INTERIM ECOLOGICAL ASSESSMENT

DINAH'S HOLLOW

MELBURY ABBAS

DORSET

VERSION 3

23RD MAY 2024

COMPILED BY

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FOR

DORSET COUNCIL

HIGHWAYS

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Summary

Protected and priority species and habitats were surveyed at Dinah's Hollow during 2023. These were identified following previous surveys of 2014-15 and a Preliminary Ecological Assessment survey undertaken during 2022. The slopes are an intrinsically important cultural landscape holloway and have a distinctive plant community which includes several species indicative of continuity of woodland cover. A vegetation survey recorded sixty plant species, sixteen of which are strongly associated with long-established woodland; four of the plants are Dorset Notable species. The woodland strips fall within W8 Ash – Maple – Dog's Mercury woodland in the National Vegetation Classification. The woodlands do not qualify as Lowland Mixed Deciduous Wood Priority Habitat, although they form part of an important wooded ecological network. Thirty species of fungi were recorded in October 2023. The number of fungi species is limited by the lack of dead wood and absence of veteran trees. Dormouse was identified in 2023 in the woodland along both sides of the road. As a species protected under the Habitats and Species Regulations 2017 a Natural England mitigation licence and approved method statement will be required to ensure the species is conserved and its habitat enhanced. There are four badger setts which had been used in 2015 but were no longer showing signs of use during 2023. However, badger activity was recorded and further survey must be carried out before any work begins with sufficient time to apply for a Natural England licence if required. Twelve species of bats were identified from acoustic surveys undertaken during June to October. These include western barbastelle listed as internationally vulnerable by the International Union for the Conservation of Nature. Several trees are notable for their potential bat roost features and further close inspection assessment must be undertaken prior to removal or for any arboricultural work to the trees or those close by. Should a bat roost be identified which is likely to be affected then a mitigation licence from Natural England is likely. Dinah's Hollow sits within the Amber Risk Zone for the Great Crested Newt District Level Licence, which maps areas of suitable terrestrial habitat for this species. However, surveys of the nearest water body, using three methods, did not record this species. Mitigation is suggested for protected species, including licensing which must be finalised following updated surveys. Enhancements include creation of habitat features, additional enrichment planting and management systems which create a range of functional resources for different species associated with this location. These will be captured in a landscape and ecological management plan to be adopted by Dorset Council and agreed with the landowners. Although the scheme does not require planning permission, and is therefore not

subject to mandatory Biodiversity Net Gain as required by the Environment Act, the DEFRA Biodiversity Metric will be used as a guide to demonstrate an overall gain in area and/or condition of habitats locally. This is provided in addition to the mitigation and enhancement measures for each species.

The remaining ecology work required will be incorporated into the project management workstreams and communicated to all parties.

1. Introduction

1.1 Background

Dinha's Hollow, is located in the village of Melbury Abbas, Shaftesbury, Dorset. Grid reference ST 88270, 20518. A preliminary ecological assessment was undertaken during 2022 (Alder 2022) which identified ecological interests including the likely protected and priority species and habitats for this location. Further detailed ecological assessment was required to identify the species and habitats present and evaluate the potential impacts of the scheme to these and recommend options for mitigation. This follows a mitigation hierarchy to Avoid, Mitigate, Compensate and Enhance the opportunities for biodiversity here. In addition, the ecological assessment will inform the scheme proposal for the stabilisation of the slopes in respect of highway safety. Previous detailed ecological survey work was undertaken in 2014-15 although due to the time elapsed since, an updated assessment was required. The extent of the current proposal affects just the slopes shown within Figure 1 whereas previously the slopes to the south below St Thomas's Church also formed part of the scheme.

1.2 Description

Dinah's Hollow is an ancient steep-sided Holloway which originally was part of the main route between Shaftesbury and Blandford. The first Turnpike Trust responsible for the upkeep of the coaching routes in Dorset established in 1752 has reference to the hollow (Good 1940). The significance of Holloway's in the north Dorset landscape has been identified by the Cranborne Chase and West Wiltshire Downs National Landscape within the Landscape Character Assessment of the area. Within Type 1: Chalk Escarpments; 'hanging woodland and sunken lanes are features of the

steep, enclosing chalk combes' which characterise the Melbury to Blandford section. The soils at Dinah's Hollow are greensand rather than clay with flint which is more typical of the chalk landscape.' (CC&WW AONB 2003) The hollow is currently wooded with a mix of tree species with Sycamore *Acer pseudoplatanus*, Holly *Ilex aquifolium*, Pedunculate Oak *Quercus robur*, Ash *Fraxinus excelsior*, Hawthorn *Crataegus monogyna*, Field Maple *Acer campestre*, Small-leaved Lime *Tilia cordata*, Beech *Fagus sylvatica*, Scots Pine *Pinus sylvestris* and Hazel *Corylus avellana*. The woodland has several vascular plant species associated with ancient woodland suggesting it has been wooded for several hundred years (King 2014). The wooded slopes adjoin a cultivated agricultural field on the eastern side and pasture and a vineyard on the western side. The hollow and highway sit within the Cranborne Chase and West Wiltshire AONB (now referred to as the Cranborne Chase National Landscape). The woodlands are not designated as ancient woodland although there are species which indicate continuity of semi-natural vegetation cover and tree management including coppicing which occurred many decades ago.

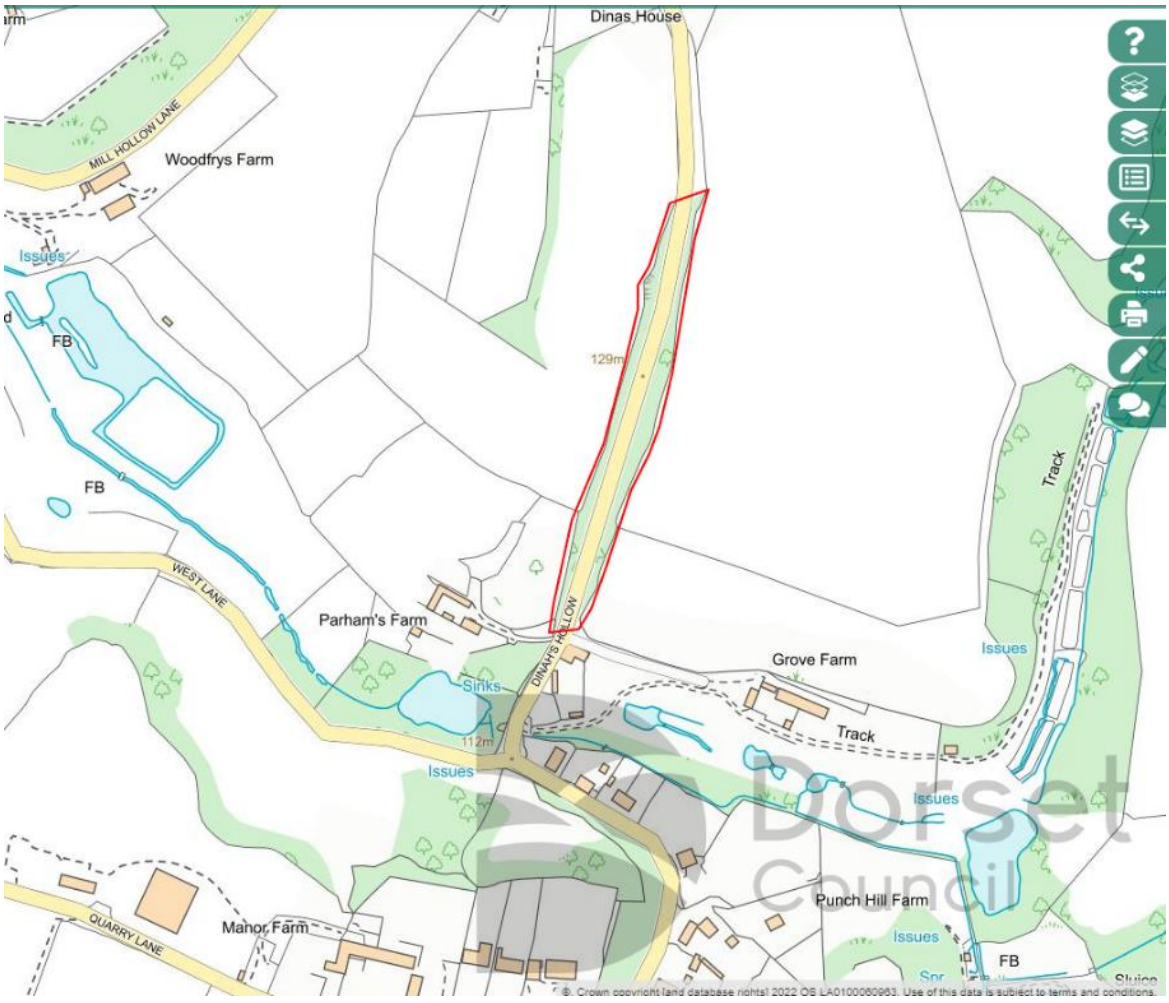

Figure 1. Location of Dinah's Hollow and extent of the area subject to survey within red-line.

1.3 Aims & Objectives

The aim of this ecological assessment is to provide an updated and more detailed baseline of information on the presence or likely presence of protected and priority species and habitats to inform the design and methods for implementation of a project to undertake ground stabilisation works at Dinah's Hollow. It broadly follows the approach set out in the guidelines for ecological impact assessment (CIEEM 2017). The long term objectives/outputs are to;

1. Identify protected and priority species interests and their relative locations/distributions and screen out those unlikely to be found here.
2. Identify protected and priority habitats and those habitat features which may provide habitats for other species which may be protected and priority.
3. To recommend further surveys for protected and priority species which must be carried out within the appropriate season and for the required duration to ensure a reasonable assessment of presence/absence and impact assessment can be made (See 7).
4. To review and where appropriate, integrate data from tree and landscape assessments when considering effects, impacts and mitigation.
5. To undertake a desk-top study of ecological records from Dorset Environmental Records Centre (DERC) for the Hollow and up to 2km around the site to consider its context and proximity to other protected landscapes, their character, habitats, and species.
6. To evaluate the potential zone of influence of the scheme upon each of the habitats and species groups and consider any cumulative impacts from developments in addition to this scheme.
7. To inform the background survey work required for this full ecological impact assessment EcIA of the scheme. This considers the impacts of the scheme and evaluates the mitigation hierarchy against the impacts and proposes the necessary measures that must be adopted. Once details of the engineering works are available a full ecological impact assessment (EcIA) will be used to inform and influence the design and methods to mitigate harm to habitats and species identified above. This will follow the mitigation hierarchy to **Avoid** by changing plans/work to avoid harm: **Mitigate** to reduce the impact to a level which does not affect a species/habitat e.g., by timing work to avoid sensitive periods or excluding species temporarily: **Compensate** to address any residual loss of habitat e.g., by creating like for like 1) on site as priority or 2) away from site replacement habitat when all measures to secure

on site have been exhausted, which can be secured into the future. **Enhancement** which involves provision of additionality leading to a net gain for biodiversity e.g., additional habitat creation which is measurable.

8. To provide an indication, based on best practice and expert judgement, on the need for any further surveys and the timing of these following current guidelines (CIEEM 2019).

2. Methods

2.1 Introduction to Methods

Methods relating to each species group identified in 2.2 are reported in the relevant sections below. These have been undertaken by a range of specialist consultant ecologists engaged by Dorset Council. Each has experience of working with the species groups concerned. Additional desk-top studies were carried out by the main report author. The report has been reviewed, revised and accepted by Dorset Council Lead Senior Ecologist. Each section includes the results of surveys and an assessment of potential impact and need for further surveys to inform the scheme, by the relevant the author. Where appropriate each section includes a short preamble by the report compiler. Box 1 sets out the principal legislation and policy drivers of this ecological work.

2.2 Species protection and designations

(See Box 1 for description)

2.2.1 Plants & Fungi

Vascular plants; red-data species and those protected from uprooting, destruction [1]

Fungi: red data species and those protected from uprooting, destruction [1]

Dorset Notable Species, Ancient Woodland Vascular Plant (indicator) species

2.2.2 Protected Mammals

Dormouse: protected from killing, injury, destruction of breeding and resting place [1 & 2]

Bats (all species): protected from killing, injury, destruction of breeding and resting place [1 & 2]

Badger: Protected from killing injury and destruction, damage, disturbance to setts [3]

2.2.3 Birds

All wild birds and their nests, eggs and young from killing, damage, destruction with some species receiving additional protection from disturbance to nesting during the breeding season [1 & 4]

2.2.4 Reptiles & Amphibians

All common protected reptiles, grass snake *Natrix natrix*, common lizard *Zootoca vivipara*, slow worm *Anguis fragilis*, Adder *Vipera berus* from killing and injury [1].

Great Crested Newt: from killing, injury, damage, destruction and disturbance to breeding and resting place [1 & 2]

2.2.5 Invertebrates

Red-listed species and priority species and those listed as protected from killing and taking [1]

2.3 Habitats

Lowland mixed deciduous woodland: closely aligns with a priority habitat listing [5] and Priority Habitat Definition Statement [6] and sits within an existing and potential habitat network[7].

Freshwater: potential habitat for protected and priority species e.g., Great Crested Newt (GCN) which may use the woodland on the slopes as terrestrial habitat outside of the breeding season.

Box 1 Summary of the legislation and policy relevant to the species and habitats for consideration at Dinah's Hollow

LEGISLATION

[1] WCA (Wildlife & Countryside Act 1981 (as amended)

[2] EPS (European Protected Species) EPS are protected under the Conservation of Habitats and Species Regulations 2017

[3] Protection of Badgers Act 1992

[4] WCA schedule 1 disturbance of certain species of nesting birds

[5] NERC (Natural Environment & Rural Communities Act 2006) s41 species & habitats of principal Importance

[6] Priority Habitat (see JNCC 2011) Definition Statement Priority Habitat Definition Statement: Lowland Mixed Deciduous Woodland v1.2. [Unpublished guidance for the National Biodiversity Network Southwest England Pilot Project.]

NB: Several species afforded statutory protection referred to and several which are not, are listed under NERC (2006) as species of principal importance which is relevant to public bodies including local authorities to help them meet their 'biodiversity duty', to be aware of biodiversity conservation in their policy or decision making (NE & DEFRA 2022[1]). Where planning permission is required, biodiversity is a material consideration (NE & DEFRA 2022). The Biodiversity Duty applies regardless of any planning requirements and is strengthened under the Environment Act 2021.

[7] POTENTIAL HABITAT NETWORK

Position within the Dorset Local Nature Partnership Habitat Network relating to the above Biodiversity duty and local nature recovery. More information.

NATIONAL PLANNING POLICY

National Planning Policy Framework 15. Conserving and enhancing the natural environment. Department for Levelling Up, Housing and Communities 2021

BRITISH STANDARDS

BS 42020: 2013 Biodiversity. Code of practice for planning and development

BS 8596: 2015 Surveying for bats in trees and Woodlands – Guide

3. Background

3.1 Historical Overview

Lowland mixed woodland: the wooded slopes represent an area of native broadleaf and mixed woodland which would align most closely with the Lowland mixed broadleaf woodland habitat of principal importance (see section 4.2). The woodland is known from existing records (DERC) to have several species which are indicators of ancient semi-natural woodland (AWI) in Dorset including Dog's Mercury *Mercurialis perennis*, Bluebell *Hyacinthiodes non-scripta* and Moschatel *Adoxa moschatellina*. King (2014) identified six AWI. There was evidence of historical coppicing as several trees and shrubs were multi-stemmed although mature. The 1947 aerial photo indicates the trees being smaller and the canopy more open as the highway is visible compared to the most recent aerial of 2021, (Figure 2 a 1947 and b 2021) although the extent of woodland is similar. An old photo from early 20th century shows the bottom of the slope (where the traffic lights currently sit close to Parham's Farm entrance), as being actively managed for underwood by coppicing with no mature trees on the western side where today they are mature, (Figure 3). Today the trees are a mix of mature specimens with a closed canopy which interlinks across the highway with an understorey of Holly *Ilex aquifolium* and old Hazel *Corylus avellana* coppice stools all of which are mature. There are several notable trees including mature Oaks on both slopes, and two multi-stemmed Field Maples *Acer campestre* and two large multi-stemmed Ash *Fraxinus excelsior* trees along the top of the eastern slope and a single Lime *Tilia spp*. There are several mature Ash and Sycamore *Acer pseudoplatanus* on the western slopes and two tall Scots Pine *Pinus sylvestris*. There are small pockets of understorey where the canopy is open with Bramble *Rubus fruticosus*, Elder *Sambucus nigra*, Hawthorn *Cragaegus monogyna* which are mostly associated at the tops of the slopes on each side. There are several mature multi-stemmed Field Maples on the western slope at the top as the highway leads northward towards the top of the incline. The woodland sits within the 'existing ecological network', which are mapped to promote extensive linkages of habitats in England to act as corridors and stepping stones for nature (Dorset Local Nature Partnership 2020). The woodland within the Holloway was deemed important for six species of bats in 2015 (unpublished interim report pers.comm. 2015) and a Buzzard *Buteo buteo* nest was identified in one tall Scot's Pine tree. The significance of Holloways in the north Dorset landscape has been identified by the Cranborne Chase and West Wiltshire Downs AONB as noted in the introduction (1.2). A single freshwater pond

within the potential zone of influence which was a consideration because of the potential to support Great Crested Newt, (see 3.5).

