Greenshank	WCA Sh1 BoCC Amber	0	5	5
Golden plover	Annex I, BoCC Green	1	3	4
Dunlin	Annex I, BoCC Red	0	0	4
Snipe	BoCC Amber	0	2	10
Red grouse	BoCC Green	2	6	9
Key: WCA Sh1 – Listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) Annex 1 – EU Birds Directive Annex I BoCC Red and Amber – Included on Red List and Amber Lists in Birds of Conservation Concern 5 (Stanbury, et al., 2021)				

3.2.3.1 Dunlin

Territories of dunlin are shown in Figure 4.1. No territories were recorded within the site boundary and two were located within 200m of the consented site.

3.2.3.2 Greenshank

Territories of greenshank are shown in Figure 4.2. Two probable breeding territories were recorded within 300m of the proposed overhead cable centred around Loch a' Mheallain Chaorainn. Five further probable territories were recorded outside of the site boundary but within the 500 m survey buffer.

3.2.3.3 Golden Plover

Territories of golden plover are shown in Figure 4.3. Territories are mainly located in the north-western and southern parts of the survey area. One confirmed territory was recorded within the site boundary to the north-west near Beinn Liath Bheag. A probable territory was also recorded within the site, near Meallan Caoruinn. An additional two probable territories were recorded within 500 m of the site boundary.

3.2.3.4 Snipe

Territories of snipe are shown in Figure 4.4. No territories were recorded within the site boundary and two were located within 200m of the consented site.

3.2.3.5 Red Grouse

Territories of red grouse are shown in Figure 4.5. Three probable territories were recorded in the north of the site. Two confirmed territories and three more probably territories were recorded within 500 m of the site boundary.

3.2.4 Black Grouse

Three black grouse leks were identified as being active within 500m of the site during the 2023 season. These are displayed in Figure 5.

3.2.5 Incidental sightings of other bird species

3.2.5.1 Woodland Birds

Seven woodland bird species of conservation concern have been recorded within the site and buffer. These were: lesser redpoll (*Acanthis cabaret*), tree pipit (*Anthus trivialis*), cuckoo (*Cuculus canorus*), crossbill (*Loxia sp.*), dunnoek (*Prunella modularis*), redwing (*Turdus iliacus*) and song thrush (*Turdus philomelos*).

During preconstruction surveys conducted in 2023, several of these species including redwing were recorded as breeding within the woodland.

3.2.5.2 Wildfowl

The species of wildfowl recorded within the site and 500 m buffer include potentially breeding teal (*Anas crecca*) and red breasted merganser (*Mergus serrator*).

3.3 Field Survey - 2024

3.3.1 Raptors

Eight raptor species were recorded within the survey area; these are listed in Table 5 and displayed in Figure 6. Five of these species were both Schedule 1 and Annex 1 species. Of the others, two are included on the amber list of Birds of Conservation Concern. Only osprey were confirmed as breeding in 2024. No other raptor species were confirmed breeding within 2 km of the site boundary.

Table 5: Raptor records 2024

Species	Conservation status	Breeding signs
Golden eagle (<i>Aquila chrysaetos</i>)	WCA Sh1, Annex I, BoCC Green	No
White-tailed eagle (<i>Haliaeetus albicilla</i>)	WCA Sh1, Annex I, BoCC Amber	No
Kestrel (<i>Falco tinnunculus</i>)	BoCC Amber	No
Osprey (<i>Pandion haliaetus</i>)	WCA Sh1, Annex I, BoCC Amber	Yes
Red kite (<i>Milvus milvus</i>)	WCA Sh1, Annex I, BoCC Green	No
Peregrine (<i>Falco peregrinus</i>)	WCA Sh1, Annex I, BoCC Green	No
Sparrowhawk (<i>Accipiter nisus</i>)	BoCC Amber	No
Buzzard (<i>Buteo buteo</i>)	BoCC Green	No
Key: WCA Sh1 – Listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) Annex 1 – EU Birds Directive Annex I BoCC Red and Amber – Included on Red List and Amber Lists in Birds of Conservation Concern 5 (Stanbury, et al., 2021)		

3.3.1.1 Osprey

Osprey were recorded as breeding on site on an overhead electrical transmission tower to the south of the A832 500 m from the Corriemoillie substation. Although only recorded twice during the raptor surveys this nest was active on the last visit, with at least one chick present.

3.3.1.2 Other Raptor Species

Red kite were recorded throughout the site thirteen times, these birds did not display any behaviour which could be considered indicative of a breeding attempt. It is considered that there is minimal habitat present suitable for breeding red kite, although the forestry plantations in the south of the site do afford some possibilities. Golden eagle were recorded thirteen times and did not display any behaviour indicative of breeding. The habitat is suitable for golden eagle nesting. One adult white-tailed eagle was recorded as an incidental sighting during a separate survey.

Kestrel were recorded breeding in 2023. No nest was recorded in 2024; however a bird did display agitated behaviour in April, suggesting a probable breeding attempt. No further breeding signs were recorded in 2024. Kestrel were recorded on site five times.

Buzzard were also recorded on site six times throughout the surveys and merlin was recorded on site once. A juvenile buzzard was observed on site in July 2024, however the breeding site is not known. There is suitable breeding habitat for buzzard in the forestry plantations in the south of the site, but no breeding attempts were recorded there.

One peregrine was recorded mobbing a golden eagle. There was one record of a sparrowhawk, being mobbed by a mistle thrush near the Lochluichart Windfarm control room. A short-eared owl was recorded on the northern side of Loch Glascarnoch.

3.3.2 Divers

A diver survey on the Lochluichart estate was carried out by Colin Galbraith Environment Ltd during 2024. In order to limit disturbance to the birds, Mabbett did not duplicate this survey, and the results were shared. Loch na Salach was the only loch where the red throated divers attempted to nest, however the nesting attempt failed, and no chicks were reared. Whilst it is not possible to be certain exactly why the birds failed to successfully nest this year it is notable that the weather conditions, especially during late May and June were exceptional in terms of low temperatures and constant heavy rainfall. Significantly, the level of water in Loch na Salach was extremely high over the course of the spring and summer months, and it may well be that the combination of the weather conditions and the flooding of the banks of the loch contributed to nesting being very difficult this year. (Colin Galbraith Environment Limited, 2024).

Mabbett surveyors carried out diver surveys on lochans on the Corriemoillie estate that were within the survey buffer. A red-throated diver pair were recorded twice at Loch Dubh Mor, at the beginning and end of April, and a single bird at Loch Coire Mhuilidh in July. No breeding attempts by these birds were recorded. One diver was recorded flying south over Creag Mhor towards Loch Luichart, and one was recorded flying west over Loch Glascarnoch.

The results of the breeding diver surveys are shown on Figure 7.

3.3.3 Waders

Territories of moorland breeding birds are presented in Figures 8.1 - 8.5, with results summarised in Table 6. Four upland wading bird species, together with red grouse were recorded holding territories during the moorland breeding bird surveys.

Table 6; MBBS target species and numbers of territories 2023

Species	Conservation Status	Confirmed territories	Probable territories	Possible territories
Greenshank	WCA Sh1 BoCC Amber	1	1	6
Golden plover	Annex I, BoCC Green	0	3	6
Dunlin	Annex I, BoCC Red	0	0	5
Snipe	BoCC Amber	0	0	12
Red grouse	BoCC Green	3	10	12

Species	Conservation Status	Confirmed territories	Probable territories	Possible territories
Key: WCA Sh1 – Listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) Annex 1 – EU Birds Directive Annex I BoCC Red and Amber – Included on Red List and Amber Lists in Birds of Conservation Concern 5 (Stanbury, et al., 2021)				

3.3.3.1 Dunlin

Territories of dunlin are shown in Figure 8.1. Two possible territories were recorded within the site boundary, one was located just outside the northern boundary on the opposite side of the A835 road, and two were located within 400m of the consented site. Each of these was just observed on one visit, with no breeding activity observed.

3.3.3.2 Greenshank

Territories of greenshank are shown in Figure 8.2. One confirmed breeding territory was recorded within the site boundary approximately 200 m north of Allt Beithe. One probable breeding territory was recorded close to Loch a' Mheallain Chaorainn, approximately 200 m from the proposed cable route. Two possible breeding territories were recorded within the site boundary, and four were recorded within 500 m of the site boundary.

3.3.3.3 Golden Plover

Territories of golden plover are shown in Figure 8.3. Territories are mainly located in the north-western and southern parts of the survey area. Three probable breeding territory were recorded outside of the site boundary but within 500 m. Five possible breeding territories were recorded, two within the site boundary, three within 500 m, and one just outside the 500 m buffer zone.

3.3.3.4 Snipe

Territories of snipe are shown in Figure 8.4. Four possible breeding territories were recorded within the site boundary and eight were located within 500m of the consented site.

3.3.3.5 Red Grouse

Territories of red grouse are shown in Figure 8.5. Three confirmed breeding territories were recorded in the south of the site, two of which were in the vicinity of the cable route. Four probable breeding territories were recorded within the development site boundary, along with six possible breeding territories. Six probable breeding territories and six possible breeding territories were recorded within 500 m of the site boundary.

3.3.4 Black Grouse

Nine black grouse leks were identified as being active within 1 km of the site during the 2024 season. Of these, four consisted of a single male bird. The remainder consisted of between two and four birds, with the largest number being at the lek in the south of the site. Two females were recorded flying over this lek and into the woodland to the south-west. The leks are displayed in Figure 9.

3.3.5 Incidental sightings of other bird species

Other bird species of conservation concern that have been recorded within the site and buffer during 2024 are shown in Table 7.

Table 7: Other bird species recorded during 2024 surveys

Species	BoCC status / Schedule 1	Notes
Teal (<i>Anas crecca</i>)	Amber	Breeding on site
Wood pigeon (<i>Columba palumbus</i>)	Amber	
Swift (<i>Apus apus</i>)	Red	Seen foraging over site
Cuckoo (<i>Cuculus canorus</i>)	Red	Several males calling on site

Skylark (<i>Alauda arvensis</i>)	Red	Breeding across the site
House martin (<i>Delichon urbicum</i>)	Red	Seen foraging over site
Wren (<i>Troglodytes troglodytes</i>)	Amber	
Dipper (<i>Cinclus cinclus</i>)	Amber	
Mistle thrush (<i>Turdus viscivorus</i>)	Red	
Redwing (<i>Turdus iliacus</i>)	Amber; Schedule 1	Singing males near Lochluicahrt Lodge
Wheatear (<i>Oenanthe oenanthe</i>)	Amber	
Tree pipit (<i>Anthus trivialis</i>)	Red	
Meadow pipit (<i>Anthus pratensis</i>)	Amber	Breeding across the site
Redpoll (<i>Acanthis flammea</i>)	Red	
Crossbill (<i>Loxia spp.</i>)	Green/amber; Schedule 1	
Reed bunting (<i>Emberiza schoeniclus</i>)	Amber	One male seen carrying food

One ptarmigan (BoCC Red) pair was recorded on Meall na Speirig, approximately 1500 m from the site boundary, with the female flushing from a nest containing three eggs.

3.4 Impact Assessment

This BBPP is based on the key findings from previous studies and subsequent pre-construction surveys. A summary of the findings and subsequent scoping is shown in Table 8.

Table 8: Species Scoping Table

Species	Summary of Results	Potential Impacts	Risk Rating	Protection Plan Required
Breeding Birds	Five schedule 1 species; crossbill, greenshank, red-throated diver, redwing and osprey were found to be potentially nesting within disturbance distance of the site. Suitable habitat for nesting raptor species, waders and common woodland nesting birds all within disturbance distance of the site.	Destruction or disturbance of nesting sites or young during felling and construction of tracks, turbine bases and overhead cable installation.	High	Yes

Section 4.0: Protection Plan

4.1 Breeding Birds

4.1.1 Legislation.

The Wildlife and Countryside Act (W&CA) 1981, as amended in Scotland, protects all breeding birds with a few exceptions (i.e., sporting birds listed in Schedule 2 and for certain specified purposes under licence). The W&CA makes it an offence to intentionally or recklessly:

- kill, injure or take a wild bird;
- take, damage, destroy or interfere with the nest of any wild bird whilst it is in use or being built (or at any time for a nest habitually used by any species listed in Schedule A1);
- obstruct or prevent any wild bird from using its nest;
- take or destroy and egg of any wild bird;
- disturb any wild bird listed on Schedule 1 whilst building a nest or is in/on/near a nest containing eggs/young or whilst lekking; and
- disturb the dependent young of any wild bird listed on Schedule 1.

Recklessly in this context is to be understood as pursuing a course of action while consciously disregarding the fact that the action gives rise to a substantial and unjustifiable risk.

Schedule 1 is a list of rare bird species that are afforded extra protection during breeding in the UK. Two additional Schedules (Schedule 1A and Schedule A1) been created to afford further protection to some species included on Schedule 1. This additional protection makes it an offence to intentionally or recklessly:

- At any time, damage, destroy or interfere with any nest habitually used by any wild bird included in Schedule A1; and
- At any time harass any wild bird included in Schedule 1A.

