

# Alveston Hill Cycle Route

## Hazel Dormouse Survey Report

South Gloucestershire Council

November 2023



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This document has 19 pages including the cover.

## Report Validity

In the event of scope or programme changes or if works do not commence within 12 months of the date of this report, then updates to the surveys may be required to ensure the validity of the data, as per CIEEM guidance<sup>1</sup>.

## Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
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## Client signoff

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<sup>1</sup> CIEEM (2019) Advice Note on the Lifespan of Ecological Reports and Surveys.

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# 1. Introduction

## 1.1. Terms of Reference

AtkinsRéalis was commissioned by South Gloucestershire Council (SGC) to undertake hazel dormouse presence/ likely absence surveys in connection with the proposed Alveston Hill cycle route scheme hereafter referred to as the 'Proposed Scheme').

The Proposed Scheme is located between the villages of Alveston and Thornbury (herein referred to as 'the Site'; as shown in **Appendix A**).

A Preliminary Ecological Appraisal (PEA) report completed in March 2023<sup>2</sup> concluded that there were no existing records for dormice within 2 km of the Site, however, the habitats affected by the Proposed Scheme (hedgerow network and woodland) had potential to support dormice. This report details the results of the hazel dormouse surveys completed at the Site in 2023 and can be used to inform design development, site layout and/ or site investigations. This is a report to outline any avoidance/ mitigation measures pre-construction, during and post-construction.

Opportunities to provide biodiversity enhancements in accordance with local, regional and national biodiversity planning strategies are also identified in this report, where relevant.

## 1.2. The Site

The Site is situated between the village of Alveston and the town of Thornbury in the county of South Gloucestershire.

The Site is centred at Ordnance Survey National Grid reference (OSNGR) ST 63442 88851 (as presented in **Appendix A**) and comprises two agricultural fields with a public footpath adjacent to and east of Alveston Hill road, the B4061 (the Survey Area). The road is delineated with trees and shrubs. Thornbury Leisure Centre is located to the north of the Site.

Habitats adjacent to the Site include agricultural fields, broadleaved trees and hedgerows, a small stream and mixed scrub comprising hazel, bramble, blackthorn and hawthorn. Habitats within the wider landscape beyond the Survey Area predominantly comprise fields which are likely in agricultural use, patches of deciduous woodland and amenity grassland associated with Thornbury Golf Centre, and residential and commercial buildings associated with Alveston and Thornbury. A large quarry is also located approximately 2.4 km to the east of the Site.

## 1.3. The Proposed Scheme

The Proposed Scheme comprises the following:

- A 2-way cycle track and footway to run along the eastern side of B4061 between Alveston Hill and the A38 road;
- Pedestrian and cycling crossings at Down Road and Alveston Hill; and
- An off-road segregated walking and cycling path from Alveston Hill to Thornbury Leisure Centre.

The proposed works within and alongside the public highway are permitted development under Part 9 Class A (a&b) of the Town and Country Planning General Permitted Development Order<sup>3</sup> meaning that formal planning permission is not required. The proposed off-road segregated footpath and cycleway does not fall under permitted development and therefore requires planning permission. Only the off-road segregated footpath and cycleway is included in this assessment and Survey Area.

This off-road section proposes a 5 m wide path comprising a 3 m wide two-way cycleway and 2 m wide footpath. These would be side by side but segregated to facilitate easy movement and prevent obstructions to cyclists and pedestrians. The path will have concrete edging and a stockproof fence is proposed to run alongside the east of the path, serving as a perimeter boundary to the private land beyond. The route includes soft landscaping and opportunities for seating/ recreation spaces for visual amenity and functionality purposes.

<sup>2</sup> Atkins (2023) Preliminary Ecological Appraisal Report Alveston Hill Cycle Route. March 2023.

<sup>3</sup> GOV.UK. Town and Country Planning General Permitted Development Order (2015, as amended). Available from: <https://www.legislation.gov.uk/ukxi/2015/596/contents/made>

In addition to running through a field, the route passes through existing tree groups and hedgerows. Part of these green infrastructure features will need to be removed to facilitate the development include: a section of hedgerow along the south-west boundary of the Site, a section of the hedgerow which runs roughly east to west across the centre of the Site dividing the two field parcels, and complete removal of a hedgerow and two groups of trees in the northern section.

At either end of this section of route, it will tie into the existing highway. At the time of writing, the preliminary construction design, construction timetable and construction working methods are not finalised. However, an indicative alignment and extent has been provided (see **Appendix A**).