Figure 2. Aerial photos from a) 1947 left and b) 2021 right. Photographs from Dorset Explorer.

A review of DERC records for statutory and non-statutory designated habitats identified the following: There are no statutory sites designated for protected habitats and species within the immediate area of Dinah's Hollow. It sits within the Cranborne Chase and West Wiltshire Downs National Landscape. The nearest nationally and internationally nature conservation designations are respectively, the site of special scientific interest (SSSI) and special protection area (SAC) covering Fontmell and Melbury Downs approximately 440 metres to the south-west, which is designated for its chalk downland species. The nearest non-statutory site of nature conservation interest (SNCI reference ST82/031) is a neutral and wet grassland habitat at Melbury Abbas c.270 metres east and not within Dinah's Hollow.

Figure 3. A photo at the southern end of Dinah's Hollow with the entrance to Parham's Farm to the left, showing a mixture of open understorey managed as coppice and mature trees. Today this is more closed canopy woodland on both slopes with no recent coppicing (Tyler Photo, Photos from Dorset early 1900's by Albert Tyler).

3.2 References

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Online:
https://www.gov.uk/guidance/biodiversity-duty-public-authority-duty-to-have-regard-to-conserving-biodiversity
Date accessed 20/12/2023

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Date accessed 24/11/2023

4. Species and Habitats

4.1 Introduction

The following section covers the main protected and priority species and habitats identified during the surveys undertaken by a range of specialist ecologists and provides an initial assessment of the potential impacts for each. At the time of writing the scheme plans are still to be finalised and a further evaluation will need to be undertaken.

The reports for Plants and Fungi, Dormouse and Great Crested Newts are kept in the format in which they were presented by their respective authors. Only page numbers have been changed and some of the footer or header text has been removed without changing any of the text and substance of the reports.

4.2 Plants and Fungi

As referred to in 3.1 there were previously recorded species indicative of ancient woodland although the Holloway is not registered as such. There were several ferns noted including Hart's-tongue *Asplenium scolopendrium* and Scaly Male fern *Dryopteris affinis.* Only a single *Ganoderma spp*. a bracket fungus was found which was growing on a Hazel shrub. Six plants are Dorset Notables (DERC records 2014) and several are ancient woodland indicators as noted in 3.1. Bluebell as well as an ancient woodland indicator and Dorset Notable is a priority species under NERC 2006. A detailed resurvey was conducted by Mr Bryan Edwards of Dorset Environmental Records Centre. His report in full, follows.

A VEGETATION & FUNGI SURVEY
and ASSESSMENT
of
DINAH'S HOLLOW, MELBURY ABBAS

Bryan Edwards
Dorset Environmental Records Centre

for

Dorset Council
June 2023

(Amended October 2023)

SUMMARY

A vegetation survey on the steep sides of the road cutting at Dinah's Hollow on the 13th April 2023 recorded 60 plant species, sixteen of which are strongly associated with long-established or ancient woodland; four of the plants are Dorset Notable species.

The woodland strips fall within W8 Ash – Maple – Dog's Mercury woodland in the National Vegetation Classification. Although wooded and with a good structure, the areas do not qualify as Lowland Mixed Deciduous Wood Priority Habitat and Section 41 Habitat as they are generally less than 15 metres wide.

A fungi survey was undertaken on the 25th October and 30 species were recorded, including several wood decay species mainly on Hazel. The number of species is limited by the lack of dead wood and the lack of true veteran trees.

CONTENTS

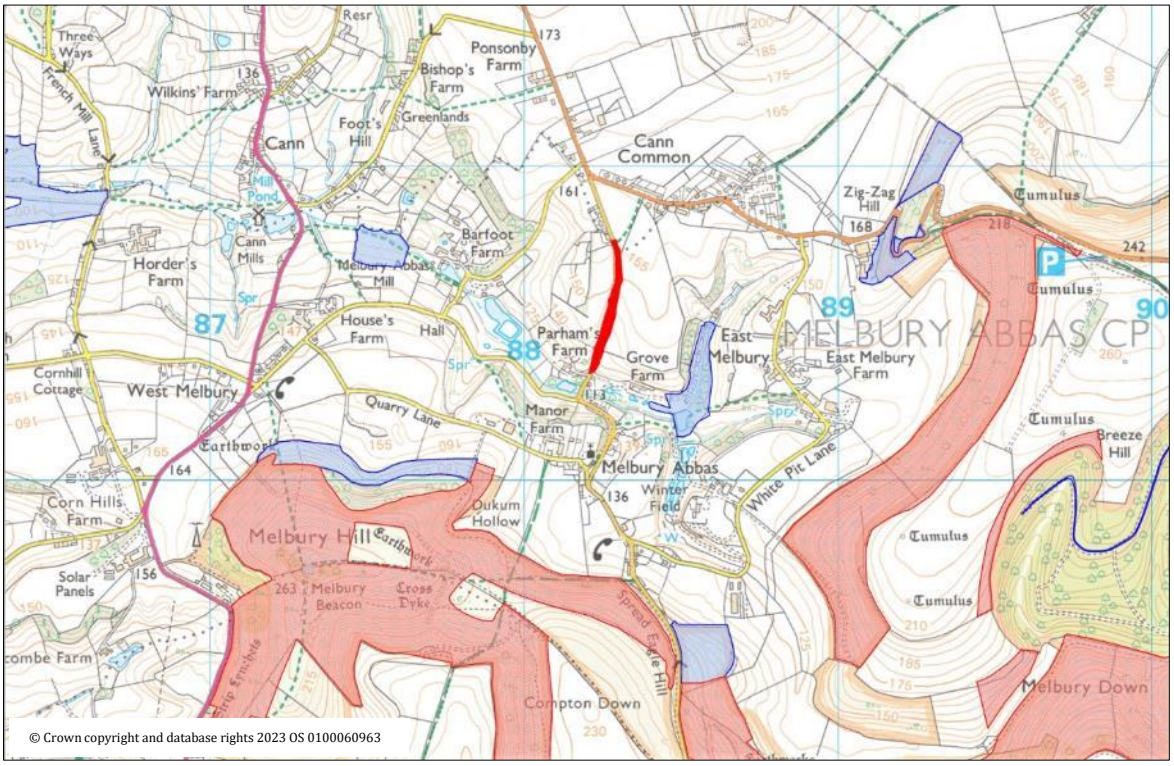
Version control		Contract number: C23088 & C23101	
1.0	Report prepared by:	Bryan Edwards	15/06/2023
	Checked by:	Carolyn Steele	15/06/2023
2.0	Report prepared by:	Bryan Edwards	29/10/2023
	Checked by:	Carolyn Steele	20/11/2023

1.0 INTRODUCTION

Dinah's Hollow is a road cutting just north of Melbury Abbas on the Shaftesbury to Blandford road. It cuts through the relatively soft Greensand geology, although on the west side of the cutting the stone was of sufficient quality to be quarried.

As a result of a series of small landslips there are plans to stabilise the banks. Dorset Council requested DERC to undertake a vegetation survey in spring and a fungi survey in autumn 2023 as part of a programme of ecological assessments for the site.

MAP 1. Location map



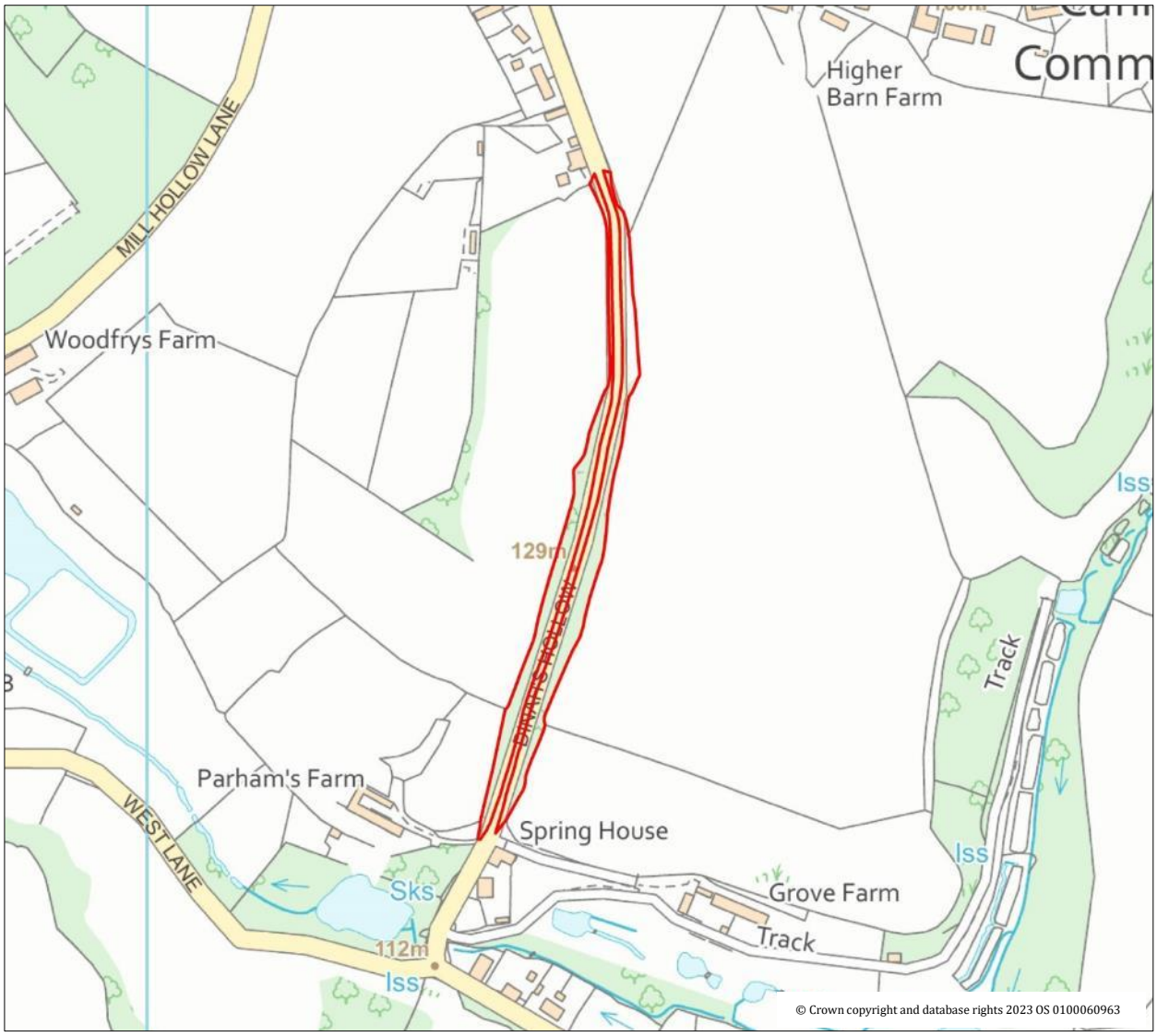
Key: SSSI are shown in red, SNCI are shown in blue. The site is shown as an area of solid red.

2.0 METHODS

The site was surveyed on the 13th April 2023 in bright weather between several short-lived showers. Because of the steepness of the slopes the survey was carried out by walking along the road and binoculars were used to survey areas that could not be reached for safety reasons. A description of the site was made and a species list with DAFOR frequencies compiled for each side of the cutting. The fungi survey was carried out on the 25th October 2023.

Plant names follow Stace (2018) and for bryophytes Blockeel *et al* (2020).

MAP 2. Areas surveyed



3. SITE DESCRIPTION

Dinah's Hollow (ST882204) lies to the north of Melbury Abbas on the road from Blandford to Shaftesbury. It is essentially a Holloway that has formed through erosion of the relatively soft Upper Greensand Formation, including the Shaftesbury Sandstone Member and Boyne Hollow Chert Member. In the upper part of the hollow on the west side there has been some minor quarrying of the better quality, harder bands of sandstone.

The steep banks of the cutting support linear strips of woodland with mature trees and shrubs. The mixture of trees including several non-natives suggest it formed part of a landscape planting. The area is marked as mixed planting on the 2nd Edition OS map.

4. RESULTS

The sides of the cutting have a varied structure with older canopy trees, a locally dense understorey and a varied ground flora. A total of 60 plant species were recorded from two sides, sixteen of these are plants that are strongly associated with (though not confined to) long established or ancient woodland. Four plants recorded are Dorset Notable species for woodland habitats (DERC, 2022).

4.1 WEST SIDE

The canopy comprises mature trees with Pedunculate Oak *Quercus robur,* Field Maple *Acer campestre* and Sycamore *Acer pseudoplatanus* the most prominent species. Beech *Fagus sylvatica*, Scot's Pine *Pinus sylvestris* and Norway Spruce *Picea abies* are rare, the last had to be felled for safety reasons. Beneath the larger trees young self-sown Sycamore are frequent. There is an understorey of frequent to abundant Hazel *Corylus avellana* with occasional to locally frequent Hawthorn *Crataegus monogyna* and Holly *Ilex aquifolium*, plus smaller quantities of Elder *Sambucus nigra* and Blackthorn *Prunus spinosa*.

The ground flora is patchy due to a combination of land slippage on the steepest slopes and the shade cast by the trees and shrubs, particularly Sycamore and Holly. Hart's-tongue Fern *Asplenium scolopendrium*, Soft Shield-fern *Polystichum setiferum*, Dog's Mercury *Mercurialis perennis*, Lesser Celandine *Ficaria verna* and Ivy *Hedera helix* are generally the most abundant species, with Stinging Nettle *Urtica dioica* in disturbed areas near the road and old quarry, and there several large dense patches of Ramsons *Allium ursinum* at the southern end near Melbury Abbas. Other species are generally found in smaller quantity as scattered patches or clumps, including Broad Buckler-fern *Dryopteris dilatata*, Moschatel *Adoxa moschatellina*, Garlic Mustard *Alliaria petiolata*, Wood Avens *Geum urbanum*, Ground Ivy *Glechoma hederacea*, Nipplewort *Lapsana communis*, Rough Meadow-grass *Poa trivialis* and Bearded Couch *Elymus caninus*. The local Greater Chickweed *Stellaria neglecta* was noted in a patch towards the north of the area.

The steepest areas prone to slippage are generally bare except for a number of mosses including *Atrichum undulatum, Bryum dichotomum, Dicranella varia* agg., *Fissidens bryoides* and *F. viridulus*.

4.2 EAST SIDE

The east side has a very similar flora. Pedunculate Oak *Quercus robur* and Sycamore *Acer pseudoplatanus* are most frequent with smaller quantities of Ash *Fraxinus excelsior* and Field Maple *Acer campestre*, plus rare Grey Willow *Salix cinerea*, Hornbeam *Carpinus betulinus* and Common Lime *Tilia* x *vulgaris*. There is a well-developed understorey in places, with Hazel *Corylus avellana* and Holly *Ilex aquifolium* frequent to locally abundant, smaller quantities of Hawthorn *Crataegus monogyna*, Blackthorn *Prunus spinosa* and Elder *Sambucus nigra*, plus some regrowth of English Elm *Ulmus procera*.

