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Kintore Hydrogen Plant Red Squirrel and Pine Marten Survey Report



December 2023

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CONTROL SHEET

Client:Kintore Hydrogen LimitedProject Title:Kintore Hydrogen PlantReport Title:Red Squirrel and Pine Marten Survey ReportDocument number:13739Project number:376782

Issue Record

Issue	Status	Author	Reviewer	Approver	Issue Date
1	Final	JEP	GN	DB	06/12/2023
2					

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EXECUTIVE SUMMARY

EnviroCentre Ltd. were commissioned by Kintore Hydrogen Limited to undertake red squirrel and pine marten surveys within the site known as Kintore Hydrogen Plant, in land south of Kintore, to inform development of a Hydrogen electrolysis plant.

Two potential squirrel dreys were identified in woodland west of the existing access road to the north of the hydrogen pipeline and grid connection area and within a woodland strip to the east of the water pipeline connection option route. A further 12 potential red squirrel dreys were identified in the woodland and scattered trees in the north and central region of the proposed Electrolysis plant and grid connection area of the site. Foraged pine cones were also present in this area.

Pine marten scat was identified in the south of the proposed Electrolysis plant and grid connection area of the site on a boulder within a small block of remnant woodland during the survey. A pine marten was sighted heading west in the woodland adjacent to the west of the proposed Electrolysis plant and grid connection area of the site.

The potential impacts to red squirrel and pine marten as a result of the development, in the absence of mitigation include:

- Death injury or disturbance to breeding or resting red squirrel if woodland with dreys are to be felled to facilitate works.
- Disturbance to commuting and foraging red squirrel and pine marten during development works.
- Removal or fragmentation of foraging, resting or sheltered commuting habitat for red squirrel and pine marten as a result of vegetation and tree clearance to facilitate works.

If felling of trees with potential dreys can't be avoided and/ or undertaken at non- sensitive times as then further survey of woodland with drey features will need to be undertake in February and March 2024 to confirm the status of dreys and inform licensing requirements.

No further survey other than annual updates to monitor for field evidence of den sites to inform any species protection plans and licensing requirements will be required for the duration of the development and pre- works checks are currently recommended.

The following broad mitigation should be applied to the project prior and during works:

- Woodland habitat should be retained where possible to ensure the continued provision of supporting habitat for a viable population of both red squirrel and pine marten. The woodlands Bandshed Moss, Stony Hill and Harthills Plantation should be avoided in particular, due to the confirmed presence of red squirrel and pine marten.
- Undertake a pre-works check for red squirrel and pine prior to the removal of trees, woodland and stone dykes.
- No felling of trees should be undertaken during squirrel breeding season (Feb to August inclusive). However, if works need to take place during the squirrel breeding season, appropriate exclusion zones will be identified and guided by the project ecologist.

Opportunities for compensation are provided in regards to National Planning Framework 4:

- If any squirrel dreys are to be lost to facilitate the development, they should be replaced using artificial squirrel drey boxes within retained woodland on site.
- Creating habitat connectivity through and/or around the site to suitable habitat (woodland) in the surrounding landscape, by increasing tree cover along boundaries where possible.

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- A Site Location Plan
- B Pine Marten and Red Squirrel Survey Plan
- C Photographic Record

1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Ltd. were commissioned by Kintore Hydrogen Limited to undertake red squirrel (*Sciurus vulgaris*) and pine marten (*Martes martes*) surveys within the site known as Kintore Hydrogen Plant, in land south of Kintore. The surveys were required to inform development of a Hydrogen electrolysis plant.

The 'site' is defined as the area demarcated by the red line boundary as shown in Appendix A.

1.2 Background

A Preliminary Ecological Appraisal (PEA) was undertaken in May 2023¹ of the whole site boundary by EnviroCentre, where the habitats on site were assessed as offering suitability for red squirrel and pine marten and some field evidence of each species was identified, therefore a targeted survey for these species was recommended.

1.3 Scope of Report

The aim of the survey was to inform future development works in regards to ecological constraints pertaining to red squirrel and pine marten. The main objectives were as follows:

- Search for field evidence of red squirrel and pine marten;
- Identify suitable habitat for red squirrel and pine marten;
- Make an assessment of site use and identify potential impacts to red squirrel and pine marten in the absence of mitigation; and
- Make recommendations for any further survey and/or species licensing requirements and outline appropriate mitigation methods.

