

Biglis to Dinas Powys ATR

Hazel Dormouse Survey Report

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01	12/23	Morgan Greedy, Rebecca Howells	Siân Carr	Samantha Walters	First Issue

This report dated 13 December 2023 has been prepared for Vale of Glamorgan Council (the “Client”) in accordance with the terms and conditions of appointment dated 01 November 2022 (the “Appointment”) between the Client and **Arcadis Consulting (UK) Limited** (“Arcadis”) for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

Contents

1	Introduction and Aims	6
1.1	Background	6
1.2	Site Location	6
1.3	Proposals.....	6
1.4	Review of Existing Information	6
2	Legislation and Conservation Status	7
3	Methodology	9
3.1	Dormouse Survey	9
4	Survey Constraints	10
5	Results	10
6	Discussion and Conclusion	11
7	Recommendations	12
7.1	Mitigation	12
8	References	13
	Drawings	14
	Dormouse Nest Tube Location Plan	14

Summary

Arcadis Consulting (UK) Ltd (Arcadis) has been commissioned by Vale of Glamorgan Council to undertake hazel dormouse (*Muscardinus avellanarius*) surveys to inform the design of the proposed active travel route (ATR) between Biglis and Dinas Powys.

An extended Phase 1 habitat survey and desk study, undertaken by Arcadis in 2023, identified woodland and hedgerows within the proposed development footprint as suitable to support foraging and breeding dormouse. Woodland located immediately adjacent to Cardiff Road has limited understorey to support dormouse, but there is sufficient canopy cover to allow commuting.

The proposals will lead to the removal of sections of hedgerow, trees, scrub, and woodland and have potential to negatively impact dormouse if found to be present. Nest tube surveys were undertaken within the hedgerow network surrounding the proposed ATR between Biglis and Dinas Powys between April and November 2023.

Dormouse was present in the hedgerow on the south-west end of the route. There is connectivity and suitable habitat throughout the route. Proposed works requiring removal of sections of hedgerow, trees, scrub, and woodland have the potential to kill, injure, or disturb dormouse and fragment available habitat.

The appropriate mitigation is dependent on the extent of vegetation clearance required within dormouse habitat. If only a small amount of clearance is required, i.e., a few metres of linear habitat, works may be undertaken following a method statement under ecological supervision. If larger scale clearance works are required a licence application would need to be prepared and submitted to Natural Resources Wales for approval. The permanent removal of habitat used by dormouse would need to take place under licence.

A licence application would need to include suitable mitigation such as sensitive clearance with respect to the dormouse life cycle, compensatory planting, and enhancements such as nest boxes. When the extent of works is confirmed, an ecologist should be consulted to determine which process to follow.

In line with guidance on the lifespan of surveys and reports, this report is valid for 18 months (i.e. until June 2025) [1].

1 Introduction and Aims

1.1 Background

This report presents the results of hazel dormouse (*Muscardinus avellanarius*) surveys along a proposed active travel route (ATR) between Biglis and Dinas Powys, undertaken by Arcadis Consulting (UK) Limited on behalf of the Vale of Glamorgan Council. The aim of the survey was to establish the presence/likely absence of hazel dormouse (hereafter referred to as dormouse) within the site boundary to identify potential ecological constraints to the proposed development and provide recommendations for appropriate mitigation.

1.2 Site Location

The proposed development is in the Vale of Glamorgan with a central grid reference of ST 15393 70215. The proposed development links Biglis in Barry (south-west of the active travel route) to Dinas Powys (north-east of the active travel route) via grazed semi-improved grasslands and existing footpath/road from along Cardiff Road to where the path will terminate at Dinas Powys train station. A second option is proposed which crosses the A4055 (grid reference ST15256 69855) and passes through a series of fields with a parcel of woodland on the eastern boundary before terminating at grid reference ST 15324 70222.

Both route options and the area surveyed are shown on Drawing 10058585-ARC-XX-010-DR-E-00004.