The general flora is very similar to the west side and is patchy depending on light levels with bare areas present in the most shaded area and the steepest slopes where there has been some slippage. Ivy *Hedera helix* is frequent to abundant, and ferns abundant with Hart's-tongue Fern *Asplenium scolopendrium*, Soft Shield-fern *Polystichum setiferum* and Male Fern *Dryopteris filix-mas* the most frequent, and smaller quantities of Broad Buckler-fern *Dryopteris dilatata* and Scaly Male-fern *Dryopteris affinis* agg. A few plants of Lady Fern *Athyrium filix-femina* were noted on damper ground. At the southern end there is a dense patch of Ramsons *Allium ursinum* and Dog's Mercury *Mercurialis perennis* forms patches along the top. Other species present include Moschatel *Adoxa moschatellina*, Wood Avens *Geum urbanum*, Herb Robert *Geranium robertianum*, Garlic Mustard *Alliaria petiolata* and Bluebell *Hyacinthoides non-scripta*.

Bare ground supports a similar range of mosses to the west side, the thalloid liverwort *Lunularia cruciata* was on damp soil near the foot of the cutting.

4.3 FUNGI SURVEY

The site was surveyed on the 25th October 2023 in bright weather. Because of the steepness of the slopes the survey was carried out by walking along the road and along the fenceline at the top of the slope accessing any flatter areas where safe to do so. Binoculars were used to survey mature trees that could not be reached for safety reasons on the very steep slopes. These were very slippery after the heavy rain of the previous few days.

Fungi were split into the following groups:

Ecto-mycorrhizal species – species forming an association with certain trees

Litter saprotrophs – species found on rotting leaves and twigs on the ground

Deadwood saprotrophs – species found on larger pieces of dead rotting wood and stumps

Epiphytes – crust-forming, small brackets and gilled found on living or dead standing trees & shrubs

Large brackets – epiphytic brackets more than 10cm in diameter

A total of **30 species** were recorded from the site, most of which are widespread species found in woodlands and older broadleaved plantations.

The mature trees supported very few bracket fungi although access was not easy and the trunks and major limbs had to be surveyed using binoculars due to limited access to the very steep slopes. *Ganoderma australe* was noted on the base of several old Hazel stools on the western side. Large dead Blackthorn stems support *Phellinus pomaceus* on both sides. Old standing dead and dying Hazel stems have frequent *Hypoxylon fuscum* and occasional *Hymenochaete corrugata* with *Stereum rugosum* noted on the east side. The agarics *Mycena arcangeliana, M. galericulata* and *Pluteus cervinus* were noted on rotting Hazel wood.

There are very few large pieces of dead wood on the ground as most is removed to prevent it falling onto the road below the steep banks, this limits the range of dead wood fungi present. *Lycoperdon pyriforme* was noted on stumps and *Psathyrella piluliformis* on rotting wood. Litter species were more frequent on rotting leaf litter or small twigs, especially *Laccaria laccata* and *Mycena vitilis* with *Crepidotus cesatii*, *Lycoperdon perlatum*, *Marasmiellus ramealis* and *Mycena stylobates*. Deeper leaf litter in the old quarry had the earthstar *Geastrum triplex* and *Melanoleuca melaleuca*.

5.0 ASSESSMENT

The woodland strips support sixteen plants that are strongly associated with long established and ancient woodland (see Table 1). However, this total is low compared with some of the woodlands in the area, plus it lacks some of the better indicators such as Wood Spurge, Common Cow-wheat and Wood Melick.

Within the National Vegetation Classification (Rodwell, 1991) the woodland mostly falls within **W8** Ash *Fraxinus excelsior* – Maple *Acer campestre* – Dog's Mercury *Mercurialis perennis*, which is the dominant type on the chalk and limestone in Dorset, extending locally to the clay and Greensand. It is difficult to assign it to one particular sub-community, with elements of the Ivy *Hedera helix* (**W4d**) and Herb Robert *Geranium robertianum* (**W8e**) sub-communities.

While the woodland has a good enough structure to qualify as Lowland Mixed Deciduous Woodland Priority Habitat each parcel has to be more than 0.25 hectares in size and more than 15 metres in width to qualify (DERC, 2001). Because of their position on steep slopes, it is difficult to measure the area accurately. The strips are thin and, while at their widest point they are over 15 metres wide, over much of their length they are less, and therefore doubtfully qualify as Lowland Mixed Deciduous Woodland Priority Habitat or Section 41 Habitat of Principal Importance.

TABLE 2. Summary of plants recorded and strongly associated with ancient woodland.

Acer campestre	Field Maple	
Adoxa moschatellina	Moschatel	Dorset Notable
Allium ursinum	Ramsons	
Asplenium scolopendrium	Hart's-tongue Fern	
Carex remota	Remote Sedge	
Carex sylvatica	Wood Sedge	
Dryopteris affinis	Scaly Male-fern	
Hyacinthoides non-scripta	Bluebell	Dorset Notable
Ilex aquifolium	Holly	
Polypodium interjectum	Western Polypody	
Polystichum setiferum	Soft Shield-fern	
Primula vulgaris	Primrose	
Ribes rubrum	Red Current	
Rosa arvensis	Field Rose	
Stellaria neglecta	Greater Chickweed	Dorset Notable
Veronica montana	Wood Speedwell	Dorset Notable

6.0 MANAGEMENT OBSERVATIONS

At present the density of trees and shrubs means the ground flora is patchy and there are areas of bare un-vegetated ground that are vulnerable to slippage. Removing the non-native Sycamore saplings from the understorey and thinning some of the Holly will let more light onto the ground allowing plants to colonise and help to stabilise the soils.

If large trees are to be removed, they could be replaced by smaller species such as Field Maple and Common Whitebeam, both of the which are native to the area.

From a fungi point of view, retention of mature trees is important. Leave branches overhanging the fields on those trees that are at the top of the slopes. Any fallen dead wood could be placed where appropriate (from a road safety point of view) inside the fence.

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APPENDIX I: Plant species recorded 13th April 2023

Species	Common Name	Status	West	East
Acer campestre	Field Maple	AWVP	O[1]	O
Acer pseudoplatanus	Sycamore		F	F
Adoxa moschatellina	Moschatel	AWVP; DN	O	O
Aegopodium podagraria	Ground-elder		R-LA	R-LA
Alliaria petiolata	Garlic Mustard		O	O
Allium ursinum	Ramsons	AWVP	R-LF	R-LA
Anthriscus sylvestris	Cow Parsley		O	O-LF
Arctium minus	Lesser Burdock		R	R
Asplenium scolopendrium	Hart's-tongue Fern	AWVP	F	F
Athyrium filix-femina	Lady Fern			R
Carex remota	Remote Sedge	AWVP	R	
Carex sylvatica	Wood Sedge	AWVP	R	
Carpinus betulus	Hornbeam			R
Circaea lutetiana	Enchanter's Nightshade		R-O	O
Corylus avellana	Hazel		F	F
Crataegus monogyna	Hawthorn		O	O
Digitalis purpurea	Foxglove			R
Dryopteris affinis	Scaly Male-fern	AWVP	R	R-O
Dryopteris dilatata	Broad Buckler-fern		O	O
Dryopteris filix-mas	Male Fern		O	O
Elymus caninus	Bearded Couch		R	
Epilobium montanum	Broad-leaved Willowherb			R
Fagus sylvatica	Beech			R
Ficaria verna	Lesser Celandine		O-LA	O-LF
Geranium robertianum	Herb Robert		O	O
Geum urbanum	Wood Avens		O	O
Glechoma hederacea	Ground Ivy		R-O	
Hedera helix	Ivy		F-LA	F-LA
Heracleum sphondylium	Hogweed		R	R
Holcus lanatus	Yorkshire-fog		R-O	R
Hyacinthoides non-scripta	Bluebell	AWVP; DN	O	R-O
Ilex aquifolium	Holly	AWVP	O-LF	O
Lapsana communis	Nipplewort		O	O
Lonicera periclymenum	Honeysuckle		O	O
Mercurialis perennis	Dog's Mercury		O-LF	O-LA
Picea abies	Norway Spruce		R	
Pinus sylvestris	Scot's Pine		R	
Poa trivialis	Rough Meadow-grass		O	R-O
Polypodium interjectum	Western Polypody	AWVP		R
Polystichum setiferum	Soft Shield-fern	AWVP	F-A	F-LA
Primula vulgaris	Primrose	AWVP	R-O	R

Species	Common Name	Status	West	East
Prunus spinosa	Blackthorn		O	O
Ribes rubrum	Red Current	AWVP		R-O
Ribes uva-ursi	Gooseberry			R
Rosa arvensis	Field Rose	AWVP	R	
Rubus fruticosus	Bramble		O-LF	O-LF
Rubus idaeus	Raspberry		R	
Rumex obtusifolius	Broad-leaved Dock		R	
Rumex sanguineus	Wood Dock		R	R
Salix cinerea	Grey Willow			R
Sambucus nigra	Elder		O	O
Silene dioica	Red Campion		O-LF	O
Stachys sylvatica	Hedge Woundwort		R	
Stellaria neglecta	Greater Chickweed	AWVP; DN	R-O	
Taraxacum officinale agg.	Dandelion		O	O
Tilia x vulgaris	Common Lime			R
Ulmus procera	English Elm			R
Urtica dioica	Stinging Nettle		O	O
Veronica hederifolia	Ivy-leaved Speedwell		O-LF	O
Veronica montana	Wood Speedwell	AWVP; DN	R	
BRYOPHYTES				
Liverworts				
Lunularia cruciata			O	R
Mosses				
Anomodon viticulosus			R	
Atrichum undulatum			O	O
Brachythecium rutabulum			O-LF	O
Bryum dichotomum			O	R
Diranella varia agg.			R	R-O
Fissidens bryoides			O-LF	O
Fissidens viridulus			R-O	
Kinbergia praelonga			O-LF	O
Mnium hornum			O	O
Rhynchostegiella tenella			O	

AWVP = Ancient Woodland Vascular Plant
DN = Dorset Notable species (Woodland)

[1] Frequency: **D** = Dominant; **A** = Abundant; **F** = Frequent; **O** = Occasional; **R** = Rare
L = Locally (e.g. **LF** = Locally frequent)

APPENDIX II: Fungi species recorded 25th October 2023

Species	Common Name		Substrate & habitat	West Side	East Side
Ascomycota					
Daldinia concentrica	King Alfred's Cakes	Saprotroph	on fallen Ash branches	R	R
Diatrype stigma	Common Tarcrust	Saprotroph	on dead Sycamore branch		R
Hypoxylon fuscum	Hazel Woodwart	Saprotroph	on dying and dead attached Hazel stems	O	O-LF
Xylaria hypoxylon	Candle Snuff	Saprotroph	on buried wood	R	O
Basidiomycota					
Armillaria mellea	Honey Fungus	Parasitic	on roots	R	R
Auricularia auricula-judae	Jelly Ear	Epiphyte; saprotroph	on dead Elder stems	R	R
Crepidotus cesatii		Litter saprotroph	on small twig		R
Ganoderma australe	Southern Bracket	Large bracket	on base of living Hazel stool	R	
Geastrum triplex	Collared Earthstar	Litter saprotroph	among leaf litter	R	
Inocybe rimosa	Split Fibrecap	Ecto-mycorrhizal	several on Hazel		R
Laccaria laccata		Litter saprotroph	among leaf litter	O	O
Hymenochaete corrugata	Glue Fungus	Epiphyte; saprotroph	on dead and dying Blackthorn & Hazel stems		
Hyphodontia sambuci		Epiphyte; saprotroph	on dead standing Elder stems	R	O
Lycoperdon perlatum	Common Puffball	Litter saprotroph	among leaf litter	R	O
Lycoperdon pyriforme	Stump Puffball	Deadwood saprotroph	on stumps	R	
Marasmiellus ramealis	Twig Parachute	Litter saprotroph	among leaf litter	R	R
Melanoleuca melaleuca	Cavalier	Litter saprotroph	among leaf litter	R	
Mycena arcangeliana	Angel's Bonnet	Deadwood saprotroph	on dead Hazel stem & rooting wood	R	R
Mycena galericulata	Common Bonnet	Deadwood saprotroph	on rotting wood	R	
Mycena galopus	Milking Bonnet	Litter saprotroph	on small twig in leaf litter	O	O
Mycena stylobates	Bulbous Bonnet	Litter saprotroph	on small twig in leaf litter		R
Mycena vitilis	Snapping Bonnet	Litter saprotroph	on small woody debris in leaf litter	O	O
Peniophora quercina		Epiphyte; saprotroph	on dead attached Oak branch		R
Phellinus pomaceus	Cushion Bracket	Epiphyte; saprotroph	on old, dead Blackthorn stems	R	R
Pluteus cervinus	Deer Shield	Deadwood saprotroph	on dead rotting wood	R	R

Species	Common Name		Substrate & habitat	West Side	East Side
Psathyrella piluliformis	Common Stump Brittlestem	Deadwood saprotroph	on dead wood		R
Russula sp.		Ecto-mycorrhizal	associated with Hazel	R	
Stereum gausapatum	Bleeding Oak-crust	Epiphyte; saprotroph	on dead attached Oak branch		R
Stereum rugosum	Bleeding Broadleaf Crust	Epiphyte; saprotroph	on dead attached Hazel stem		R
				20	**22**

Frequency: **D** = Dominant; **A** = Abundant; **F** = Frequent; **O** = Occasional; **R** = Rare
L = Locally (e.g. **LF** = Locally frequent)

Appendix III: Photographs

FIG 1. Southern end of area on the east side with a dense patch of Ramsons.

FIG 2. Southern section on the west side with a locally dense understorey of Holly and a very patchy ground flora.

FIG 3. Mid section on the east side showing patchy ground flora

FIG 4. Upper section on the west side at the widest point showing exposure of Greensand in area that was formerly quarried.

FIG 5. Upper section with old layered or coppiced stools of Field Maple and Holly.

FIG 6. Mid section of the eastern side, typical of that side with patchy but abundant Ivy and abundant ferns.

FIG 7. Edge of the eastern side of the wooded strip at the top of the slope with sheltered edge habitat for birds and invertebrates.

FIG 8. Old Hazel (Tag no. 00065) stool at top of eastern slope, the large dead attached stem supporting *Hypoxylon fuscum*, *Hymenochaete corrugata* and *Stereum rugosum*.

FIG 9. Bracket of ***Ganoderma australe*** on the base of an old Hazel stool on the western side.

4.3 Hazel Dormouse

Previous surveys identified the woodland on both slopes does provide suitable habitat for Hazel Dormouse *Muscardinus avellanarius*. This species was not found during survey work in 2015. The nearest record was at Compton Abbas 2km away. However, the following report from Lindsay Carrington Ecological Services (Higgins 2023) follows a full survey carried out between April and November 2023 following the methodology of Bright *et al.* (2006). This produced a positive record of the presence of Dormouse where 4 active nests were identified within nest tubes located on each of the slopes in the Hollow.

LC Ecological Services

DORMOUSE REPORT

DINAH'S HOLLOW

MELBURY ABBAS

SHAFTSBURY

NOVEMBER 2023

ON BEHALF OF DORSET COUNCIL

The Old Squash Court,

Rempstone Hall,

Rempstone,

Corfe Castle,

Wareham,

Dorset,

BH20 5JQ

Authorisation

	Name	Date
Report prepared by:	SH	15.11.2023
Report reviewed and authorised by:	JS	21.11.2023

The contents of this report were correct at the time of the last survey visit. The report is provided for the sole use of the named client and is confidential.

dealing with this. It may not be sold, lent, hired out or divulged to any third party not directly involved in this situation without our written consent.

It is company policy to share species records collected during our surveys with local biological records centres unless instructed otherwise by the client.

CONTENTS

1.0 EXECUTIVE SUMMARY

1.1 LC Ecological Services Limited were commissioned by Dorset Council to conduct hazel dormouse presence/absence surveys at Dinah's Hollow, Melbury Abbas, Shaftsbury, Dorset, Ordnance Survey Grid reference ST 88282 20546. The proposals include the installation of mesh along the steep slopes to address soil erosion issues.

1.2 The site comprises Dinah's Hollow consisting of a mature woodland strip to the west and east of Dinah's Hollow Road with steep sides dominated by scrub habitat.

1.3 A total of four hazel dormouse nests were confirmed on site with three confirmed to the west of Dinah's Hollow and one to the east.

1.4 This survey has confirmed the presence of dormice on site therefore, a European Protected Species Licence will be required to allow works to proceed legally.