1.4 Legislation and Policy

Red squirrel and pine marten are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as amended by the Nature Conservation (Scotland) Act 2004.

Subject to certain exceptions, it is now an offence to 'intentionally or recklessly':

- Kill, injure or take (capture) a red squirrel or pine marten;
- Damage, destroy or obstruct access to any structure or place which they use for shelter or protection;
- Disturb a species while it is occupying a structure or place which it uses for that purpose; or to
- Possess or control, sell, offer for sale or possess or transport for the purpose of sale any live or dead red squirrel or pine marten or any derivative of such an animal.

Knowingly causing or permitting any of the above acts to be carried out is also an offence.

¹ ECREP13628_Kintore Hydrogen Plant PEA_FinalV3

In some cases licences may be issued by NatureScot to enable certain otherwise illegal activities to take place. With respect to development related activities, licences can be issued where there is likely to be damage to a red squirrel or pine marten resting place, or disturbance to the animal within its resting place, for social, economic or environmental reasons. Licences may only be issued for this purpose provided that:

- The activity authorised by the licence will contribute to significant social, economic or environmental benefit; and
- There is no other satisfactory solution.

1.5 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.

If this report is to be submitted for regulatory approval more than 12 months following the report date, it is recommended that it is referred to EnviroCentre Limited for review to ensure that any relevant changes in data, best practice, guidance or legislation in the intervening period are integrated into an updated version of the report.

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2 METHODS

2.1 Desk study

Prior to field work being undertaken, a desk study of the site and surrounds was undertaken in May 2023. The following sources were checked:

- A review of North East Scotland Biological Records Centre (NESBReC) for records of red squirrel and pine marten up to 2km of the site obtained in 2022; and
- Saving Scotland's Red Squirrels sightings map for records of squirrels up to 2km from the site between 2019-2023.

2.2 Field Survey

EnviroCentre Ecologists Scott Fraser and Jennifer Paterson, who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM), conducted the field survey on 24th-27th July 2023.

The survey area included a search of all suitable habitat within the site boundary (plus a 50m buffer where accessible). Suitable habitat within the site comprised woodland and felled woodland within and adjacent to the site and crevices in/under rock/boulders within the areas of woodland and felled woodland.

2.2.1 Red Squirrel

A survey was undertaken based on best practice guidance² which involves a search of suitable habitat (primarily coniferous woodland) for two distinct signs of squirrel activity. It should be noted that neither of these methods accurately distinguishes between red or grey squirrels (*Sciurus carolinensis*).

- Drey count dreys are the nests made by both species of squirrel in trees. Dreys are distinguishable from birds' nests as they are normally 50cm in diameter and 30cm deep, comprise a ball shape and are usually densely constructed. The dreys are normally located close to the main stem of the tree at a height of 3m or more; and
- Feeding evidence where cone producing trees (conifers) are evident evidence of squirrel feeding is searched for. Although the two species of squirrel cannot be distinguished from feeding remains, the manner in which squirrels break open seeds and nuts, which are then left on the forest floor, is diagnostic.

2.2.2 Pine Marten

The pine marten survey was undertaken during the optimal survey season for pine marten (summer when they are most active) to search for field evidence of pine marten within or adjacent to the site.

The pine marten survey focussed on searching for field evidence of pine marten within suitable habitats identified during the PEA.

² Available online at: <u>http://www.forestry.gov.uk/PDF/fcpn011.pdf/\$FILE/fcpn011.pdf</u> last accessed 05/10/2023

A passive sign survey was conducted for pine marten according to standard guidance³. The survey included a search for scats (e.g. on prominent features such as tree stumps, dead logs and stones, or paths, rides and track ways), footprints and identification of any potential den sites (elevated tree cavities and between rocks or crags). Evidence of active pine marten den sites include cached prey (particularly prevalent when a female has young) or bird feathers, small mammal bones and the remains of half-eaten larger prey items⁴.

An assessment of the habitat was also undertaken to identify likely prey resources, which include small mammals, birds and invertebrates, and potential resting sites and commuting opportunities.

It should be noted that in areas where pine marten populations are sparse and/ or territorial defence is relatively unimportant, searches for signs (incl. scats) may fail to detect presence simply because the animals are less likely to deposit scats as territory markers; in such situation most scats are deposited at den sites and in foraging areas.