1.3 Proposals

The proposals are for a new ATR between Dinas Powys and Biglis. An ATR is a path that will be used for walking and cycling (including the use of mobility scooters) for everyday journeys. The northeastern and northern section of the proposed development are located alongside the Cardiff Road from Dinas Powys train station to the entrance of Green Lane. The southern section of the proposed development runs from Green Lane where it will continue through grazed semi-improved grasslands and then run parallel to Cardiff Road to the Biglis roundabout that connects the A4055 to the A4231 and B4267 at the eastern edge of Barry. A second option is proposed which crosses the A4055 (grid reference ST15256 69855) and will pass through a series of fields with a parcel of woodland on the eastern boundary before terminating at grid reference ST 15324 7022.

The existing footpath/road on the northern section of the proposed development will likely need widening with roadside trees and scrub requiring pruning and/or clearance. Sections of hedgerow, trees, scrub, woodland, and semi-improved grassland will require some vegetation clearance on the southern section of the proposed development, but the full extent of vegetation clearance is currently unknown. There may be a requirement to incorporate lighting along the travel route.

1.4 Review of Existing Information

The desk study returned two records of dormouse within 2 km of the proposed development. The closest record was of a dormouse nest found at Cog Moors (Wastewater Treatment Works (WwTW), 600m east of the proposed development. The proposed development is connected to that record via woodland and hedgerows.

The woodland and hedgerows within the proposed development are suitable to support foraging and breeding dormouse, a range of suitable food sources are present along the proposed development, including, Bramble (*Rubus fruticosus* agg.), Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Oak (*Quercus* sp.). Woodland located immediately adjacent to Cardiff Road has limited understorey to support dormouse, but there is sufficient canopy cover to allow commuting [2].

2 Legislation and Conservation Status

This section provides an overview of the legislation applicable to dormouse. For further information the source legislation should be reviewed.

The dormouse is protected by National and European legislation. It is listed under Schedule 5 of the Wildlife and Countryside Act (WCA) 1981 (as amended) [3] which makes it an offence to:

- intentionally kill, injure or take a dormouse;
- possess or control any live or dead specimen or anything derived from a dormouse;
- intentionally or *recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse (whether occupied or not); and
- intentionally or *recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

*The term “recklessly” was added as an amendment to the Wildlife and Countryside Act 1981 (as amended) as a result of the Countryside and Rights of Way Act 2000 [4].

The dormouse is included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) [5] which makes it an offence to:

- deliberately capture or kill a dormouse;
- deliberately disturb a dormouse;
- damage or destroy a breeding site or resting place of a dormouse; and
- keep, transport, sell or exchange, or offer for sale or exchange a live or dead dormouse or any part of a dormouse.

Dormouse is a Section 7 of the Environment (Wales) Act 2016 [6] species. This legislation states that reasonable steps must be taken to maintain and enhance the living organisms included in the section.

National and local policies are in place to ensure developments have regard to protected sites and species that are notable or locally important in the area. Planning Policy Wales 2021 [7], supplemented by Technical Advice Note 5 [8], states that planning authorities must seek to maintain and enhance biodiversity providing a net benefit.

Local planning policy for ecology and biodiversity is provided in the Vale of Glamorgan Replacement Local Development Plan (LDP) [9]. The following policies are of most relevance to this report:

POLICY MD9 - PROMOTING BIODIVERSITY

New development proposals will be required to conserve and where appropriate enhance biodiversity interests unless it can be demonstrated that:

1. The need for the development clearly outweighs the biodiversity value of the site; and
2. The impacts of the development can be satisfactorily mitigated and acceptably managed through appropriate future management regimes.

POLICY SP10 - BUILT AND NATURAL ENVIRONMENT

Development proposals must preserve and where appropriate enhance the rich and diverse built and natural environment and heritage of the Vale of Glamorgan including:

1. The architectural and / or historic qualities of buildings or conservation areas, including locally listed buildings;
2. Historic landscapes, parks and gardens;
3. Special landscape areas;
4. The Glamorgan Heritage Coast;

5. Sites designated for their local, national and European nature conservation importance;
6. Important archaeological and geological features.