1.5 Mitigation and compensation planting have been recommended in section 6.

2.0 INTRODUCTION

2.1 LC Ecological Services Limited were commissioned by Dorset Council to conduct hazel dormouse presence/absence surveys at Dinah's Hollow, Melbury Abbas, Shaftsbury, Dorset, Ordnance Survey Grid reference ST 88282 20546. The proposals include the installation of soil nails and mesh along the steep slopes to address slope stability issues. A site location plan is provided in appendix I and the proposed plans in appendix II.

2.2 The site comprises Dinah's Hollow consisting of a mature woodland strip to the west and east of Dinah's Hollow Road with steep sides dominated by scrub habitat.

2.3 The objectives of this study were:

- To record and map evidence of dormouse activity;
- To make an initial ecological assessment of the site in respect to dormouse;
- To detail potential ecological constraints in respect to dormouse; and
- To make recommendations for mitigation, compensation and enhancements for the site in relation to dormouse.

3.0 LEGISLATION AND POLICY CONTEXT

Legislation

3.1 Hazel dormouse are protected as a European Protected Species under the 2017 Conservation of Habitats and Species Regulations, which implements the EC Habitat Directive 92/43/EEC in the United Kingdom. The regulations protect hazel dormouse against:

- Deliberately capture, injure or kill any wild animals.
- Deliberately disturb wild animals of any such species, in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce; to rear or nurture their young; to hibernate or migrate or affect significantly the local distribution or abundance of the species to which they belong.
- Damage or destroy a breeding site or resting place of such an animal and/or.
- To be in possession of or to control, transport any live or dead animal or any part of an animal; to sell or exchange or offer for sale or exchange any live or dead animals or part of an animal that is protected.

3.2 Hazel dormice are also protected under the Wildlife and Countryside Act 1981 (as amended), where dormice are listed under Schedule 5 and are subject to the provisions of Section 9.4b and 9.4c, which make it an offence to:

- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for shelter or protection and
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a dormouse.

4.0 METHODOLOGY

Study Area

4.1 The site is located at central Ordnance Survey (OS) grid reference ST 88282 20546 and the study area comprises the site plus:

- 2 kilometres for granted Protected Species Licences

Nest Tube and Footprint Survey

4.2 Dormouse nest tubes were installed across the site by ecologists Rob McCalman and Alex Sinclar on the 13th April 2023, in accordance with the methodology described in the Dormouse Conservation Handbook (Bright *et al*, 2006).

4.3 A total of 50 dormouse tubes were deployed across the site in suitable habitat for hazel dormouse (Refer to appendix III for locations). In addition to the tubes, ten dormice footprint tunnels were also deployed across the site. Fortnightly survey visits were undertaken between May and November 2023 by licensed ecologist Aimee Cokayne (2019-042601-CLS-CLS). This survey followed the methodology outlined in Guidance for using Hazel Dormouse Footprint Tunnels (Bullion & Looser, 2019) and involves deploying the tubes, which include a tracking medium formed from charcoal and olive oil which is imprinted on a paper element by small mammals commuting through the un-baited trap. The tracking points were checked and re-inked every two weeks. This gives a 95% confidence limit of detecting dormice, even at low densities.

4.4 On each visit, all tubes were inspected for the presence of dormouse or evidence of occupation by dormice, such as nests. Evidence of use by other mammals was also recoded. In addition, every two weeks the paper in the dormouse tubes were changed and inspected for any dormouse prints.

4.5 The Dormouse Conservation Handbook describes a scoring system for nest tube surveys which provides an indicator of the thoroughness of the surveys. The system is based upon an index of probability where each month that dormice are active are provided with a score of the likelihood of finding occupation on these months. Table 1 summaries these values. A minimum score of 20 is required to provide a robust survey effort.

Table 1: Index of probability of finding dormouse present in nest tubes.

Month	April	May	Jun	July	Aug	Sep	Oct	Nov	Total
Index Score	1	4	2	2	5	7	2	2	25

4.6 Values for each month are based on 50 tubes being used. During the surveys at Dinah's Hollow a total of 50 tubes were used therefore, an overall score of 25 was achieved on site.

Limitations

4.7 During the survey there was no access limitations, and all surveys were conducted in accordance with best practice guidelines.

5.0 BASELINE RESULTS

5.1 A search of the MAGIC Maps identified no granted dormouse Protected Species Licences within a 2-kilometre radius of the site.

Nest Tube Survey

5.2 Appendix IV provides the full results of the dormouse surveys with a summary of the dormouse encountered presented in Table 2 below. In summary, a peak count of four dormouse nests were recorded on site (Refer to appendix V for photographs and appendix VI Dormouse Results Map).

Table 2: Summary of confirmed dormouse nests at Dinah's Hollow

Date	Tubes/footprint tunnels	Weather conditions	Results
25.08.23	Dormouse tubes and footprint check/install paper	Sunny and humid with rain clouds. 19-20◦C, wind 1/12 and cloud cover 5/8	Dormouse recorded in tube E23 (///exclusive.classmates.empire)
08.10.23	Dormouse tube and footprint check	Sunny and warm 14-19◦C, cloud 1/8 and wind 1/12	Start of a nest in W19 ///outsmart.cello.hedgehog
10.11.23	Dormouse tube and footprint check	Sunny with a cool wind, 14◦C, cloud 3/8 and wind 3/12	Dormouse nests recorded in the following nests: E23 ///exclusive.classmate.empire W20 first recorded September ///utensil.schematic.tonic W23 first recorded September ///silently.investors.papers W19///outsmart.cello.hedgehog

Footprint Survey

5.3 During the footprint tunnel surveys only wood mouse prints were recorded in the tunnels. No dormouse prints were confirmed.

6.0 IMPACT ASSESSMENT

6.1 The proposals will result in the loss of up to 25% of the wooded slope to be temporarily removed to facilitate the works. The potential impacts of these works on dormice include:

- Loss of habitat
- Potential fragmentation of habitats
- Potential risk of killing/injuring a dormouse

6.2 When mitigation is not considered, the works will have **a significant adverse impact** on dormouse at a **regional level.**

6.1 Mitigation measures

6.3 The surveys confirmed the presence of dormice within the site therefore, a European Protected Species Licence (EPS) will be required to allow works to be undertaken legally.

6.4 The dormouse licence will detail measures to include the avoidance of vegetation clearance between June and early September when adult dormice have dependent young. Clearance will be carried out in either of the following two ways depending on the time of year works take place (active season or inactive season).

- *Inactive Season Clearance*: two-stage vegetation clearance using hand tool (strimmers and chainsaws) with trees and scrub being cut back to between 200mm and 500mm. Once dormice fully emerge from hibernation, by the end of May, a full clearance of the area can continue. Ideal timing of works for the first stage is between November and March inclusive. This time avoids the majority of the period when dormice might be found in nests above ground. The second stage cannot be carried out prior to May of the following season.
- *Active Season Clearance*: clearance of vegetation during the active season is only suitable for small areas (less than 50 square metres of woodland). This involves taking out small areas at a time when animals are active. Works should be carried out in May only as this will avoid the time of the year when dormouse are with young (early June to late September). Single stage clearance can be undertaken between mid-September and October.

6.5 In addition, details of replacement woodland planting and enhancement to the remainder of the site will be detailed.

6.6 Once prepared the application will be submitted to Natural England for determination. The application will be returned within a minimum of 30 working days of receipt. All staff and sub-contractors involved in the proposed clearance works within the working area will be briefed on the aims and procedures outlined below. In the long-term following an EPS licence, enhancement of woodland and establishment of new woodland will be a **minor benefit for dormice within the site and within the zone of influence.**

Compensation planting and enhancements

6.7 Compensation planting will include shrub planting and allowing some trees to become mature. Species such as pedunculate oak (*Quercus robur*), beech (*Fagus sylvatica*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), hazel (*Corylus avellana*), field maple (*Acer campestre*), and elder (*Sambucus nigra*) as well as the native climber such as honeysuckle (*Lonicera periclymenum*) should be planted. This mix of species will provide a good food source for dormice throughout the year.

7.0 REFERENCES

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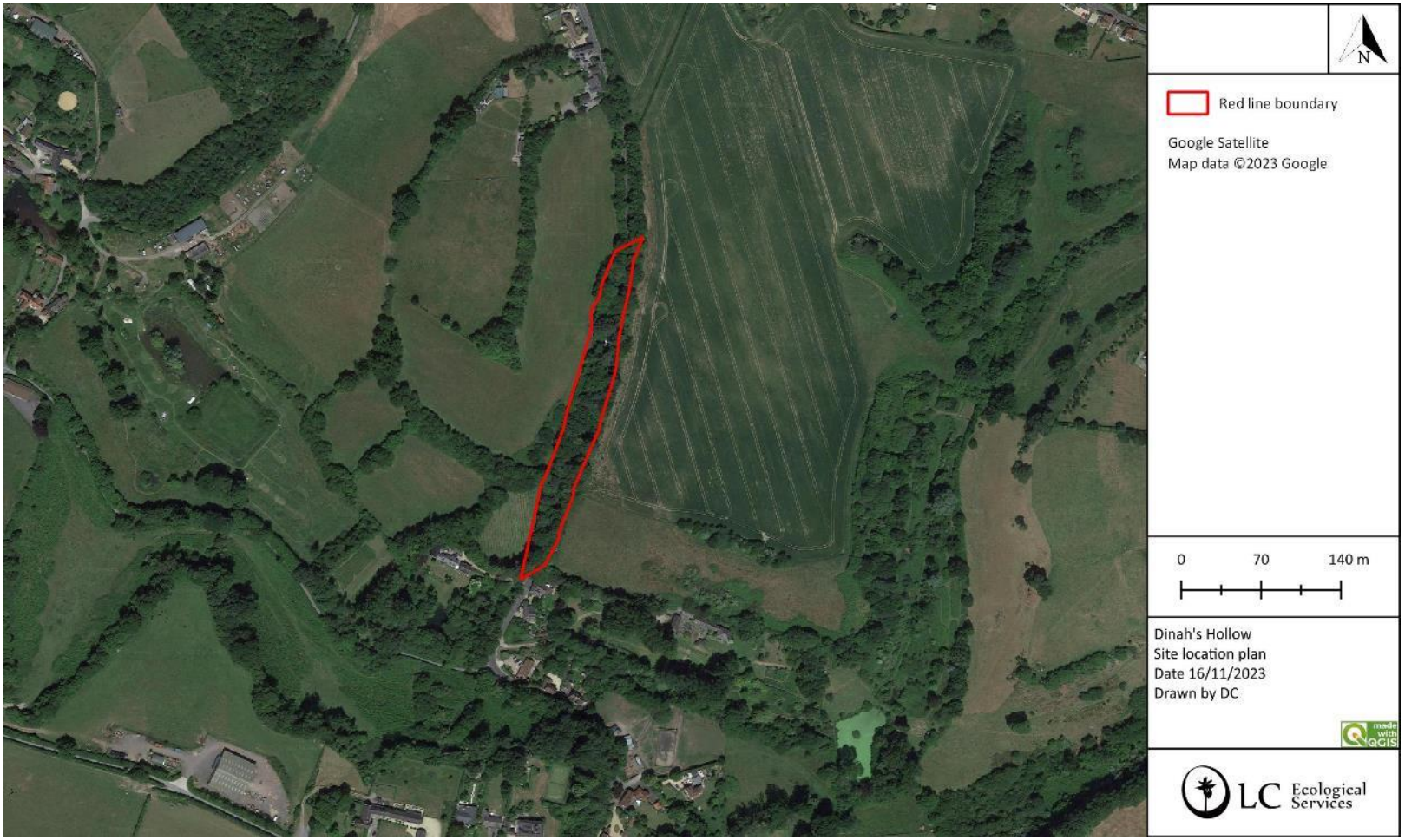
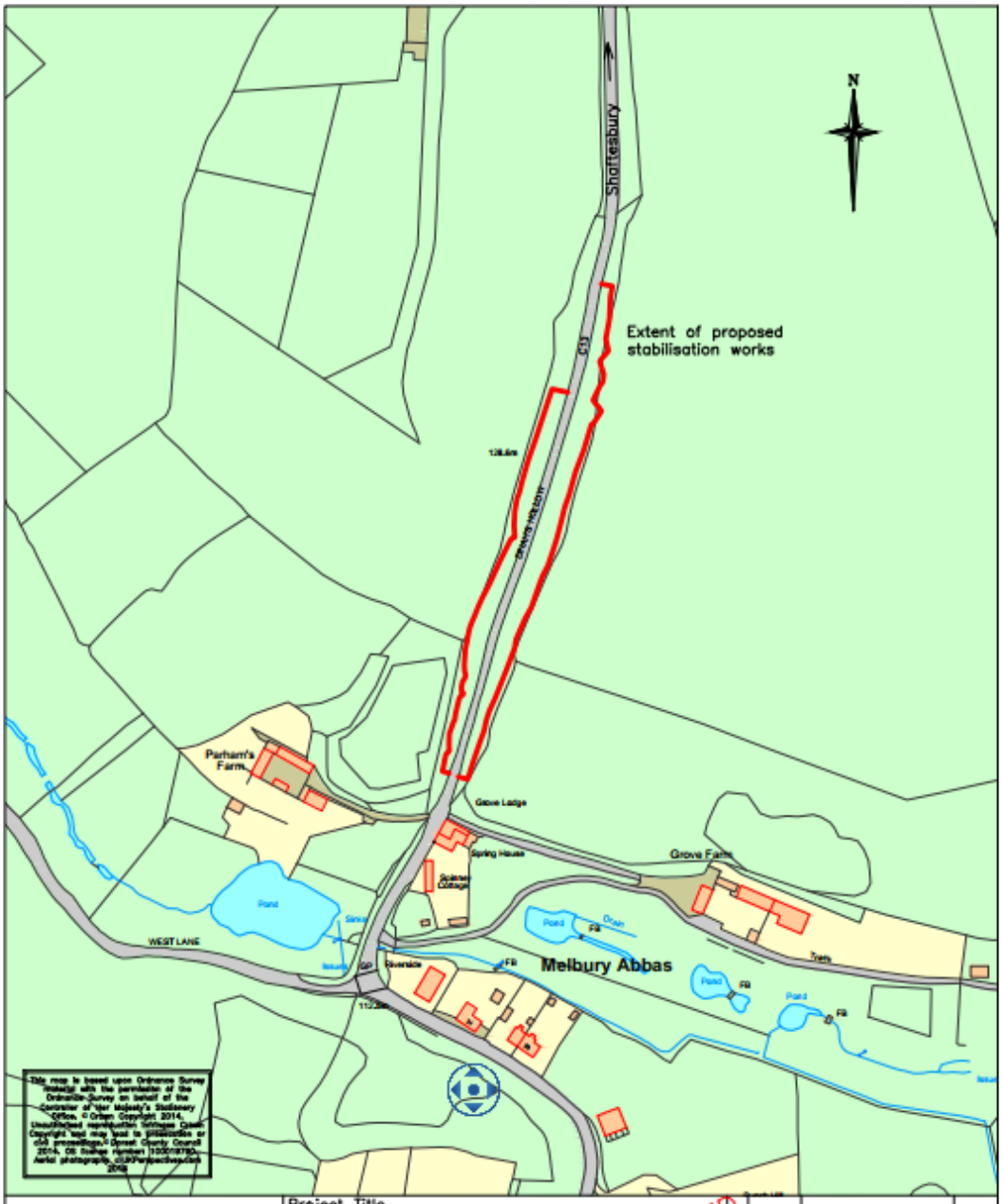
Peoples Trust for Endangered Species (PTES, 2022) *Guidance for surveying for hazel dormouse using footprint tunnels.*

APPENDIX I: Site location



APPENDIX II: Site proposals



APPENDIX III: Dormouse Tube Location Plan

APPENDIX IV: Survey Results

Date	Tubes/footprint tunnels	Weather conditions	Results
12.05.23	Dormouse tube check Set up footprint tunnels	Partly cloudy, mild with sunny intervals. 16◦C, 1/12 wind and cloud cover 4/8	No dormouse or evidence of dormouse found
24.05.23	Footprint tunnel check and install new paper	Hot and sunny. 20◦C, 1/12 wind and 0/8 cloud cover.	No dormouse or evidence of dormice recorded. Wood mouse footprints in tube ///unravel.forgives.motel
30.06.23	Dormouse tubes and footprint check/install paper	Humid and overcast. 18 ◦C, 8/8 cloud cover and 1/12 wind.	Wood mouse footprints in following tubes: ///carriage.revealing.rosier ///inclines.envy.price ///unravel.forgives.motel
17.07.23	Dormouse footprint check/install paper	Humid and cloudy with some sunny spells 15-17◦C, 1/12 wind and 3/8 cloud cover.	No dormouse found no other footprints recorded apart from the wood mouse one listed above.
28.07.23	Dormouse tubes and footprint check/install paper	Overcast but clearing up. 18◦C, 1/12 wind and 5/8-3/8	No dormouse found in tubes. Wood mouse footprints recorded in two tubes ///comb.afflicted.longingle ///unravel.forgives.motel

