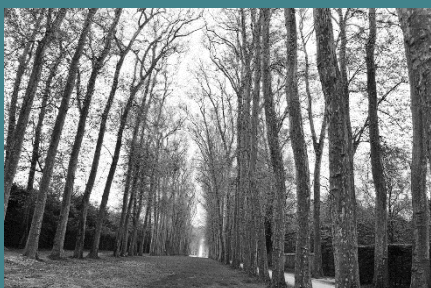


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Appendix 7.6 Red Squirrel Report

Client

Hallam Land Management Limited

Project

Land east of Knowsley Lane, Knowsley

Date

September 2025

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Rev	Issue Status	Prepared/Date	Approved/Date
-	Draft	HK/ET 11/09/25	AJB/26/09/25

1.0 INTRODUCTION

- 1.1 This report has been produced by FPCR Environment & Design Ltd. (FPCR) on behalf of Hallam Land Management Limited and details a series of red squirrel, *Sciurus vulgaris*, surveys undertaken at land east of Knowsley Lane, Knowsley (central grid reference: SJ43739466).
- 1.2 This report accompanies and should be read in conjunction with the Ecology Chapter (Chapter 7) of the Environmental Statement (FPCR, 2025) for the Site which has been undertaken to inform the development proposals and to provide recommendations for mitigation and enhancement.

Site Context

- 1.3 The Site is approximately 33.75ha, with the northern and western boundaries formed by Home Farm Road and Knowsley Lane respectively, with Knowsley village located adjacent to the north. The east and southern boundaries adjoin woodland areas within Knowsley Park local wildlife site – an extensive area of wood pasture and parkland priority habitat.
- 1.4 The Site is comprised of large arable fields, grassland, hedgerows, scrub, a number of permanent and temporary waterbodies and two parcels of priority habitat deciduous woodland in the central site area with a smaller area of non-priority broadleaved woodland at the northern border.

Site Proposals

- 1.5 The Site proposals include the creation of up to 700 dwellings with associated public open space, landscaping, vehicular access junctions, active travel links, sustainable urban drainage systems and other infrastructure. Habitat loss predominantly comprises arable land and modified grassland currently occupying the majority of the Site, with the more optimal on-Site woodland and pond habitat to be retained.
- 1.6 Green infrastructure proposals include the retention and enhancement of all existing woodland and scrub and the majority of hedgerows and creation of additional native mixed scrub, individual trees, species rich grassland and woodland. This will provide a buffer and enhancement to retained woodland habitat.

Survey Objectives

- 1.7 This report has been prepared to achieve the following objectives:
- Describe the survey methodologies employed to inform this assessment;
 - Provide the results of red squirrel surveys undertaken;
 - Assess the likelihood of red squirrel being present onsite;
 - Assess potential impacts of proposals on red squirrel and provide recommendations for avoidance, mitigation, compensation and/or enhancement to mitigate impacts.

2.0 LEGISLATION

2.1 Red squirrels are fully protected under Schedule 5 and 6 of the Wildlife & Countryside Act 1981 (as amended) due to the protection afforded to their places of shelter and protection. They are afforded protection under Section 9 parts 4(a) and 4(b). This makes it an offence to:

- Intentionally kill, injure or take these species;
- Possess or control, live or dead these species or derivatives;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
- Intentionally or recklessly disturb these species whilst occupying a structure or place used for that purpose;
- Sell these species or offer or expose for sale or transport for sale
- Publish or cause to be published any advertisement which conveys the buying or selling of these species

2.2 Red squirrels are also identified as a Priority Species on the North Merseyside Biodiversity Action Plan (LBAP), and a Species of Principal Biological Importance on Section 41 of the NERC Act 2006.

3.0 METHODOLOGY

Desk Study

3.1 To support the field survey and further compile existing baseline information relevant to the Site, ecological information was sought from the Merseyside Biobank (the local biodiversity records centre of North Merseyside), including records of red and grey squirrels, *Sciurus carolinensis*, from within 2km of the Site.

Field Surveys

3.2 A detailed visual search for the presence of squirrel field signs was undertaken in suitable habitats within the Site on 30th April 2025 and 8th and 9th May 2025. Surveys considered good practice guidance^{1 2}.