The Conservation of Habitats and Species Regulations 1994 (as amended), commonly known as the Habitat Regulations, places a duty on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds. Several bird species are classified as 'Species of Principal Importance' under the Nature Conservation (Scotland) Act 2004 which makes these species capable of being material considerations in the planning process.

The reader should refer to the original legislation for the definitive interpretation.

4.2 Site Conditions

The site is predominantly moorland and peat bog suitable for a range of upland and moorland bird species. This includes an assemblage of breeding upland waders including greenshank, golden plover, snipe and dunlin. Black grouse are also confirmed as present and have been observed displaying at leks within 500 m of the site. Breeding raptors such as kestrel and osprey were recorded outwith the site boundary but their nests may lie within the distance considered to cause disturbance.

Red-throated diver have the potential to breed on any of the lochans throughout site as they have attempted to do so throughout the baseline surveys.

Other breeding birds, such as red grouse, meadow pipit and skylark, which are not considered to have as high conservation priority as the waders in this location, could also breed anywhere on the site. The only ground-nesting bird recorded on site that is protected under Schedule 1 of the WCA is greenshank although dunlin and golden plover are Annex I species and treated as if they were WCA Schedule 1 under the mitigation scheme described in section 4.4.

4.3 Potential Impacts

4.3.1 Construction

Vegetation removal could lead to unintentional killing/injury and disturbance of nesting birds. Once vegetation removal is complete, areas of ground potentially suitable for nesting waders and raptors will be present and subsequent construction activities, such as access creation, could leave ground nesting birds

vulnerable to nest damage/destruction. Birds breeding off-site and foraging birds could also be at risk from noise/visual disturbance from personnel, equipment or site vehicles during felling and construction. High levels of disturbance could potentially cause nest failure or increase the risk of predation. Crossbill spp, greenshank, red-throated diver, redwing and osprey all of which are included on Schedule 1 of the W&CA were identified in pre-construction surveys carried out in 2023. As these species are legally protected from disturbance whilst around their nest (including disturbance of dependent young), it is important that nests are identified and appropriately buffered.

4.3.2 Operation

The EIA for both Lochluichart Wind Farm and Lochluichart Wind Farm Extension found no likely significant effect of the development on birds during operation. Therefore, no mitigation measures are included for the operational phase in the BBPP.

4.4 Mitigation Measures

The following mitigation measures are proposed to minimise the impact of the development on breeding birds during the construction activities.

Table 9: Breeding Bird Species Protection Plan

Controls/Mitigation Measures	Reason	Responsibility	Phase
BBPP and Habitat Management Plan to be produced and implemented by an Ecological/Environmental Clerk of Works (ECoW) who would have the authority to intervene during the works including the powers to stop works if necessary.	To provide oversight of mitigation measures and check adherence to works method statements.	Ecologist/ Contractor	All Times
Site access should be by marked tracks wherever possible & site speed limit to be obeyed	To prevent disturbance of birds and damage to birds' nests.	Contractor	Construction
Toolbox talks identifying site sensitivities to be provided to all staff through the site induction and during daily meetings as required.	To alert the workforce to the presence of breeding birds in the vicinity of the works and the mitigation measures that are to be put in place.	Ecologist/ Contractor	Construction
Vegetation clearance should be undertaken outside of the breeding bird season where possible (01 April to 15 August in this locale, due to the latitude). In the event that it is necessary to undertake ground clearance outwith these times then the area shall be subject to a pre-construction survey for raptors, diver and breeding birds by a qualified ecologist no more than 24-hours before clearance occurs.	To prevent disturbance of birds and damage to birds' nests.	Contractor Ecologist	/ Breeding season (April - August).
During construction, walkover breeding bird surveys must be carried out within at least 500m of works between 01 April to 15 August on a regular basis, to attempt to detect breeding territories and nests. If a nest is	To provide accurate information ahead of works to ensure appropriate species protection buffers can be implemented during the works. Buffers to follow the	Contractor Ecologist	/ Breeding season (April - August).

Controls/Mitigation Measures	Reason	Responsibility	Phase
detected for any bird species, then an appropriate buffer zone would be employed to protect it from damage and/or disturbance.	distances set out in Table 10.		
If there is any evidence of red-throated divers breeding, no construction shall take place (or any vehicle movements) within a minimum 750m exclusion zone until the young have fledged or the breeding attempt has been confirmed as failed by a suitably qualified ecologist.	To prevent disturbance of breeding red-throated divers.	Contractor / Ecologist	Breeding season (April - August).
If there is any evidence of black grouse lek(s), no construction shall take place (or any vehicle movements) within a minimum 750m exclusion zone before 9am in the months of April and May inclusive.	To prevent disturbance of breeding black grouse.	Contractor / Ecologist	Breeding season (April - August).

If a nest is detected for any bird species during the surveys outlined in Table 9, then a buffer zone would be employed to protect it from damage and/or disturbance.

The buffer zone would be dependent upon the sensitivity of the species and its legal protection. Although legally only species listed on Schedule 1 of the Wildlife and Countryside Act (WCA) are protected from disturbance at or around their nest, for the purposes of the project, disturbance to Annex I species would also be minimised to try to reduce impacts on any nests which may occur. Table 10 sets out the buffer zones to be employed for the species recorded on or around the site. These are based on published guidance (Goodship & Furness, 2022) which would also be used for any species not listed but which is found during surveys.

Two buffer distances have been provided; one in which no activity can occur and the second in which the ECoW can authorise work following a risk assessment to identify whether disturbance could occur and if so whether this would be illegal (Schedule 1 species) or likely to cause an adverse impact on the breeding birds. The ECoW may exercise additional professional judgement in the application of both buffer zones, if there are mitigating circumstances that mean disturbance would be highly unlikely, such as where breeding locations are visually separated from the work site (e.g., by topography) and works would not cause auditory or other disturbance.

Once the access tracks are completed the track can be used for vehicle movements provided the ECoW has assessed that the predicted volume of vehicle movements will not affect any species protection buffers that may be in place. Once the track is complete, and the first breeding season is over, then it is assumed that any birds breeding within disturbance distance of the track (see buffers listed in Table 10) in subsequent seasons will be tolerant of vehicle movements and therefore no general restrictions will be placed on these. However, this will be kept under review by the ECoW and additional mitigation, such as reduced speed limits, may be put in place if particularly sensitive species nest within disturbance distance of the track. Restrictions on stopping and alighting from vehicles will be in place throughout construction and will be determined by the ECoW on the basis of the construction phase bird checks.

Factors to be considered before works can be carried out within the discretionary buffer zone would include: stage of the breeding season; species disturbance sensitivity; visibility of the works; noise generation by the works; duration of the works; equipment and personnel likely to be used during the works.

Table 10: Buffer zones for breeding birds

Species	Buffer Area where No Work can Occur	Buffer Area where Work can Proceed on Approval by ECoW
Red-Throated Diver	0-500 m from nest/territory centre	500 m to 750 m from nest/territory centre
Black Grouse	0-500 m from lekking males 0-100 m from nesting female	500-750 m from lekking males 100-150 m from nesting females
Osprey	0-350 m from nest/territory centre	350-750 m from nest/territory centre
Greenshank	0 to 300 m from nest	300 - 500 m from nest
Golden plover	0 to 200 m from nest	200 - 500 m from nest
Kestrel	0 - 100 m from nest	100 - 200 m from nest
Dunlin	0 - 100 m from nest	100 - 200 m from nest
Redwing	0 - 100 m from nest	100 - 250 m from nest
Crossbill spp.	0 - 50 m from nest	50 - 200 m from nest
Other Schedule 1 species	As per Goodship & Furness	As per Goodship & Furness
Other Annex I species	As per Goodship & Furness	As per Goodship & Furness
Other species	0 to 5 m radius	5 to 10 m radius

4.5 Emergency Procedure

Should a bird species or nest be encountered unexpectedly during site works, the following emergency procedure should be followed:

- Stop the activity being undertaken immediately.
- The ECoW and Site Agent or Project Manager will be informed.
- The ECoW is to confirm presence of species and/or nest(s), establish a suitable buffer zone, and consult NatureScot (if appropriate) over suitable mitigation measures to implement.

No works should resume until written approval, detailing any appropriate mitigation, has been given by the Site Agent and the ECoW.

Section 5.0: References

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Figures

Figure	Title
Figure 1	Designated sites
Figure 2	Breeding Raptor Survey Results 2023
Figure 3	Breeding Diver Survey Results 2023
Figures 4.1 - 4.5	Breeding Wader Territories 2023
Figure 5	Grouse Leks 2023
Figure 6	Breeding Raptor Survey Results 2024
Figure 7	Breeding Diver Survey Results 2024
Figure 8.1 – 8.5	Breeding Wader Territories 2024
Figure 9	Grouse Leks 2024

Appendix A: 2023 Survey Dates and Weather Conditions

2023 Moorland Bird Survey Dates and Weather Conditions

Visit Number	Survey Date	Surveyor	Start Time	End Time	Cloud (8ths)	Cover	Temp (°C)	Visibility	Wind Speed (Beaufort)	Wind Direction	Precipitation
1	10/04/2023	AC/JAR	0900	1700	6		9	Excellent	3	SW	-
1	11/04/2023	AC/JAR	0900	1700	4		6	Excellent	4	SW	Scattered showers
1	12/04/2023	AC/JAR	0900	1700	5		6	Excellent	4	SW	-
1	13/04/2023	AC/JAR	0900	1700	4		8	Excellent	3	E	-
1	19/04/2023	AC	0900	1700	3		10	Excellent	4	NW	-
1	25/04/2023	JAR	0900	1700	2		4	Excellent	4	W	-
2	04/05/2023	JAR	0900	1700	3		11	Excellent	3	SE	-
2	15/05/2023	AC/JAR	0900	1700	4		10	Excellent	3	SW	Scattered showers
2	16/05/2023	JAR	0900	1700	5		12	Excellent	4	W	Scattered showers
2	18/05/2023	AC/JAR	0900	1700	3		13	Excellent	5	SW	-
2	19/05/2023	AC	0900	1700	7		13	Excellent	2	N	-
3	12/06/2023	AC/JAR	0900	1700	4		15	Excellent	5	NW	-
3	13/06/2023	AC/JAR	0900	1700	8		16	Excellent	4	N	-
3	14/06/2023	AC/JAR	0900	1700	0		19	Excellent	5	N	-
3	15/06/2023	JAR	0900	1700	0		20	Excellent	5	N	-
3	16/06/2023	AC	0900	1700	0		19	Excellent	2	N	-
3	30/06/2023	AC	0900	1700	2		15	Excellent	3	W	-
4	04/07/2023	AC	0900	1700	4		10	Excellent	3	N	-
4	05/07/2023	AC/JAR	0900	1700	7		13	Excellent	4	N	-
4	06/07/2023	AC/JAR	0900	1700	3		15	Excellent	3	N	-
4	10/07/2023	JAR	0900	1700	2		17	Excellent	4	SW	-
4	12/07/2023	AC	0900	1700	7		14	Excellent	3	SW	Scattered showers
4	14/07/2023	JAR	0900	1700	5		13	Excellent	4	NE	-

2023 Raptor Survey Dates and Weather Conditions

Visit Number	Survey Date	Surveyor	Start Time	End Time	Cloud Cover (8ths)	Temp (°C)	Visibility	Wind Speed (Beaufort)	Wind Direction	Precipitation
1	10/04/2023	AC/JAR	0900	1700	6	9	Excellent	3	SW	-
1	11/04/2023	AC/JAR	0900	1700	4	6	Excellent	4	SW	Scattered showers
1	12/04/2023	AC/JAR	0900	1700	5	6	Excellent	4	SW	-
1	13/04/2023	AC/JAR	0900	1700	4	8	Excellent	3	E	-
1	19/04/2023	AC	0900	1700	3	10	Excellent	4	NW	-
1	25/04/2023	JAR	0900	1700	2	4	Excellent	4	W	-
2	04/05/2023	JAR	0900	1700	3	11	Excellent	3	SE	-
2	15/05/2023	AC/JAR	0900	1700	4	10	Excellent	3	SW	Scattered showers
2	16/05/2023	JAR	0900	1700	5	12	Excellent	4	W	Scattered showers
2	18/05/2023	AC/JAR	0900	1700	3	13	Excellent	5	SW	-
2	19/05/2023	AC	0900	1700	7	13	Excellent	2	N	-
3	12/06/2023	AC/JAR	0900	1700	4	15	Excellent	5	NW	-
3	13/06/2023	AC/JAR	0900	1700	8	16	Excellent	4	N	-
3	14/06/2023	AC/JAR	0900	1700	0	19	Excellent	5	N	-
3	15/06/2023	JAR	0900	1700	0	20	Excellent	5	N	-
3	16/06/2023	AC	0900	1700	0	19	Excellent	2	N	-
3	30/06/2023	AC	0900	1700	2	15	Excellent	3	W	-
4	04/07/2023	AC	0900	1700	4	10	Excellent	3	N	-
4	05/07/2023	AC/JAR	0900	1700	7	13	Excellent	4	N	-
4	06/07/2023	AC/JAR	0900	1700	3	15	Excellent	3	N	-
4	10/07/2023	JAR	0900	1700	2	17	Excellent	4	SW	-
4	12/07/2023	AC	0900	1700	7	14	Excellent	3	SW	Scattered showers
4	14/07/2023	JAR	0900	1700	5	13	Excellent	4	NE	-