Date	Tubes/footprint tunnels	Weather conditions	Results
		cloud cover.	
11.08.23	Dormouse footprint check/install paper	Warm and humid 20◦C, wind 1/12 and cloud cover 4/8	No dormice recorded. Wood mouse footprints recorded in ///wanted.hunt.croches
25.08.23	Dormouse tubes and footprint check/install paper	Sunny and humid with rain clouds. 19-20◦C, wind 1/12 and cloud cover 5/8	**Dormouse recorded in tube E23 (///exclusive.classmates.empire)** Wood mouse footprints in ///unravel.forgives.motel ///convinced.emperor.axed
08.09.23	Footprint tunnels change of paper	Hot and humid 25◦C, wind 1/12 and cloud 0/8	Woodmouse found in tubes: ///unravel.forgives.motel ///wanted.hunt.croches
23.09.23	Dormouse tubes and footprint check/install paper	Warm and sunny 19◦C, cloud cover 1/8 wind 1/12	Three dormouse nests recorded at: **E23 (///exclusive.classmates.empire)** **W20 - green leaves around a woven grass core ///utensil.schematic.tonic Photos 3 and 4.** **W23 - woven grass with outer layer of green leaves ///silently.investors.papers Photo 5.**
08.10.23	Dormouse tube and footprint check	Sunny and warm 14-19◦C, cloud 1/8 and wind 1/12	Start of a potential dormouse nest in W19 ///outsmart.cello.hedgehog Wood mouse prints in the following tubes: East 3 and 4 ///convinced.emperor.axed and///comb.afflicted.longingly and West 4 and 5 ///unravel.forgives.motel and ///wanted.hunt.crouches
10.11.23	Dormouse tube and footprint check	Sunny with a cool wind, 14◦C, cloud 3/8 and wind 3/12	Dormouse nests recorded in the following nests: **E23 ///exclusive.classmate.empire** **W20 ///utensil.schematic.tonic** **W23 ///silently.investors.papers** **W19///outsmart.cello.hedgehog**

Date	Tubes/footprint tunnels	Weather conditions	Results
			Wood mouse nests: **West** ///wanted.hunt.crouches ///unravel.forgives.motel ///surfacing.petal.backed **West** ///wanted.hunt.crouches ///unravel.forgives.motel ///surfacing.petal.backed Wood mouse footprints in the tunnels

APPENDIX V: Photographs

Photo 1: Dormouse nest confirmed on the 25.08.23.

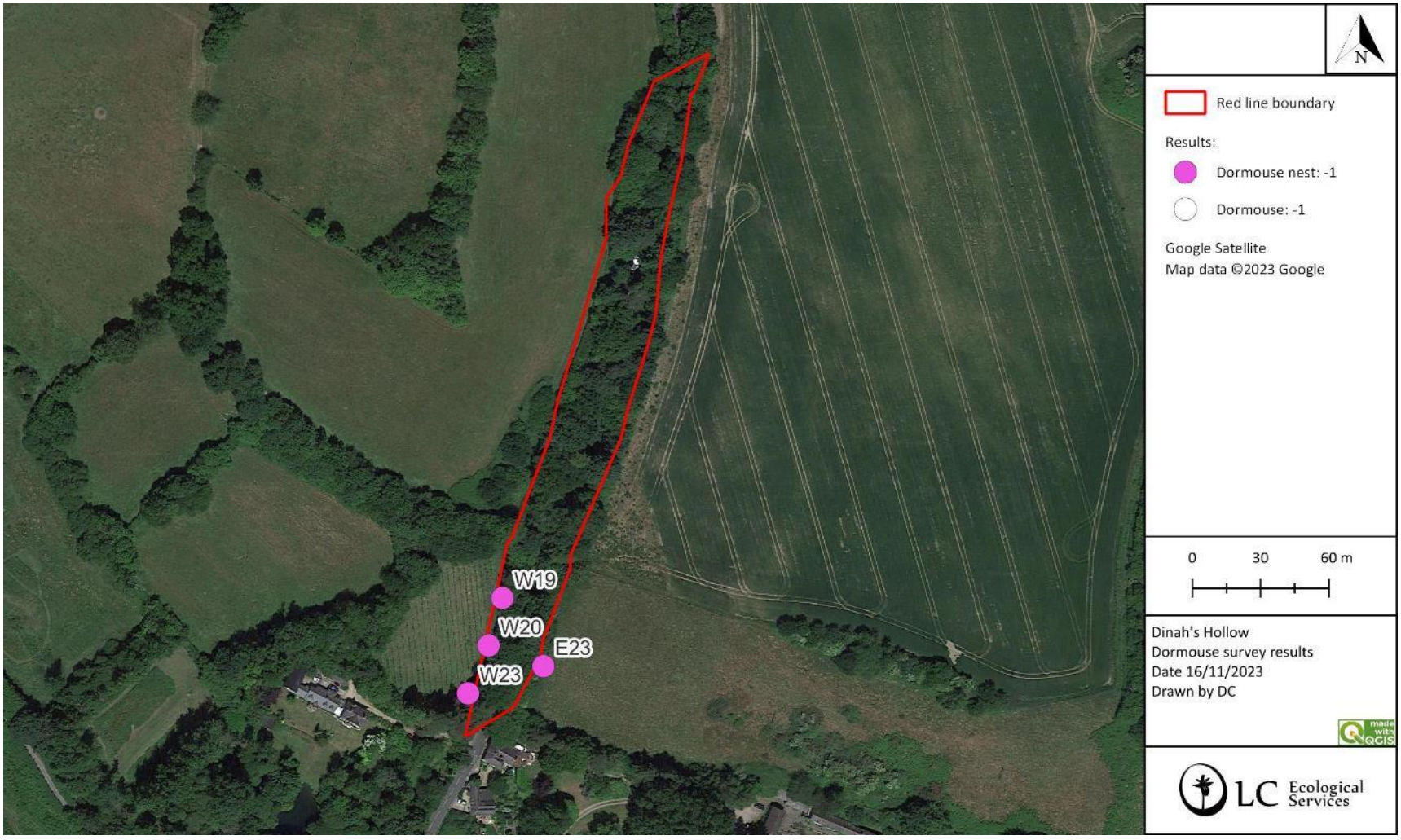
Photo 1: Side view of dormouse nest confirmed on the 25.08.23.

Photo 3: Dormouse nest recorded in 23.09.23.

Photo 4: Dormouse nest recorded 23.09.23.

	
Photo 5: Dormouse nest confirmed on the 23.09.23	**Photo 6:** Dormouse nest recorded on the 23.09.23.

APPENDIX VI: Dormouse results map



4.4 Bats – D. Alder

4.4.1 Introduction

Twelve species of bats were identified during 2023 following acoustic assessment, Table 3. Bats were previously recorded from the area (King 2014), and the hollow is known to be used by several species. Several trees were noted during the preliminary survey to have high potential roost features including a mature Oak on the western slope (Figure 4) with a Great Spotted Woodpecker hole. There were several trees across the area of both slopes with potential roost features. Bats will use a range of cavities, splits and lifting bark in which to roost (BTHK 2020). There is one roost record within buildings within 250m and 7 roost records within 1km of Dinah's Hollow. Four species have been identified through acoustic detection in 2018; serotine *Eptesicus serotinus*, common pipistrelle *Pipistrellus pipistrellus*, Long-eared *Plecotis spp*., and noctule *Nyctalus noctula*. There are records beyond the immediate site from more than 1km away for Western Barbastelle *Barbastellus barbastella*, Natterer's bat *Myotis nattereri*, soprano pipistrelle *Pipistrellus pygmaeus*. Undertaking surveys for bats in woodland should be proportionate to the likely scale and impact of the scheme on the trees. The survey primary aims have been to understand the use of Dinah's Hollow by bats and the potential roosting opportunities within trees as these are the features most likely to be affected. The objectives of the survey for bats were to;

1. Identify the species of bat using Dinah's Hollow and relate this to tree use.
2. Identify the potential roost features within trees which bats may use.
3. Undertake further survey/assessment of trees likely to be affected by the scheme.
4. Produce recommendations for further surveys once details of the extent of tree safety work and tree removal is established.
5. Identify potential impacts and options for mitigation to tree cover and potential roosts both directly and indirectly.
6. Recommend enhancements for bats following best practice guidance on bats using trees and woodlands.

4.4.2 Methods

4.4.2.1 Acoustic survey

Acoustic surveys involved the installation of two Song Meter 3 Bat recording units (SM3Bat) with an ultrasound microphone mounted on a 3 metre long pole (Wildlife Acoustics). Units were placed on either side of the Hollow close to the top of each slope. The units were configured to switch on 15 minutes before sunset and 15 minutes after sunrise to capture bats which emerge before sunset and after sunrise (Alder *et al.* 2021). The aim was to collect data which were used to identify bat species presence within the Hollow from the sound files produced using automated machine -learning techniques (Cook *et al.* 2023). A sample of species identified using the automated procedure was manually verified using Sonobat 4.1.0 (https://sonobat.com/sonobat4/) to view the spectrograms and check the call parameters against known references e.g., Russ (2021). A single recording triggered by a bat is called a bat pass and is used as a measure of activity. Surveys were carried out throughout the summer with at least three consecutive nights of recording in the following months; 21st – 24th June, 9th – 12th August, 6th – 10th September, and 3rd – 6th October. An additional evening survey was undertaken in September due to unforeseen night-time road works which may have affected results. In addition to using the SM3Bat static recording units, a walked transect survey using a handheld Echometer Touch 2 Pro (Wildlife Acoustics) bat detector linked to a Samsung Galaxy smart-phone was used following a linear route along the tops of each slope (Figure 4), on the east and west of Dinah's Hollow respectively. The eastern transect was approximately 383 metres and western approximately 436 metres in length. Each transect was undertaken on the first evening of each of the four survey periods given above June – October. Surveys were conducted in dry weather with wind conditions less than 3 on the Beaufort scale. Selecting these two survey methods covering the breeding and post-breeding periods for bats aims to provide a representative sample of the bat

species most likely to be encountered (Collins 2016, Collins 2023, BTHK 2020). The transect length followed the entire length of the Hollow woodland because bats are a volant group and likely to use all of it (BTHK 2020).

4.4.2.2 Tree Roost Survey

Tree roost assessment involved walk over surveys during the early spring April 2023 to help identify trees with potential bat roost features e.g., splits, cavities, woodpecker holes, lifting bark and basal hollows (BTHK 2020). In addition, trees identified during this survey with potential roosting features (PRF's) which could be safely accessed, including through using a multi-elevated work platform (MEWP), were inspected using a Depstech endoscope (https://depstech.com/en-gb) linked to a smart-phone.

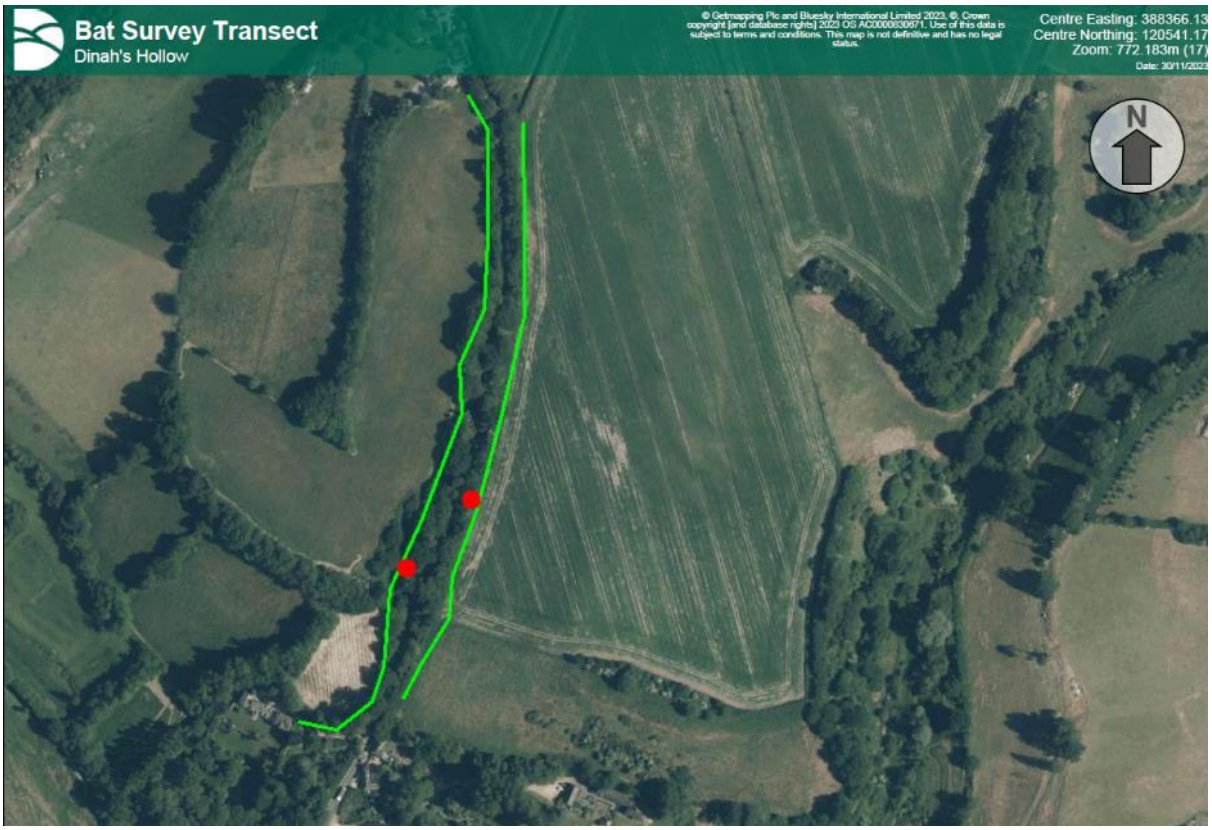


Figure 4 Bat survey transect route (green lines) on either side of the C13 Dinah's Hollow and position of static acoustic recorders (red circles) used in summer and autumn 2023.

4.4.3 Results

4.4.3.1 Acoustics

Twelve species of bats were identified from sound recordings of 25,565 bat passes Table 2. These include the western barbastelle which is red-listed by the International Union for the Conservation of Nature (IUCN) as globally vulnerable. Most bat activity was recorded during August with 11,000 bat passes which coincides with peak numbers of young bats following the breeding period. The most common species was common pipistrelle *Pipistrellus pipistrellus* which accounted for 76% of all activity. All species are known to depend on woodland and have been recorded using tree roosts, see 3.4.3.2 Potential tree roosts.

The transect walk surveys identified seven species with a total of 68 bat passes recorded with 12 on the eastern side and 56 on the western side. Most activity was associated with the area within the vineyard and immediately north where the dense tree-line converges with the woodland on the slope. Common pipistrelle were the most abundantly recorded species.

Bat Species		Passes	% of Passes
Pipistrellus pipistrellus	Common Pipistrelle	19465	76.1
Pipistrellus pygmaeus	Soprano Pipistrelle	5264	20.6
Myotis mystacinus or M. brandtii	Whiskered/Brandt's	497	1.9
Eptesicus serotinus	Serotine	104	0.4
Nyctalus noctula	Noctule	70	0.3
Myotis naterreri	Natterer's	55	0.2
Myotis daubentonii	Daubenton's	53	0.2
Plecotus auritus	Brown Long-eared	24	0.1
Barbastella barbastellus	Barbastelle	16	0.1
Nyctalus leisleri	Leisler's	15	0.1
Myotis bechsteinii	Bechstein's	1	< 0.1
Rhinolophus hipposideros	Lesser Horseshoe	1	< 0.1
		25565	100

Table 2. Bat species identified from acoustic surveys at Dinah's Hollow between end of June and early October 2023.