## 1.4. Scope of the Assessment

This report presents hazel dormouse presence/likely absence survey information obtained between May and November 2023 (see Table 2-1 below for dates).

## 1.5. Legislation and Relevant Policy

Hazel dormice are listed on the Wildlife and Countryside Act 1981 (as amended), and on the Conservation of Habitats and Species Regulations 2017 (as amended) as European Protected Species (EPS).

These two pieces of legislation make it illegal to:

- Deliberately<sup>4</sup> capture, injure or kill a hazel dormouse;
- Deliberately disturb<sup>5</sup> a hazel dormouse;
- Damage or destroy a breeding site or resting place used by a hazel dormouse; or
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb<sup>6</sup> a hazel dormouse in such a place.

Hazel dormice are also a 'Species of Principal Importance for the conservation of biodiversity' listed under Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC)<sup>7</sup>. Section 40 of the Act places a 'Biodiversity Duty' on all public bodies, local and regional, to have regard to the conservation of biodiversity which includes giving consideration to the restoration and enhancement of species and habitats.

The National Planning Policy Framework<sup>8</sup> (NPPF) specifies that local authorities should aim to conserve and enhance 'biodiversity' requiring planning policies and applications to 'promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity'. Hazel dormice are listed as a priority species in the South Gloucestershire Biodiversity Action Plan<sup>9</sup>.

Within South Gloucestershire Council's Local Plan Core Strategy<sup>10</sup>, Policy CS9 – Managing the Environment and Heritage, sets out the objectives of conserving and enhancing the district's distinctive landscapes, natural environmental resources and biodiversity. This policy states that new development will be expected to conserve and enhance the natural environment, avoiding or minimising impacts on biodiversity and geodiversity and conserve and enhance the character, quality, distinctiveness, and amenity of the landscape. Within South Gloucestershire Council's Policies, Sites and Places (PSP) plan<sup>11</sup>. Policy PSP19 – Wider Biodiversity, states that biodiversity gain will be sought from development proposals. Land with low to negligible nature conservation value (such as pasture or arable land) can be used for provision of new semi-natural habitat, which would provide gains for local wildlife.

<sup>4</sup> Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing.

<sup>5</sup> Deliberate disturbance of animals includes any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.

<sup>6</sup> Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

<sup>7</sup> GOV.UK Natural Environment and Rural Communities Act (2006). Available from: <https://www.legislation.gov.uk/ukpga/2006/16/contents>

<sup>8</sup> GOV.UK National Planning Policy Framework (2023). Available from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

<sup>9</sup> South Gloucestershire Council, 2016. *South Gloucestershire Biodiversity Action Plan 2016-2026* [pdf] Available at: < <https://beta.southglos.gov.uk/static/e25ebdbd66bf0d60a81b9501a5427a7f/Biodiversity-Action-Plan-2016-26.pdf> > [Accessed 22 August 2023].

<sup>10</sup> South Gloucestershire Council, 2013. *South Gloucestershire Local Plan: Core Strategy 2006-2027* [pdf] Available at: < <https://beta.southglos.gov.uk/static/f149e2bb1bf00a972238eb11eb06d132/South-Gloucestershire-Core-Strategy-2006-2027.pdf> > [Accessed 22 August 2023].

<sup>11</sup> South Gloucestershire Council, 2017. *South Gloucestershire Local Plan: Policies, Sites and Places Plan Adopted November 2017*. [pdf] Available at < <https://beta.southglos.gov.uk/static/90efa5d673f208a3109ed111ba963a01/PSP-Plan-Nov2017.pdf> > [Accessed 22 August 2023].

## 2. Methodology

### 2.1. Surveyor Competencies

All hazel dormouse surveys detailed below have been undertaken in accordance with good practice guidance<sup>12</sup> and led by surveyors who have been assessed to be at least of capable experience in undertaking hazel dormouse surveys, according to the Chartered Institute of Ecology and Environmental Management (CIEEM) competency framework<sup>13</sup> and also hold a Natural England hazel dormouse survey licence.

### 2.2. Presence/ Likely Absence Surveys Using Nest Tubes

A hazel dormouse nest tube survey was carried out between May and November 2023. The survey area comprised approximately 1.1 km of hedgerows within the Site as shown in **Appendix B**. The hedgerow species comprised of species such as hawthorn, blackthorn, hazel, and bramble which has been identified as suitable habitat in which hazel dormice are encountered.

