HORIZON NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

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Wylfa Newydd

Horizon Nuclear Power (Wylfa) Ltd

Technical Summary Report - Red Squirrel

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Executive Summary

Horizon Nuclear Power Wylfa Limited (Horizon) is planning to develop a new Nuclear Power Station on Anglesey (the Wylfa Newydd Generating Station) as identified in the *National Policy Statement for Nuclear Power Generation (EN-6)* (Department of Energy and Climate Change, 2011). The Wylfa Newydd Project will require a number of applications to be made under different legislation to different regulators. Jacobs U.K. Limited (Jacobs) was commissioned to collect baseline data to inform the various applications, assessments and permits that will be submitted for approval to construct and operate the Wylfa Newydd Generating Station.

Following two incidental sightings of red squirrel in the Wylfa Newydd Development Area, one from the Red Squirrels Trust Wales (2016) website and the second by a Horizon contractor working on the Wylfa Newydd Project, Jacobs was commissioned by Horizon to undertake red squirrel surveys.

This report summarises the results of surveys of habitats that had the potential to support red squirrel (scrub and woodland) within the Wylfa Newydd Development Area and a 50 m buffer zone. The total area surveyed is called the 'study area' in this report. The survey results indicate that squirrels are present within the study area, with feeding evidence of squirrels recorded within seven areas of woodland habitat.

Only one drey was recorded in the study area, in woodland east of the Existing Power Station, and is located 12 m outside of the area to be cleared in preparation for the Wylfa Newydd Project. This drey is therefore likely to be subject to disturbance during clearance and construction works. Other effects include habitat loss and the potential for mortality and injury effects should new dreys be recorded within the woodland that is to be felled as a result of the Wylfa Newydd Project.

This report also details mitigation to minimise the levels of potential disturbance to red squirrel and their dreys, including scheduling works to avoid the squirrel breeding season (February to September, inclusive), conducting pre-works surveys and setting up protection zones around dreys.

1. Introduction

This report provides a technical summary of the data collected on red squirrel (*Sciurus vulgaris*) within the study area during surveys completed in May 2016. These data are then used to identify the potential for effects on red squirrel as a result of the Wylfa Newydd Project. This report also describes a range of mitigation measures likely to minimise or compensate for any effects.

1.1 Overview

Horizon is currently planning to develop a new Nuclear Power Station on Anglesey, as identified in the *National Policy Statement for Nuclear Power Generation (EN-6)* (Department of Energy and Climate Change, 2011). The Wylfa Newydd Project comprises the Wylfa Newydd Generating Station, including the reactors, associated plant and Ancillary Structures and features, together with all of the development needed to support its delivery, such as highway improvements, worker accommodation and specialist training facilities. The Wylfa Newydd Project will require a number of applications to be made under different legislation to different regulators. As a Nationally Significant Infrastructure Project under the *Planning Act 2008*, the construction and operation must be authorised by a development consent order.

Jacobs was commissioned by Horizon to undertake a full ecological survey programme within the vicinity of the Power Station Site. This work has included the gathering of baseline data to inform the various applications, assessments and permits that will be submitted for approval to construct and operate the Power Station and Associated Development.

Previous background data search information provided by Cofnod to Jacobs in 2013 did not return any records of red squirrels within 2 km of the study area. Combined with the limited amount of suitable habitat in the local area and geographical separation from nearby populations, the species was therefore considered to be absent. However, there have since been two recorded sightings of red squirrels within the Wylfa Newydd Development Area. The first was in 2015 (Red Squirrels Trust Wales, 2016) and the second was in 2016 by a Horizon contractor working on the Wylfa Newydd Project (pers. com. with Horizon Environmental Coordinators). In addition, grey squirrels (*Sciurus carolinensis*) are known to have been eradicated on Anglesey in 2015 (Red Squirrel Survival Trust, 2016), which may have reduced competitive pressure on red squirrels. As a result, Jacobs was commissioned by Horizon to undertake red squirrel surveys.