Species	21/06/2023	09/08/2023	06/09/2023	03/10/2023	Totals
Pipistrellus pipstrellus	4	4	6	10	24
Pipistrellus pygmaeus	2	16	3		21
Eptesicus serotinus		3	5		8
Nyctalus noctula	3		5	4	12
Barbastellus barbastella			1		1
Myotis nattereri		1			1
Myotis daubentonii		1			1
					68

Table 3. Bat species recorded from transect surveys at Dinah's Hollow, June – October 2023.

3.4.3.2 Potential tree roosts

Eight trees were identified and assessed during the survey carried out on the 11th April 2023 and twenty-four further trees were identified during the second visit in October 24th 2023, Table 3. Of the 8 trees inspected in April 2023 none were found to be used by bats although all have the potential to support bats. The additional trees identified (section B, Table 3), with potential roost features in October 2023 will require assessment using close inspection with endoscope and torch. All trees identified will require further close inspection prior to any work. The numbering of trees was incomplete during the April assessment and therefore location details required updating for several trees identified with potential roost features. Additionally, it was not possible to assess trees in October due to conditions preventing safe access onto the slopes. Recommendations are given in the assessment section.

Tree Species/East-E/West-W	Location reference	Type of PRF-location on tree	Comments
A)			
Scots Pine -W	T130 – ST8827,20536	Woodpecker hole 7m agl Basal opening at buttress	Endoscoped -neg
Beech- W	T124 – ST88271,20519	Basal split 1m agl	Endoscoped – neg
Sycamore – W	T ? – ST8826320482[1]	Basal cavity at soil level	Endoscoped – neg

Pedunculate Oak – W	T42 – ST88262, 20479		Endoscoped – neg
Sycamore – W	T52 ST8826020477	Flaking bark 1-3m agl	Visual check - neg
Pedunculate Oak – W	T45 ST8825220458	Woodpecker holes in branches over road, hazard beam >10m agl	Endoscoped – neg
Pedunculate Oak – E	T171? ST8830220605	Branch split >6m agl	Not checked
Ash – E	T80 ST8826320448	Lifting bark, splits	Endoscoped - neg
B)			
Sycamore – W	T26 ST8822620391	Cavity	Not checked
Sycamore – W	T33 ST8823020416	Cavity	Not checked
Sycamore – W	T38 ST8823020425	Cavity? Ivy	Not checked
Sycamore – W	T39 ST8823420424	Basal cavity	Not checked
Sycamore – E	T71 ST8826920458	Basal cavity	Not checked
Ash – E	T83 ST8825520435	None recorded	Not checked
Sycamore – E	T84 ST8825220420	Basal rot	Not checked
Sycamore - W	T105 ST8823220411	Basal rot cavity	Not checked
Ash – E	T110 ST8824720419	Basal rot	Not checked
Pedunculate Oak – E	T113 ST8825220418	Dead wood branches	Not checked
Pedunculate Oak – E	T115 ST8827020469	Leaning no PRF's identified	Checked
Sycamore – W	T119 ST8826520513	Mature tree	Not checked
Scot's Pine – W	T120 ST8826520508	Mature raptor? no PRF's	Checked
Sycamore – W	T122 ST 8826020500	Basal cavity	Potentially checked see [1]
Pedunculate Oak – W	T126 ST 8827320511	No PRF's but important ecology tree	Checked
Beech – W	T133 ST 8827320524	None recorded	Recheck
Beech – W	T134 ST 8826620521	None recorded	Recheck
Ash – W	T135 ST8827020536	None recorded	Recheck
Sycamore – W	T136 ST8827520522	None recorded	Recheck
Pedunculate Oak _ E	T176 ST8829320559	Split deadwood/branches	Recheck

Sycamore – E	T186 ST8828720550	None recoded but basal rot	Recheck
Pedunculate Oak – E	T189 ST8828820543	None recorded in Ivy at base	Recheck
Hazel – E	T190 ST 8828920540	None recorded basal rot	Recheck
Sycamore - E	T199 ST 8828020514	Open buttress at soil level	Recheck

Table 4. Inspection results where close inspection was undertaken during April 2023 A) and potential roost trees identified in October 2023 B); Key: neg – negative result, agl – measure in metres above ground level. Grid references derived from Garmin GPS.

NB. All the above will require further close inspection before any works are scheduled.

4.4.4 Assessment

Dinah's Hollow is used by at least twelve species of bats all of which are associated with woodland and tree roosts. Bats used all the woodland on both sides but with concentrations along the southern area. Bats rely on woodland cover and a mixture of age-classes of trees and understorey, but also edge or open habitat within or surrounding woodland in which to feed. Woodland structural diversity is important because it provides most of the resources on which bats depend; woodland cover, roosting opportunities, and foraging locations. In recent studies within Cranborne Chase, woodlands with more complex structures were found to accommodate most species (Alder *et al.* 2021). The opening of dense woodland canopy can help to increase the opportunities for bats where woody understorey is allowed to regrow e.g., by coppicing, although care must be taken in narrow strips of woodland to avoid creating large gaps which some species may avoid and can lead to habitat fragmentation. Retaining mature trees is important because these often contain the most resources for bats (Carr *et al*. 2020). The main risks to bats here are loss of roosting sites. To ensure the scheme and tree works comply with best practice for bats in trees and woodlands it will be necessary to recheck all trees noted in Table 4

so that any roosts identified can be protected. Where bats are roosting and this is not possible then a mitigation licence from Natural England will be required. Consideration of the amount of tree removal and the likely significant effects on bats should be discussed once the full extent of the works is known.

4.4.5 References

Alder, D.C., Poore, A., Norrey, J., Newson, S.E. and Marsden, S.J., 2021. Irregular silviculture positively influences multiple bat species in a lowland temperate broadleaf woodland. Forest Ecology and Management, 483, p.118786.

Carr, A., Weatherall, A. and Jones, G., 2020. The effects of thinning management on bats and their insect prey in temperate broadleaved woodland. Forest Ecology and Management, 457, p.117682.

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Forestry Commission 2005 Woodland Management for Bats. https://www.forestresearch.gov.uk/publications/woodland-management-for-bats/ Accessed 5/12/2023

4.4.6 Acknowledgements

The landowners of both slopes at Dinah's Hollow kindly allowed access to facilitate the surveys for bats. Dr Stuart Newson undertook the analysis of bioacoustics recordings.

4.5 Badgers – D. Alder

4.5.1 Introduction

Badgers *Meles meles* are common mammals in Dorset although the recent culling for bovine tuberculosis has reduced the population given culling aims to reduce numbers by 70% (UK Parliament). During the previous surveys conducted during 2015 (Brown 2015) there were five badger setts found although one of these was on Church Slopes which at the time was also considered as part of the scheme. However, this is not the case currently. There were four setts identified by Brown (2015) on the western slope at Dinah's Hollow. At that time Sett 1 with three entrance holes was active, sett 2 with a single hole was partially used, sett 3 with two holes was partially used and sett 4 with five holes was disused. The objectives of the current survey and assessment were to;

- Resurvey both slopes at Dinah's Hollow and record badger setts and entrance holes.
- Identify and record signs of activity for each sett and entrance hole and general activity.
- Provide an assessment of the potential impact of the scheme and propose mitigation.

4.5.2 Methods

A walkover survey was used to systematically search for setts and entrance holes across both the slopes at Dinah's Hollow, and search for signs of badger activity including well-defined paths, latrines, footprints, hair caught on barbed wire and foraging signs. The survey follows a similar methodology to that of Harris *et al.* (1989). Surveys were undertaken in April 2023 and October 2023 in daytime in dry weather. Sett numbering follows Brown (2015) for consistency.

4.5.3 Results

There was evidence of Badger *Meles meles*, using the Hollow with several well-worn paths seen on the western slope and fresh latrine pits on the field side of the eastern slope. Sett 1, located on the upper part of the western slope beyond the upper traffic lights in the

old quarry where a 5-hole sett was identified around ST 8827520570. This was inactive with no signs of recent use (Figure 5). This had been very active during surveys in 2015 (Brown 2015, Own observation) and was included in the recent records from Dorset Environmental Records Centre. A single hole sett 2, was found which had signs of recent use but not believed to be in current use close to the field edge at ST 88264 20545. There was another single-holed sett 3, found near top of slope above the traffic lights ST 8825920509.There was a two hole outlying sett 4, near the top of the western slope just below the field ST 88252 20492. There was a single disused entrance hole within the area of sett 4, part way down the slope approximately 30 metres down from the upper traffic lights ST 8825420487.

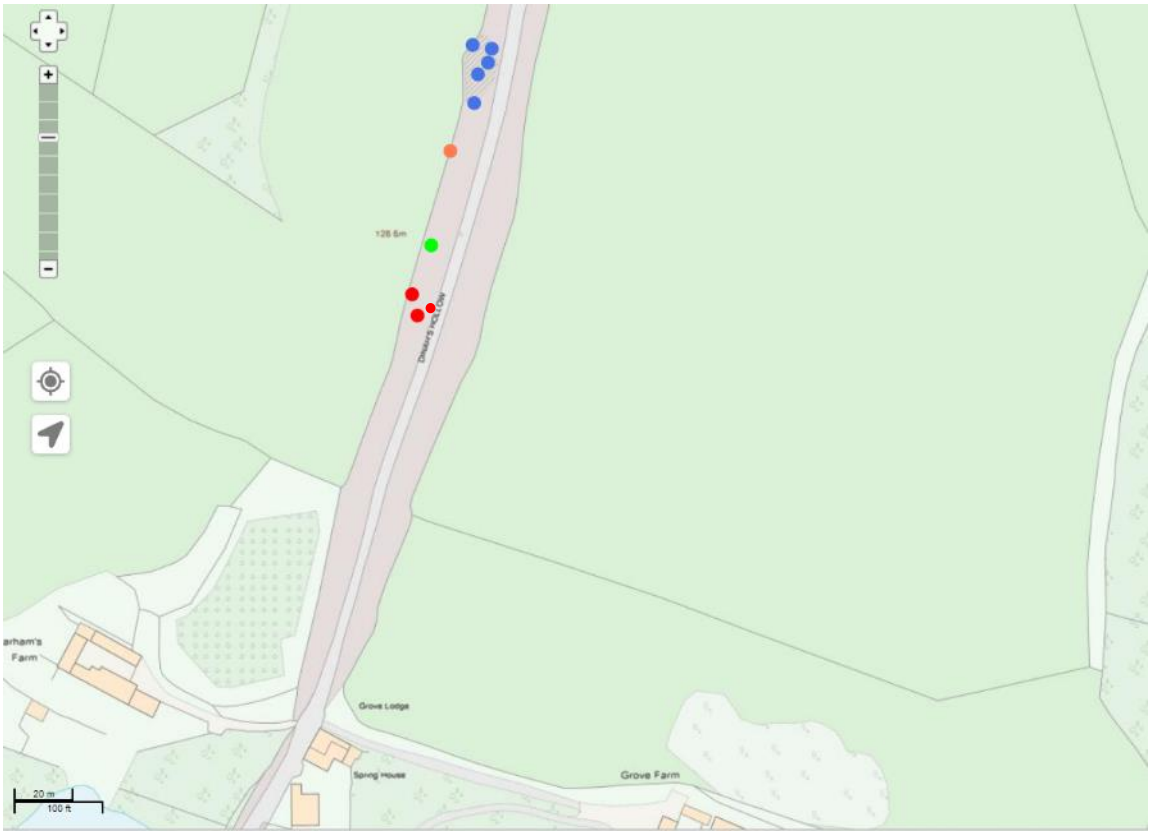

Figure 5. Approximate locations of four setts identified during surveys carried out in 2023. These follow the locations of setts identified during 2015 although the numbers of entrances have since changed. Numbering 1 to 4 from top to bottom.

4.5.4 Assessment

There was evidence of badger activity across both the slopes with fresh latrine pits on both sides of the road. The status of the setts has changed since 2015 as none were currently active. Several entrance holes had become filled with soil due to collapsed tunnels and were no longer visible other than slight depressions in the slope and spoil heaps. All setts remain categorised as before; sett 1 is a currently disused main sett which had increased the number of entrances since 2015 yet is no longer used. Setts 2 and 3 are outlying setts and sett 4 is a subsidiary sett. The sett below the Church was also visited during April 2023 and was found to be inactive although this had been subjected to partial closure at the time. It is not directly affected by the current scheme; nevertheless, it should be surveyed again due to its proximity to the work area to inform any further

assessment of badger activity. Setts 1 – 4 are likely to be within a home-range of a badger social group and could become active at any time. As such they must be monitored in advance of the proposed works to establish whether a sett becomes active in, or close to, the area of slopes likely to be affected by the stabilisation work. Licensing to undertake sett closure was considered necessary during the 2014-15 survey but the current activity status would suggest licensing is not necessary should this status remain. In which case setts not showing signs of current use may be assessed as being inactive and deserted and could potentially be closed down without a licence but only if this can be proven by monitoring including use of trail cameras. The previous objective for sett closures was not to completely exclude badgers but to focus on those areas subject to stabilisation work. Depending upon the extent of the work area and mesh installation this is likely to remain to be the case. Retaining areas within which badgers can continue to live in setts will be important rather than pushing them into areas where they may cause damage e.g., in gardens, bringing them into conflict. The status of setts can change and setts which were within the work area and were outlying setts could become re-occupied and very active to become categorised as main breeding setts. This is a consideration where licensing conditions are imposed by Natural England. Closure of an entire main sett can require construction of an alternative sett as compensation.

The licensing window for any sett closure is 1st July to 30th November. Sufficient lead-in time is required to complete any licensable sett closure prior to any stabilisation works beginning. Similarly, where setts are inactive yet fall within the working areas these will also need to be closed well before the work starts as leaving them open presents a risk that they may be occupied by badgers and therefore a licence application will be required which may cause delays. In all cases monitoring is required which includes additional survey visits and the use of trail cameras to observe entrances affected by the proposed work. As a guide a period of at least 21 days continual observation without any badger activity at a sett entrance may be sufficient grounds to temporarily exclude badgers using 2.5-gauge chain-link mesh. Where activity is suspected or has been clearly identified then

a licence application will be required and once granted (for licensable actions within the period 1st July to 30th November) the sett can be closed using approved methods, typically using one-way gates with a chain-link apron at each entrance. Importantly, landowner permission is required as this is a condition of licensing sett interference.

4.5.5 References

Brown. J. 2015. C13 Dinah's Hollow, Melbury Abbas, Dorset. Update Survey of Badger Activity 2015. On behalf of Dorset Highways, Dorset County Council.

Harris, S., Cresswell, P. and Jefferies D. 1989 Surveying Badgers. Occasional Publication No 9, The Mammal Society, London.

UK Parliament 2018. Research Briefing. Badger Culling in England. Briefing paper Number 6837, House of Commons Library.
https://commonslibrary.parliament.uk/research-briefings/sn06837/
Accessed 7/12/2023

4.6 Birds

4.6.1 Introduction

Previous preliminary surveys for birds carried out in 2022 indicated a range of species associated with woodland. Woodand birds are included within the United Kingdom Biodiversity Indicators (JNCC 2023). Overall woodland birds have declined by 37% between 1970–2022, and by 15% over the recent short-term period from 2017–2022 (BTO online). Woodland birds are categorised as either Generalist species, those which use woodland but also other habitats including gardens and farmland, and Specialists, those species which are most strongly associated with woodland throughout the year in which they breed and forage. In addition, birds are included within the UK index of Birds of Conservation Concern (Stanbury *et al*. 2021). This is used to indicate the severity of population decline following a traffic light system with species on the red and amber lists most likely to be at increasing risk of extinction. Several woodland bird species are listed (Natural England 2022).

