



**Ecological Appraisal, Biodiversity Net Gain Assessment, Community Engagement Survey & Ecological Management Recommendations for The Common, Yate**

**On behalf of South Gloucestershire Council**

**Project Code: EP2023001Av2**

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## Introduction

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### 1 Scope

- 1.1.1. Wild Service was commissioned by South Gloucestershire Council (SGC) to undertake an updated Preliminary Ecological Appraisal (PEA) and a Biodiversity Net Gain (BNG) Assessment of land at of Westerleigh Common - nearest address 80 Chedworth, Yate, BS37 8RZ - (hereafter referred to as the 'Site'). The survey was requested to inform the scheme, enable the biodiversity value of the land parcels to be assessed, and calculate the biodiversity net gain of the proposed ecological interventions on these land parcels. In addition, Wild Service was commissioned to undertake a Community Engagement Survey in collaboration with South Gloucestershire Council (SGC).
- 1.1.2. The PEA comprised of a UK Hab habitat Survey, desk study and protected species survey. The latter was undertaken to ensure that any protected species mitigation was considered.
- 1.1.3. This report includes a description of methods used to identify habitats, results, and recommendations for mitigation and ecological enhancement measures. This report also provides a summary of the biodiversity net gain calculations undertaken at the Site. Summary ecological management recommendations are also included in the report.

### 2 Site Description

- 2.1.1 Westerleigh Common (also known locally as Yate Common) comprises a relatively large area of semi-natural habitat in an otherwise urban area. The Site contains a large expanse of tall grassland (spread across four fields) with planted broadleaved woodland patches to the west, patches of scrub, a network of hedgerows and amenity grassland at the northern end. There are three permanent ponds and a narrow watercourse on the site.
- 2.1.2 The site is surrounded by residential housing to the south-east, east and north, and a light industrial area borders the west and south-west boundaries.
- 2.1.3 The grasslands have been ploughed and used for growing crops in the past and subsequently treated with fertilisers (The Yate Common Management Plan 2015). These processes excluded many of the species of unmodified grasslands or lowland

meadows. In recent years, these have been managed without the input of fertilisers and this has allowed plant species of unmodified grasslands to recolonise (The Yate Common Management Plan 2015).

2.1.4 A check of [landis.org.uk/soilscapes/](https://landis.org.uk/soilscapes/) indicates the area to be *Soilscape 8: Slightly acid loamy and clayey soils with impeded drainage*, while awaiting results of soil testing. The Yate Common Habitat Management Plan (2015) notes that the underlying rocks are Pennant Sandstones and the soils are derived from these.

2.1.5 The central Ordnance Survey Grid Reference for the Site is ST 70162 81916.

### 3 **Legislation**

3.1.1 This report has been prepared in accordance with relevant legislation and policy. Further detail is provided in Appendix 1, however the following primary documents are of relevance:

- The Wildlife and Countryside Act 1981 (as amended) (WCA 1981);
- The Countryside and Rights of Way Act (CRoW Act), 2000 (as amended);
- The Natural Environment and Rural Communities Act (NERC Act), 2006;
- The Protection of Badgers Act 1992 (PBA 1992); and
- The Conservation of Habitats and Species Regulations 2017 (as amended) (CHS 2017).
- The Environment Act 2021 contains provisions for the protection and improvement of the environment, including introducing biodiversity net gain (“BNG”).

3.1.2 No part of this report should be considered as legal advice and when dealing with individual cases, the client is advised to consult the full texts of the relevant legislation and obtain further legal advice.

## Methods

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### 4 Desk Study

4.1.1 The objectives of the desk study are to review the existing available information in order to identify the following:

- Statutory and non-statutory nature conservation sites within 1km of the Site;
- Records of protected and rare/notable species within 1km of the Site; and
- Waterbodies within 500m of the Site.

4.1.2 Ecological data were provided by South Gloucestershire Council and sourced from the Multi-Agency Geographic Information for the Countryside (MAGIC) website (2022).

### 5 UK Hab Habitat & Protected Species Survey

5.1.1 The methods used for the UK Hab habitat and protected species survey are outlined in Table 1.

5.1.2 Elizabeth Pimley of Wild Service undertook the updated PEA and BNG condition assessment on 22<sup>nd</sup> September and 9<sup>th</sup> October 2023 respectively.

### 6 Biodiversity Net Gain (BNG) Assessment

6.1.1 The habitats were classified using the UK Hab classification system. Habitat condition was assigned following guidance from the 'Technical Supplement' document (Natural England, 2022) which accompanies the 'Statutory Biodiversity Metric' Assessment criteria. The condition assessment methods for the relevant habitats for this Site are included in Appendix 3.

6.1.2 This BNG assessment used the following industry-recognised best practice methodologies:

- CIEEM, IEMA & CIRIA (2016). Biodiversity Net Gain: Good Practice Principles for Development;
- Natural England (2021). Statutory Biodiversity Metric – Auditing and Accounting for Biodiversity;

6.1.3 The following resources were used to determine the strategic significance within the Statutory BNG Metric:

- South Gloucestershire Biodiversity Action Plan 2016-2026.
- West of England Nature Partnership map<sup>1</sup> at [www.wenp.org.uk](http://www.wenp.org.uk)

6.1.4 Applying these standardised methods results in the calculation of a baseline biodiversity value, a post-development biodiversity value and a net change in biodiversity value associated with the proposed development.