A total of 50 artificial nest tubes were placed in areas of suitable habitat (hedgerow and scrub) throughout the Site (the Hazel Dormouse Survey Area). Where possible, tubes were spaced between 15 m and 20 m apart. Tubes were fastened underneath horizontal tree/ scrub branches (including bramble).

The nest tubes were deployed on 25/04/2023 and were checked monthly up to 07/11/2023. Survey checks were carried out by a lead surveyor and assistant on the dates detailed in Table 2-1 below.

**Table 2-1 - Summary of Site Visits for Nest Tube Checks**

Visit Number	Date
Deployment	25/04/2023
1	26/05/2023
2	30/06/2023
3	28/07/2023
4	22/08/2023
5	22/09/2023
6	19/10/2023
7 (last visit and collection)	07/11/2023

Using 50 tubes as a standard for surveying<sup>14</sup>, a combined Index of Probability score can be calculated as an indicator of thoroughness of a hazel dormouse survey. The Index of Probability score is based on the likelihood of a tube being occupied in any specific month and is highest in May, August and September when nest tubes are most frequently occupied as shown in Table 2-2. The combined score is calculated by adding together the Index of Probability score for each full month the survey tubes are present and is increased or decreased depending on the number of nest tubes deployed<sup>15</sup>. A combined Index of Probability score of 20 or above must be achieved to judge likely absence in any particular survey area. The tubes were deployed in late April and in situ between May and November, and a combined score of 24 has been achieved, which indicates that a thorough survey was undertaken.

<sup>12</sup> Natural England Standing Advice: Hazel or common dormice: surveys and mitigation for development projects, accessed October 2019 from: <https://www.gov.uk/guidance/hazel-or-common-dormice-surveys-and-mitigation-for-development-projects>

<sup>13</sup> <https://www.cieem.net/competency-framework>

<sup>14</sup> Natural England Standing Advice: Hazel or common dormice: surveys and mitigation for development projects, accessed July 2022 from: <https://www.gov.uk/guidance/hazel-or-common-dormice-surveys-and-mitigation-for-development-projects>

<sup>15</sup> The process of determining scores is provided at <https://www.gov.uk/guidance/hazel-or-common-dormice-surveys-and-mitigation-for-development-projects>

**Table 2-2 - Index of Probability of Finding Hazel Dormouse in Nest Tubes in Any One Month<sup>16</sup>**

Month	Index of probability
May	4
June	2
July	2
August	5
September	7
October	2
November	2
<b>Combined Index of Probability</b>	<b>24</b>

Nest tubes were checked for evidence of hazel dormice by covering the entrance of the tube and pulling the wooden tray back to look for occupants or nests. If evidence of hazel dormice was observed, such as the presence of nesting material, the tray was carefully placed back, and the tube was taken down and positioned inside a large, clear plastic bag to examine the contents. If a hazel dormouse was present, their sex, weight, breeding condition and whether they were torpid or active was recorded, if possible. If considered likely that dependent young hazel dormice were present, the tube was not inspected beyond pulling the wooden tray back. Empty nests found in tubes that were considered likely to have been created by hazel dormouse were also recorded. These nests were retained for one month and emptied in the following month unless continuing evidence of current or recent occupations (e.g., warmth or intact structure). During the site visits, any hazelnuts found within the tubes or whilst walking along the survey transect were examined to determine if they had been chewed by hazel dormice, however, a specific nut search was not carried out.

Any other small mammals (mice, voles, or shrews) found within the tubes were removed, unless young individuals still dependent on the female were present. Any bird nests found within the nest tubes where chicks or eggs were present were also left in place. If it was determined that a bird nest was no longer in use, it was removed from the nest tube. When possible, nest tubes that were lost or damaged were replaced nearby.

### 2.3. Limitations

This section identifies any limitations to the surveys or assessment and provides an explanation as to the effect of these on the assessment.

Throughout the surveys a number of tubes were not found, with a maximum of 14 not found during the August survey due to over-grown dense vegetation (see results in Error! Reference source not found.). This is not considered a significant limitation as 50 tubes were deployed over the Proposed Scheme ensuring these were placed in the most suitable habitat for hazel dormice, and there was considered optimal distribution of nest tubes in each suitable habitat for hazel dormice (e.g., each hedgerow or woodland parcel). Moreover, these tubes were then found in September, October and November, and therefore it is still a thorough survey.