POLICY MG19 - SITES AND SPECIES OF EUROPEAN IMPORTANCE

Development proposals likely to have a significant effect on a European site, when considered alone or in combination with other projects or plans will only be permitted where:

1. The proposal is directly connected with or necessary for the protection, enhancement and positive management of the site for conservation purpose; or
2. The proposal will not adversely affect the integrity of the site;
3. There is no alternative solution;
4. There are reasons of overriding public interest; and
5. Appropriate compensatory measures are secured.

Development proposals likely to have an adverse effect on a European protected species will only be permitted where:

1. There are reasons of overriding public interest;
2. There is no satisfactory alternative; and
3. The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

POLICY MG20 - NATIONALLY PROTECTED SITES AND SPECIES

Development likely to have an adverse effect either directly or indirectly on the conservation value of a site of special scientific interest will only be permitted where it is demonstrated that:

1. There is no suitable alternative to the proposed development; and
2. It can be demonstrated that the benefits from the development clearly outweigh the special interest of the site; and
3. Appropriate compensatory measures are secured; or
4. The proposal contributes to the protection, enhancement or positive management of the site.

Development proposals likely to affect protected species will only be permitted where it is demonstrated that:

1. The population range and distribution of the species will not be adversely impacted;
2. There is no suitable alternative to the proposed development;
3. The benefits of the development clearly outweigh the adverse impacts on the protected species; and
4. Appropriate avoidance, mitigation and compensation measures are provided.

Where impacts are identified the Council will require applicants to demonstrate that appropriate measures have been incorporated to reduce, or minimise the impact identified to the lowest possible acceptable level.

Supplementary Planning Guidance Note [10]: Sustainable Development recognises that Sustainable Urban Drainage Systems (SUDS), green roofs and green infrastructure support the enhancement of biodiversity and that such provision is an important consideration in achieving sustainability, through good design, whilst promoting biodiversity.

New development proposals will be required to conserve and where appropriate enhance biodiversity interests unless it can be demonstrated that: 1) the need for the development clearly outweighs the biodiversity value of the proposed development; and 2) the impacts of the development can be satisfactorily mitigated and acceptably managed through appropriate future management regimes.

3 Methodology

3.1 Dormouse Survey

Dormouse surveys were undertaken in accordance with the guidance provided in The Dormouse Conservation Handbook [11]. The ‘dormouse nest-tube survey methodology’ was used, whereby specially constructed artificial nesting tubes were fastened underneath horizontal branches in areas of suitable habitat using garden wire and were left in place over a period of several months. When present, dormouse often find and make nests in these tubes and presence can then be detected by means of periodic monitoring to find actual animals or nests, both of which are distinctive.

The standard survey methodology requires the deployment of at least 50 nest tubes and uses an index of probability to calculate a survey effort score. Nest tubes are most frequently occupied in May, August and September and so these months score the highest. The guidelines state that “assumed absence should not be based on a search effort score of less than 20”.

Fifty dormouse tubes were deployed in the hedgerows identified as suitable dormouse habitat on the 24 May 2023 by licenced surveyor Julie Player MCIEEM (licence number: S089877-1) and assisted by Rachel Turcan (qualifying member of CIEEM). These locations can be found on Drawing 10058585-ARC-XX-010-DR-E-00004. A further 11 tubes were deployed on 8 August 2023 by experienced surveyor Rebecca Howells assisted by Morgan Greedy when the second option through the skate park was proposed.

Nest tube checks were carried out monthly between June and November 2023. Surveys were carried out by licensed surveyors: Julie Player, Siân Carr MCIEEM (licence number: S089962-1), and Rebecca Howells (accredited on Siân Carr’s licence) and assisted by Morgan Greedy and Rachel Turcan as indicated in Table 1 below.