2023 Black Grouse Survey Dates and Weather Conditions

Visit Number	Survey Date	Surveyor	Start Time	End Time	Cloud Cover (8ths)	Temp (°C)	Visibility	Wind Speed (Beaufort)	Wind Direction	Precipitation
1	29/03/2023	AC	0550	0750	4	5	Excellent	0	N	-
1	30/03/2023	AC/JAR	0550	0750	3	4	Excellent	1	SW	-
1	31/03/2023	AC/JAR	0550	0750	4	4	Excellent	0	N	-
2	07/04/2023	AC/JAR	0520	0720	3	0	Excellent	1	SW	-
2	25/04/2023	JAR	0520	0720	2	1	Excellent	1	SW	-
3	01/05/2023	AC	0450	0650	8	9	Excellent	2	W	-
3	02/05/2023	AC	0450	0650	0	1	Excellent	0	N	-
3	03/05/2023	AC/JAR	0450	0650	3	5	Excellent	1	N	-
4	16/05/2023	AC	0420	0630	5	7	Excellent	2	SW	-
4	17/05/2023	AC/JAR	0420	0630	8	8	Excellent	0	N	-

2023 Diver Survey Dates and Weather Conditions

Visit Number	Survey Date	Surveyor	Start Time	End Time	Cloud Cover (8ths)	Temp (°C)	Visibility	Wind Speed (Beaufort)	Wind Direction	Precipitation
1	30/05/2023	AC	0900	1700	4	12	Excellent	2	N	-
2	11/07/2023	JAR	0900	1500	8	14	Excellent	3	W	Light rain
3	31/07/2023	JAR	0900	1500	8	13	Excellent	2	N	Light rain

Appendix B: 2024 Survey Dates and Weather Conditions

2024 Moorland Bird Survey / Raptor Survey Dates and Weather Conditions

Visit Number	Survey Date	Surveyor	Start Time	End Time	Cloud (8ths)	Cover	Temp (°C)	Visibility	Wind Speed (Beaufort)	Wind Direction	Precipitation
1	09/04/2024	AC/SC	0900	1700	8		8		2	SW	Light showers
1	10/04/2024	AC/SC	0900	1700	8		8		3	SW	Light showers
1	11/04/2024	AC/SC	0900	1700	0		14		5	S	None
1	12/04/2024	AC/SC	0900	1700	4		15		4	SW	None
2	07/05/2024	AC/EP	0900	1700	7		15		1	NE	None
2	08/05/2024	AC/EP	0900	1700	8		12		5	SE	Light showers
2	09/05/2024	AC/EP	0900	1700	5		16		3	S	None
2	10/05/2024	AC/EP	0900	1700	5		19		2	S	None
3	04/06/2024	AC/EP	0900	1700	6		8		5	W	Heavy showers
3	05/06/2024	AC/EP	0900	1700	5		9		4	W	Light showers
3	06/06/2024	AC/EP	0900	1700	4		10		3	W	Light showers
3	07/06/2024	AC/EP	0900	1700	6		9		4	W	Light showers
4	01/07/2024	EP	0900	1700	6		13		3	W	None
4	02/07/2024	AC/EP	0900	1700	6		15		3	W	Light showers
4	03/07/2024	AC/EP	0900	1700	6		16		3	SW	Light showers
4	05/07/2024	AC/EP	0900	1700	5		15		2	W	None
4	08/07/2024	AC/EP	0900	1700	4		15		1	N	None

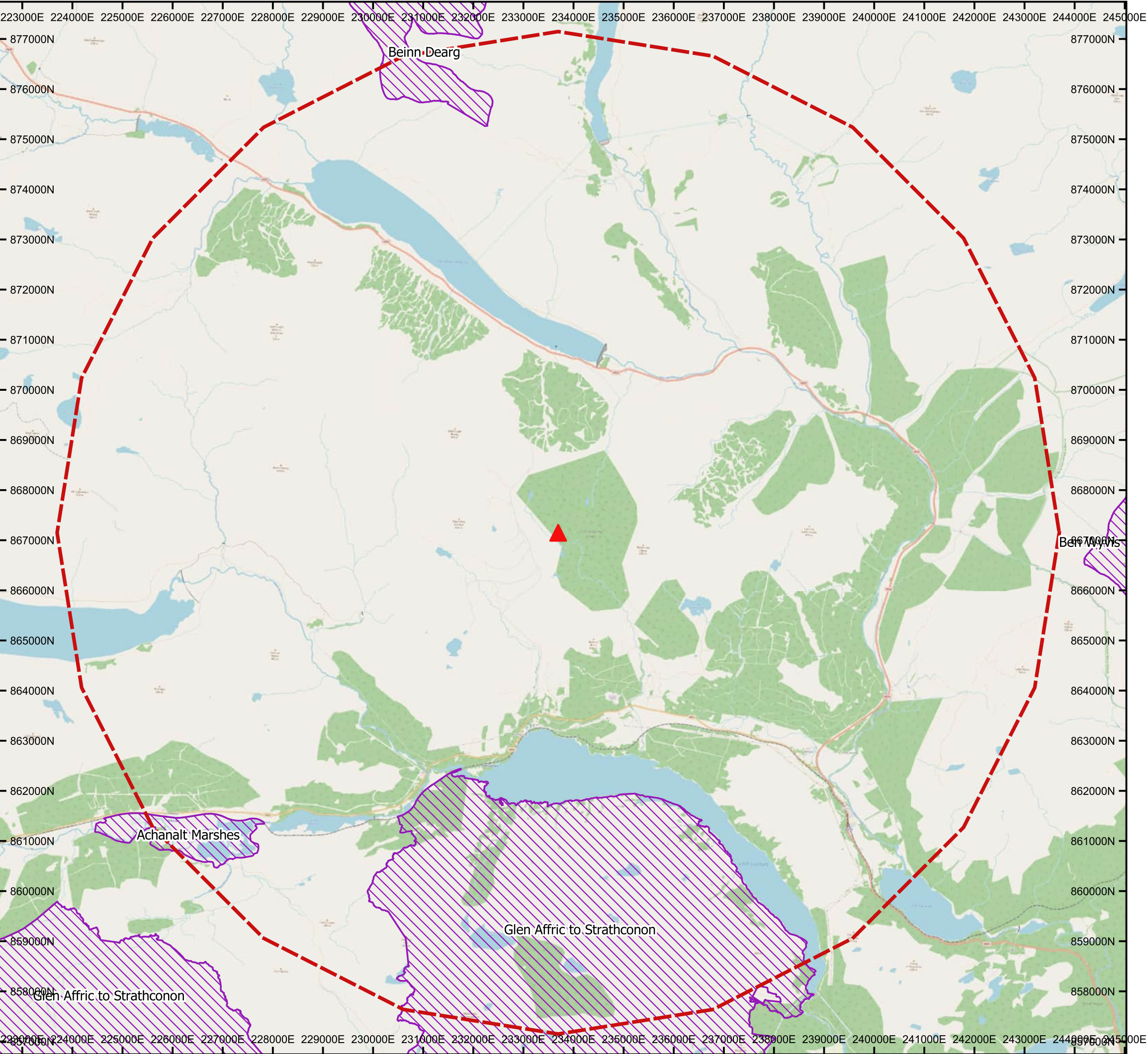
2024 Black Grouse Survey Dates and Weather Conditions

Visit Number	Survey Date	Surveyor	Start Time	End Time	Cloud Cover (8ths)	Temp (°C)	Visibility	Wind Speed (Beaufort)	Wind Direction	Precipitation
1	29/03/2024	AC	0545	0745	Start: 8 End: 2	4	Good	0 to 1	Unable to determine direction	Light intermittent drizzle
1	01/04/2024	SCr/JR	0540	0740	8	4	Good	1	NE	Light intermittent drizzle
1	18/04/2024	AC/SC/EP	0520	0720	8	5	Good	3	SW	Light intermittent drizzle
2	30/04/2024	AC/SC/JR	0445	0745	4	7	Good	1	NE	None
2	01/05/2024	AC/JR	0445	0745	3	8	Good	2	NE	None

2024 Diver Survey (on Corriemoillie Estate) Dates and Weather Conditions

Visit Number	Survey Date	Surveyor	Start Time	End Time	Cloud Cover (8ths)	Temp (°C)	Visibility	Wind Speed (Beaufort)	Wind Direction	Precipitation
1	30/05/2024	AC	1000	1500	2	15	Good	2	N	None
1	31/05/2024	AC	1000	1500	4	14	Good	2	W	None
2	11/07/2024	AC	1000	1500	3	15	Good	2	NW	None
2	12/07/2024	AC	1000	1500	5	15	Good	1	N	None
3	31/07/2024	AC	1000	1500	1	16	Good	1	NE	None
4	14/08/2024	AC	1000	1500	3	18	Good	3	W	None

Diver visits on Lochluichart Estate carried out by Colin Galbraith Environment Ltd:
April 10th, 19th, 21st, 24th
May 10th, 11th, 12th, 17th, 19th
June 5th, 8th, 25th, 26th
July 10th, 12th
August 1st.



Lochluichart Extension

Boralex Ltd.

Figure 1: Designated
Sites

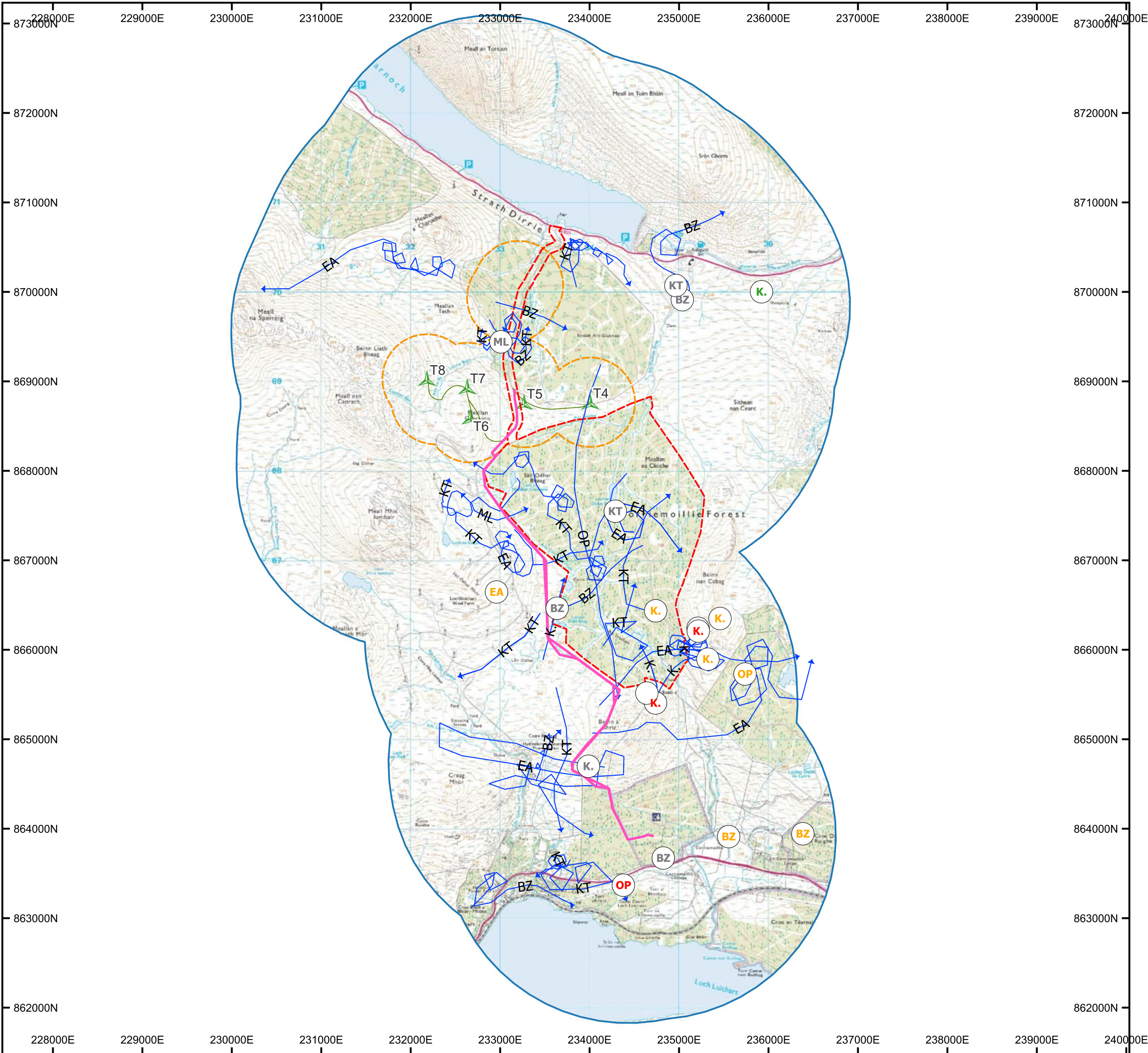
KEY

- Centre of Site
- 10km Buffer
- Special Protection Areas

0 1,000 2,000 m



Drawing Number: EC0d2072A		Project Number: 312771		
SHEET: A3	SCALE: 1:75,000	BY: JAR	QA: SC	REV: 1.0
Projection: OSGB 1936/British National Grid - EPSG 27700			Issue Date: 02/08/2023	



Lochluichart Extension

Boralex Ltd.