<sup>16</sup> This table is taken from People’s Trust for Endangered Species, accessed July 2022: [Hazel dormice nest tubes - People’s Trust for Endangered Species \(ptes.org\)](https://www.ptes.org/). The score system was developed in the following research report: Chanin, P. & Woods, M. 2003. Surveying dormice using nest tubes. Results and experiences from the South West Dormouse Project. English Nature Research Report No. 524. This was incorporated into: Bright, P., Morris, P. & Mitchell-Jones, T. (2006). Dormouse Conservation Handbook. Second Edition. English Nature, Peterborough.

## 3. Results

The locations of the hazel dormouse nest tubes are illustrated in **Appendix B**. The full findings of the surveys are provided in Error! Reference source not found..

The hazel dormouse surveys using nest tubes have been undertaken monthly from May to November 2023 with the nest tubes being deployed in late April 2023. During the hazel dormouse surveys, no hazel dormice or evidence of hazel dormice (including nests) have been identified.

Wood mouse evidence, including sightings of wood mice and nests made from loose dead leaves, were found in tubes during July, August, September, October and November. The following nest tubes were found to have evidence of wood mice: 2, 9, 11, 27, 31, 33, 49 and 50.

As no evidence of hazel dormouse has been recorded within the Survey Area, it is considered unlikely that hazel dormice are present within the Site.



## 4. Recommendations

### 4.1. Mitigation (Precautionary)

No evidence of hazel dormouse has been recorded within the Survey Area, and it is considered unlikely that hazel dormice are present within the Proposed Scheme. The desk study identified no records within 2 km of the Site and no hazel dormice or evidence of hazel dormice (including nests) have been identified during these surveys. However, the suitable habitat throughout the Proposed Scheme is well connected to further extensive areas of broadleaved woodland habitat and a network of hedgerows across the wider landscape. Therefore, the following mitigation is recommended as a precautionary approach due to the low residual risk.

- As it is currently understood, there are two groups of trees requiring removal (15 trees) will be removed at the northern section of the Site adjacent to the leisure centre. The Proposed Scheme will also partially remove two hedgerows and remove one in its entirety within the Site, totalling 83m of hedgerow loss.
- Any vegetation clearance works that may be necessary to facilitate the Proposed Scheme should be carried out in winter during the dormouse hibernation season (November to April, inclusive). This would also avoid the main breeding season for dormice, as well as bird nesting season;
- It is recommended that where hedgerow needs to be removed for the cycleway, that there is creation of further hedge as compensation to provide protection, and a buffer to avoid fragmentation were possible, to allow continued connectivity for hazel dormice and other small mammals;
- New hedgerow should be planted to mitigate for the loss of hedgerows within the Proposed Scheme and also to enhance the landscape. New hedgerows should be similar to the lost hedgerows, in terms of species composition and richness, providing a wide range of food sources for hazel dormice, outline details of which are provided within the hedgerow report;
- Retention of the southern and central hedgerow commuting corridor for small mammals such as hazel dormice should be achieved via a 'hop-over': planting or allowing mature trees to overhang the cycleway/footpath so that their crowns bridge the gap above.

### 4.2. Enhancement

The works will involve opportunities for ecological enhancement to align with South Gloucestershire's Core Strategy on protecting and enhancing the landscape for biodiversity. This will include planting of hedge and grassland for additional terrestrial habitat and the provision of additional nesting opportunities via dormouse nest box installation across the Site.

The recommendations below, as well as further details of this enhancement, will be outlined within a Landscape Ecology Management Plan (LEMP) once the planning application has been determined, the below proposed habitat creation is provided within a landscape general arrangement plan in **Appendix D**.

#### 4.2.1. Nesting Opportunities

To enhance the potential of the woodland to support nesting dormice, dormouse nest boxes will be installed on mature trees where appropriate within the Site. Boxes should be positioned where they are sheltered from the wind and artificial lighting, and within close proximity to suitable commuting and foraging habitat. The boxes will require installation from a licenced ecologist to ensure correct positioning, and maintenance requirements will be provided within the LEMP, including annual inspections over the required monitoring period.

#### 4.2.2. Hedgerow Creation

Hedgerow planting could reconnect the landscape adjacent to the works and provide important wildlife corridors. Native flower and fruit bearing tree and shrub species of local provenance should be used within the planting to provide food sources for hazel dormice. Planting a variety of species will help to provide diverse habitat and a species-rich community.

