Kintore Hydrogen Plant
Wintering Bird Surveys

July 2024

CONTROL SHEET

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1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Ltd. was commissioned by ASH to undertake bird surveys during winter 2022/ 2023 in relation to the proposed Kintore Hydrogen Plant development (see Appendix A for a plan showing the current proposed scheme).

The desk study undertaken for the proposed development highlighted that it lies 5km from the Loch of Skene Special Protection Area (SPA). One of the qualifying species for this site is Greylag Goose (*Anser anser*). The core foraging range of Greylag Geese from night roosts during the winter season extends up to 15-20km (SNH, 2016). As such, there is the potential for there to be connectivity for this species between the proposed substation site and the Loch of Skene SPA.

In order to establish if there is a functional link between the proposed substation site and the Loch of Skene SPA, wintering bird surveys targeting Greylag Geese were proposed. In addition, Loch of Skene is also a Special Site of Scientific Interest (SSSI), with one of the qualifying species being Pink-footed Goose (*A. brachyrhynchus*), the core foraging range of which is also 15-20km from winter night roosts (SNH, 2016). This species also formed part of the wintering bird surveys.

1.2 Scope of Report

This report details the survey methods and the results of the survey. Observations of Greylag and Pink-footed Geese are discussed and, where necessary, recommendations for mitigation measures or additional surveying are given. These recommendations are made to avoid, reduce or compensate for any impacts the proposed development may have on the birds of the area.

1.3 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre Limited.

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2 METHOD

2.1 Wintering Bird Survey

The wintering bird surveys were conducted between November 2022 and March 2023. The surveys were undertaken by scanning the site boundary and surrounding fields from farm tracks and the public road using binoculars and telescope to locate and count any feeding flocks of Greylag or Pink-footed Geese. Surveys were undertaken once the geese had left their roost site at Loch of Skene.

Large-scale maps were used to record the observations.

2.2 Survey Conditions

Surveys were undertaken on six dates during the 2022/ 2023 winter season. Forecast weather conditions and visibility were considered when timetabling the survey dates. A summary of the dates, conditions, survey effort and surveyor is provided in Table 2.1.

Table 2.1: Survey Dates and Conditions

Date	Start Time	End Time	Surveyor	Wind Speed (/12)*	Wind Direction**	Precipitation (/3)***	Visibility#	Cloud Cover (/8)##	Cloud Base (m)###
04/11/2022	09:30	12:00	HA	0	n/a	0	E	1	>500
29/11/2022	13:45	14:45	HA	0	n/a	0	E	0	>500
20/12/2022	10:30	12:00	HA	3 - 4	SW	0	E	2	>500
23/01/2023	12:15	15:00	HA	2 - 3	SW	0	E	5 - 7	>500
21/02/2023	12:30	15:30	HA	2	SSW	0	E	3 - 5	>500
23/03/2023	09:10	11:05	HA	3	SW	0	E	1	>500

LEGEND: *Wind Direction based on a 16-point compass direction; **Wind Speed is based on the Beaufort Scale; ***Precipitation Scale is 0=none, 1=light showers, 2=persistent rain/heavy showers, 3=heavy rain; #Cloud Cover is based on oktas; ##Cloud Base is metres above sea level; ###Surveyor, HA=Hugh Addlesee.

2.3 Survey Constraints

No survey was undertaken in October, but this was substituted with an additional visit in early November. This is not considered to have significantly affected the results, with the November counts representing the traditional peak period for both Icelandic Greylag Geese and Pink-footed Geese numbers at Loch of Skene. Foraging habitat preference also remains consistent throughout the autumn and early winter period, with cereal stubbles typically preferred by both species.

Due to ongoing access negotiations, surveys were focused on the western side of the site (west of the A96) until January 2023, with limited coverage of the proposed pumping station location and associated water pipe route prior to this. No access permission was obtained for land under Marshall ownership during the survey period, but this could be adequately viewed from surrounding areas.

3 RESULTS

All observations of Greylag and Pink-footed Geese within the survey area are summarised on Drawing 377066-GIS001 in Appendix A. All sightings were of birds utilising improved grassland/ pasture, the dominant agricultural habitat within the survey area.

Greylag Geese were recorded within the survey area only in February and March, with a maximum count of approximately 185 on field west of the proposed pumping station in March.

Pink-footed Geese were recorded within the survey area in November, January, February and March, with a maximum count of approximately 1,050 in two flocks on fields at the west of the survey area, on land proposed for the electrolysis plant and grid connection, in January.