Figure 2: Raptor
Survey Results 2023

KEY

Buffer

- 2km Breeding Raptor Survey Area
- Turbine 500m Buffer
- Corriemoillie Wind Farm
- Access Tracks
- Cable Route

Turbine Layout

Combined Bird points

- Confirmed Breeding
- Probable breeding
- Possible breeding
- Non-breeding
- Other
- Combined Bird lines

0 900 1,800 m



Drawing Number: EC0d2073A

Project Number: 312771

SHEET:
A3

SCALE:
1:42,000

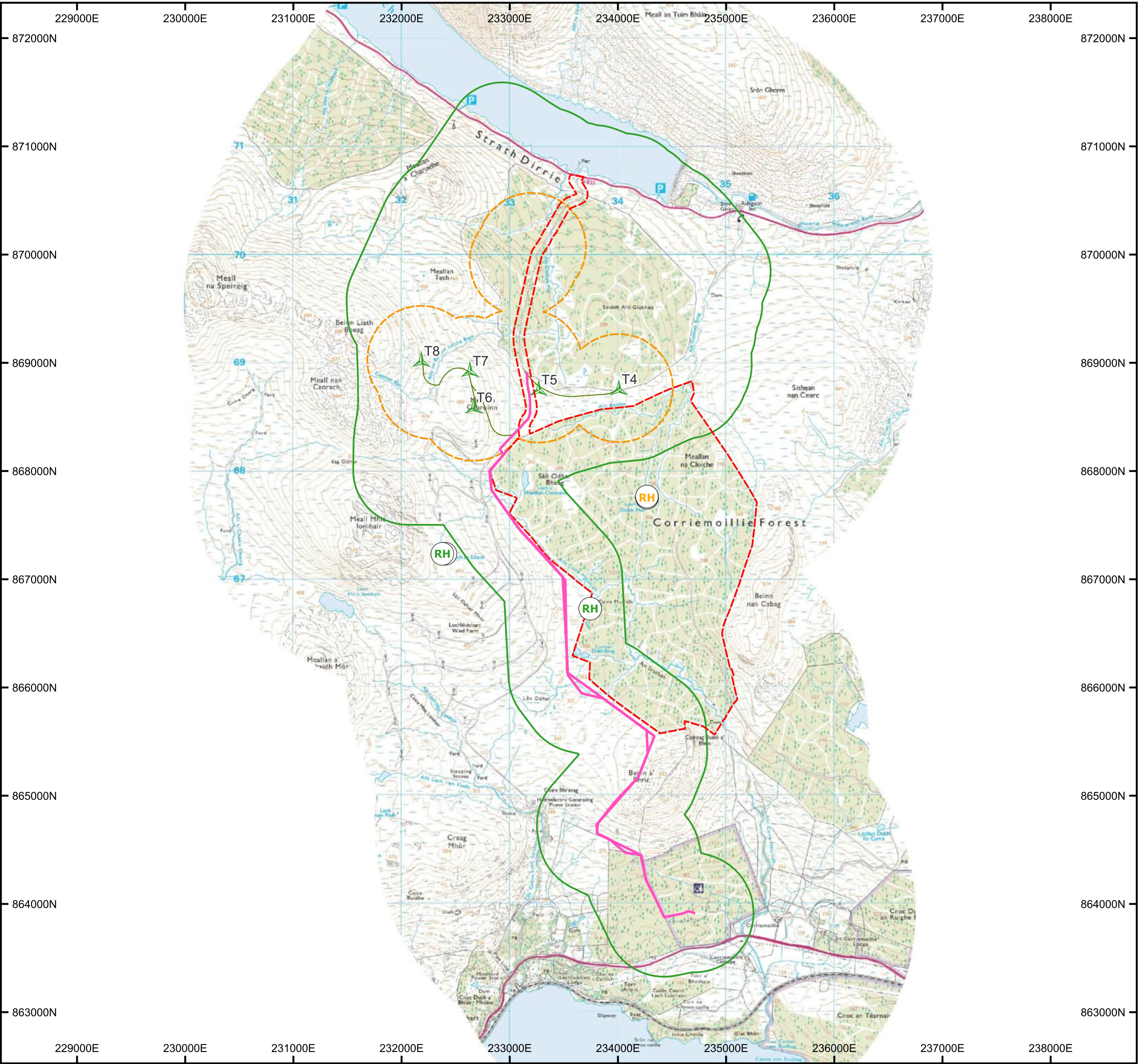
BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 01/08/2023



Lochluichart Extension

Boralex Ltd.

Figure 3: Diver Survey
Results 2023

KEY

Site Buffers

- Breeding Diver Survey Area
- Corriemoillie Wind Farm
- SI Works 500m Buffer
- Cable Route
- Access Tracks

Turbine Layout

Activity

- Probable breeding
- Possible breeding

0 700 1,400 m



Drawing Number: EC0d2074A

Project Number: 312771

SHEET:
A3

SCALE:
1:35,000

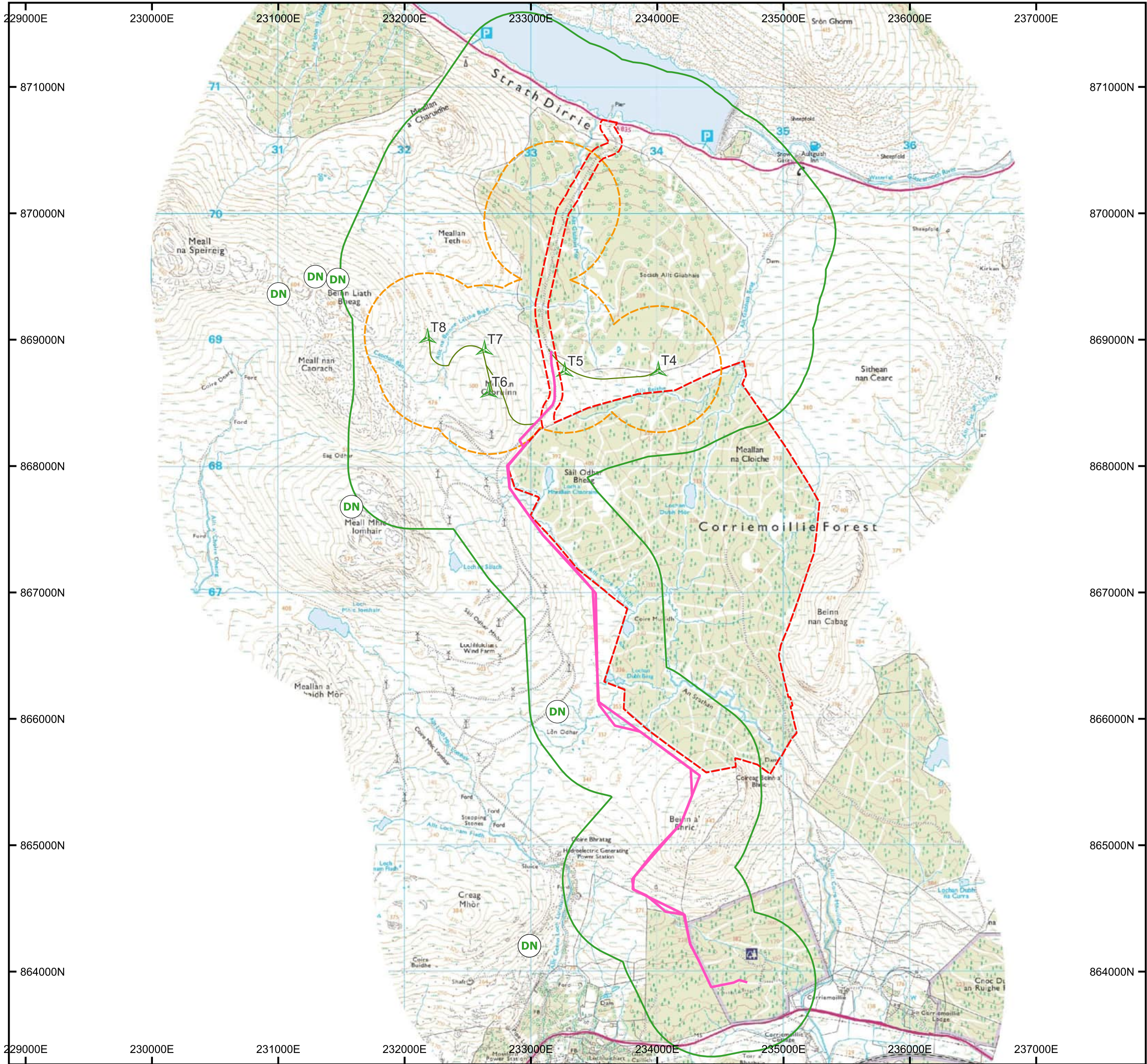
BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 01/08/2023



Lochluichart Extension

Boralex Ltd.

Figure 4.1: Dunlin
Survey Results 2023

KEY

Buffers

- MBBS Survey Area
- Corriemoillie Wind Farm
- SI Works 500 m Buffer
- Cable Route
- Access Tracks
- Turbine Layout

Activity

- Possible breeding

0 600 1,200 m



Drawing Number: ECod2075A

Project Number: 312771

SHEET:
A3

SCALE:
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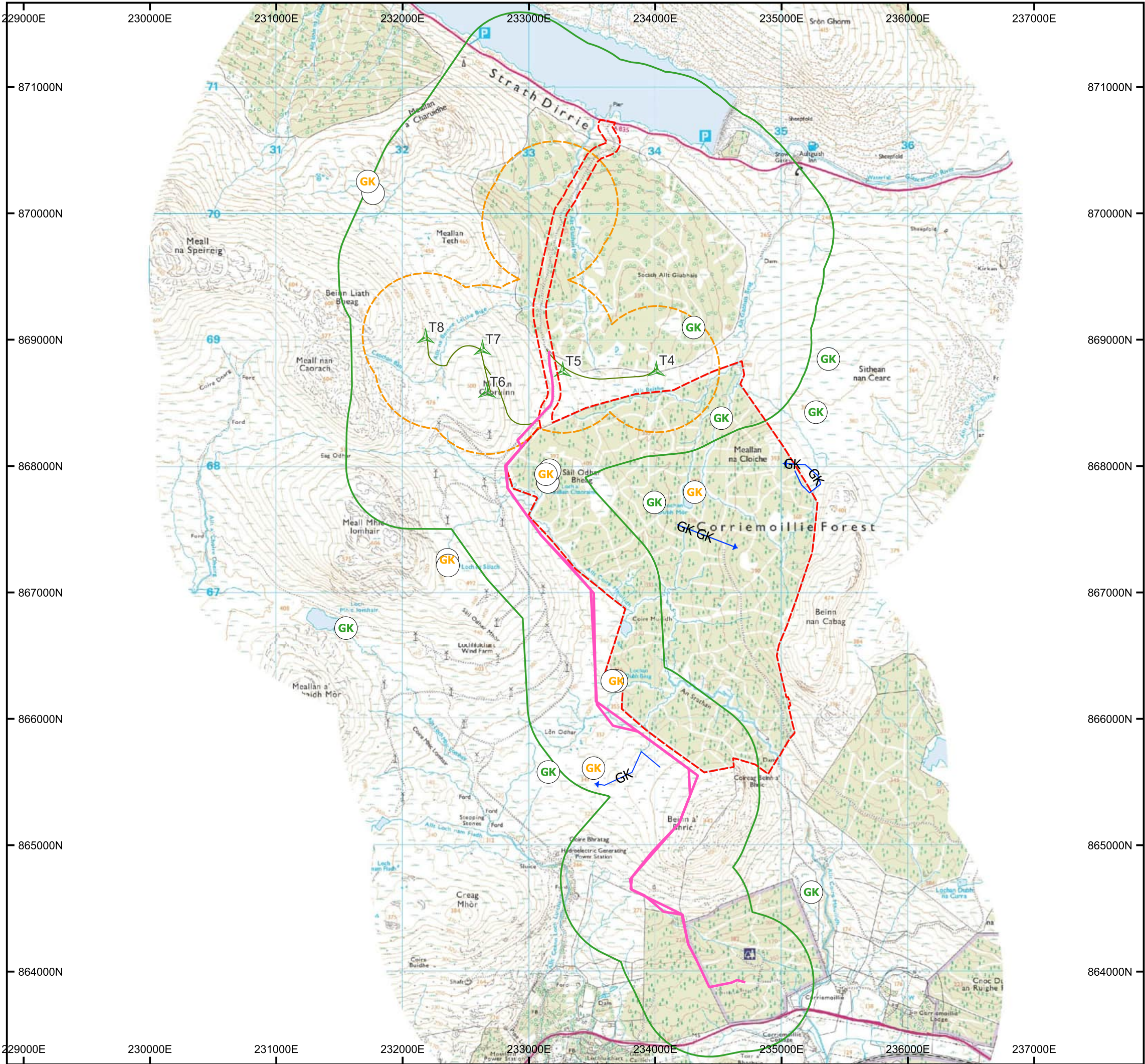
BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 02/08/2023



Lochluichart Extension

Boralex Ltd.