1.2 Wylfa Newydd Project

The Wylfa Newydd Project includes the Wylfa Newydd Generating Station and Associated Development[1]. The Wylfa Newydd Generating Station includes two UK Advanced Boiling Water Reactors to be supplied by Hitachi-GE Nuclear Energy Ltd, associated plant and Ancillary Structures and features. In addition to the reactors, development on the Power Station Site (the indicative area of land and sea within which the majority of the permanent Wylfa Newydd Generating Station buildings, plant and structures would be situated) would include steam turbines, control and service buildings, operational plant, radioactive waste storage buildings, Ancillary Structures, offices and coastal developments. The coastal developments would include a Cooling Water System and breakwater, and a Marine Off-Loading Facility.

1.3 Site Description

The Wylfa Newydd Development Area (the indicative areas of land and sea, including the Power Station Site, the Wylfa NPS[2] Site and the surrounding areas that would be used for the construction and operation of the Wylfa Newydd Generating Station) covers an area of approximately 380 ha. It is bounded to the north by the coast and the existing Magnox power station (the Existing Power Station). To the east, it is separated from Cemaes by a narrow corridor of agricultural land. The A5025 and residential properties define part of the south-

[1] Development needed to support delivery of the Wylfa Newydd Generating Station is referred to as 'Associated Development'. This includes highway improvements along the A5025, Park and Ride Facilities for construction workers, Logistics Centre, Temporary Worker Accommodation, specialist training facilities, Horizon's Visitor Centre and media briefing facilities.

[2] The site identified on Anglesey by the *National Policy Statement for Nuclear Power Generation (EN-6)* (Department of Energy and Climate Change, 2011) as potentially suitable for the deployment of a new Nuclear Power Station.

east boundary, with a small parcel of land spanning the road to the north-east of Tregele. To the south and west, the Wylfa Newydd Development Area abuts agricultural land, and to the west it adjoins the coastal hinterland.

Woodland habitats are only a small component in the Wylfa Newydd Development Area, representing approximately 5 ha of the site. The largest areas are those around Dame Sylvia Crowe's Mound to the east of the Existing Power Station. These contain some areas of broadleaved tree species such as alder (*Alnus glutinosa*), hawthorn (*Crataegus monogyna*) and sycamore (*Acer pseudoplatanus*), but the largest area is dominated by Corsican pine (*Pinus nigra*) and Lodgepole pine (*Pinus contorta*). The plantation woodlands to the west of the Existing Power Station are mainly Scots pine (*Pinus sylvestris*) with some broadleaved woodland areas containing species such as beech (*Fagus sylvatica*) and sycamore (Jacobs, 2013).

1.4 Report Aims and Objectives

The purpose of this report is to provide a single resource regarding all survey and background data available for red squirrels to inform and support ecological chapters of Environmental Impact Assessments for each stage of the Wylfa Newydd Project.

The aims of the report will be achieved by:

- reviewing the background data available on the species;
- presenting the results of surveys completed in 2016; and,
- interpreting the results of the surveys and provide mitigation recommendations.

1.5 Legal Status

Red squirrel is included in Schedules 5 and 6 of the *Wildlife and Countryside Act 1981* (WCA) (as amended). The legislation has subsequently been amended, most recently by the *Countryside and Rights of Way Act 2000* for England and Wales. The inclusion of the species in Schedule 5 means that, under Section 9 of the WCA it is an offence to:

- intentionally kill, injure or capture (take) a red squirrel; and
- intentionally or recklessly damage or destroy any structure or place which a red squirrel uses for shelter or protection; or
- intentionally or recklessly disturb a red squirrel while it is occupying a structure or place which it uses for that purpose.

Currently, under the WCA there is no provision for licensing activities that may cause damage or disturbance to red squirrels and their shelters for the purpose of development. To avoid an offence it must be shown that reasonable precautions to avoid causing damage or disturbance are undertaken. However, discussions between Horizon and Natural Resources Wales have indicated that, should the Wylfa Newydd Project contravene this legislation, a conservation licence could be issued, the application for which would need to demonstrate maintenance of the favourable conservation status of the species, and conservation benefit resulting from the proposed works.

Red squirrel is also included in the *Anglesey Local Biodiversity Action Plan* (IACC, 2003) and listed as a priority species in accordance with Section 7 of the *Environment (Wales) Act 2016*, which means they are of principal importance for the purpose of conserving biodiversity.

2. Methodology

2.1 Study Area

The extent of the study area comprised all scrub and woodland within the Wylfa Newydd Development Area and a 50 m buffer zone around this. Locations of the study area and woodlands are shown in Figure 1 (Appendix A). For the purposes of the survey, woodland habitats were divided into 13 discrete areas (Table 1).