6.1.5 The quantitative outcomes of the calculations are one component of the BNG assessment and associated good practice principles. A BNG assessment also requires the collation of qualitative evidence on the application of the mitigation hierarchy, stakeholder engagement and post-development habitat management. Collectively, these quantitative outcomes and qualitative evidence are used to inform the outcomes of the project-wide BNG assessment.

## **7 Community Engagement Surveys**

7.1.1 The Community Engagement Survey was undertaken by Elizabeth Pimley on 22nd September, 9<sup>th</sup> and 16<sup>th</sup> October 2023. This comprised undertaking counts of types of visitors to the Site, obtaining views from visitors about the Common and distributing questionnaires. A copy of the questionnaire is included in Appendix 5.

7.1.2 On each occasion, the Site was walked end-to-end to ensure all sides of the common were surveyed on each visit and visitor numbers and types noted. Types comprised dog walkers (the number of dogs per walker was noted), cyclists, walkers, joggers, walker & pram (included parents, grandparents/other relatives in this category), users of mobility aids (e.g. wheelchairs, scooters, Zimmer frames).

7.1.3 The questionnaires were analysed by the Community Engagement Team at SGC and a summary of results is included in the Discussion below.

7.1.4 In addition, a public meeting was held at the Sunnyside Bowling Pavilion at the Common on 16<sup>th</sup> October, where members of SGC were also present to facilitate communication

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<sup>1</sup> Across the West of England three ecological networks (grassland, woodland and wetland) are recognised and these networks are supported by biodiversity opportunity maps which identify the best areas for habitat restoration and creation.

with local people on their vision for the Common. The questionnaires were also available at this meeting.

- 7.1.5 A stakeholder meeting was held at SGC offices in Yate on 7<sup>th</sup> November 2023 with members of SGC and local councillors to obtain further views on a shared vision for the Common.

## **8 Limitations and Constraints**

- 8.1.1 While every attempt has been made to collect accurate baseline data, all ecological surveys represent a 'snapshot' of activity. Ecological features are dynamic and often transient, and it is not possible to confirm the absence of a species through survey. It may be necessary to update the ecological surveys if sufficient time elapses since the surveys and data collection presented in this report were carried out.
- 8.1.2 Despite significant effort being made to catalogue the variety and frequency of uses of the Common by the public, any Community Engagement Survey is limited by the circumstances in which it was conducted. Different seasons result in varying usages of public space including both frequency and usage type, for instance. The Community Engagement Survey must therefore only be taken as a reasonably proportional *insight* into the nature of public use and opinion.

| Table 1. UK Hab Habitat & Protected Species Survey Methods |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UK Hab Habitat Survey</b>                               | The aim of the UK Hab survey is to provide a description of the habitats on a particular site and is made in accordance with the UK Hab methodology. The survey includes a detailed assessment of the land within the development boundary, including a description and mapping of all key features and habitat types. The survey has been carried out to identify the range of habitats within the site and the predominant and notable species of flora. Where necessary, the condition of habitat has been described. The appraisal also aims to identify invasive plants listed on Schedule 9 of the Wildlife & Countryside Act that could have implications for works on site. Where appropriate, maps are provided in other formats, such as annotated aerial photographs/site plans.                                                                                                                                                                                                                                       |
| <b>Badgers</b>                                             | The site is assessed for suitable habitats that may support badgers <i>Meles meles</i> . Where relevant habitat occurs, evidence of badgers including setts, latrines, tracks, snuffle holes, padding or guard hairs is recorded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Bats</b>                                                | The Site is assessed for suitable habitats, generally buildings and trees, that may support roosting bats. For example, buildings are assessed for holes in soffits, missing tiles and gaps in the masonry whilst trees are assessed for features such as cracks, holes, flaky bark and established ivy cover. Where possible the interior of buildings are also inspected for suitable roosting features and any evidence of bats in the form of bats, droppings, urine staining and feeding remains are noted. Potential roosting features are classed as negligible, low, moderate, or high potential in (Collins, 2016). The suitability of the habitats for foraging bats is also assessed.                                                                                                                                                                                                                                                                                                                                  |
| <b>Birds</b>                                               | The site is assessed for suitable habitats that may support birds in terms of feeding, nesting and roosting. Where relevant habitat occurs, evidence identifying the presence of birds including nests, droppings, pellets and feathers is recorded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Dormice</b>                                             | The site is assessed for suitable habitats that may support dormice <i>Muscardinus avellanarius</i> including woodland and hedgerows. Where relevant habitat occurs evidence of dormice including nests and gnawed nuts is recorded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Great crested newts</b>                                 | During the site visit the potential of the site to support great-crested newts <i>Triturus cristatus</i> is assessed; this includes looking for potential breeding sites such as ponds, disused swimming pools and other water-bodies. The appraisal also focuses on the potential for this species to find refuge in places such as log piles, rubble and compost heaps. Where still water-bodies occur a Habitat Suitability Index (HSI) is calculated. This is a standard appraisal method developed specifically to evaluate the habitat suitability for great crested newts (Oldham <i>et al.</i> 2000). A series of factors must be considered. Each factor is assessed along suitability guidelines and allocated a value of between 0.1 (highly unsuitable) to 1.0 (highly suitable). The geometric mean of these values provides an overall suitability value for the site. Although this is no substitute for a dedicated survey the suitability value informs the decision on whether to undertake a dedicated survey. |
| <b>Otters</b>                                              | The area under appraisal is searched for suitable habitat along water-bodies, recording where appropriate, evidence pertaining to the presence of otters <i>Lutra lutra</i> in the form of holts, spraints, anal jelly, tracks and feeding remains.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Reptiles</b>                                            | The site is assessed for suitable habitats that may support reptiles including slow-worms <i>Anguis fragilis</i> , common lizards <i>Zootoca vivipara</i> grass snakes <i>Natrix natrix</i> and adder <i>Vipera berus</i> . Where relevant habitat occurs, evidence identifying the presence of reptiles, particularly tracks and sloughed skin is recorded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Water voles</b>                                         | The area under appraisal is searched for suitable habitat along water-bodies, recording where appropriate, evidence pertaining to the presence of water voles <i>Arvicola amphibius</i> in the form of burrows, latrines, runs, footprints and distinctive “feeding lawns”.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>White-clawed crayfish</b>                               | The area under appraisal is searched for suitable habitats that may support white-clawed crayfish <i>Austropotamobius pallipes</i> . This typically includes freshwater streams and rivers but may also include still water-bodies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Community Engagement Survey Results