Figure 4.2: Greenshank
Survey Results 2023

KEY

Buffers

- MBBS Survey Area
- Corriemoillie Wind Farm
- SI Works 500 m Buffer
- Cable Route
- Access Tracks
- Turbine Layout

Activity

- Probable breeding
- Possible breeding
- Other

0 600 1,200 m



Drawing Number: EC0d2075A

Project Number: 312771

SHEET:
A3

SCALE:
1:30,000

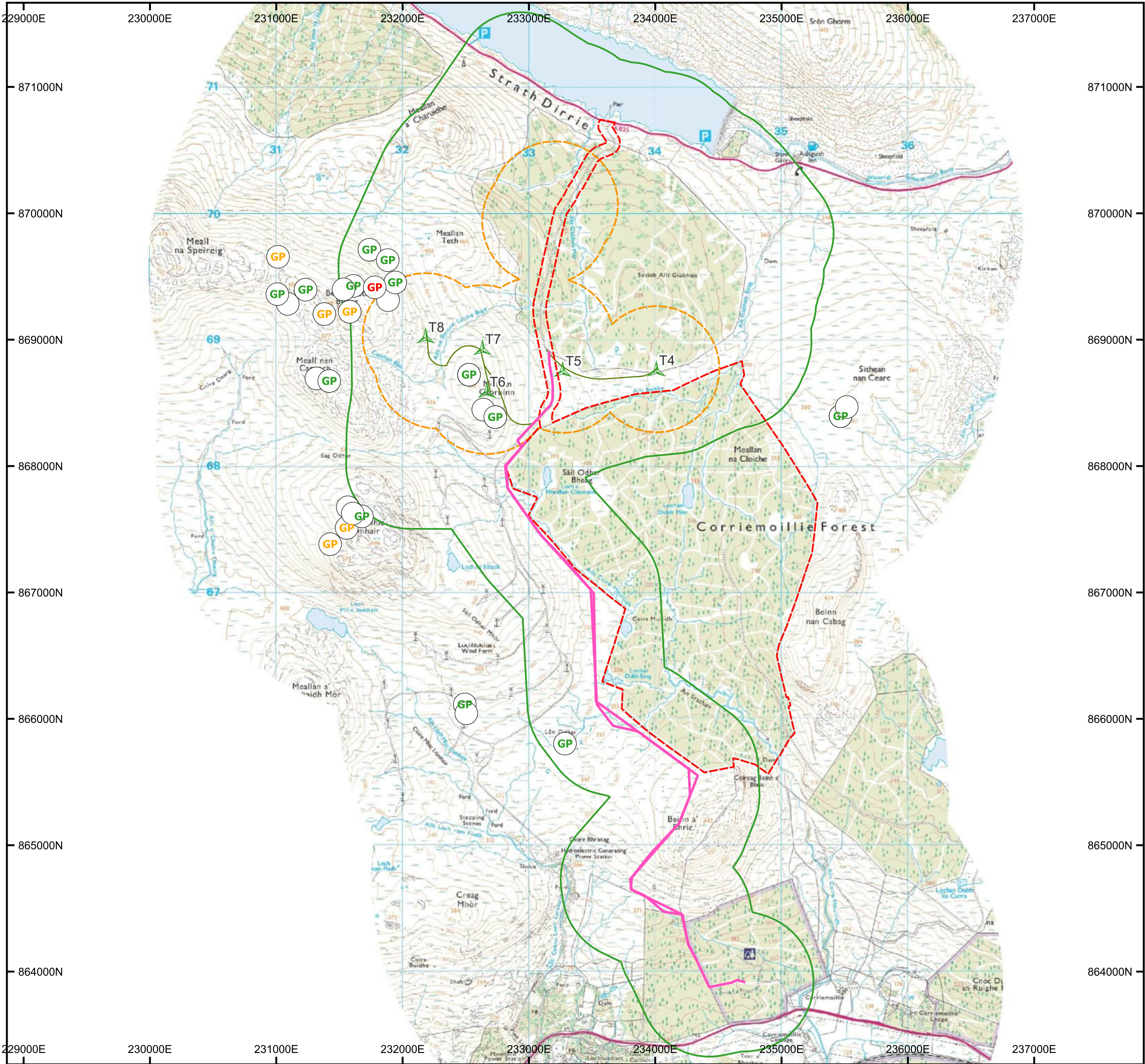
BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 02/08/2023



Lochluichart Extension

Boralex Ltd.

Figure 4.3: Golden
Plover Survey Results
2023

KEY

Buffers

- MBBS Survey Area
- Corriemoillie Wind Farm
- SI Works 500 m Buffer

- Cable Route
- Access Tracks

- Turbine Layout

Combined Bird points

- Confirmed Breeding
- Probable breeding
- Possible breeding
- Non-breeding
- Other

0 600 1,200 m



Drawing Number: ECod2075A

Project Number: 312771

SHEET:
A3

SCALE:
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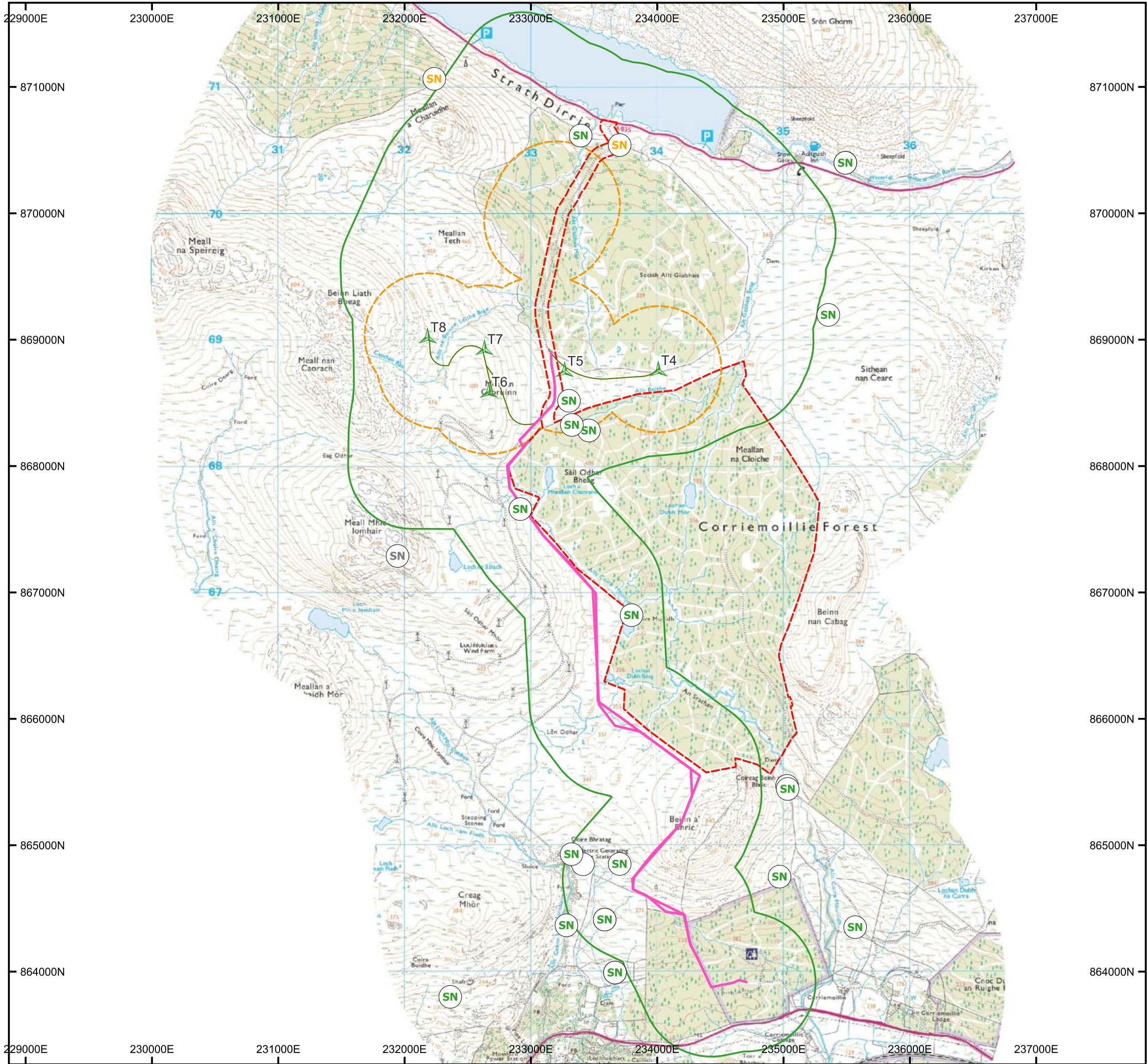
BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 02/08/2023



Lochluichart Extension

Boralex Ltd.

Figure 4.4: Snipe Survey
Results 2023

KEY

Buffers

- MBBS Survey Area
- Corriemoillie Wind Farm
- SI Works 500 m Buffer
- Cable Route
- Access Tracks

Turbine Layout

Combined Bird points

- Probable breeding
- Possible breeding
- Non-breeding
- Other

0 600 1,200 m



Drawing Number: EC0d2075A

Project Number: 312771

SHEET:
A3

SCALE:
1:30,000

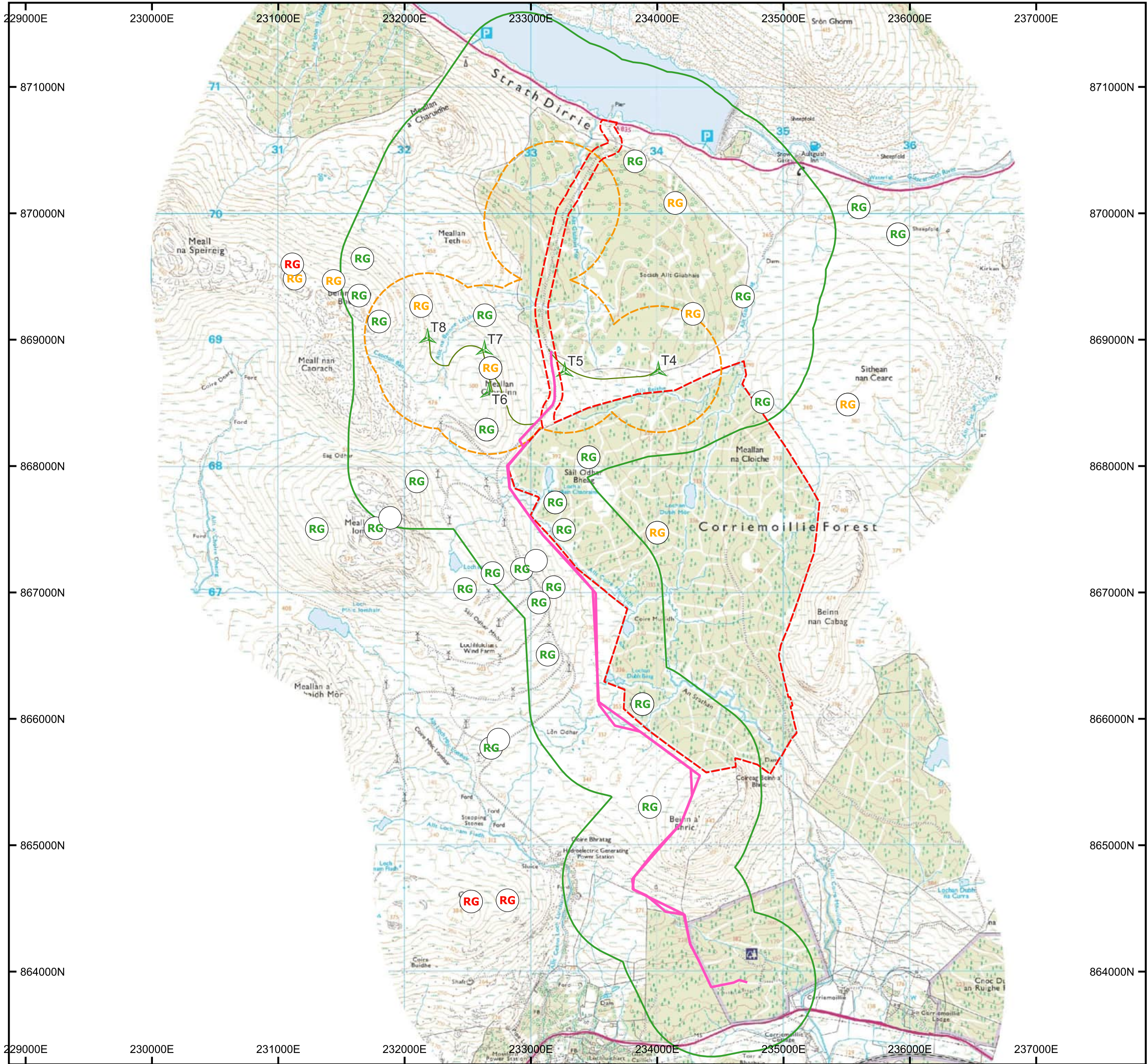
BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 02/08/2023



Lochluichart Extension

Boralex Ltd.