Table 1 Dormouse Survey Visits

Survey Date	Surveyors	Weather Conditions	Survey Score
24 May 2023	Julie Player and Rachel Turcan	17°C, dry, sunny	N/A – tubes deployed
22 June 2023	Siân Carr and Rebecca Howells	22°C, sunny and dry	2
17 July 2023	Rebecca Howells and Morgan Greedy	17°C, wind 16 mph, cloud cover 7/8, dry	2
14 August 2023	Rebecca Howells and Morgan Greedy	20°C, wind 18 mph, cloud cover 7/8, dry	5
15 September 2023	Julie Player and Rachel Turcan	21°C, dry, sunny	7
18 October 2023	Julie Player and Rachel Turcan	11°C, cloudy, scattered showers	2
7 November 2023	Julie Player and Rachel Turcan	12°C, cool and cloudy	2 – tubes collected
		Total	20

4 Survey Constraints

In line with guidance on the lifespan of surveys and reports, this report is valid for 18 months (i.e., until June 2025) [1].

Areas where nest tubes could not be deployed due to access issues are identified as Field A on Drawing 10058585-ARC-XX-010-DR-E-00004. The presence of livestock in Field B (horses) and Field C (cattle) prevented checking of some tubes due to safety concerns: tubes 26 – 29 could not be checked in Field B during the September, October and November surveys, and tubes 14 – 25 could not be checked in Field C during the July survey. The impact on the overall assessment as a result of these safety concerns is considered minimal as the proportion of tubes not inspected is relatively small.


Overgrown Bramble scrub resulted in surveyors being unable to locate tube 2, 4, 11 and 46 during the July survey and tube 2, 5, 11, 14, 24, and 46 during the August survey. Six tubes were found to be missing the inserts during the August survey. Two inserts were found on the ground and reinserted.

The late identification of option 2 on the north-west side of Cardiff Road meant that 11 tubes were not deployed until July, mid-way through the season. Despite this, a score of 20 was already met due to the original 50 tubes deployed throughout the site. The 11 tubes that were deployed in July 2023 are therefore providing additional information that is important for understanding dormouse presence along option 2 but is not necessary for increasing the overall survey score.




5 Results

During the July, August, October, and November surveys, material indicative of a dormouse nest was found in tube 9 (Table 2). Also in October 2023, potential old dormouse nests were found in tube 8 and 10, both were occupied by wood mouse (*Apodemus sylvaticus*) at the time of the visit.

Table 2 Hazel Dormouse Nest Tube Survey Results

Survey Date	Survey Result	Photograph
24 May 2023	N/A - tubes deployed.	
22 June 2023	No evidence found.	
17 July 2023	Tube 9 - nesting material found inside, appears to be the start of a dormouse nest.	

Tube 9.

Survey Date	Survey Result	Photograph
14 August 2023	<p>Tube 9 – nesting material present. Potentially abandoned dormouse nest.</p> <p>Tube 31 – 2 x wood mouse present. Nesting material found.</p>	 <p data-bbox="823 618 1364 651"><i>Tube 9 (left) and Tube 31 (right).</i></p>
15 September 2023	No evidence found.	
18 October 2023	<p>Tube 5 – 3 x wood mouse.</p> <p>Tubes 8 and 10 – potentially old dormouse nest with wood mouse present.</p> <p>Tube 9 – dormouse nest.</p> <p>Tube 12 – 1 x wood mouse. Tube 43 – wood mouse nest.</p>	 <p data-bbox="823 1093 1329 1126"><i>Tube 9.</i></p>
7 November 2023	<p>Tubes 7 and 8 – 1 x wood mouse.</p> <p>Tube 9 – dormouse nest (tightly woven, one hole for entrance, did not break up when tube opened).</p> <p>Tubes 10, 42, and 46 – wood mouse nest.</p>	 <p data-bbox="823 1512 1241 1545"><i>Tube 9.</i></p>

6 Discussion and Conclusion

Dormouse has been identified as using the site in the hedgerow on the southwest end of the route. There is connectivity and suitable habitat throughout the route. Proposed works requiring removal of sections of hedgerow, trees, scrub, and woodland have the potential to kill, injure, or disturb dormouse and fragment available habitat.