### 9 Visitor Count Analysis

9.1.1 The results of the visitor counts undertaken on 22nd September and 9th October 2023 are included in Figures 2 and 3 below:

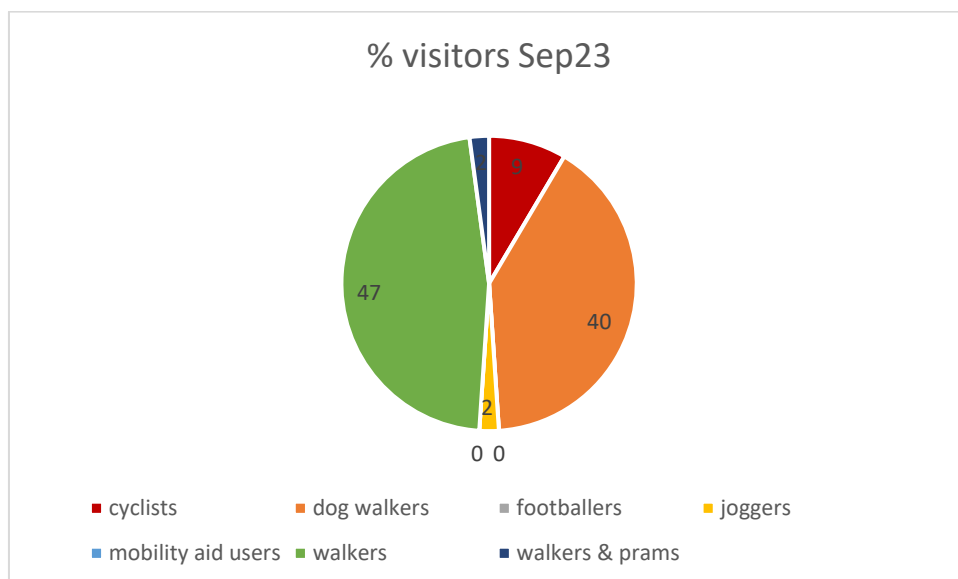


Figure 2. Percentage split of groups visiting the Common in September 2023

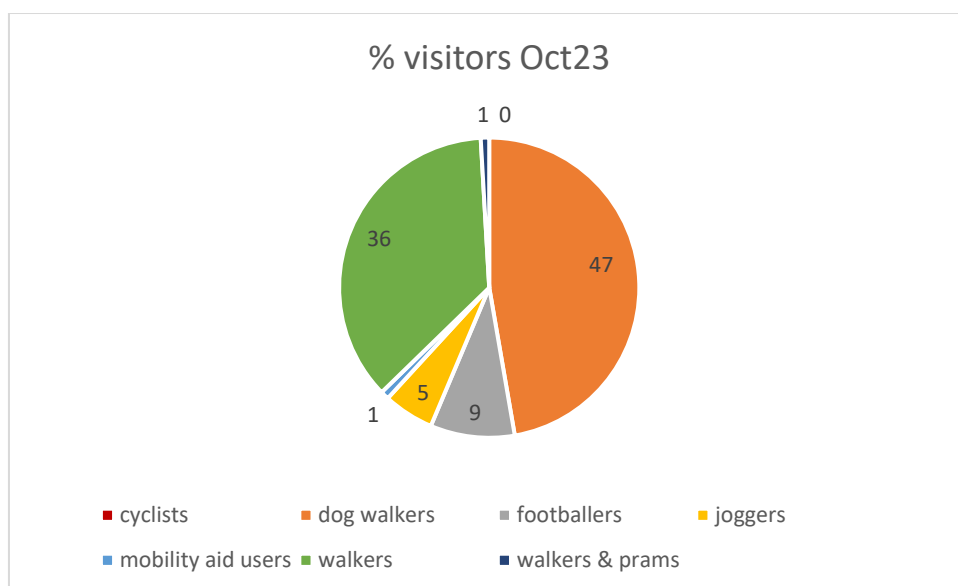


Figure 3. Percentage split of groups visiting the Common in October 2023

9.1.2 The largest proportion of visitors to the Common were dog walkers and walkers. Of the dog walkers, the majority had one dog (69% recorded in October), with 23% having two

dogs (recorded in October) and only 5% and 8% with three dogs (recorded in September and October respectively). Of dog walkers interviewed, none were professional dog walkers but rather dog owners.