Figure 4.5: Red Grouse
Survey Results 2023

KEY

Buffers

- MBBS Survey Area
- Corriemoillie Wind Farm
- SI Works 500 m Buffer
- Cable Route
- Access Tracks
- Turbine Layout

Combined Bird points

- Probable breeding
- Possible breeding
- Non-breeding
- Other

0 600 1,200 m



Drawing Number: EC0d2075A

Project Number: 312771

SHEET:
A3

SCALE:
1:30,000

BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 02/08/2023



Lochluichart Extension

Boralex Ltd.

Figure 5: Black
Grouse Results 2023

KEY

Lochluichart_Combined_Buffers

- Black grouse survey area
- Corriemoillie WF
- Lochluichart SI Works 500 m Buffer
- Cable Route
- Access Tracks
- Turbine Layout

Activity

- Probable breeding
- Possible breeding
- Non-breeding
- Flight Lines

0 800 1,600 m



Drawing Number: EC0d2076A

Project Number: 312771

SHEET:
A3

SCALE:
1:38,000

BY: JAR

QA: SC

REV: 1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Issue Date: 02/08/2023

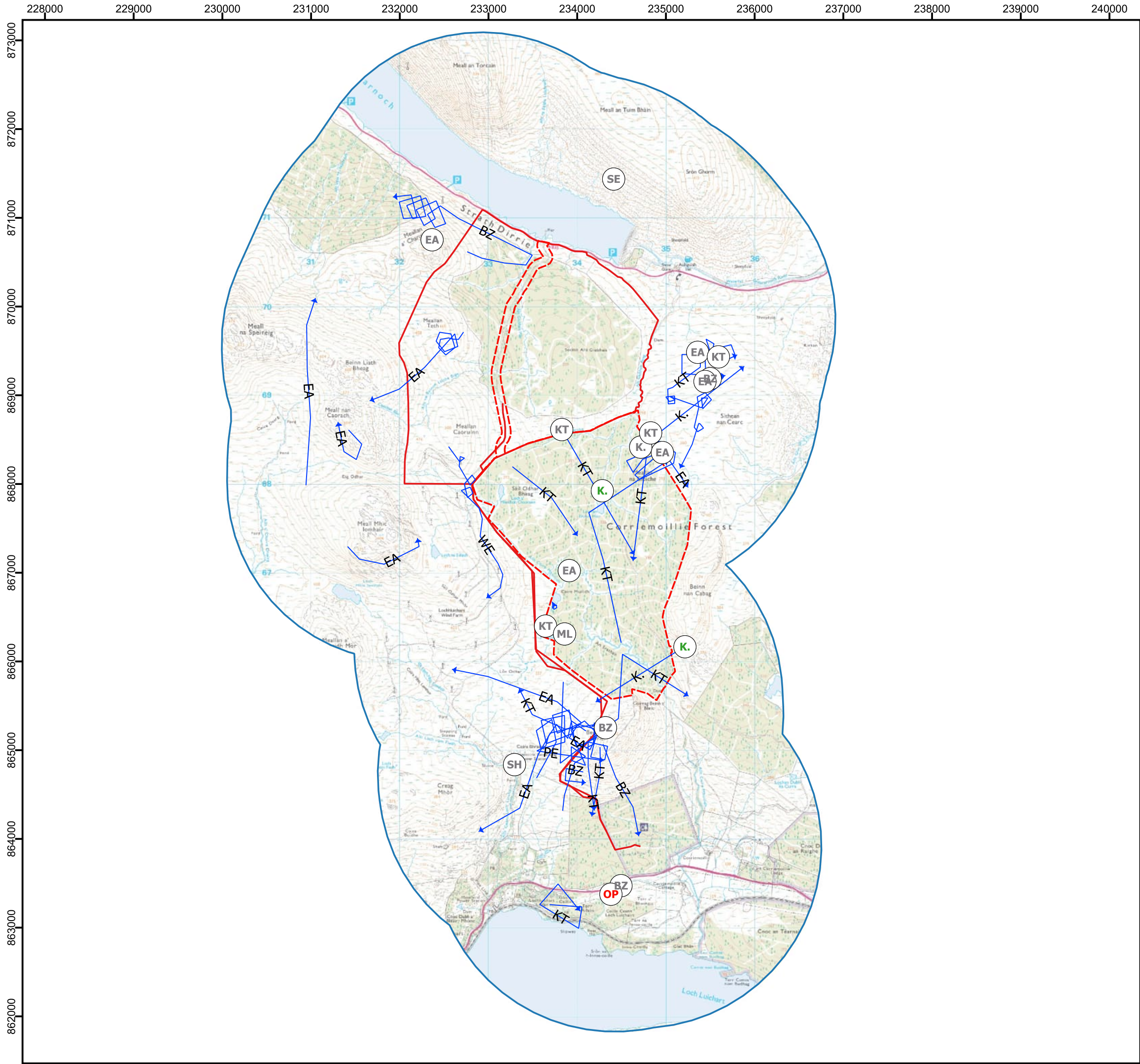


Figure 6: Raptor Survey Results
2024

Boralex Ltd.	Lochluichart Extension
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Key:

2km Breeding Raptor Survey Area 

Corriemoillie Wind Farm 

Lochluichart II Wind Farm 

Cable Route 

2024 Bird Points

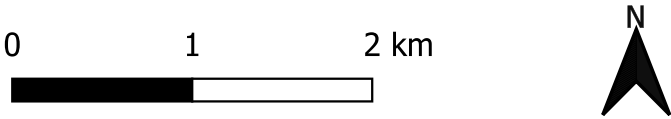
Confirmed Breeding 

Possible breeding 

Non-breeding 

Other 

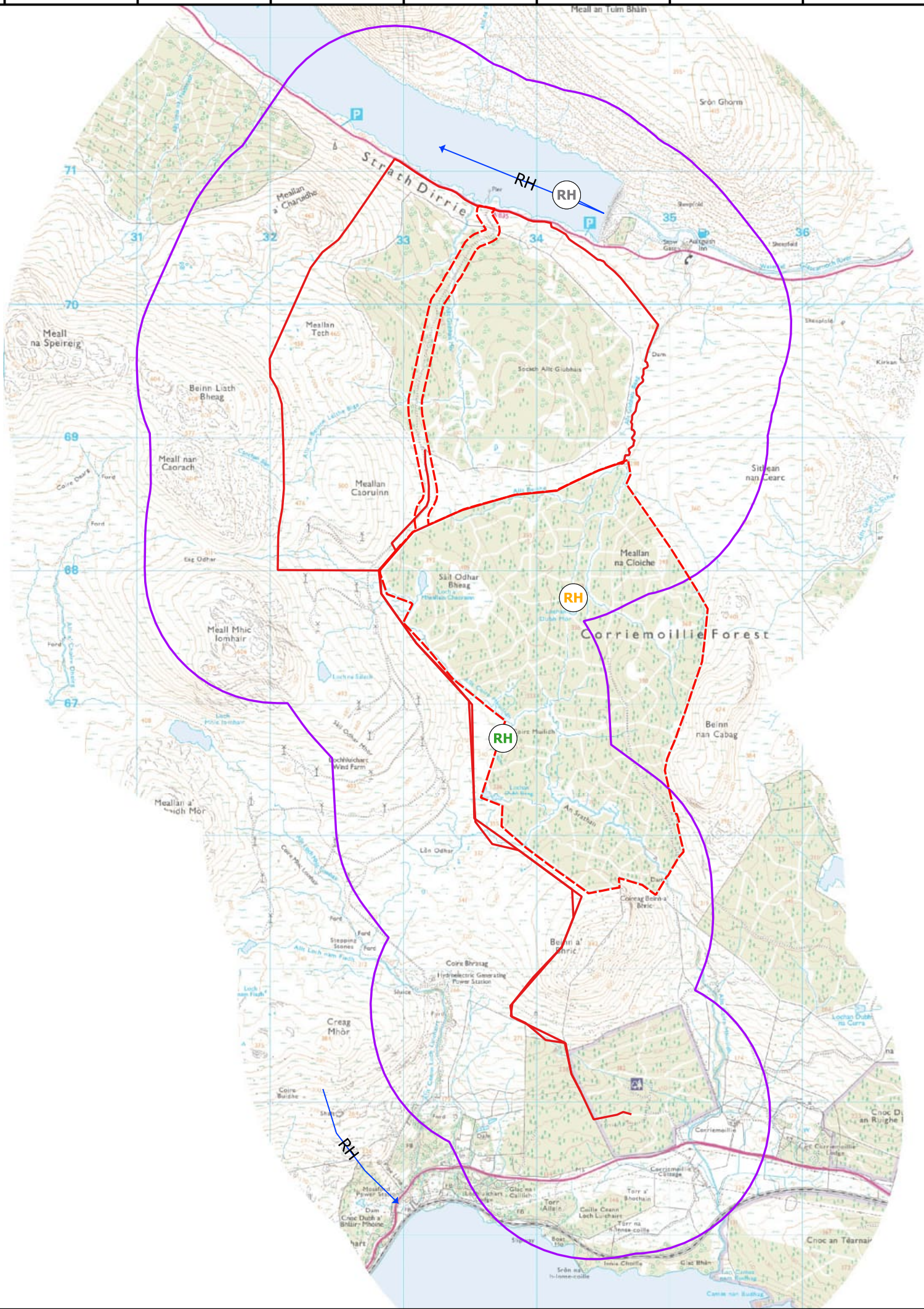
2024 Bird Lines 



Project Number: 314569	Scale at A3:
Drawn By: AC	1:42,000
Reviewed By: SC	Version: Final
Projection: OSGB 1936/British National Grid - EPSG 27700	Issue Date: 15/08/2024

229000 230000 231000 232000 233000 234000 235000 236000 237000 238000 239000

872000
871000
870000
869000
868000
867000
866000
865000
864000
863000



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Figure 7: Diver Survey Results
2024

Boralex Ltd.	Lochluichart Extension
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Key:

- Breeding Diver Survey Area
- Corriemoillie Wind Farm
- Lochluichart II Wind Farm
- Cable Route
- 2024 Bird Points
 - Probable breeding
 - Possible breeding
 - Non-breeding
 - Other
- 2024 Bird Lines

0 1 2 km



Project Number: 314569	Scale at A3:
Drawn By: AC	1:35,000
Reviewed By: SC	Version: Final
Projection: OSGB 1936/British National Grid - EPSG 27700	Issue Date: 15/08/2024