The appropriate approach to mitigation is dependent on the extent of vegetation clearance required within dormouse habitat. If only a small amount of clearance is required, i.e., a few metres of linear habitat, it may be possible for works to be undertaken following a method statement under ecological supervision. If larger scale clearance works are required a licence application would need to be prepared and submitted to Natural

Resources Wales (NRW) for approval. The permanent removal of habitat used by dormouse would need to take place under licence. A licence application would need to include suitable mitigation such as sensitive clearance with respect to the dormouse life cycle, compensatory planting, and enhancements such as nest boxes. When the extent of works is confirmed, an ecologist should be consulted to determine which process to follow.

7 Recommendations

7.1 Mitigation

Mitigation requirements will be dependent on the extent of works and the provisions of any licence but are likely to include the following.

- Retain hedgerows, scrub and woodland where possible;
- Vegetation clearance to be sensitively programmed to be of least risk to dormouse life cycle. Periods of time to avoid tree, shrub and hedgerow clearance comprise hibernation (November to March) and the breeding window (June to August/ September).
- Encourage dormouse to leave the area of their own accord using a two-stage process. This involves cutting tree/ shrub vegetation over winter, with minimal ground disturbance (e.g., tree shears) and then undertaking stump removal once dormouse typically emerge from hibernation and would have left the area (late April/ May) in search of suitable foraging habitat. Displacement of dormouse using this method should only be used where short sections of hedgerow habitat or small areas of tree/shrub habitat need to be removed. Nest boxes may need to be used where large scale habitat removal is required.
- Enhance adjacent habitat for dormouse through new tree and shrub planting. Species recommended for planting which provide food sources for dormouse include Hazel, oak, honeysuckle (*Lonicera periclymenum*), Bramble, hawthorn, Broom (*Cytisus scoparius*), Yew (*Taxus baccata*), Wayfaring-tree (*Viburnum lantana*).
- The erection of nest boxes in retained and newly planted trees. These should be provided at a density of 30-100 per hectare.
- Ensure that any gaps created in vegetation are less than 10m wide to retain connectivity. Trees should be avoided during clearance to ensure that canopies connect.

If a licence is required, the licence would need to satisfy the '3 tests' of the Conservation of Habitats and Species Regulations [5]:

1. Need/purpose of the works must be proved to be for public health or safety or imperative reason of over-riding public interest.
2. That there are no reasonable/satisfactory alternatives (including "do nothing" option)
3. That the proposals would not be detrimental to the favourable conservation status of dormouse

It can take between 6 and 8 weeks for NRW to grant a licence or potentially longer in busy periods. Approval of the licence would require the implementation of an ongoing dormouse mitigation strategy to ensure that no harm comes to dormouse on site through the works.

8 References

- [1] CIEEM, "Advice Note on the Lifespan of Ecological Reports and Surveys," 2019.
- [2] Arcadis Consulting (UK) Ltd, "Biglis to Dinas Powys ATR Preliminary Ecological Appraisal. Document Reference: 10058585-ARC-XX-XXX-RP-E-0001-P01," 2023.
- [3] His Majesty's Stationary Office, "Wildlife and Countryside Act (as amended)," HMSO, London, 1981.
- [4] His Majesty's Stationary Office, "Countryside and Rights of way Act 2000," 2000.
- [5] His Majesty's Stationary Office, "The Conservation of Habitats and Species Regulations 2017 (as amended by the EU Exit Regulations 2019)," 2017.
- [6] His Majesty's Stationary Office, "The Environment (Wales) Act," 2016.
- [7] Welsh Government, "Planning Policy Wales Edition 11," 2021.
- [8] Welsh Government, "Technical Advice Note 5 Nature Conservation and Planning," 2009.
- [9] Vale of Glamorgan Council, "Vale of Glamorgan Local Development Plan 2011 - 2026.," Barry, 2017.
- [10] Vale of Glamorgan council, "Supplementary Planning Guidance: Sustainable Development," Barry, 2006.
- [11] Bright, P., Morris, P., & Mitchell-Jones, T, Dormouse Conservation Handbook (Second edition), Peterborough: English Nature, 2006.