- 9.1.3 The majority of users of the Common appeared to be over 18 years old, and were therefore assumed to be adults. During the late afternoon and throughout both surveys (presumably following the end of the school day), several school children (that appeared to be aged between 12 and 16 years) were observed walking across the northern end of the common (amenity side) along the footpath and these constituted 27% of walkers in September and 18% of the walkers in October. Only a small proportion of visitors to the Common were mobility aid users (0-1%) or walking with prams (1-2%).

## **10 Summary of feedback from surveys and public/stakeholder engagement events**

- 10.1.1 A summary of opinions collected during the surveys and the public/stakeholder engagement events is provided below. An Engagement Feedback Map with feedback comments is also provided in Appendix 6 to report key findings from the public meeting and SGC stakeholder meeting.

- 10.1.2 Summary of sitewide feedback highlights the following:

- Access to the Common was awkward due to barriers. No wheelchair access at Westerleigh Rd or Westerleigh Close.
- The Road Traffic Network (RTN) has limited maintenance. Not a Public Right of Way (PROW). 'Active Travel Route' on planning policy. 'Maintained shared cycleway' on SGC GIS.
- Some expressed a desire to have overhead lighting on cycle path. The possibility that lighting would impact wildlife should be considered, however.
- Respondents desired sponsored/memorial trees.
- There was some concern regarding tree health and ash dieback. An avenue of trees could be planted along northern path. More trees along northern and eastern hedges are also a possibility. Copses could be planted in northeastern corner or adjacent to the woods.
- Recent newly planted trees have struggled, perhaps due to waterlogged soils.

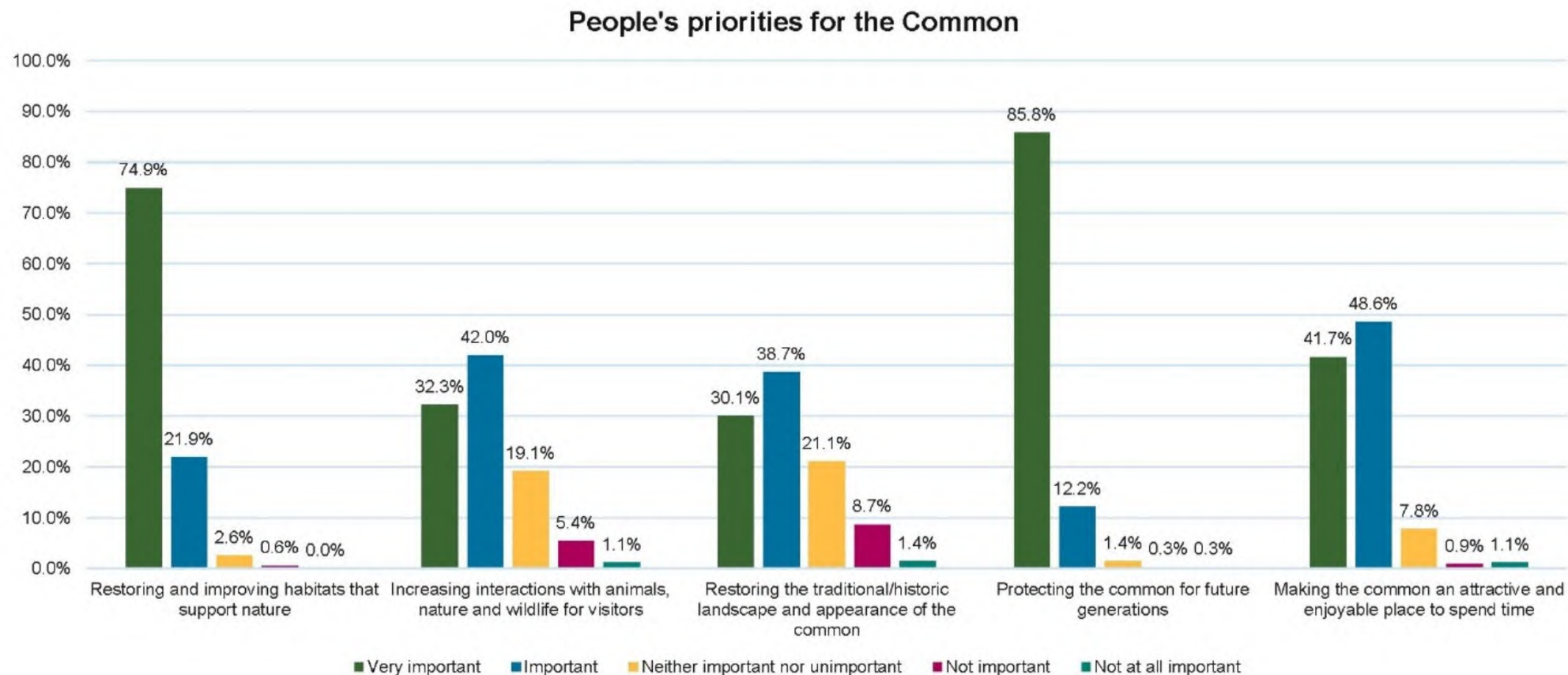
- There was some expression of desire for more understorey vegetation, age variety and tree thinning in the woodland. New tree locations would need to enable ease of mowing. Closing off some of the paths in woodland was considered necessary to improve shelter for wildlife.
- Bristol Avon Rivers Trust have recommended encouraging development of wet woodland creation to improve the wooded habitat, reduce path flooding and silt in pond.
- One third of the bulrush *Typha latifolia* in central pond to be removed.
- There is some potential for a new pond in the current wet areas e.g. orchard field.
- A dog free, wildlife pond would be beneficial.
- There issue of lots of dog waste was raised, particularly on RTN. Additionally, dogs are not always under control.
- There was a suggestion to move the bins inside the gates.
- There are ongoing minor maintenance issues, including overgrown paths and poor condition of structures. The reinvigoration of the volunteer group might be a suggestion.
- Ongoing grass maintenance is fragile. Grazing is an option.
- The signage is outdated. Maps, byelaws and field names needed, e.g. German & Skylark fields
- 'Road to nowhere' provides filming opportunities for TV: negative is the waste left after filming but a valuable income source.
- Animal homes are well supported, including the bird & owl boxes, wildlife pond.
- People would like to see log piles and hedging (preferably thorny) for food and shelter to support hedgehogs *Erinaceus europaeus*. Wildflowers would encourage insects as a further food source.