4.6.2 Methods

Four daytime transects were walked during the breeding season, April, May x2 and June, and two evening surveys during June and October for detecting nocturnal species, e.g., Owls. These followed the methodology of Bibby *et al.* (2000). Surveys were conducted in fine, dry weather when the wind speed was no greater than 3 on the Beaufort scale. Birds were noted when first encountered and were either visually or aurally detected, and their position marked on a map. This spot-mapping method can help to identify areas which birds may be using as breeding territory when a species is detected at the same location at different survey periods. Categories of breeding certainty include U – unknown, a bird encountered once with no evidence of holding a territory, Possible – bird encountered and appears to be holding a territory e.g., singing, but without firm evidence of nesting; Probable – a bird which is encountered at least two times and for example has been seen carrying food or other behaviour which indicates nesting close by. Confirmed – when a

nest has been found or young are seen/heard calling, adult birds seen regularly carrying food to a position where a nest is likely. For more details see
Microsoft Word - BreedingStatusCodesforweb.doc (bto.org)

4.6.3 Results

A total of 45 bird species were recorded within the area of Dinah's Hollow with twenty either confirmed or probably breeding (Table 5). Of the total six species were red-listed as Birds of Conservation Concern (BoCC) and ten amber-listed BoCC. However, several of these are not woodland birds e.g., Grey wagtail and Kingfisher, which are water birds found within the nearby habitats associated with ponds and streams. Three species, Greenfinch, Spotted Flycatcher and Mistle thrush are red-listed, and seven are amber-listed species, including Song thrush, Wren and Tawny Owl; are all likely to breed within the woodland of the slopes. Tawny Owl was confirmed breeding as young birds were heard calling for the mature trees at the southern end of Dinah's Hollow on the western slope. There were eleven generalist and nine specialist woodland birds. Some e.g., Dunnock, Spotted Flycatcher and Tawny Owl have declined by more than 40% since the 1970's. Buzzard, an increasingly widespread raptor was confirmed breeding as a large nest is present in a tall Scot's pine on the western slope. Although not identified to species during the survey, another raptor nest was seen within another Scot's pine on the western slope, which is possibly that of a Sparrowhawk used in a previous year. There was a large oak tree on the western slope with a recently excavated Great Spotted woodpecker *Dendrocopus major*, hole. There is a DERC record nearby of the red-listed Spotted flycatcher *Muscicapa striata* which uses woodland and woodland edges.

		Daytime				*Nocturnal*			
Species		11-Apr - 23	16-May - 23	31-May - 23	14-Jun -23	06-Jun -23	03-Oct -23	Status	Habitat
Aegithalos caudatus	Long tailed tit*		2		5			*Po*	*A3, B1*
Alcedo atthis	Kingfisher		1					*U*	*G5*
Anas platyrhynchos	Mallard		2					*Co*	*G5*
Ardea cinerea	Grey Heron		2	2				*U*	*G5*
Branta canadensis	Canada Goose		2					*U*	*G5*
Buteo buteo	Buzzard	1			2			*Co*	*A2,D3*
Carduelis cannabina	Linnet				3			*U*	*B3,3,2*
Carduelis carduelis	Goldfinch		2	3	6			*Pr*	*A3, B3*
Certhia familiaris	Treecreeper**		1	2				*Pr*	*A3*
Chloris chloris	Greenfinch	1	2	3				*Pr*	*A3,B3*
Columba oenas	Stock Dove	1	3	2	1			*Pr*	*F3,1,1*
Columba palumbus	Woodpigeon	6	6	5	5			*Co*	*A3*
Corvus corone	Carrion Crow	3	3	6	3			*Pr*	*D3, C8, A2*
Corvus corax	Raven				2			*Po*	*D3,C8,A2*
Corvus monedula	Jackdaw	1	2	2				*Co*	*A3*
Cyanistes caeruleus	Blue Tit*	2	2	1				*Co*	*A3, B3*
Dendrocopos major	Great Spotted Wdpecker**			2	1			*Pr*	*A3,*
Erithacus rubecula	Robin*	2	2	3	5			*Co*	*A3, B3*
Fringilla coelebs	Chaffinch*	1	4	3	3			*Pr*	*A3,D3,9*
Gallinula chloropus	Moorhen	1	1	2				*Po*	*G5*
Garrulus glandarius	Jay**			1				*Po*	*A3, B3*
Hirundo rustica	Swallow		2Flyo	3Flyo	2Flyo			*U*	*B3,C7*
Motacilla alba	Pied Wagtail	1						*U*	*i5,2 C8*
Motacilla cinerea	Grey wagtail	1						U	*G2, G6*
Milvus milvus	Red Kite			2Flyo				*Po*	*E1,2,3*
Muscicapa striata	Spotted flycatcher**			2				*Pr*	*A3*

Parus major	Great Tit*	4	2	3	1			*Pr*	*A3,B3*
Passer domesticus	House Sparrow		3	5				*Co*	*F1,1*
Periparus ater	Coal Tit**	3	1	2	2			*Pr*	*A2,A3*
Phylloscopus collybita	Chiffchaff**		2	1	1			*Pr*	*A3, B3*
Pica pica	Magpie	1	2	2				*Pr*	*A3, B3*
Picus viridis	Green Woodpecker**	1	2					*Po*	*,A3*
Prunella modularis	Dunnock*	4	3	2				*Co*	*B3, A3*
Pyrrhula pyrrhula	Bullfinch*	1		1				*Po*	A3
Regulus ignicapilla	Firecrest	1	2					*Pr*	*A3,A2*
Regulus regulus	Goldcrest*	2	3	3	1			*Po*	*A3,A2*
Sitta europaea	Nuthatch**			1	1			*U*	*A3*
Strix aluco	Tawny Owl*		1	1		1	1	*Co*	*A3*
Streptopelia decaocto	Collared dove			2flyo				*U*	*F3,1*
Sturnus vulgaris	Starling			2				*U*	C5
Sylvia atricapilla	Blackcap**	3	3	2	2			*Pr*	*A1, A3,1*
Troglodytes troglodytes	Wren*	3	2	3	3			*Co*	*A3,1,2*
Turdus merula	Blackbird*	2	2	3	4			*Co*	*A3, B3*
Turdus philomelos	Song Thrush*	1	2	1	1			*Pr*	*A3, B3*
Turdus viscivorus	Mistle Thrush	1		3				*Pr*	*A3*

Table 5 Bird species identified at each survey; woodland generalists are shown using a single asterisks and specialists as double asterisks. Red and amber colour reflect the Birds of Conservation Concern category to which a species belongs.

4.6.4 Assessment

Twenty-one bird species identified during these surveys have a strong association with woodland and most likely to breed at Dinah's Hollow. These include several rare and threatened species e.g., Spotted Flycatcher and Song thrush. Several woodland specialists are associated with dense understorey, e.g., Blackcap which is sporadically encountered

here and as such woodland birds which are associated with open canopy, dense coppice and early successional scrub and bramble were generally found at the tops of the slopes alongside the woodland edges. Conversely, woodland specialists which are strongly associated with older canopy trees e.g., Treecreeper were found using many of the trees within the Hollow. The site is historically known to be used by Buzzard as a large nest is present in a tall Scot's pine on the western slope and was found to be used during 2023 with at least one young heard calling in June. There was a large oak tree with a recently excavated Great Spotted woodpecker *Dendrocopus major*, hole. There is a DERC record nearby of the red-listed Spotted flycatcher *Muscicapa striata* which uses woodland and woodland edges. Firecrest *Regulus ignicapilla* was heard singing within the conifer trees with which it is strongly associated on the south western area of woodland. The woodland is likely to provide nesting opportunities for a range of woodland birds particularly species associated with mature trees using holes and crevices such as Nuthatch *Sitta europaea* and Treecreeper *Certhia familiaris.* Woodland birds benefit from a range of different woodland structural characteristics within a continuous canopy cover (Alder *et al*., 2018).

The impact to nesting birds is primarily associated with direct risks from vegetation removal which must avoid being carried out during the bird nesting period typically within 1st March to 31st August. The area of loss is also a consideration e.g., where significant nesting trees are removed. However, increasing areas of dense understorey, e.g., coppice, will likely benefit several species if these can be retained and/or restored (Fuller and Warren 1993). Additional mitigation planting is recommended which improves the woodland habitat network within which Dinah's Hollow sits (Dorset LNP 2020).

Further surveys must be carried out where the scheme is likely to be delayed by more than a year to inform the work programme and mitigation.

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4.7 Great Crested Newts

4.7.1 Introduction

The woodland on the slopes is likely to provide refuges for amphibians but unlikely to offer breeding habitat as there is no water body within the wooded slopes. A previous survey for Great Crested Newt (GCN) *Triturus cristatus* in 2015 did not find any evidence of breeding in the nearest waterbody at Parham's Farm. However, part of the Holloway sits within the Amber risk zone for this species in Dorset which contain main population centres for GCN and comprise important connecting habitat that aids natural dispersal (NE 2021). Mr Paul Beatson undertook a repeat survey for Great Crested Newt in the nearest water body at Parham's Farm. His report follows.

Great Crested Newt Survey Report.

Dinahs Hollow, Shaftesbury.

Dorset.

April/May 2023.

For and on behalf of: Dorset Council.

By: Paul Beatson. BSc.(Hons) MCIEEM

Date: June 2023

PGB Conservation Ltd

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Appendices

Appendix 1- Waterbody photographs

Appendix 2 – Site plan showing location of ponds

Ecologist**:** Paul Beatson

PGB Conservation Ltd.

The consultancy was started in 2000. The director and principal ecologist is Paul Beatson BSc. (Hons), MCIEEM, who has been working as an ecologist since 1990. He has a wide experience of ecology with particular experience in habitat management, reptiles and ornithology. He has a Natural England licence for great crested newt surveys (2017-30710-CLS-CLS) and is a full member of the Chartered Institute of Ecology and Environmental Management.

1.0 Introduction

1.1 Purpose of this Report

This report details the results of Great Crested Newt (*Triturus cristatus*) (hereafter GCN) surveys undertaken in April and May 2023 as commissioned by Dorset Council, Highways. The results will assist in informing any necessary mitigation.

1.2 Background

Repairs to nearby unstable road embankments have been proposed. The work zone is within approximately 70 metres from the pond which has been assessed for its potential as a suitable breeding habitat for GCN.

1.3 Site Description

The proposed works are located south of Shaftesbury at Dinah's Hollow, Melbury Abbas. One pond was identified within 250 metres of the work zone was surveyed and is located in the garden of Parham's Farm. The pond is located at grid reference ST 882204. (Please refer to appendix 2, site plan).

The pond is situated in a garden with managed lawn to the north, and a woodland of shrubs and trees to the south.

It is largely open on the north side but surrounded primarily by willow trees to the west, east and south.

There is very little emergent vegetation but rushes and sedges are present around the margins.

The pond is largely shaded, has no aquatic vegetation and has an accumulation of leaf litter on the bottom.

There were lumps of what appeared to be organic matter floating on the surface of the pond.

2 Canada geese were nesting on an island on the pond.

A stream runs through the pond, running in at the eastern end and out at the western end (Please refer to appendix 1, Photographs)

The pond and work site lie within an amber zone in Dorset for the purposes of GCN district licensing. Please click on the link for details.

2.0 Legislation

2.1 Great Crested Newt

The GCN is listed in Schedule 5 of The Wildlife and Countryside Act 1981 (as amended). The Act transposes into the UK law, the Convention on the Conservation of European Wildlife and Natural Habitats (commonly known as the 'Bern Convention'). GCN is listed on Schedule 5 of the Act in respect of Section 9, which makes it an offence to:

- Intentionally or recklessly kill, injure, or take (handle) a GCN;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a GCN uses for shelter or protection;
- Intentionally or recklessly disturb a GCN while it is occupying a structure or place that it uses for shelter or protection.

GCN receives further protection under Regulation 41 of the Conservation of Habitats and Species Regulations 2010 9as amended), which makes provision for the purpose of implementing European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992. GCN is listed on Annex IV of the Directive, which means that

member states are required to put in place a system of strict protection as outlined in Article 12 and this is done through inclusion on Schedule 2 of the Regulations, which makes it an offense to:

- Deliberately capture, injure or kill any GCN
- Deliberately disturb a GCN, in particular 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) To hibernate or migrate.

  (b) To affect significantly the local distribution or abundance of GCN; or
- Damage or destroy a breeding site or resting place of a GCN.

The survey work was carried out under licence/registration number – 2022-30710-CLS-CLS. This permits the survey work and any possible disturbance caused by the survey.

3.0 Method

3.1 Review of Secondary Data

The pond and work site lie within an amber zone for GCN district licensing.

There is anecdotal evidence from the landowner that smooth or palmate newts were found within the last year approximately 70m from the pond

3.2 Defining Survey Scope

In line with Chartered Institute of Ecological and Environmental Management (CIEEM) and Natural England guidance, surveys were focused on those areas in which works associated with the proposed development could contribute to significant adverse effects on GCN populations, or could result in contravention of the legislation protecting GCNs.

3.3 Agreement of Suitable Survey Methods

The water body lies approximately 70m from the proposed work zone and was therefore selected to be surveyed. Methods to be employed were egg search and torch survey. In addition eDNA sampling was undertaken as a supplementary survey method. These were all carried out in line with Natural England guidelines.

The pond was subjected to a habitat suitability index (HSI) test which assesses the suitability of the pond for great crested newts.

3.4 Limitations

There were no survey constraints.

4.0 Field Survey Methodology

4.1 Torch Survey

Torching involves searching for great crested newts at night by walking the perimeter of the water body whilst shining a powerful torch into the water. This method is only undertaken when the night-time air temperature exceeds 5 degrees centigrade.

4.2 Egg Search

An egg search involves a visual search for folded vegetation either on emergent plants, aquatic plants or on leaf litter in the pond.

4.3 Habitat Suitability Index (HSI)

The HSI for the great crested newt was developed as a scoring system to evaluate habitat quality and quantity. As HSI is a numerical index between 0 and 1. Ponds with values below 0.5 are categorised as poor; between 0.5 and 0.59 as below average; 0.6 to 0.69 as average; 0.7 to 0.79 as good and over 0.8 as excellent.

Features examined and ranked include:

- Shading
- % of macrophyte (aquatic plant) cover.
- Presence of fish or wildfowl.
- Pond size
- Quality of terrestrial habitat
- National location
- Water quality (abundance and diversity of invertebrates and submerged plants)
- Other ponds within 1km

4.4 eDNA Testing

If GCN use a pond, their DNA can be detected in water samples. eDna testing currently requires one visit in the daytime between 15th April and 30th June. Samples are gathered following the guidelines supplied by the testing company. Samples are then refrigerated until transfer to the laboratory.

This survey method is accepted by NE. In the Government website https://www.gov.uk/guidance/great-crested-newts-advice-for-making-planning-decisions it states that, 'survey work can include: presence or absence surveys, which can include eDNA sampling'.

5.0 Results

Torch Surveys, Egg search, eDNA testing and Habitat Suitability Index results.

Site: **Pond** Dinah's Hollow, Shaftesbury, Dorset.

Date & time	Species	No	Method	Weather & Temperatures	Notes
17-4-23	No amphibian or egg sightings		Torch	20% cloud. Air – 12 degrees C, water 13 degrees C.	Turbidity – 2 out of 10 (10 being very turbid). 25 sticklebacks seen

25-4-23	No amphibian or egg sightings		Torch	10% cloud. Air – 10 degrees C, water 13 degrees C.	Turbidity – 2 8 sticklebacks seen
17-4-23			HSI		0.50 = Below average. Borderline poor GCN habitat
9-5-23	No amphibian sightings		eDNA samples taken		Negative

- 2 torch surveys 2 egg searches were undertaken on 17-4-23 and 25-4-23.
- No GCN or GCN eggs were found during the surveys.
- eDNA samples were taken on 9-5-23. The samples were analysed on 18-5-23 and the results were negative.

6.0 Analysis

- The pond does not appear to support a population of Great Crested Newts.

- HSI rating is categorised as below average and is borderline poor. This low reading is primarily due to; the presence of and stocking of predatory fish; the presence of wildfowl and the poor water quality.

- The negative eDNA test results help to reaffirm the negative torch and egg search survey results for the pond.
  As noted in 5.8.1 of the NE GCN Mitigation Guidelines manual 2001, 'it is virtually impossible to demonstrate absence'. However, the population size here can be classed as between zero and 'small'.

  A 'small' population size class refers to maximum counts of up to 10 (please refer to 5.8.3.1 of the NE GCN Mitigation Guidelines), whereas no evidence of GCN was found during the recent surveys at the Dinah's Hollow pond.

- The proposed development is unlikely have any significant effect on any local GCN population and therefore not have a negative impact on the favourable status of this species within this locality.

- It is possible that GCN may travel to the working area from outside, although the numbers are likely to be low as most will be found within 250 metres of a breeding pond.

7.0 Mitigation

- Although the pond does not appear to support a population of GCN, the terrestrial habitat around the pond and at the work site are suitable for newts.

- Due to this and the fact that the work site lies within an amber zone for GCN licencing, any work undertaken on suitable terrestrial habitat for GCN should be overseen by a suitably qualified ecologist.