Drawings

Dormouse Nest Tube Location Plan

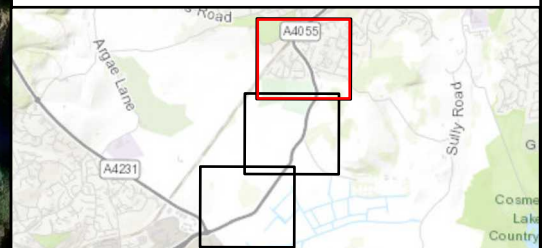
Drawing 10058585-ARC-XX-010-DR-E-00004



Legend


- Site boundary
- Location of nest tube

Notes
 World Imagery: Maxar, Microsoft
 World Topographic Map: Esri UK, Esri, HERE, Garmin, INCREMENT P, USGS, METI, NASA



Rev	Date	Description	Drawn	Check	Approv
01	13-12-23	INITIAL ISSUE	RP	EH	SW

Client:



VALE of GLAMORGAN
BRO MORGANNWG

PROJECT:
BIGLIS TO DINAS
POWYS ATR

Site

Biglis to Dinas Powys ATR

Client

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Title:

Dormouse Nest Tube Location Plan

Page 1 of 3

Designed	E. Hopkins	Date	13 DEC 23	Signed
Drawn	R. Pakhare	Date	13 DEC 23	Signed
Checked	E. Hopkins	Date	13 DEC 23	Signed
Approved	S. Walters	Date	13 DEC 23	Signed
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Original Size:	A3	Grid:	OS	
Suitability Code:	S2	Project Number:	10058585	

Suitability Description:

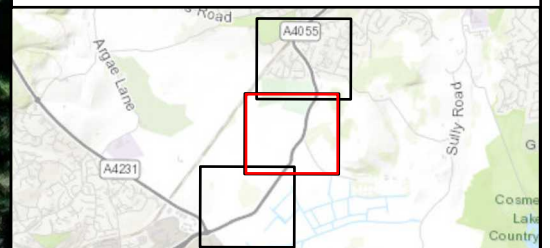
For Information

Drawing Number:	10058585-ARC-XX-010-DR-E-00004	Revision:	P01
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- Legend**
- Site boundary
 - Location of nest tube
 - A - the section of the proposed development where access was not granted

Notes
 World Imagery: Maxar, Microsoft
 World Topographic Map: Esri UK, Esri, HERE, Garmin, INCREMENT P, USGS, METI/ NASA



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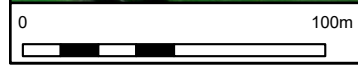
Page 2 of 3

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Scale:	1:2,500	Datum:	AOD	
Original Size:	A3	Grid:	OS	
Suitability Code:	S2	Project Number:	10058585	

Suitability Description:

For Information

Drawing Number:	10058585-ARC-XX-010-DR-E-00004	Revision:	P01
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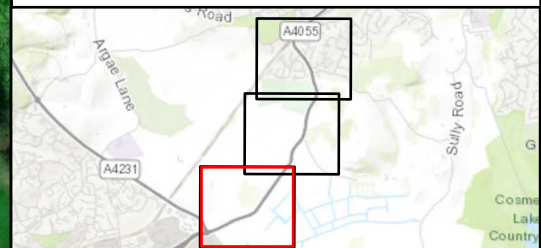




Legend

- Site boundary
- Location of nest tube
- B - the field with horses and foals where access was considered unsafe
- C - the fields with cows and calves where access was considered unsafe

Notes
 World Imagery: Maxar, Microsoft
 World Topographic Map: Esri UK, Esri, HERE, Garmin, USGS, NGA



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Site: Biglis to Dinas Powys ATR
Client: Vale of Glamorgan County Borough Council

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Page 3 of 3

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