2.3 Disclaimer

Red squirrel and pine marten are elusive species in nature and denning/drey sites can therefore be difficult to confirm. A lack of diagnostic evidence therefore does not mean that pine marten and red squirrel are not utilising suitable features within the site.

³ Birks, J. (2012) *Pine marten*. In: Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trewhella, W.J., Wells, D. and Wray, S. (2012). *UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation.* The Mammal Society, Southampton

Society, Southampton ⁴ The Vincent Wildlife Trust (2020) *A Guide To Identifying Evidence of Pine Marten*, available at: <u>https://www.vwt.org.uk/wp-</u> <u>content/uploads/2020/07/Evidence-of-Pine-MartensJune2020Webversion.pdf</u>

3 **RESULTS AND ASSESSMENT**

This section should be read in conjunction with Appendix B: Red Squirrel and Pine Marten Survey Plan and Appendix C: Photographic record.

3.1 Red Squirrel

227 records of red squirrel were returned from NESBReC within a 2km radius of the site, between 2012 and 2021, predominantly associated with Kintore and the woodland surrounding the site.

SSRS returned 114 records of red squirrels, with six of those records being recorded within the site, associated with the woods at Kinellar, Dewsford and the woods adjacent (Bandshed Moss, Stony Hill and Harthills Plantation).

Two potential squirrel dreys were identified in woodland west of the existing access road to the north of the hydrogen pipeline and grid connection area and within a woodland strip to the east of the water pipeline connection option route (Page 4 and 6, Appendix B). No diagnostic field signs of squirrel (i.e foraging signs or sightings) were identified near the features or during the survey.

A further 12 potential red squirrel dreys were identified in the woodland and scattered trees in the north and central region of the proposed Electrolysis plant and grid connection area of the site (Page 2, Appendix B; Photograph 1). Foraged pine cones were also present in this area (Photograph 2).

The woodland habitat within the site offers suitable red squirrel foraging and commuting resources, as well as providing suitable opportunities for drey creation. As field signs, records in the locale and potential dreys were identified during the survey this indicates that these areas are inhabited by a functioning red squirrel population. The woodland in the site is also well connected to further blocks of woodland west and north of the site.

Arable and grassland fields comprise the dominant habitats within the site, however, connective corridors such as treelines, stone dykes and scrub field boundaries, may be utilised, however, these are considered suboptimal for red squirrel to commute along regularly.

3.2 Pine Marten

One pine marten was identified as roadkill from the A96 approximately 650m north of the site in 2015. In addition, a pine marten scat was identified west of the site boundary during the PEA survey on a forestry track.

Pine marten scat was identified in the south of the proposed Electrolysis plant and grid connection area of the site on a boulder within a small block of remnant woodland during the survey (Page 2, Appendix B; Photograph 3).

During the targeted survey a pine marten was sighted heading west in the woodland adjacent to the west of the proposed Electrolysis plant and grid connection area of the site (Page 2, Appendix B) likely hunting for prey.

The coniferous and broadleaf woodland blocks within the site and surrounding the site are considered suitable for commuting and foraging pine marten and provide suitable habitat for denning.

Although open arable and grassland fields dominate the site, connective corridors along continuous treelines, rough grass, stone dykes and scrub field boundaries, which pine marten would likely be able to utilise for commuting and foraging. The woodlands are also connected to other woodland blocks further afield within the locale to the north, and west.

4 POTENTIAL IMPACTS, FURTHER SURVEY AND LICENSING

4.1 Potential Impacts

The potential impacts to red squirrel and pine marten as a result of the development, in the absence of mitigation include:

- Death injury or disturbance to breeding or resting red squirrel if woodland with dreys are to be felled to facilitate works.
- Disturbance to commuting and foraging red squirrel and pine marten during development works.
- Removal or fragmentation of foraging, resting or sheltered commuting habitat for red squirrel and pine marten as a result of vegetation and tree clearance to facilitate works.
- Death or injury to red squirrel and pine marten due to increased vehicle activity during proposed works.
- Enhanced noise, vibration, lighting and human disturbance during works which may displace existing red squirrel and pine marten activity.

4.2 Further Survey and Licensing

Red Squirrel

If felling of trees with potential dreys can't be avoided and/ or undertaken at non- sensitive times as outlined in Section 5.1. Then further survey of woodland with drey features will need to be undertake in February and March 2024 to confirm the status of dreys and inform licensing requirements.