## **11 Summary of information from public consultation questionnaire**

11.1.1 An analysis of the data collected from the public consultation questionnaire is provided below and further details are provided in Appendix 6.

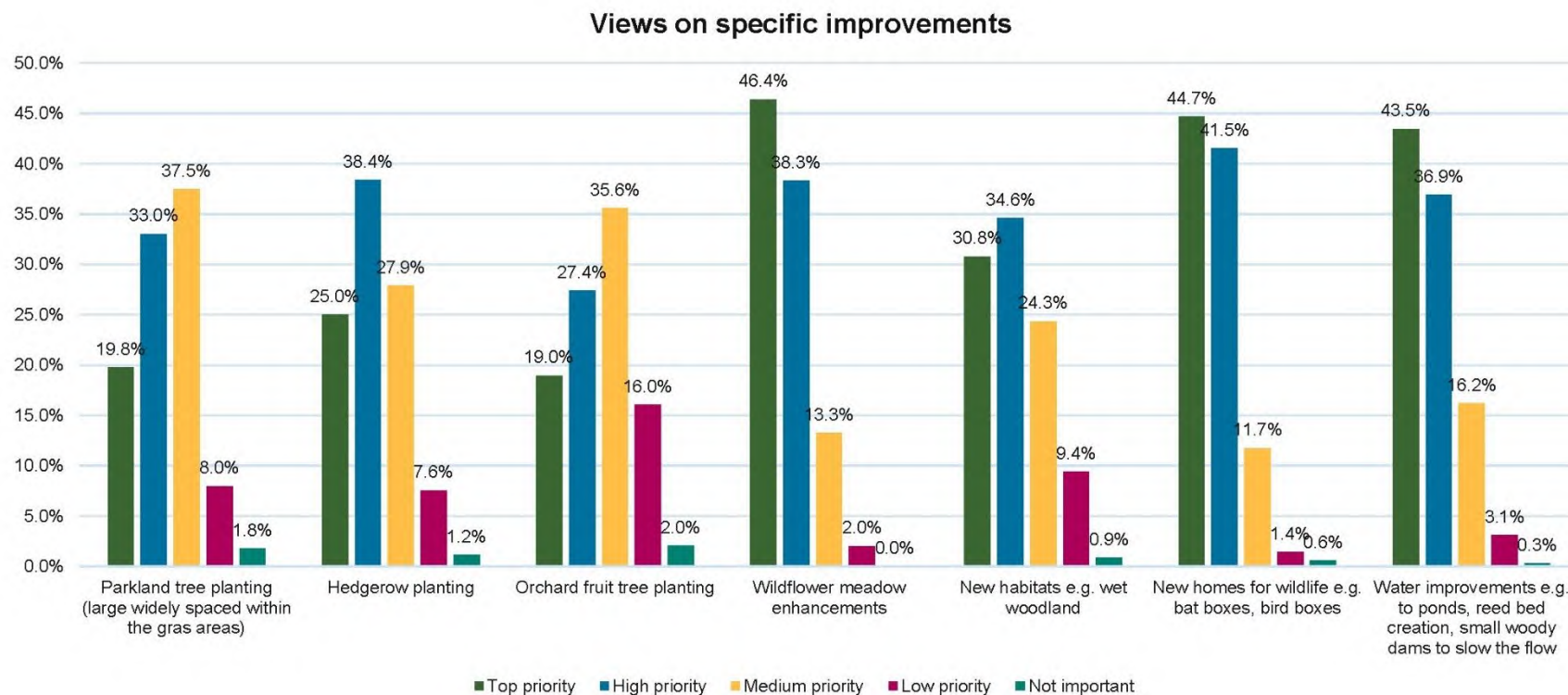
11.1.2 The 360 responses collected formed a reasonably representative sample of the local population, with 85% living within three miles of the Common. In terms of the nature of visits to the common, half of respondents visit at least once a week, mostly on foot or by bike and typically alone. The reason for the visit was generally for a walk with or without dogs. The Common is not perceived as a 'destination'. It is considered as a local green space where people walk rather than somewhere people meet to socialise and people enjoy nature as part of that walk. Respondents value the Common greatly, recognising it is a place where nature can flourish.