#### 4.2.3. Grassland Improvements

Grassland adjacent to woodland and hedgerows could be managed through cutting and monitoring regime to improve the current condition of the grassland, this will provide dense ground level cover for fauna, including refuge and foraging habitat for dormice, through an increase in prey availability (e.g., insects), due to the increase in wildflowers available as food plants as nectar.

## 5. Conclusions

Overall, no evidence of hazel dormouse has been recorded within the Survey Area, and it is considered unlikely that hazel dormice are present within the Site. The desk study provided no records of dormice within 2 km and no hazel dormice or evidence of hazel dormice (including nests) have been identified during these surveys. However, the suitable habitat throughout the Site is well connected to further extensive areas of broadleaved woodland habitat and a network of hedgerows across the wider landscape.

For the commuting corridor, where the Proposed Scheme goes through two hedgerows, retention of the southern and central hedgerow commuting corridor for small mammals such as hazel dormice may be achieved via a 'hop-over'. It is recommended that in order to adhere to local planning policy, additional hedgerow creation, dormouse nest box installation and grassland improvements will be provided to increase commuting, foraging, and nesting habitat for hazel dormice.

In the event of scope or programme changes or if works do not commence within 12 months of the date of this report, further surveys may be required to ensure the validity of the data, as per CIEEM guidance<sup>17</sup>.

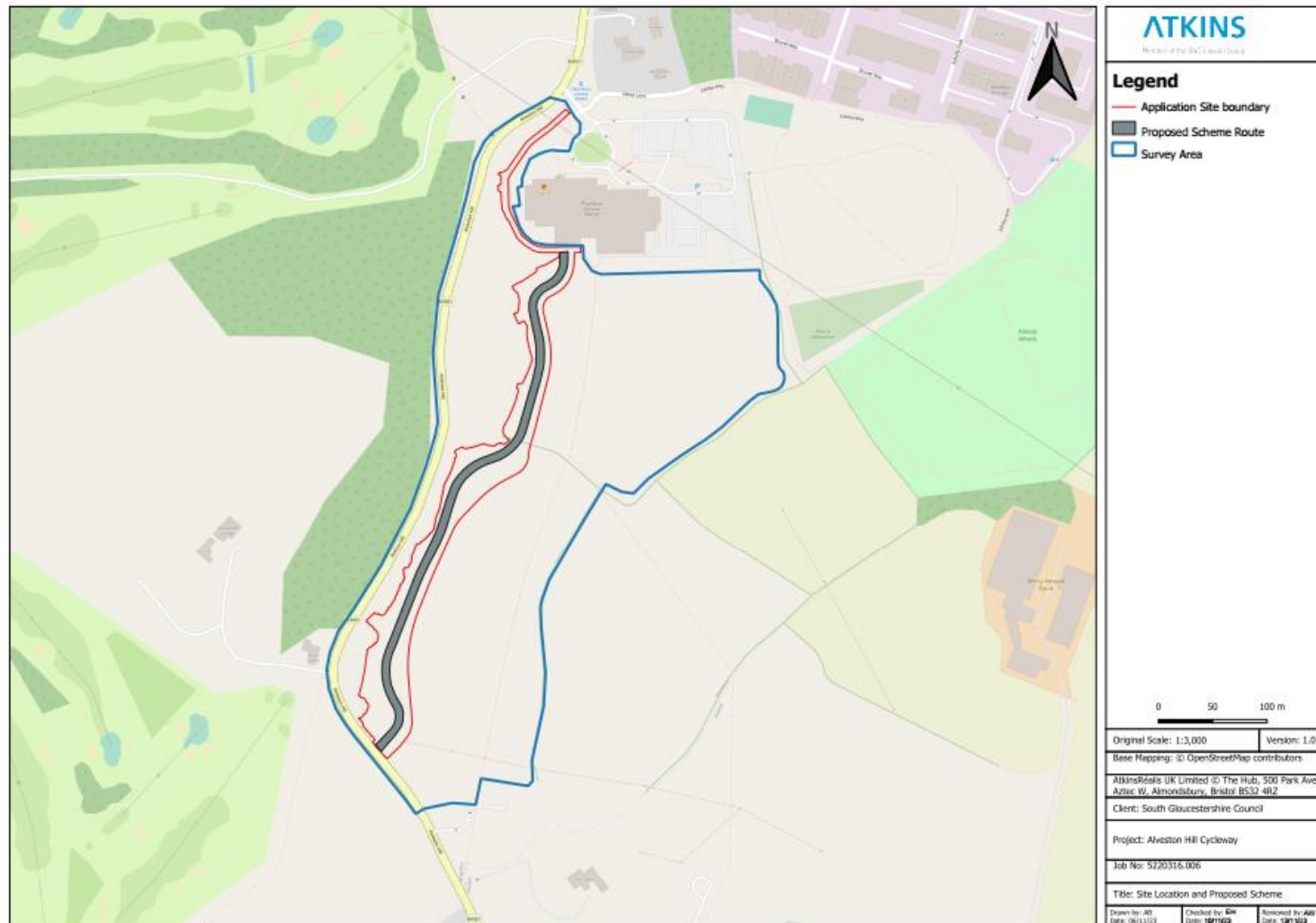
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<sup>17</sup> CIEEM, 2019. Advice Note on the Lifespan of Ecological Reports and Surveys.