2.2 Survey Methods

Surveys were conducted of 13 woodlands in the study area between the 10th and 12th May 2016. Survey techniques followed methodology detailed in Gurnell *et al*. (2009). This involved walking transects and recording sightings of squirrels, dreys and feeding signs, for example chewed cones. Whether the feeding signs were fresh (clean, brightly coloured) or old (dark, discoloured) was also noted.

Surveys were undertaken during periods when squirrels are most likely to be active and were carried out in suitable weather conditions (not in heavy rain, strong winds or when it was very cold) (Table 1). Where evidence of squirrel was recorded, the woodland was surveyed for a second time on the 17th or 18th May 2016.

2.3 Survey Limitations

Steep terrain in Woodland 6 (Figure 1) meant that it could not be surveyed safely, and as a result, a small section of woodland at the top of a ridge immediately adjacent to the Existing Power Station could not be surveyed. However, as this woodland is outside of the area to be cleared in preparation for the Wylfa Newydd Project, it is considered that not having data from this section of the woodland is unlikely to significantly affect the outcome of any impact assessment.

3. Results

3.1 Incidental Sightings

There have been two recent incidental sightings of red squirrel in the Wylfa Newydd Development Area. The first was from a member of the public in October 2015 and was recorded on the Red Squirrel Trust Wales website (Red Squirrels Trust Wales, 2016) and the second was by a Kehoe Countryside Limited employee contracted to work on the Wylfa Newydd Project in March 2016 (pers. com. with Horizon Environmental Coordinators). The locations of these sightings are shown on Figure 2.

3.2 Survey Results

There were no sightings of red squirrel during the surveys. However, evidence of red squirrel presence was recorded in seven areas of woodland, and one drey was recorded within Woodland 6 (Figure 2). Woodland descriptions, details of the surveys including dates, times, weather conditions, findings and any further notes are shown in Table 1 below.

Table 1: Red squirrel surveys details and results

Woodland Number	Location	Grid Reference	Woodland Description	1st Survey	Survey Times and Weather	2nd Survey	Survey Times and Weather	Feeding Signs	Dreys	Notes
1	Cestyll Gardens	SH 34522 93309	Strip of pine on east side of gardens, decorative gardens in middle and individual trees on west side	10.05.16	09:30–10:00 Dry with light rain showers. 15°C, 100% cloud cover	17.05.16	10:00–10:30 Dry with sunny spells, 14°C	Yes	No	Three bird nests including a very large raptor nest. A small number of old squirrel feeding signs were recorded.
2	Single Strip	SH 34722 93384	Single line of conifer and gardens of demolished house	10.05.16	10:00–10:10 Dry with light rain showers. 15°C, 100% cloud cover	n/a	n/a	No	No	Not suitable for squirrels as isolated and very open in structure.
3	South of Existing Power Station approach road (West)	SH 35115 93458	Pine woodland	11.05.16	09:30–10:30 Dry with light rain showers. 15°C, 100% cloud cover	17.05.16	10:45–11:20 Dry with sunny spells, 15°C	Yes	No	Three bird nests recorded. One nest is similar to a drey (SH 3511 9335) but situated along a branch and not close to the trunk, so ruled out as potential drey.
4	South of Existing Power Station approach road (East)	SH 35219 93480	Pine with sycamore on outer edges of woodland	11.05.16	10:30–11:00 Dry with light rain showers. 15°C, 100% cloud cover	17.05.16	11:20–11:45 Dry with sunny spells, 15°C	Yes	No	Two bird nests similar to dreys at SH 35187 93487 and SH 35216 93497. First nest was too large to be a drey and surrounds the tree. The second was very similar to a drey, but had a flat top and bird droppings underneath.