A single White-fronted Goose (*Anser albifrons*) of the Greenland (*flavirostris*) subspecies was recorded in a flock of Greylag Geese in February.

4 DISCUSSION

4.1 Greylag Goose

The SPA citation for Loch of Skene is an average of 5,500 Greylag Geese, representing over 5% of the Iceland/UK/Ireland biogeographic population at the time of classification (1986). The peak flock of 185 recorded during the wintering bird surveys would represent approximately 3% of this figure. It is, however, also noted that a northward winter range shift of Icelandic Greylag Geese since the Loch of Skene SPA was classified has led to few now wintering in North-East Scotland and an almost complete abandonment of the Loch of Skene roost (Mitchell, 2012). This is evidenced by the mean peak count of Greylag Geese at Loch of Skene for the five years from 2018/19-2022/23 of 43[1]. It is also assumed that most Greylag Geese encountered at Loch of Skene and surrounds are now from the resident feral breeding population in North-East Scotland, which has increased substantially in recent years (Francis & Cook, 2011), rather than from either the Icelandic or native British breeding populations.

4.2 Pink-footed Goose

The mean peak count of Pink-footed Geese for the five years from 2018/19-2022/23 at Loch of Skene was 31,736[1]. The peak total (two flocks) of 1,050 recorded during the wintering bird surveys would represent approximately 3.3% of this figure.

In addition to its proximity to the Loch of Skene SPA/SSSI, the proposed substation site also lies 14.5km from the Ythan Estuary, Sands of Forvie and Meikle Loch SPA, for which Pink-footed Goose is one of the qualifying species. However, the locations of night roosts within this SPA are on the Ythan Estuary and Meikle Loch, both of which are over 20km from the site, with the closer, southern extent of the SPA comprising part of a marine component added due to use by foraging terns. The main feeding grounds for these Pink-footed Goose roosts are identified as widely spread, especially to the northeast of the roosts in NK03, to the south along the Aberdeenshire coast to Balmedie and west to Ellon and probably to NH82 around Oldmeldrum (Mitchell, 2012). This area does not extend as far as the proposed development site. Therefore, connectivity of the proposed development with the Ythan Estuary, Sands of Forvie and Meikle Loch SPA is not considered likely.

4.3 White-fronted Goose

Greenland White-fronted Goose is on the Scottish Biodiversity List and is on the Red List of Birds of Conservation Concern (BoCC)[2]. However, the species is not a qualifying species for any protected site in North-East Scotland and, as such, the single individual observed during the surveys is not considered to be of particular significance.

4.4 Conclusions and Recommendations

The survey results indicate that, while the proposed development area is used by both Greylag and Pink-footed Geese, the numbers routinely foraging in this area are too low for the development to have a significant impact on the populations using Loch of Skene or other nearby protected sites, even in

[1] BTO WeBS Reports
[2] Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds*, **114**, 723-747. Or online at https://www.bto.org/our-science/publications/birds-conservation-concern/status-our-bird-populations-fifth-birds

the short-term during the construction phase. Following the construction phase, it is expected that most of the land within the development site will be returned to agricultural use, with only the area where the electrolysis plant is to be developed resulting in permanent loss of foraging habitat.

To minimise the risk of disturbance to foraging or resting geese from construction and operational activities at the site, the following mitigation measures are recommended:

- A toolbox talk will be provided to the construction team informing them of the presence of the qualifying features and the Loch of Skene SPA and Ythan Estuary, Sands of Forvie and Meikle Loch SPA as part of the site inductions.
- Vegetation clearance of arable fields to be undertaken in a phased approach, if being undertaken during the winter season (November-March) to avoid major disturbances to foraging Greylag Geese and Pink-footed Geese, where possible.
- An Ecological Clerk of Works (ECoW) will be employed during the construction phase to provide advice in relation to geese.
- Slow start should be implemented when undertaking activities which will result in loud noise or vibrations when geese are present.
- The site boundary will be clearly demarcated (and protected via fencing where possible) ahead of any works to avoid habitats outside of the working area being damaged (either temporarily or permanently) and resulting in reduced foraging opportunities for geese.