# Appendices



# Appendix A. Site Location and Proposed Scheme



# Appendix B. Dormouse Nest Tube Locations



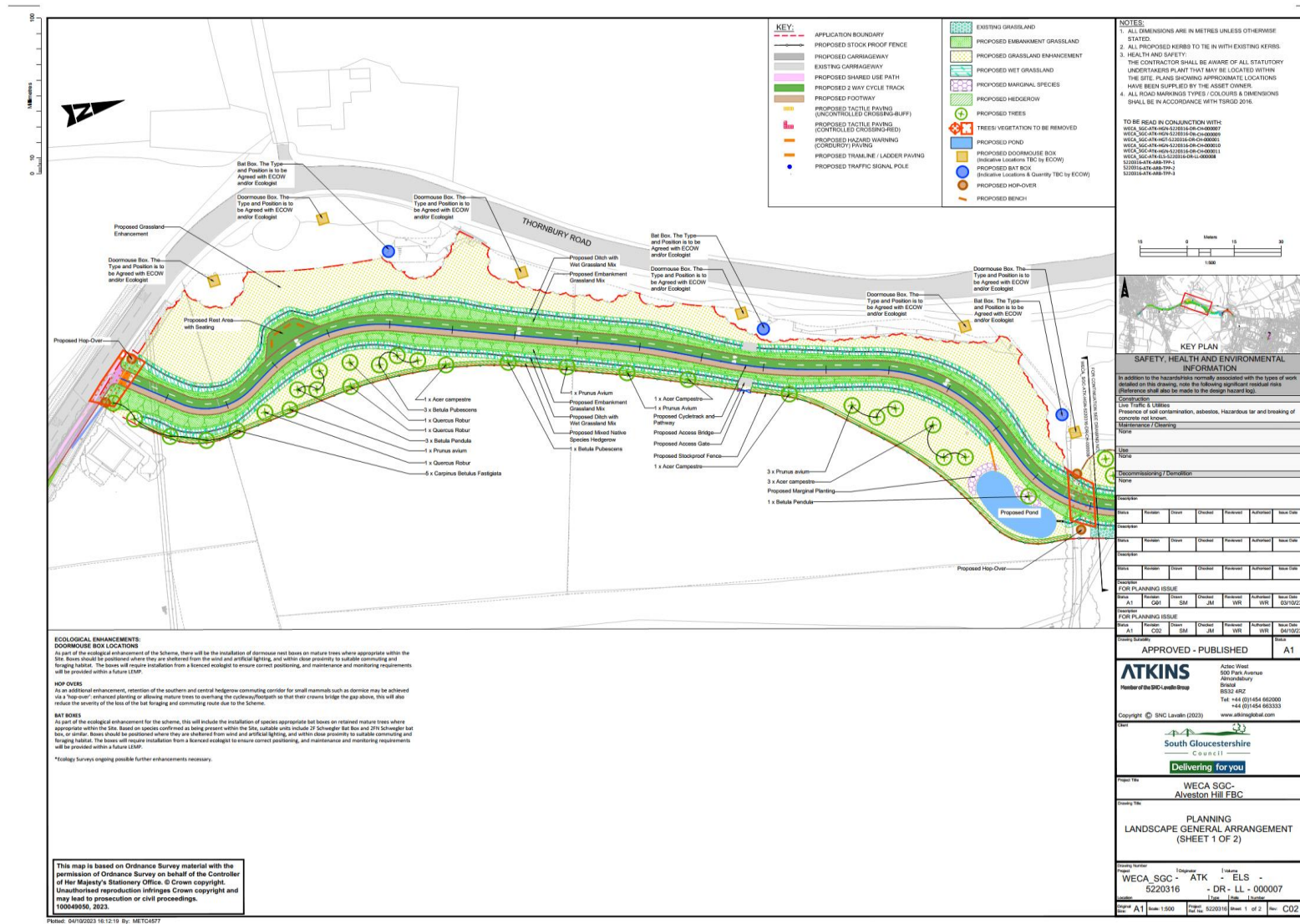
## Appendix C. Survey Results Table

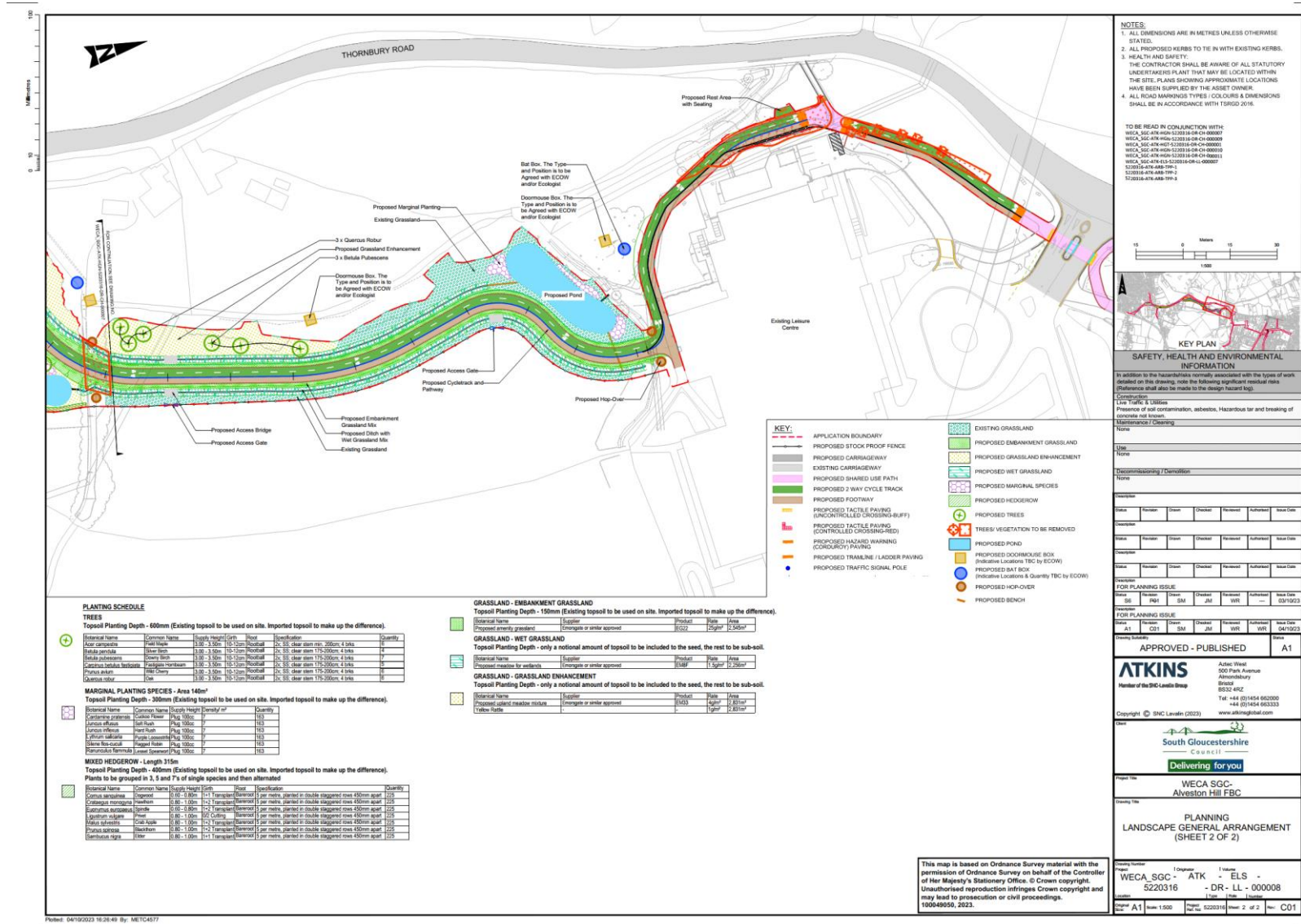
Survey Tube	Survey Findings						
	26/05/2023	30/06/2023	28/07/2023	22/08/2023	22/09/2023	19/10/2023	07/11/2023
1	Empty	Empty	Empty	Empty	Empty	Empty	Empty
2	Empty	Empty	Empty	Empty	Empty	Empty	Mouse sp. nest
3	Empty	Empty	Empty	Empty	Empty	Empty	Empty
4	Empty	Empty	Empty	Empty	Empty	Empty	Empty
5	Empty	Empty	Empty	Empty	Empty	Empty	Empty
6	Empty	Empty	Empty	Empty	Empty	Empty	Empty
7	Empty	Empty	Empty	Empty	Empty	Empty	Empty
8	Empty	Empty	Empty	Not found	Empty	Empty	Empty
9	Empty	Empty	Empty	Mouse sp. nest	Empty	Empty	Empty
10	Empty	Empty	Empty	Empty	Empty	Empty	Empty
11	Empty	Empty	Not found	Two wood mice in nest	Empty	Empty	Empty
12	Empty	Empty	Not found	Not found	Empty	Not found	Empty