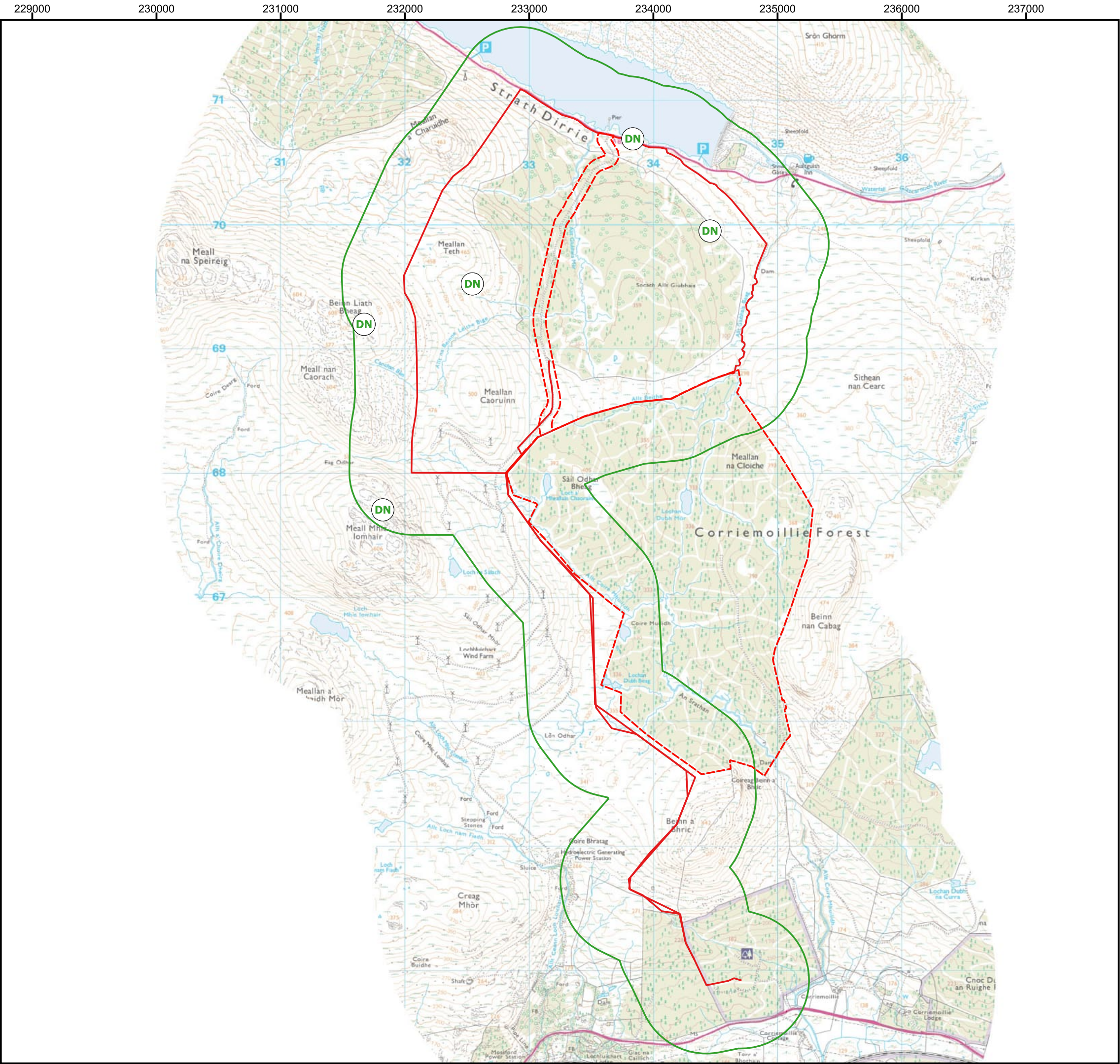


Figure 8.1: Dunlin Survey Results
2024

Boralex Ltd.	Lochluichart Extension
Key: MBBS survey area Corriemoillie Wind Farm Lochluichart II Wind Farm Cable Route Dunlin territories 2024 Possible breeding CH	
012 km N	
Project Number: 314569	Scale at A3:
Drawn By: AC	1:30,000
Reviewed By: SC	Version: Final
Projection: OSGB 1936/British National Grid - EPSG 27700	Issue Date: 02/09/2024

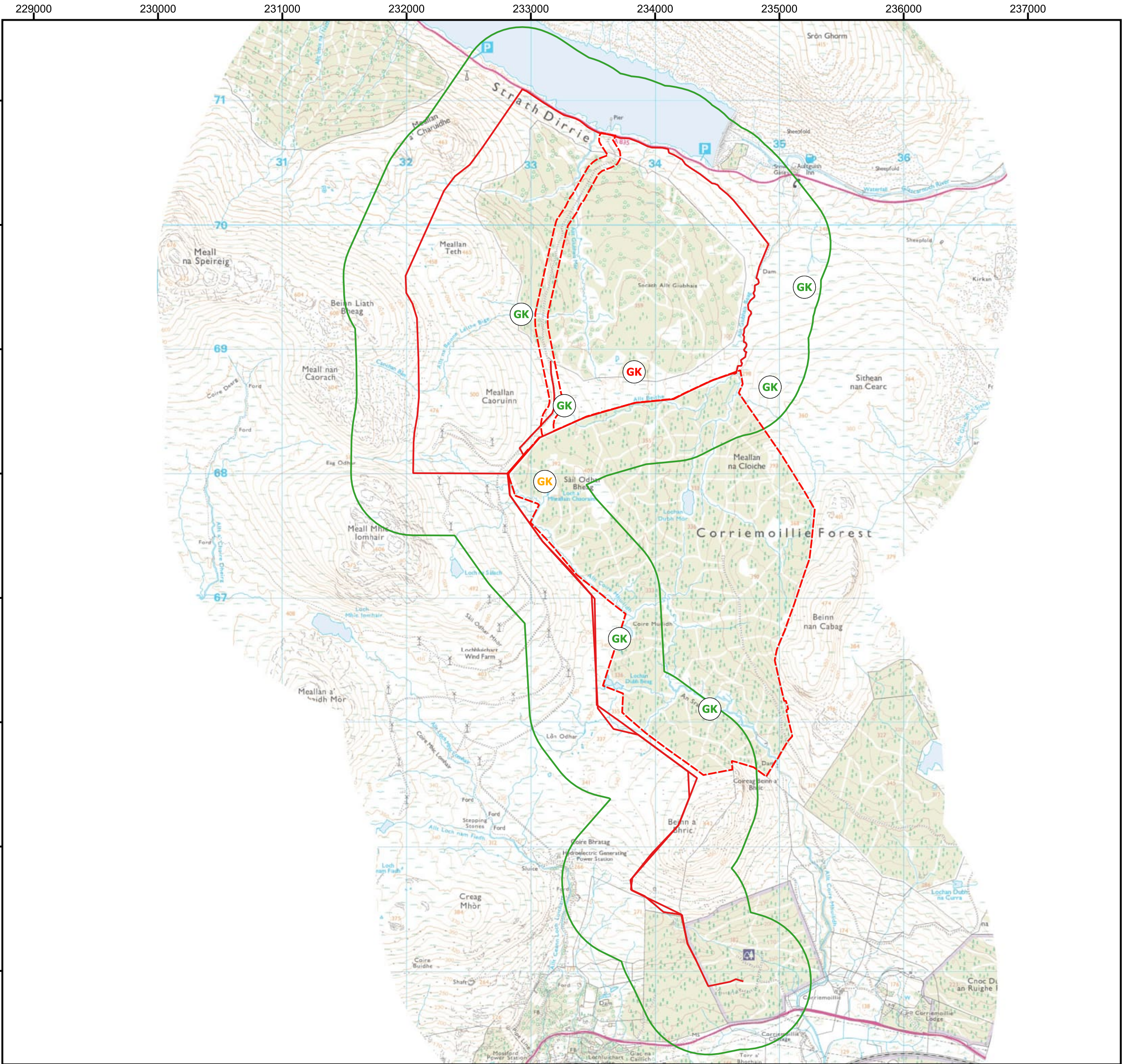


Figure 8.2: Greenshank Survey
Results 2024

Boralex Ltd.	Lochluichart Extension
Key: MBBS survey area Corriemoillie Wind Farm Lochluichart II Wind Farm Cable Route Greenshank territories 2024 Confirmed Breeding CH Probable breeding CH Possible breeding CH	
012 km N	
Project Number: 314569	Scale at A3:
Drawn By: AC	1:30,000
Reviewed By: SC	Version: Final
Projection: OSGB 1936/British National Grid - EPSG 27700	Issue Date: 02/09/2024

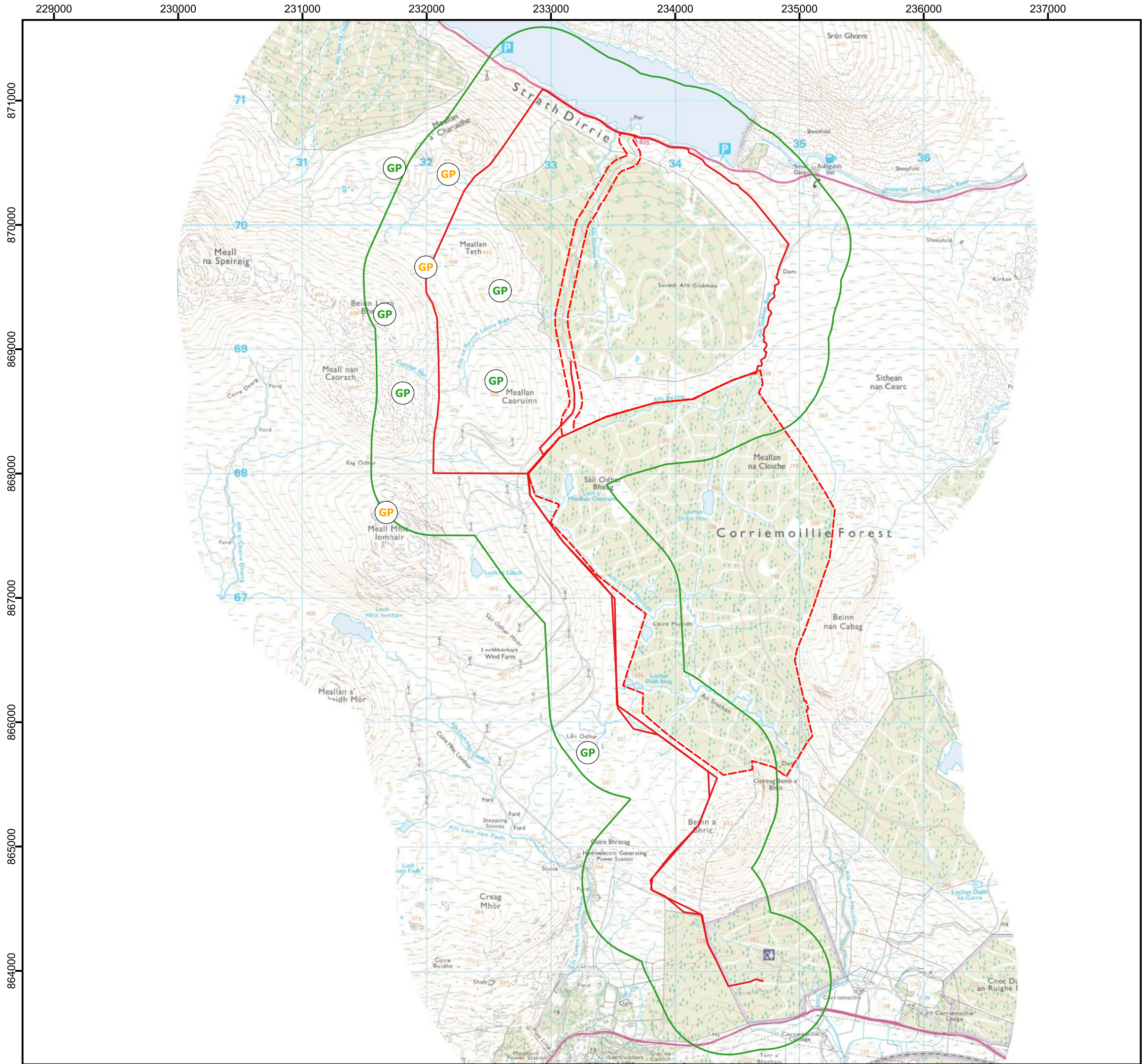
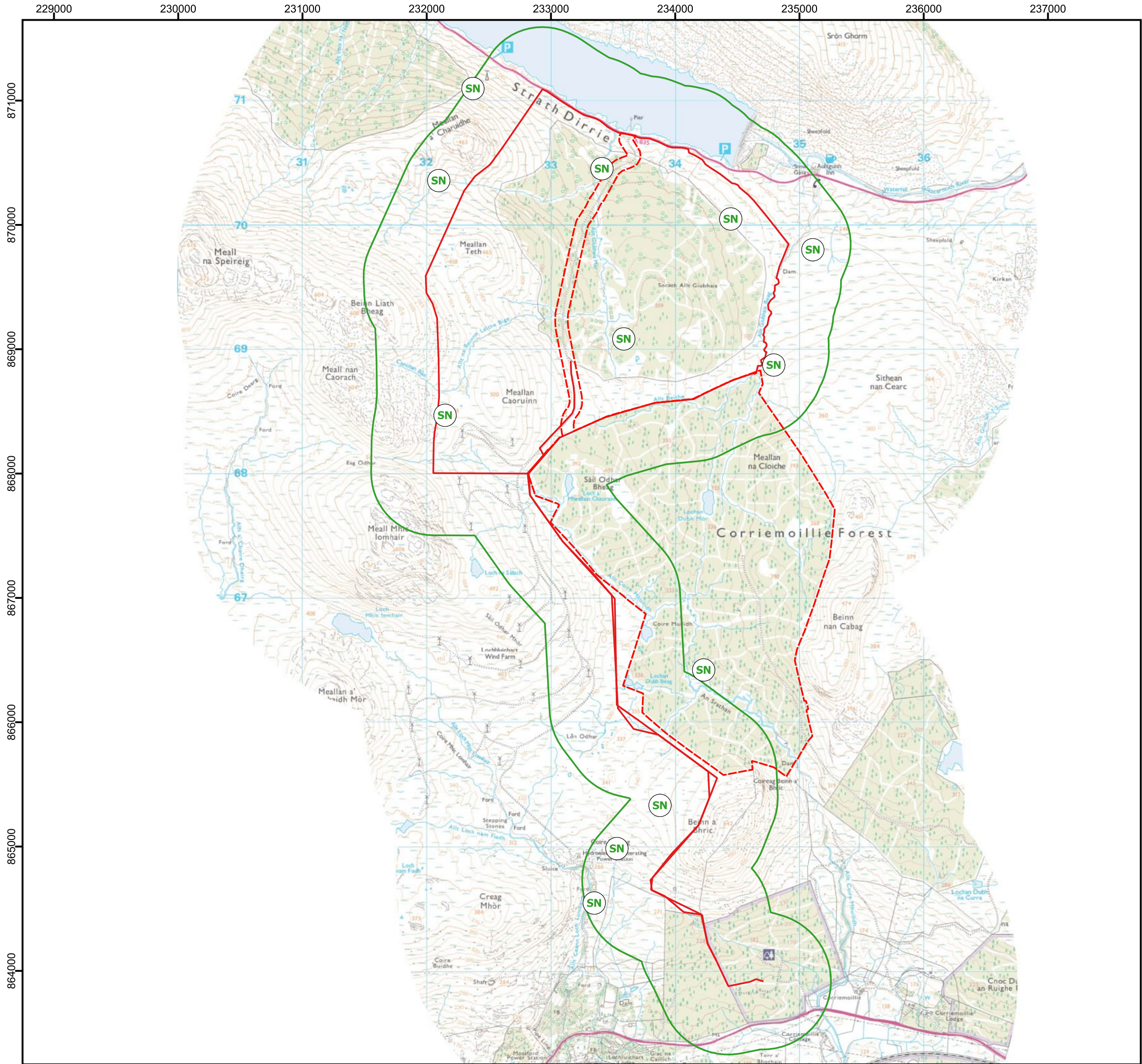