3.3 The visual Surveys comprised a systematic search of the woodland for squirrels, or their field signs, including;

- Dreys, which are usually found at a height of more than 3m and are supported by either the main stem or a thick side branch. They are semi-permanent structures that are not always in use during the squirrel active season. There is no distinctive structural difference between the dreys of red and grey squirrels; and
- Search for squirrel feeding remains, particularly hazel nut shells. Squirrels leave neatly halved hazelnut shells with a small, chiselled nick in the apex, distinguishing them from

¹ Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trehwella, W.J., Wells, D. and Wray, S. (2012). UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton

² John Gurnell, Peter Lurz, Robbie McDonald and Harry Pepper (2009) Practical techniques for surveying and monitoring squirrels Forestry Commission

the gnawed holes made by mice and voles³. Again, there is no distinct difference between the feeding remains of red and grey squirrels.

Hair Tube Surveys

- 3.4 In order to distinguish if field signs observed were a result of red or grey squirrels then hair tube surveys involved the deployment of 20 tubes containing a bait of sunflower seeds and peanuts and with two adhesive tape (photograph 1) pads within each end. A total of twenty tubes (10 tubes in each the eastern and western woodland parcels) were deployed on 1st August 2025. These were checked for hairs and re-baited on the 12th August 2025 and retrieved on the 21st August 2025.
- 3.5 Locations of deployed hair tubes are illustrated in Figure 7.6.1.



Photograph 1: Baited hair tube

Hair Sample Analysis

- 3.6 Samples of collected hair from the tubes was analysed to ascertain if any were from red or grey squirrel.
- 3.7 It is not possible to separate red and grey squirrel hairs on the basis of colour. The only characteristic that is different is the cross-section of the hair; red squirrel hairs have a concave or a dumb-bell shaped cross section, whereas grey squirrels have a round one.
- 3.8 To ascertain the type of cross-section, a negative staining technique was undertaken, as outlined by Gurnell and Pepper (1994)⁴;
- With forceps, 10 representative hairs from each identifiable cluster of hairs were removed, avoiding very fine, small underfur hairs;

³ <https://treesforlife.org.uk/wp-content/uploads/2020/09/Squirrel-monitoring-signs.pdf>

⁴ Gurnell, J and Pepper H. (1994). Red Squirrel Conservation: Field Study Methods, Forestry Commission Research Information Note 255, Edinburgh.

- Only complete hairs were used; their length and colour banding were noted. Any hairs <15mm long were attributed to mice or vole and were discarded;
- A 5:1 solution of Indian ink: water was made up;
- Several hairs were placed on a slide together with a few drops of ink solution. This was covered with a cover slip and examined at their widest part (i.e. the shield region) using a light microscope.

3.9 Mounts which show a continuous dark band along the hair, where the central groove is stained with ink, are likely red squirrel hairs. Hairs which show no banding are likely to be grey squirrel.

Constraints

3.10 The eastern most woodland known as Howards Pit (W2) which contained extremely dense rhododendron and together with extremely undulating ground obscured a proration of the tree canopies, as such it is recognised that all dreys were potentially not found during the search of this woodland. Knowles Wood (W1) to the west did contain rhododendron, however this was far less frequent and dense than the former and presented no constraints.

4.0 RESULTS

Desk Study

- 4.1 The Site lies within a red squirrel alert zone. Active protection for red squirrel and exclusion of grey squirrels through monitoring and population control methods is encouraged within these areas.
- 4.2 The desk study returned 21 records for red squirrel, the closest is within Knowsley Park 270m to the southeast. The most recent sighting was in 2017 which is located 820m north of the Site boundary and no red squirrels have been recorded in the area since then. Several records for grey squirrel were returned in the data search. The most recent recorded in Knowsley Park were in 2024.
- 4.3 Figure 7.3 of the Ecology Chapter 7 of the ES shows locations of the red squirrel records and red squirrel alert zone.
- 4.4 The woodlands on Site provide suitable habitat for both red and grey squirrel.