13	Empty	Empty	Not found	Not found	Not found	Empty	Empty
14	Empty	Empty	Not found	Empty	Empty	Empty	Empty
15	Empty	Empty	Not found	Not found	Empty	Empty	Empty
16	Empty	Empty	Not found	Empty	Empty	Empty	Empty
17	Empty	Empty	Not found	Empty	Empty	Empty	Empty
18	Empty	Empty	Empty	Empty	Empty	Empty	Empty
19	Empty	Empty	Empty	Empty	Empty	Empty	Empty
20	Empty	Empty	Empty	Not found	Empty	Empty	Empty
21	Empty	Empty	Empty	Empty	Empty	Empty	Empty
22	Empty	Empty	Empty	Not found	Empty	Empty	Empty
23	Empty	Empty	Empty	Empty	Empty	Empty	Empty
24	Empty	Empty	Empty	Empty	Empty	Empty	Empty
25	Empty	Empty	Empty	Not found	Empty	Empty	Empty
26	Empty	Empty	Empty	Empty	Empty	Empty	Empty
27	Empty	Empty	Empty	Empty	Mouse sp. nest	Mouse sp. nest	Empty
28	Empty	Empty	Empty	Not found	Empty	Empty	Empty
29	Empty	Empty	Empty	Empty	Empty	Empty	Empty
30	Empty	Empty	Empty	Empty	Not found	Not checked for H&S	Empty