**12 The overall themes for people's priorities for the Common are shown below:**



**Figure 3. Chart showing people's priorities for the Common**

### 13 People's views of potential improvements shown below:



**Figure 4. Chart showing people's views on specific improvements**

#### 13.1.1 Other priorities: Education and community involvement:

- Recognition that the community can have a positive impact in preserving and enhancing the Common, but education is key. People would like to see more activities and events to encourage people to use the space, for example, guided walks. Information boards and campaigns to involve the local community in the management of the local area.

#### 13.1.2 Other priorities: Maintenance:

- People recognise the work that goes into keeping the Common an enjoyable place to spend time, but think more could be done, particularly in reference to the improvement of paths and ponds/water areas. There was a belief that, whilst drastic changes should be avoided, the existing space could be better maintained, particularly with regards to ponds, paths and brambles. There was also a growing issue with motorbikes and e-scooters.

#### 13.1.3 Other priorities: Road to Nowhere:

- With regards the road on site that leads apparently to nowhere, there were diverging views. These included, removing it, 'greening' it or connecting it with another road.

#### 13.1.4 Other priorities: Accessibility:

- Many people felt the entrances to the Common and pathways need to be improved to allow access for all. This was meant with particular emphasis on improving access to disabled people, removing barriers to cyclists and general quality of pathways for pedestrians.

#### 13.1.5 Other priorities:

- Comments reflect that people use or want to use the Common for a wide range of purposes. Some of the most requested improvements include adding more benches/places to sit/picnic areas, more bins, fitness facilities and Park Run, a dedicated space for young people to ride bikes and a CCTV system of warden to prevent misuse.

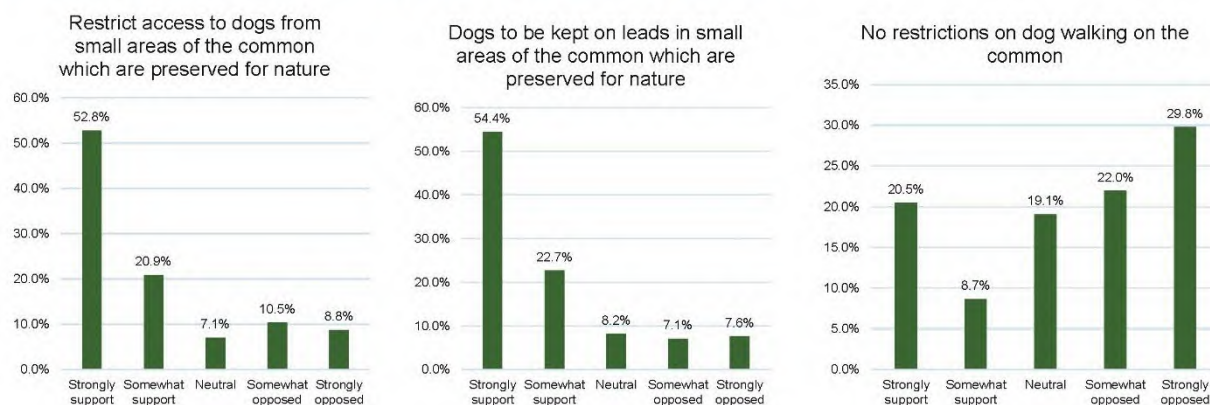
#### 13.1.6 Priorities – Summary:

- Respondents' priority is to protect what they have.
- They support small-scale measures which enhance what is already there.

- People are less enthusiastic about more significant changes.
- Most people love the idea of wildflower meadows, bird and bat boxes and water course improvements.
- They are less keen (though still supportive) of planting trees and hedgerows.
- People are proud of the Common and want to enable more people to enjoy it.
- Access for disabled and cyclists is a core concern.
- More focus on maintenance would be appreciated, especially of the paths and water areas.