5	Dame Sylvia Crowe's Mound (West)	SH 35337 93587	Mound of pine woodland with broadleaved trees at the top. The outer edges are also broadleaved trees, mainly sycamore.	12.05.16	09:00–11:00 Dry with sunny spells, 15°C	18.05.16	07:30–09:30 Dry with sunny spells, 10°C	Yes	No	Fresh and old feeding signs.
6	Dame Sylvia Crowe's Mound (East)	SH 35515 93688	Pine and cypress (*Cupressus* sp.) woodland. Very steep ridge in middle. Broadleaved trees around edges (mainly sycamore).	12.05.16	09:00–11:00 Dry with sunny spells, 15°C	18.05.16	07:30–09:30 Dry with sunny spells, 10°C	Yes	Yes	Squirrel drey is located at SH 35535 93734 in a Scots pine. Fresh and old feeding signs. Bird nest that was similar to a drey recorded at SH 35452 93950 (lots of birds droppings underneath).
7	Avenue	SH 35619 93849	Mature broadleaf woodland comprising beech and sycamore, with occasional conifer trees	12.05.16	08:40–09:00 Dry with sunny spells, 15°C	18.05.16	09:45–10:00 Dry with sunny spells, 10°C	Yes	No	Three bird nests in woodland. Old squirrel feeding signs recorded.
8	Tre'r Gof SSSI	SH 35907 93582	Young scrub and gorse (*Ulex europaeus*)	12.05.16	11:00–11:10 Dry with sunny spells, 15°C	n/a	n/a	No	No	Not suitable for squirrels given age and structure
9	Sports Centre	SH 35341 93334	Gardens of sports centre including scattered, mixed mature trees	11.05.16	11:00–11:15 Dry with light rain showers. 15°C, 100% cloud cover	n/a	n/a	No	No	Bird nests recorded but no evidence of squirrel presence
10	The Firs	SH 35263 92927	Gardens of demolished houses including mature mixed woodland	11.05.16	09:00–09:20 Dry with light rain	17.05.16	10:30–10:50 Dry with	Yes	No	Old squirrel feeding signs recorded close to the entrance gate.

					showers. 15°C, 100% cloud cover		sunny spells, 15°C			
11	Cemaes Community Woodland	SH 36844 93473	Young broadleaf woodland	12.05.16	11:30–11:40 Dry with sunny spells, 15°C	n/a	n/a	No	No	Not suitable for squirrels – too young.
12	Tregele	SH 35675 92768	Strip of conifer alongside main road. Cones on trees, but are young.	10.05.16	10:30–10:40 Light rain, 15°C, 100% cloud cover	n/a	n/a	No	No	Not suitable for squirrels due to young age of trees.
13	A5025	SH 35212 92146	Isolated conifers	12.05.16	11:40–11:50 Dry with sunny spells, 15°C	n/a	n/a	No	No	Not suitable for squirrels as very isolated.

4. Conclusions and Recommendations

The presence of red squirrel was confirmed in seven of the 13 woodland areas surveyed through evidence of feeding remains, and one drey was recorded in woodland east of the Existing Power Station (Figure 2). The combined area of woodland habitat where evidence of red squirrel was found within the study area is 9.87 ha, with the largest fragment being Woodland 6 (4.35 ha).

A study conducted by Verbeylen *et al*. (2003) found that habitat fragments smaller than 3.5 ha were never occupied by squirrels. Rodriguez and Andren's (1999) study predicted that squirrels utilise fragments if they are larger than 10 ha in size and are within 600 m of a source population. However, Verboom and van Apeldoorn (1990) found that squirrels do occupy smaller fragments (the smallest 0.72 ha) and the probability of red squirrel occurrence significantly increases when a fragment is situated close to a large permanently occupied woodland or where the area of surrounding woodland increases.

The red squirrel distribution map on the Red Squirrels Trust Wales (2016) website shows that red squirrels are more common in the south and east of the island. Since 2004, there have been reintroductions of red squirrel to eight sites in Anglesey, the nearest of which is approximately 7 km from the study area at Llanfaethlu, and is the nearest known population. However, there have been two sightings in the north of the island; the sighting shown on Figure 2 near Cestyll Gardens and a second sighting over 2 km south-east from the Existing Power Station (Red Squirrel Trust Wales, 2016).

Given the amount of available suitable habitat and its relatively isolated nature from large woodland blocks and the main population centres in Anglesey, it is considered that the Wylfa Newydd Development Area supports low numbers of red squirrel and, although the species appears to be expanding its range across Anglesey, it is unlikely this area would ever support high numbers. Although it is not proposed that further survey effort is required to support a formal impact assessment for the species, the following measures are proposed to help secure the favourable conservation status of the species during the Wylfa Newydd Project:

- pre-work surveys of areas of suitable red squirrel habitat, notably Dame Sylvia Crowe's Mound where the one drey was recorded, should be undertaken;
- works affecting red squirrel habitat should be timed to avoid the breeding season (1st February – 30th September inclusive); and,
- protection zones of a minimum of 5 m or one tree buffer should be employed around active dreys.