- Suitable terrestrial habitat for GCN has structure, so may include small mammal holes, rotten stumps, stone walls, and piles of loose rock or logs. Good terrestrial habitat offers cover and foraging opportunities and may include rough grassland, hedges, scrub and woodland. Creation of these features in advance of the main scheme is recommended.

- A method statement must be produced to cover all GCN mitigation.

Appendices

Appendix 1 – Photographs of Surveyed Pond

Appendix 2 – Figure 1. Site Survey Location

Appendix 1. Photographs of Surveyed Pond

Photo 1. Survey pond.

Photo 2. Stream inlet to pond

Appendix 2

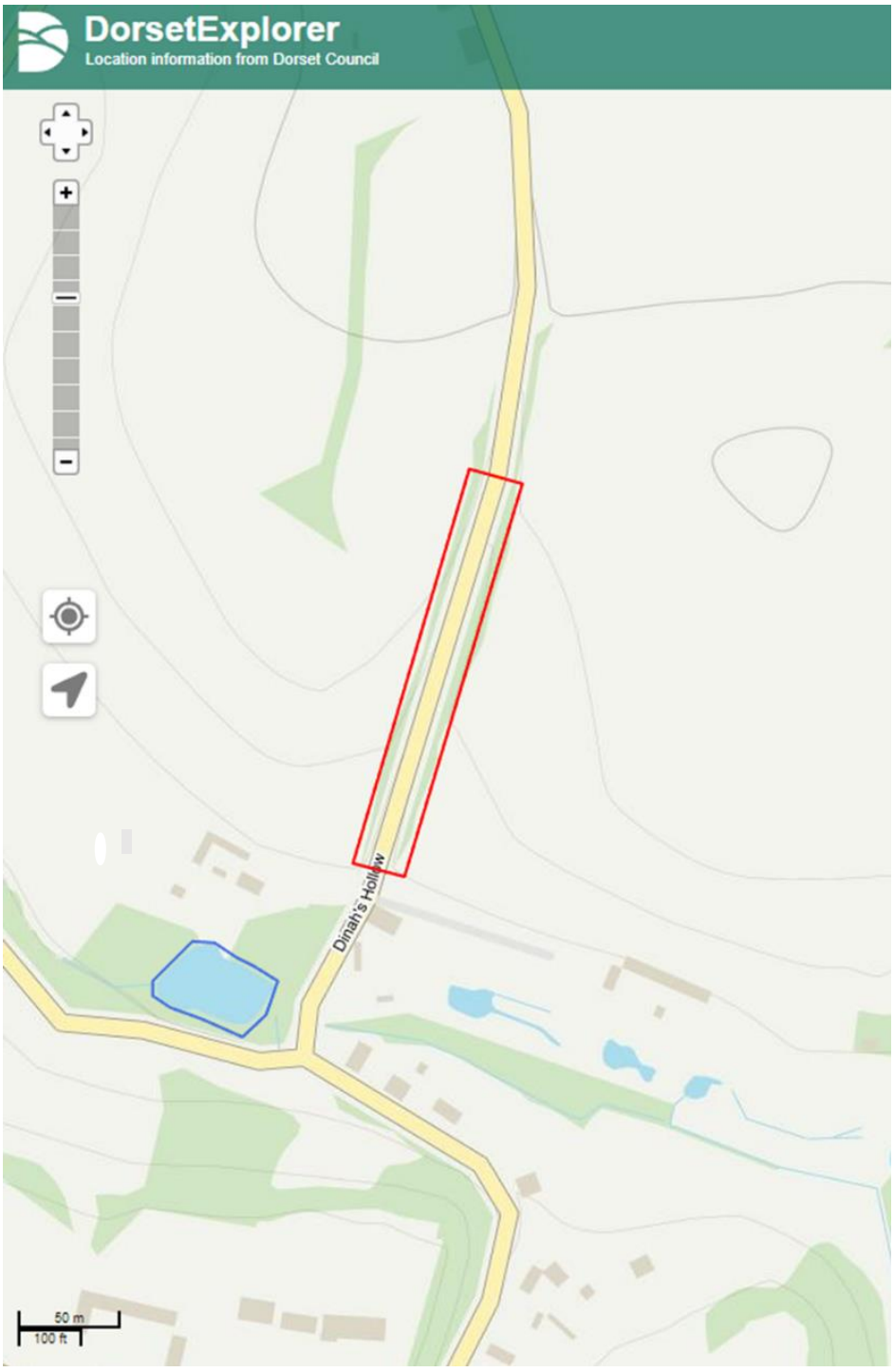

Figure 1 Proximity of surveyed pond and the approximate proposal working zone.

4.8 Amphibians and Reptiles

4.8.1 Introduction

During the Great Crested newt survey which provided an opportunity to search for other amphibians there was no evidence of any using the pond at Parham's farm. See methods section 3.7. The habitat suitability for reptiles was assessed.

4.8.2 Results

Smooth newt *Lissotriton vulgaris* was found using terrestrial habitat at Parham's Farm. It is reasonable to assume that other species of amphibian, Common Frog *Rana temporaria*, Common Toad *Bufo bufo* and will be present using the terrestrial habitat as both have been recorded within the likely zone of influence.

There are records of Slow-worm *Anguis fragilis* and Grass Snake *Natrix Helvetica.* The habitat within the hollow is not suitable for reptiles because it is largely shaded with few opportunities for basking which is essential for species during the lead up to breeding and to warm up to be able to forage for prey.

4.8.3 Assessment

There is potential for amphibians to use the slopes at Dinah's Hollow where they can find refuges e.g., underneath fallen wood and within dense understorey vegetation and rodent burrows. However, this is limited within the slopes and therefore the risk of harm is low.

Reptiles prefer habitats which are more open and sunnier in which to bask and forage for invertebrate prey. However, reptiles will use fallen deadwood and rodent burrows as potential hibernation sites. This should be considered during the proposed works and as for Great Crested Newts (and amphibians) the risk is deemed low assuming mitigation method statement is in place.

It is recommended that an ecologist with experience of amphibian and reptile conservation prepares a method statement and is available to oversee the preparatory works to install the mesh. Refuges such as log piles and brushwood should be created in advance away from the working area and used as alternative refuges by any animals that are displaced.

4.9 Invertebrates

4.9.1 Introduction and results

The slopes are likely to be used by woodland invertebrates although with a closed canopy these are likely to be associated with fallen deadwood, leaf-litter, and tree leaf-foliage. The previous survey did not identify any protected or priority species e.g., woodland butterflies. There are records of Silver-washed fritillary *Argynnis paphia* from within 2km, a species associated with woodland, the caterpillars feeding on Violets. However, there were no wild species of violets recorded during the botanical survey. This is most likely because the woodland on the slopes is shaded which can reduce the number of many species of ancient woodland plant. Most butterfly species records are of open grassland and downland species relating to the Fontmell and Melbury Downs designated sites.

4.9.2 Assessment

There are no records of invertebrates using Dinah's Hollow. However, there are likely to be several species associated with closed canopy woodland e.g., Dor snail *Clausilia bidentata.* A species found within the southern area of Cranborne Chase (own observation). Saproxilic insects include beetles and hoverflies although these will be limited by the volume of deadwood which is generally low because of the safety requirement alongside a public highway. Those invertebrates which are associated with early successional and generally open habitats are likely to be low in numbers of species because the wooded slopes are shaded. Some canopy opening by careful selection felling of trees would likely enhance the opportunities for invertebrates which select warm sunny glades within woodlands e.g., butterflies (Warren and Fuller 1992). Most closed

canopy invertebrates will be best catered for by retaining areas of mature trees. In summary, invertebrates are such a large and diverse group that to provide conditions for all requires a much more varied structure than that which exists. In the absence of any rare or protected species the woodland should be retained while considering increasing opportunities for enrichment planting to diversify the range of trees and shrubs, fallen deadwood on level ground and creating a wider range of conditions including canopy opening, reflecting a varied woodland successional gradient, than that which currently exists (Kirby 2001).

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5. Conclusions and Recommendations

5.1 Impacts and further assessments

The precise timeline of the work to stabilise the slopes is currently unknown which has consequences for detailed recommendations. The main impacts of the proposal are currently believed to be to Dormouse because this species was found using nesting tubes on both slopes. Licensing will be required as recommended by the ecologists from LC Ecological Services. For bats and badgers further surveys and assessment will be required because details of the potential roost trees, and activity at setts respectively, could change. Recent guidance on Bat mitigation and surveys has highlighted the transient nature of roost use in trees and that it is best to treat the entire woodland as if it were a roost. Given the increase in bat species which has doubled to twelve since 2015 this is an important factor. Close roost inspection will be necessary and must be undertaken well in advance of the proposed works. Where this may not be possible the use of night vision aids will need to be considered (Collins 2023). Where a roost is identified licensing must be considered for affected trees. Badgers are certainly using the Hollow because of evidence of latrines and foraging on both sides. The setts could become active again at any time despite showing no current signs of use, and their status could also change with implications on the licensing conditions.

It is important that the survey effort is sufficient and up to date to inform licensing requirements as failure to do so could mean a licence application to Natural England being refused leading to delays to the scheme. At the time of writing this report the exact extent of the stabilisation work across the slopes and its timing is unknown. Wherever possible, through careful scheme design, or modified arboricultural practices, trees could be retained subject to further discussion and agreement. A key objective should be to retain the wooded characteristics of the slopes wherever possible. The effects to other species groups e.g., nesting birds, amphibians and reptiles, and ground flora will also need to be considered through appropriately drawn up method statements, as well as considering the long-term residual impacts from changes to the woodland. For all these species,

retaining woodland with a mix of age structures and some small openings, will be beneficial. The final version of this ecological impact assessment will be produced once a detailed project timeline is in place. The assessment will consider the risks to protected and priority species during construction as well as the long-term risks or effects afterwards once the project timeline is known. This is particularly important where the magnitude of change and the timing of the works is likely to significantly affect the conservation status of a species or alter conditions of the existing habitat. It is currently unknown which areas will require soils to be trenched (e.g., for drainage) moved or graded which could have impacts on some of the woodland plants. Re-establishing woodland plants (any Dorset notables, ancient woodland indicators and ferns) will be required.

5.2 Conclusion

This assessment has identified several potential protected and priority species which are likely to be affected by the proposed scheme, notably Dormouse, Bats and Badgers where further assessment is essential and detailed mitigation will be necessary. In the absence of mitigation (timing works to avoid sensitive periods and ensuring ecological oversight) there may also be impacts to nesting birds, amphibians, and reptiles. Some effects of the scheme closely replicate woodland management, and where selective tree removal and coppicing are undertaken, are known to be beneficial e.g. providing dense understorey and allowing increased light and warmth to reach the woodland floor. Ground disturbance through soil scraping/disturbance may affect ground flora and poses a significant risk to species like Dormouse, hence the requirement for licensing. Care must be taken not to alter the woodland conditions which will cause changes to the habitat from a broad-leaved and mixed woodland towards a grassland which ecologically would be undesirable. Assuming these conditions can be met the impacts to most species will be temporary. There will be need for integrated approach with Ecological, Arboricultural and Landscape Officers to agree mitigation and enhancement opportunities and the long-term management of the woodland slopes. There should be no net loss to biodiversity

and gains which can be measurable. A timeframe of surveys and licensing preparations is required for badgers and bats and Dormouse, and requires details of the programme of stabilisation works to ensure adequate lead-in time is given to finalise these surveys and assessment. Survey data beyond two years cannot be relied upon to provide reasonable certainty and for some groups (badgers, bats) this is less than 18 months (CIEEM 2019). Ecological surveys will need to be repeated if the scheme is delayed beyond these periods. Finally, an integrated landscape and ecology management plan (LEMP) will be required which draws together the recommendations from ecology, landscape, and arboriculture under one document for the future management of the woodland slopes at Dinah's Hollow.

6. Acknowledgements

Tanya Ruseva kindly provided background details and previous survey data requested from Dorset Environmental Records Centre. Bryan Edwards kindly sent through the historical botanical records from the 1940's which included the hollow. Sophie Higgins provided the Dormouse Report and Impact Assessment for this species. Importantly, the cooperation of the landowners for granting access during the survey periods has been very much appreciated by all of the ecologists involved.

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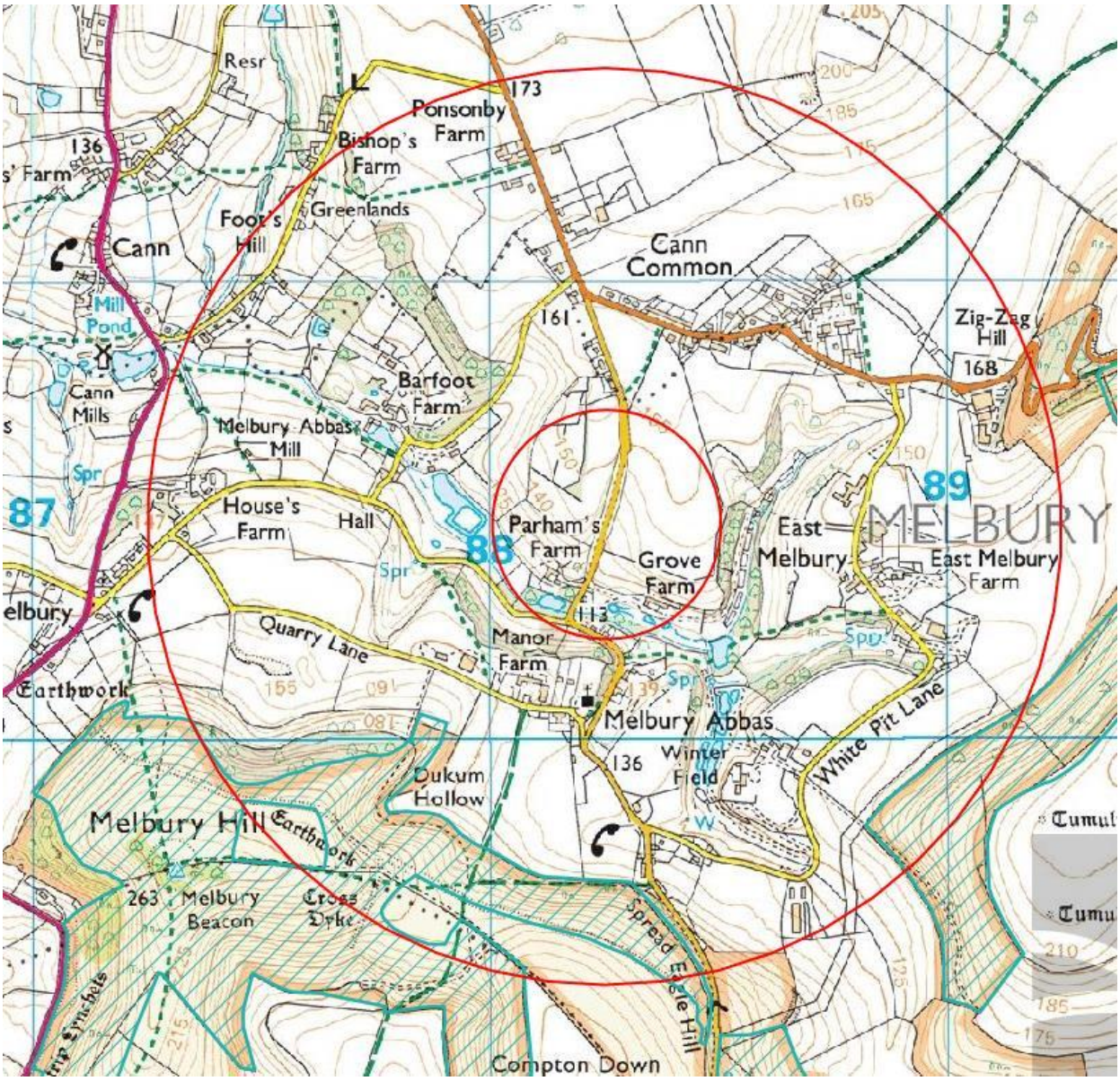
Appendices

Appendix 1 Potential Zones of Influence showing 1km radius outer circle for designated sites and inner circle 250 metre radius in considering Great Crested Newts as the hollow is partly within the Amber risk zone and therefore qualifies for consideration under district licensing.



Appendix 2 Ecological Networks

Dinah's Hollow within potential and higher ecological network for habitat conservation and enhancement opportunities as prepared for the Dorset Local Nature partnership towards nature recovery in the county. For more information visit https://dorsetlnp.org.uk/