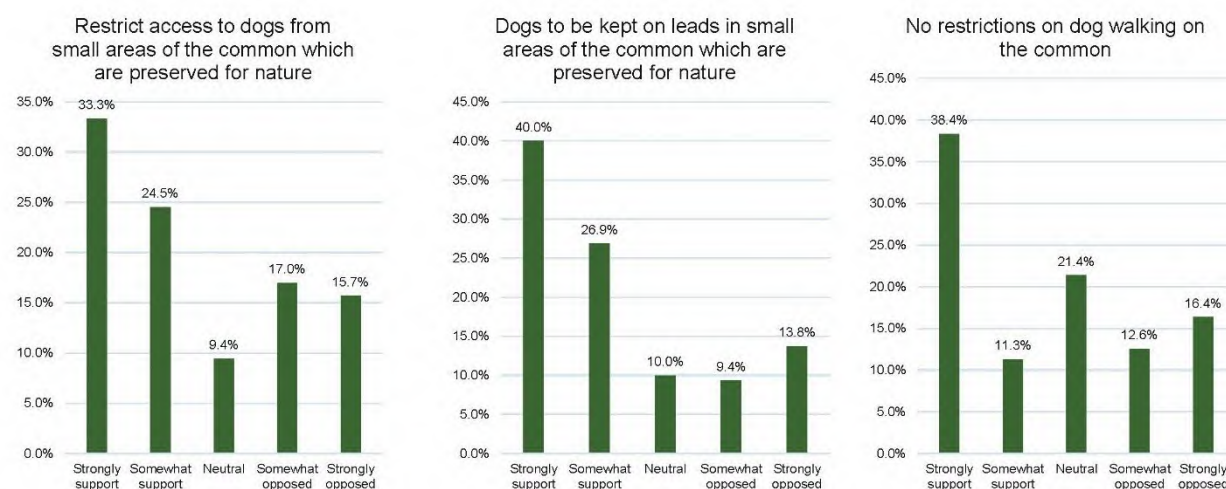
### 13.1.7 Balancing the needs of nature and dog owners?

#### Support for restrictions on dogs (even amongst dog walkers)



**Figure 5. 3 charts showing levels of support for restrictions on dogs walking in the Common**

#### Restrictions on dogs – Perspective of dog walkers



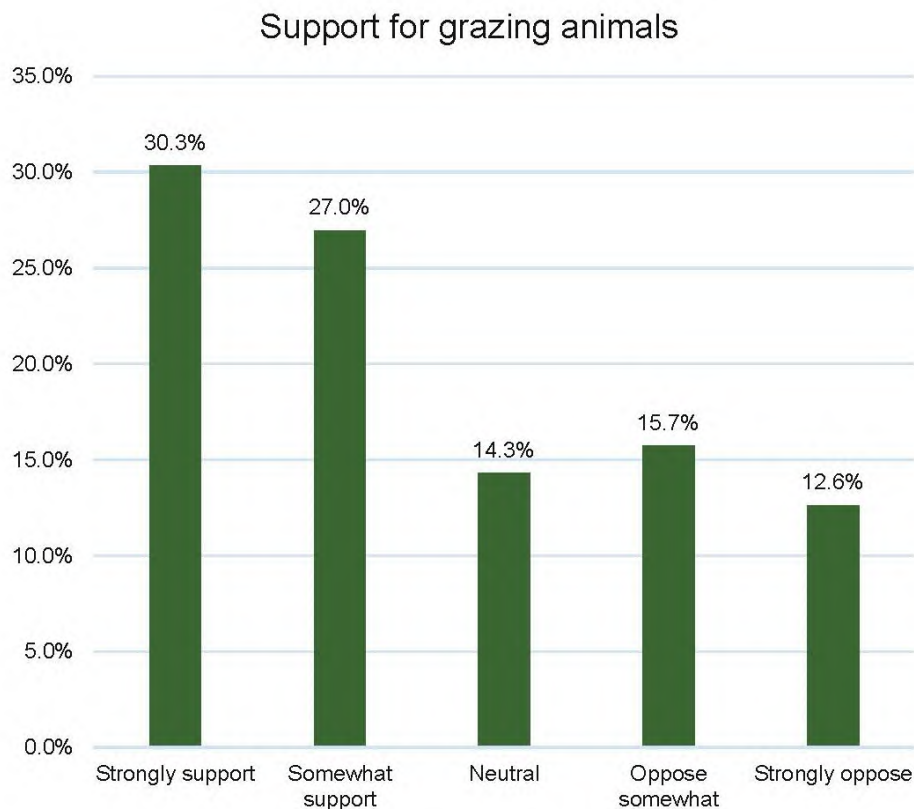
**Figure 6. 3 charts showing levels of support for restrictions on dogs walking in the Common among dog walkers**

### 13.1.8 Perspectives on dog walking:

- In the consultation, dog walking was a common subject. Many wanted to see areas of the Common reserved solely for nature, although there is some trepidation around the introduction of grazing animals.

- There is also a desire for a space where dogs can run wild, alongside resistance to any restrictions on dog walking in the Common. Generally, men are slightly more supportive than women of restrictions on dogs.
- Dog poo is a problem and more poo bins are needed.

#### 13.1.9 Would people like to see grazing?



**Figure 7. Chart showing levels of support for grazing on the Common**

- There is overall soft support for grazing animals, with lots of people concerned. Those who live immediately bordering the Common provided a slightly lower rate of support, with retirees the least likely group to support grazing. The disabled have strong views in both supporting and rejecting the motion.
- Those who support the idea cited these reasons; bio-diversity improvements, land maintenance, and positive memories of traditional land use.
- Those who reject the idea cited their fears over dogs and cattle mixing poorly, personal safety in a field of cattle, the potential for cows escaping onto roads and a general dislike of cow pats.