Should works proposed as part of the Wylfa Newydd Project have the potential to contravene the legislation in place to protect red squirrel, discussion with Natural Resources Wales would be required in relation to the need for a conservation licence to be secured prior to such works taking place. For example if a drey is found during pre-works surveys in woodland that is to be felled.

5. References

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Appendix A. Figures

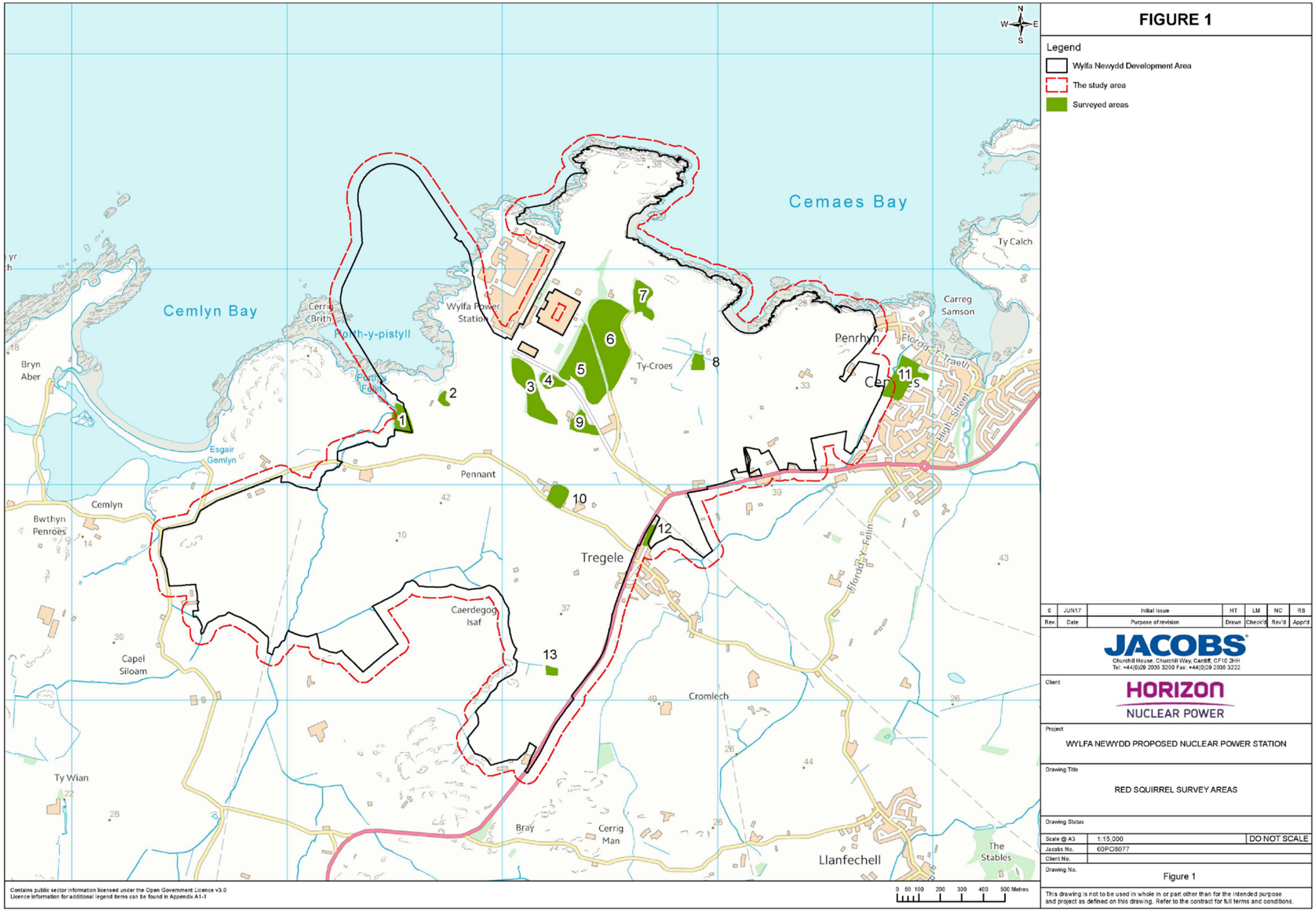

Figure 1 Red squirrel survey areas

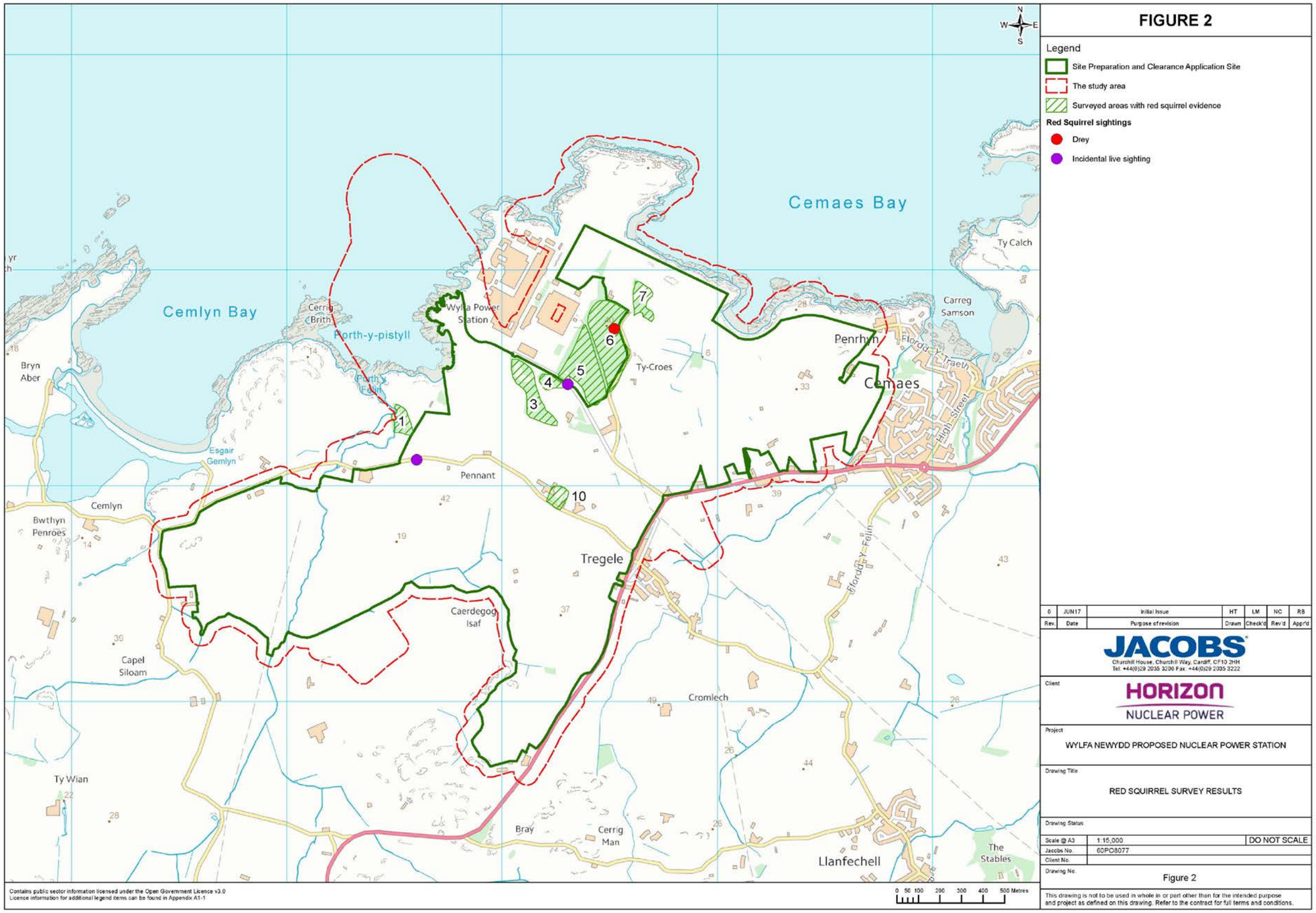

Figure 2: Red squirrel survey results