Field Study

- 4.5 The visual survey on 30th April 2025 found a single squirrel drey within W2 and potential squirrel feeding remains in the form of eaten hazel nuts around a number of trees within W1. These hazel nut shells exhibited the notch and clean break in half that suggests that they are squirrel feeding remains instead of another species (see Photograph 2). The location of these features is shown on Figure 7.6.1.



Photograph 2: Hazel nuts exhibiting the notch and cut in half

- 4.6 No sightings of red or grey squirrel were observed during any of the red squirrel surveys or other species surveys undertaken on Site.
- 4.7 Out of the 20 hair tubes deployed, all had the bait taken. No red or grey squirrel hairs were identified from those collected within the traps.

5.0 DISCUSSION

- 5.1 No conclusive evidence has been found to suggest the presence of red squirrel within the Site.
- 5.2 The visual survey found evidence of use of W1 and W2 by low numbers of squirrels as surveys of suitable habitat found a single squirrel drey within W2 and potential feeding remains within W1.
- 5.3 No recent records of red squirrel were returned in the data search, despite regular monitoring for the presence of red squirrel within the red squirrel alert zone. The data search confirmed several recent sightings of grey squirrel in the local area.
- 5.4 Analysis of hairs collected by the tubes deployed within W1 and W2 during August 2025 found no red or grey squirrel hairs. Additionally, no red squirrels were observed during the red squirrel surveys, or during the numerous survey visits to the Site.
- 5.5 Due to the prevalence of grey squirrels in the area, and lack of evidence of the presence of red squirrel found during the surveys, it is likely that a low population of grey, rather than red squirrel is present within the Site.
- 5.6 There is a residual risk of future colonisation of suitable woodland habitat on Site by red squirrel, due to their historical presence in the locality and ongoing conservation efforts within the red squirrel alert zone. It is therefore recommended that updated red squirrel surveys should accompany any future reserved matters or full planning application.
- 5.7 As proposals are at outline stage, a detailed masterplan has not yet been prepared. It is anticipated that any negative impacts on red squirrel could be mitigated within the proposed scheme.
- 5.8 Within the submitted illustrative masterplan, it is proposed to retain and enhance both onsite and adjacent offsite woodland. New planting within the scheme has been designed to buffer

the suitable woodland habitat and maintain commuting corridors via the planting of connecting individual trees and scrub, with larger trees allowed to develop a canopy cover over time, in order to link the central woodlands with adjacent and offsite habitats. Additional scrub planting is proposed adjacent to retained woodland which will provide a buffer from predation and disturbance.