Pine Marten

No further survey other than pre- works checks are currently recommended.

As pine marten were observed in the woodland adjacent to the site in the proposed Electrolysis plant and grid connection area and adjacent to this area offers suitable denning features and evidence of pine marten presence is confirmed, annual updates to monitor for field evidence of den sites to inform any species protection plans and licensing requirements will be required for the duration of the development.

Ecological data is considered valid for a period of 12 months, therefore regular annual updates for pine marten and red squirrel should be undertaken to keep baseline data up to date and to inform development works.

5 MITIGATION AND COMPENSATION

5.1 General Good Practice Mitigation

The following broad mitigation should be applied to the project prior and during works to ensure any potential impacts to red squirrel and pine marten are avoided or reduced.

- Woodland habitat should be retained where possible to ensure the continued provision of supporting habitat for a viable population of both red squirrel and pine marten. The woodlands Bandshed Moss, Stony Hill and Harthills Plantation should be avoided in particular, due to the confirmed presence of red squirrel and pine marten.
- Undertake a pre-works check for red squirrel and pine prior to the removal of trees, woodland and stone dykes.
- No felling of trees should be undertaken during squirrel breeding season (Feb to August inclusive). However, if works need to take place during the squirrel breeding season, appropriate exclusion zones will be identified and guided by the project ecologist.
- All site contractors should be made aware of the potential presence of pine marten and red squirrel and other protected species in the locale, and in the event that a protected species is discovered on site, all work in that area must stop immediately and a suitably qualified ecologist contacted.
- Any trenches or pits made during construction should be covered when unattended or with a shallow angled plank inserted to allow animals to escape, should they become trapped inside them. The ends of any pipeline should be capped when unattended, or at the end of each working day to prevent animal access.
- Suitable tree root protection barriers around the woodland and scattered trees to be retained in the site and those adjacent to the site should be implemented prior to any works commencing.
- Temporary lights used during construction should be fitted with shades to prevent light spillage outside the working area. Temporary lights should not illuminate woodland or scattered trees on site, and avoid illuminating woodland, treelines, ponds, ditches and watercourses within and surrounding the site as lighting can affect commuting and foraging success for nocturnal or crepuscular species such as pine marten, along with other species.
- Any permanent lighting should be designed not to illuminate pine marten and red squirrel commuting, foraging and nesting habitats including woodland, rock piles and water bodies. Screening techniques and dark buffer zones are advised to reduce the impact on these habitats for pine marten. Low or high pressure sodium lamps instead of mercury and metal halide lamps are preferred for their UV filtering properties, reducing light spillage and pollution. 'Warm white' lighting also reduces impacts of lighting on crepuscular or nocturnal species.

5.2 Compensation

Opportunities for compensation are provided in regards to National Planning Framework 4:

- If any squirrel dreys are to be lost to facilitate the development, they should be replaced using artificial squirrel drey boxes within retained woodland on site.
- Piles of deadwood should be included to encourage fungi and invertebrates as additional foraging resources for red squirrel.
- Improving connectivity of the woodlands via additional planting using native species, including nut, seed and berry producing plants which provide a varied food source for pine marten and red

squirrel. The inclusion of linear vegetative features into the design would also help provide commuting habitat for a number of species.

• Creating habitat connectivity through and/or around the site to suitable habitat (woodland) in the surrounding landscape, by increasing tree cover along boundaries where possible.

APPENDICES

A SITE LOCATION PLAN



KINTORE HYDROGEN PLANT

		07	07.000	20
Date:		07	-07-202	23
Paper size:			A3	
Scale:		1	:20,00	0
0	200	400	600	800 m

Key:

- Electrolysis plant and grid connectionExisting and proposed access roads
- Hydrogen and water pipeline connections
- Hydrogen pipeline and gas grid connection
- Water pipeline connection options and abstraction discharge point



Kintore Hydrogen

DEVELOPMENT ELEMENTS PLAN

FIGURE 4

Status:	DRAFT
Revision:	V2
Drawn by:	Rhys Williams

Approved by: Tom Dearing

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B PINE MARTEN AND RED SQUIRREL SURVEY PLAN



















C PHOTOGRAPHIC RECORD



Photograph 1: Potential red squirrel drey in the north of the electrolysis area of the site



Photograph 2: Squirrel foraged pinecone



Photograph 3: Pine marten scat on a boulder in the south of the electrolysis area of the site