REFERENCES

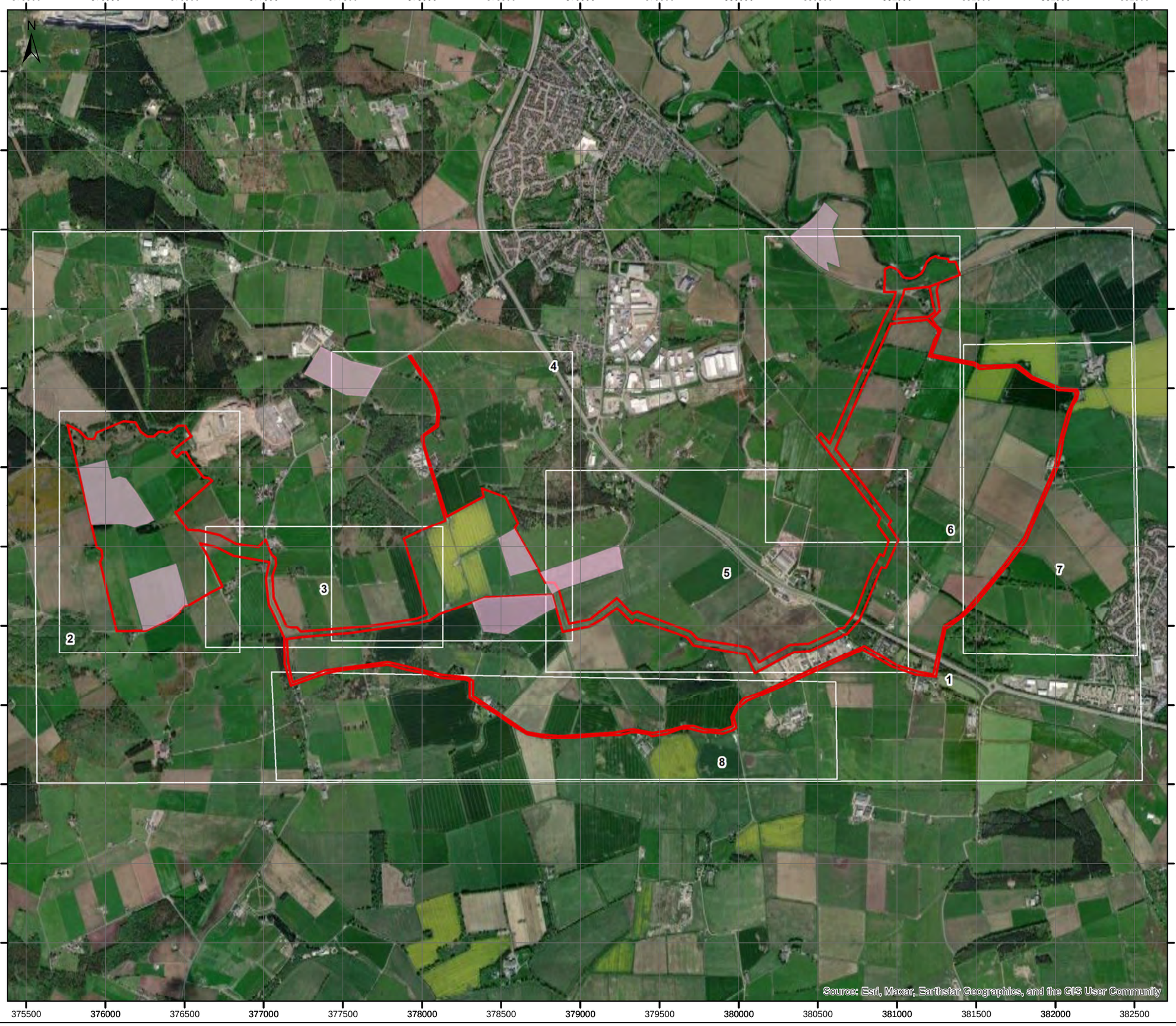
Francis I. & Cook M. eds. (2011). The Breeding Birds of North-East Scotland. Scottish Ornithologists' Club, Aberdeen.

Mitchell C. (2012). Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge.

Scottish Natural Heritage (2016). Assessing Connectivity with Special Protection Areas (SPAs). Guidance, Version 3.

APPENDICES

A FIGURES



Legend

- Hydrogen Development Area
- Geese Present

Geese Species

- Greylag Goose (GJ)
- White-fronted Goose (WG)
- Pink-footed Goose (PG)

Do not scale this map

Client
Statera Energy

Project
Kintore Hydrogen Plant

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Winter Geese Survey Results Plan
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Status
FINAL

Drawing No.	Revision	Date
377066-GIS001	-	20 Dec 2023
Drawn	**Checked**	**Approved**
JEP	HA	HA

Scale
1:23,000 @A3
0 115 230 460 690 Metres

Rev	Date	Amendment	Initials
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