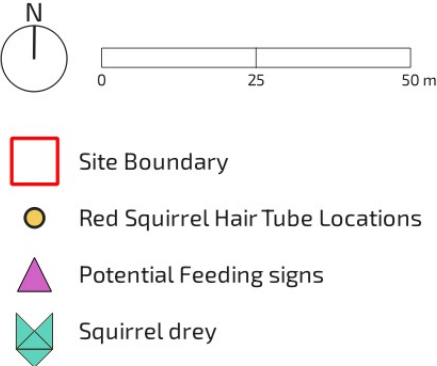
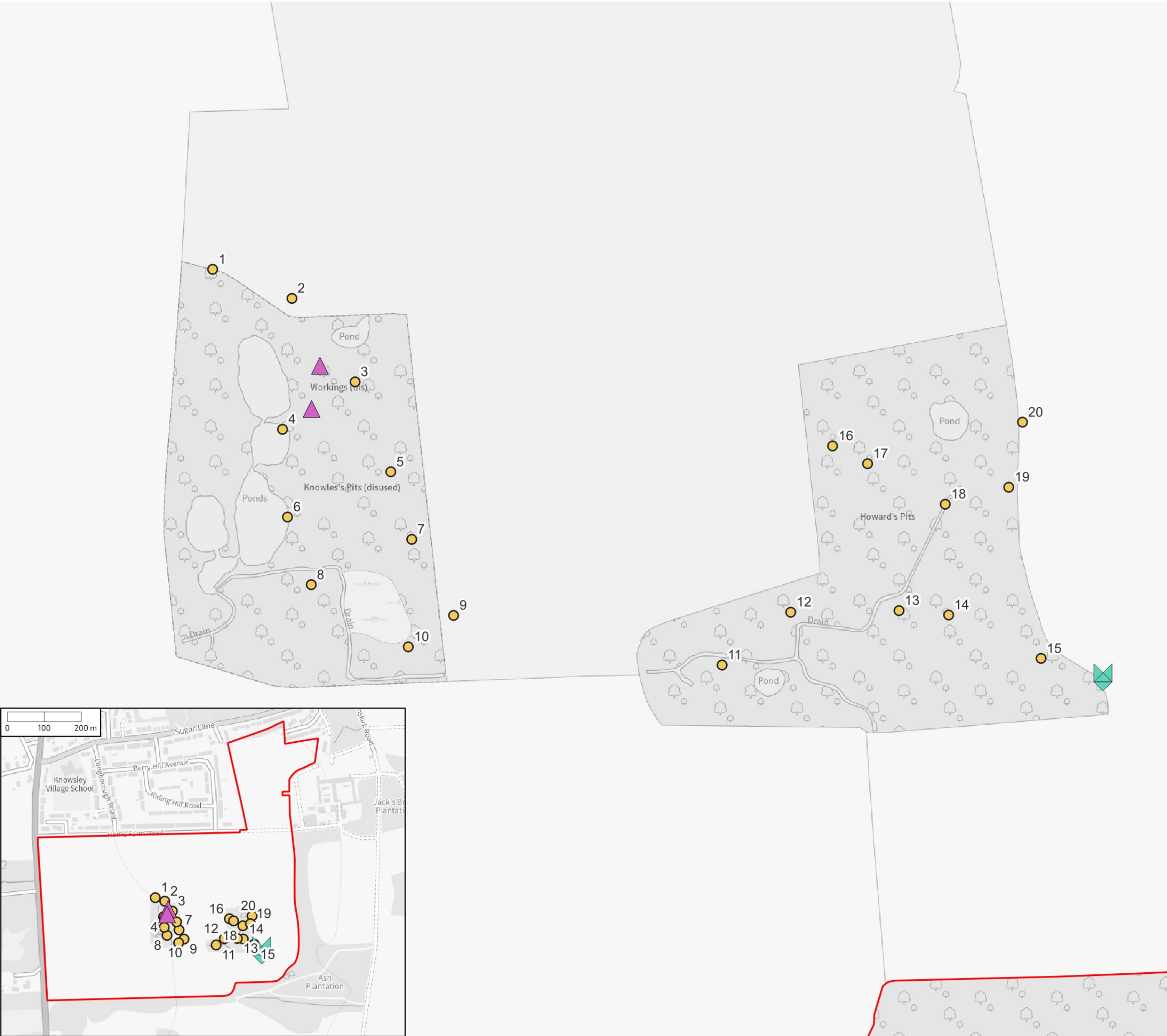
- 5.9 If required at the detailed design stage, additional mitigation to maintain connectivity from the central woodlands to Ash Plantation woodland (within Knowsley Park LWS) could be implemented via inclusion of a canopy road crossing in the south-east part of the Site.
- 5.10 Additionally, if required, the provision of road signs placed in appropriate locations could be utilised to warn drivers to the presence of red squirrel.
- 5.11 It is anticipated that any negative impacts during construction could be mitigated via implementation of an industry best practice Construction Environmental Management Plan (CEMP) as detailed in Section 7.5.11 of the Ecology Chapter prior to the commencement of any construction activity. This will ensure pre-commencement checks are carried out by a suitably experienced ecologist to avoid impacts to dreys or individual red squirrels.
- 5.12 It is therefore considered unlikely that red squirrel will be significantly impacted by proposals and that residual effects on Red Squirrel would be Not-Significant at a Local level.

FPCR Environment and Design Ltd

Registered Office: Lockington Hall, Lockington, Derby DE74 2RH

Company No. 07128076. [T] 01509 672772 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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date	26/09/25	drwn/chkd	DV / ER
client	Hallam Land Management Ltd		
project	Land east of Knowsley Lane, Knowsley		
title	RED SQUIRREL HAIR TUBE PLAN	scale	1:1,223 @ A3
number	FIGURE 7.6.1		
rev	-		