Survey Tube	Survey Findings						
	26/05/2023	30/06/2023	28/07/2023	22/08/2023	22/09/2023	19/10/2023	07/11/2023
						reasons – livestock near tube	
31	Empty	Empty	Empty	Empty	Empty	Mouse sp. nest	Empty
32	Empty	Empty	Empty	Empty	Empty	Empty	Empty
33	Empty	Empty	Mouse sp. nest	Mouse sp. nest	Empty	Empty	Empty
34	Empty	Empty	Empty	Empty	Empty	Empty	Empty
35	Empty	Empty	Empty	Empty	Empty	Empty	Empty
36	Empty	Empty	Empty	Empty	Empty	Empty	Empty
37	Empty	Empty	Empty	Empty	Empty	Empty	Empty
38	Empty	Empty	Empty	Empty	Empty	Empty	Empty
39	Empty	Empty	Empty	Empty	Empty	Empty	Empty
40	Empty	Empty	Empty	Empty	Empty	Empty	Empty
41	Empty	Empty	Empty	Empty	Empty	Empty	Empty
42	Empty	Empty	Empty	Not found	Empty	Empty	Empty
43	Empty	Empty	Empty	Empty	Empty	Empty	Empty
44	Empty	Empty	Empty	Not found	Empty	Empty	Empty
45	Empty	Empty	Empty	Not found	Empty	Empty	Empty
46	Empty	Empty	Empty	Empty	Empty	Empty	Empty
47	Empty	Empty	Empty	Empty	Empty	Empty	Empty
48	Empty	Empty	Empty	Not found	Empty	Empty	Empty
49	Empty	Empty	Empty	Not found	Mouse sp. nest	Empty	Empty
50	Empty	Empty	Empty	Not found	Empty	Mouse sp. nest	Empty

## Appendix D. Proposed Habitat Creation







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