Figure 8.3: Golden Plover Survey Results 2024

Boralex Ltd.		Lochluichart Extension	
Key: MBBS survey area  Corriemoillie Wind Farm  Lochluichart II Wind Farm  Cable Route  Golden plover territories 2024 Probable breeding  Possible breeding 			
0 1 2 km 		N 	
Project Number: 314569		Scale at A3: 1:30,000	
Drawn By: AC			
Reviewed By: SC		Version: Final	
Projection: OSGB 1936/British National Grid - EPSG 27700		Issue Date: 02/09/2024	



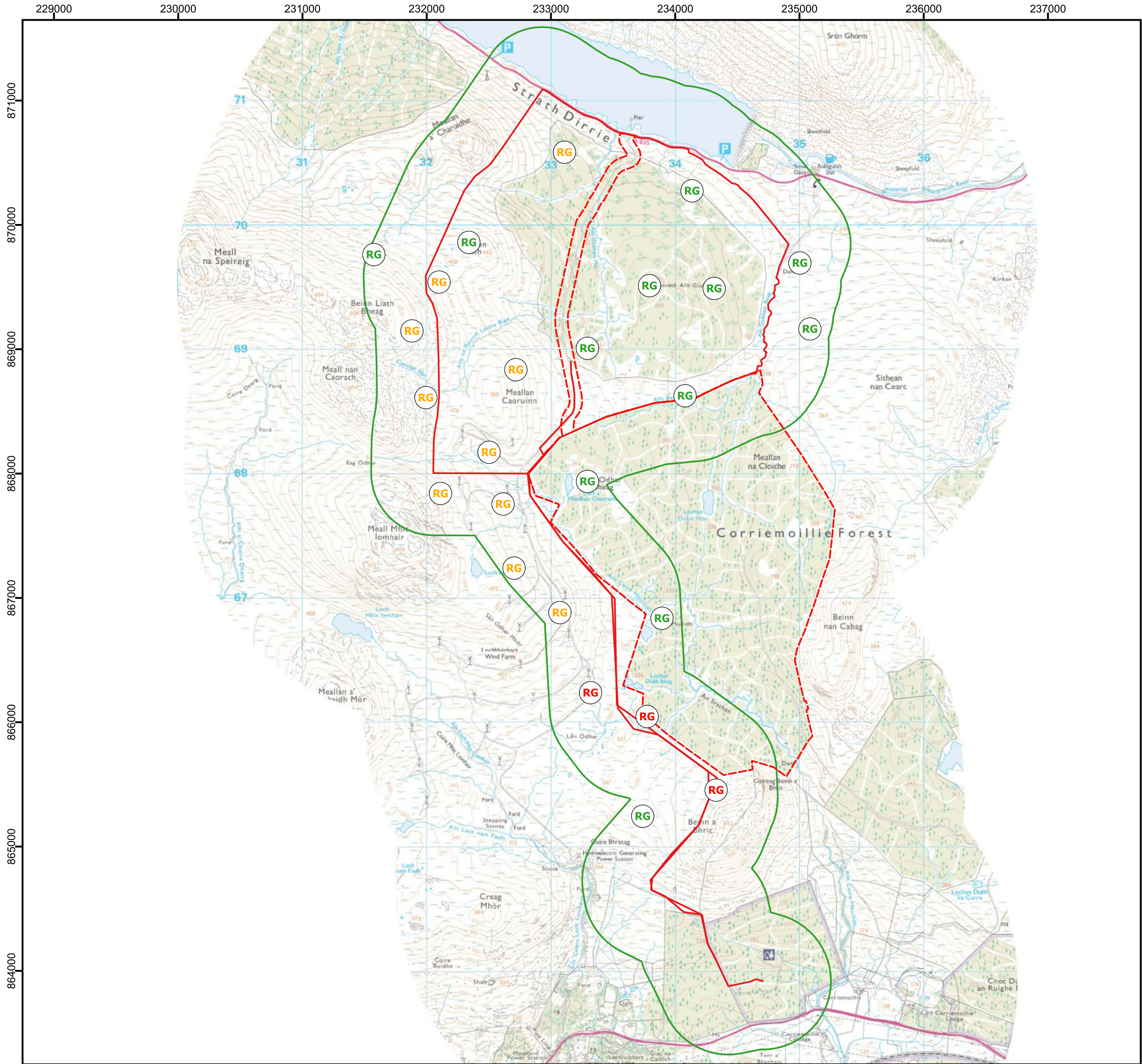
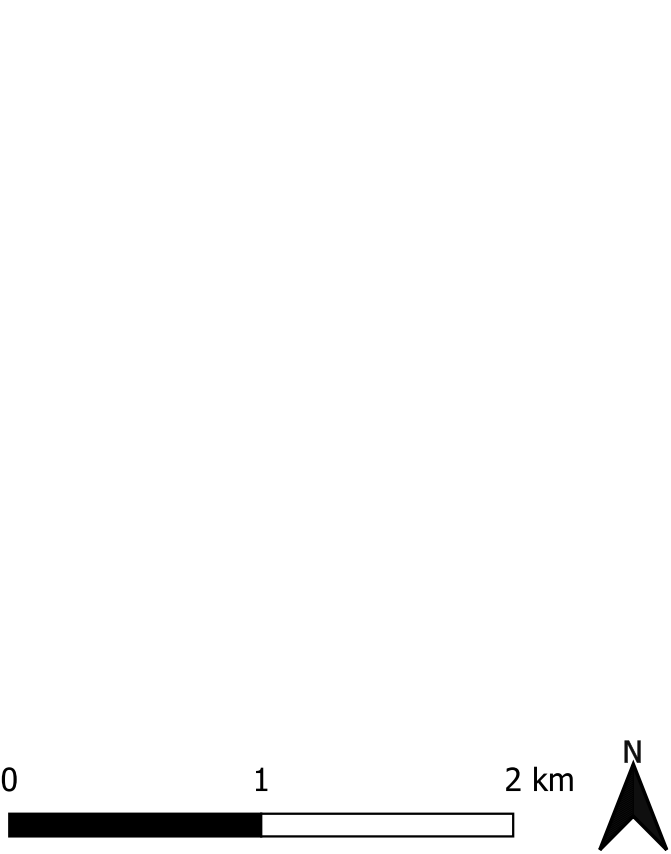


Figure 8.5: Red Grouse Survey Results 2024

Boralex Ltd.	Lochluichart Extension
Key: MBBS survey area  Corriemoillie Wind Farm  Lochluichart II Wind Farm  Cable Route  Red grouse territories 2024 Confirmed Breeding  Probable breeding  Possible breeding  Other 	
	
0 1 2 km  	
Project Number: 314569	Scale at A3:
Drawn By: AC	1:30,000
Reviewed By: SC	Version: Final
Projection: OSGB 1936/British National Grid - EPSG 27700	Issue Date: 05/09/2024

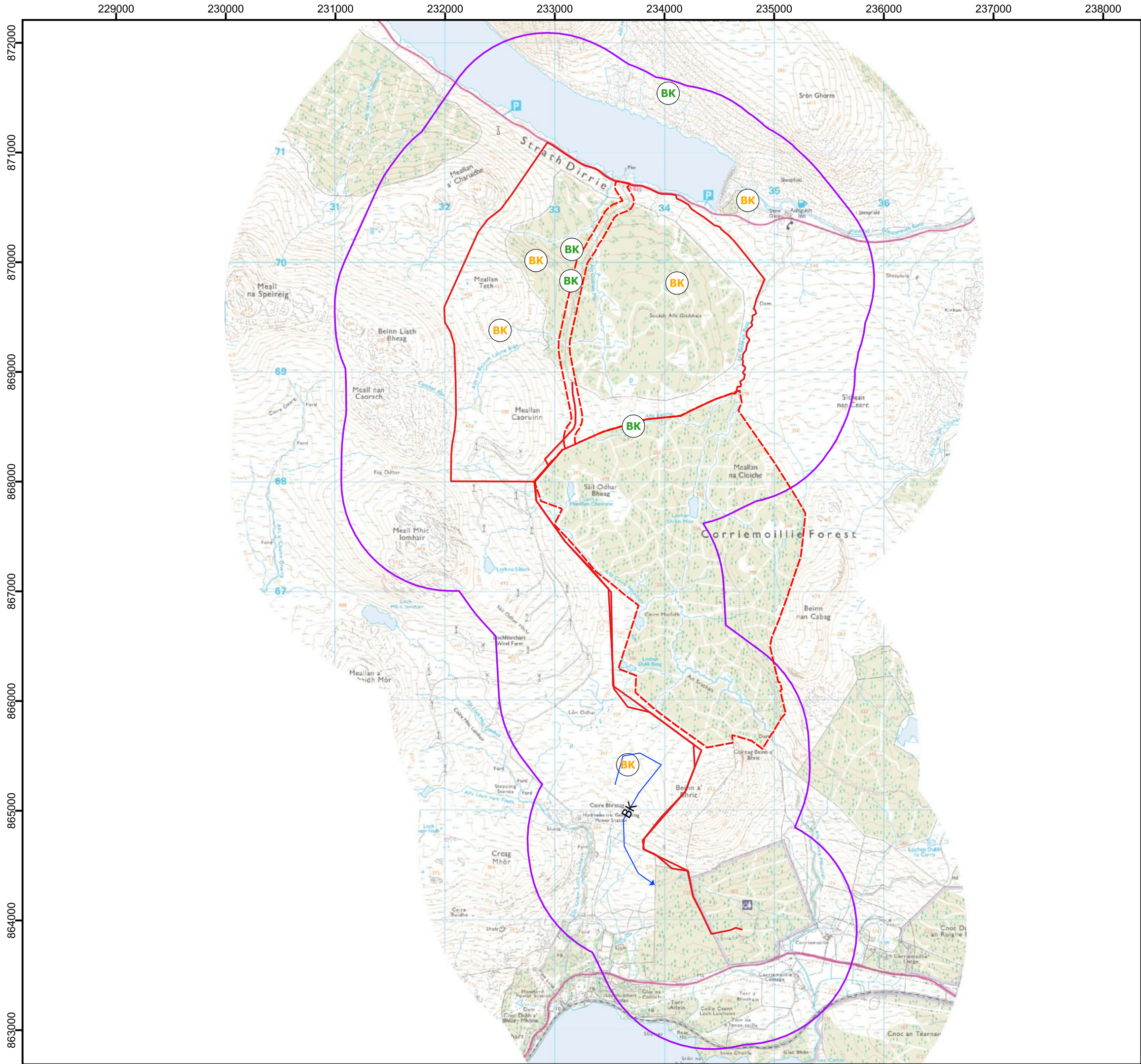
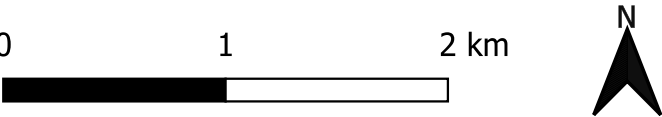


Figure 9: Black Grouse Survey Results 2024

Boralex Ltd.	Lochluichart Extension
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Key:

- Black grouse survey area
- Corriemoillie Wind Farm
- Lochluichart II Wind Farm
- Cable Route
- 2024 Bird Lines
- Black grouse leks 2024
 - Single male
 - Multiple males



Project Number: 314569	Scale at A3:
Drawn By: AC	1:34,000
Reviewed By: SC	Version: Final
Projection: OSGB 1936/British National Grid - EPSG 27700	Issue Date: 05/09/2024