## Ecological Appraisal & BNG Assessment Results

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### ***Desk Study***

#### *Statutory Nature Conservation Sites*

13.1.10 There are no statutory nature conservation sites within 1km of the Site.

#### *Non-Statutory Nature Conservation Sites*

13.1.11 There are two non-statutory nature conservation sites within 1km of the Site (but not specific to it), both of which are Sites of Nature Conservation Interest (SNCI). These are:

Goose Green Way - Neutral Grassland, Marshy grassland and Scrub/Carr;

River Frome (South Gloucestershire) – Flowing Open Water and Bankside Vegetation. Yate/Westerleigh Common is also listed as a candidate for SNCI status, due to Hedgerow, Woods, Orchard, Acid Grassland, Ponds, Ditches and Scrub.

#### *Protected Species*

13.1.12 The biological data search yielded records of several protected and notable species within 1km of the Site, including a slow worm and an unidentified bat which are specific to the Site. The data are summarised in Table 3.

## **14 UK Hab Habitat & Protected Species Survey**

14.1.1 The results of the UK Hab Habitat & Protected Species Survey assessment are outlined in the Table 2 and Table 3. Reference should be made to the Site maps presented in Figures 8 and 9 for original and enhanced habitats respectively.

Table 2. UK Hab Habitat Survey Results, BNG Habitat Condition &amp; Recommendations

| Habitat/UK Hab                                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NERC Habitat | BNG Condition & Evaluation                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Recommendations                                                                                                         |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Other grassland with scattered trees/FIELDS A, B, G, D, E | <p><b>Areas A &amp; B</b> in the southwest corner comprised an area of generally tall, coarse, unmanaged grassland with scattered scrub. Sward a mix of coarse and finer grasses and herbs, typically Yorkshire-fog <i>Holcus lanatus</i>, cock's-foot <i>Dactylis glomerata</i>, false oat-grass <i>Arrhenatherum elatius</i>, rough meadow-grass <i>Poa trivialis</i>, Timothy <i>Phleum pratense</i>, rye-grass <i>Lolium perenne</i>, red fescue <i>Festuca rubra</i>, sweet vernal-grass <i>Anthoxanthum odoratum</i>, common bent <i>Agrostis capillaris</i>, ragwort <i>Senecio jacobaea</i>, red clover <i>Trifolium pratense</i>, ribwort plantain <i>Plantago lanceolata</i>, creeping thistle <i>Cirsium arvense</i>, creeping cinquefoil <i>Potentilla reptans</i>, creeping buttercup <i>Ranunculus repens</i>, hogweed <i>Heracleum sphondylium</i> and autumn hawkbit <i>Leontodon autumnalis</i>.</p> <p>Scattered scrub in this grassland area comprised oak <i>Quercus</i> sp, blackthorn <i>Prunus spinosa</i>, grey willow <i>Salix cinerea</i>, common hawthorn <i>Crataegus monogyna</i>, gorse <i>Ulex europaeus</i>, elder <i>Sambucus nigra</i> and bramble <i>Rubus fruticosus</i> agg., with some planted apples <i>Malus domestica</i>.</p> <p>The majority of the open grassland <b>areas G, D, E</b> comprised a shorter, finer grass sward less dominated by coarse grasses and bulky herbs. Typically sward comprises Yorkshire-fog, common bent, sweet vernal-grass, red fescue, crested dog's-tail <i>Cynosurus cristatus</i> and cock's-foot, with some rye-grass particularly along paths and margins, false oat-grass and Timothy. Herbs mainly red clover, white clover <i>Trifolium repens</i>, creeping buttercup, meadow buttercup <i>Ranunculus acris</i>, ribwort plantain, thistles, ragwort, cat's-ear <i>Hypochaeris radicata</i> and autumn hawkbit, with some wild carrot <i>Daucus carota</i>, common bird's-foot-</p> | No           | <p>Although site overlies or may be influenced by the Bristol coalfields, the grasslands are assessed as neutral (MG6) although they may have a slight acidic influence. Coarse areas of MG1 appear to have been unmanaged for several years whereas the short grass areas are likely cut annually.</p> <p>Moderate ecological value in otherwise fairly urban area.</p> <p><b>Fields A &amp; B – Poor BNG Condition.</b></p> <p><b>Fields G, D, E – Moderate BNG Condition.</b></p> | Late summer cut and removal of arisings should promote development of diversity of native species of grasses and forbs. |

| Habitat/UK Hab                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NERC Habitat | BNG Condition & Evaluation                                                              | Recommendations                                                                                                                                                                       |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | trefoil <i>Lotus corniculatus</i> and yellow-rattle <i>Rhinanthus minor</i> . Damper areas supported soft rush <i>Juncus effusus</i> and marsh thistle <i>Cirsium palustre</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |                                                                                         |                                                                                                                                                                                       |
| Individual Trees               | Fields D, G and E contained several scattered trees (none of which were particularly mature) including English oak <i>Quercus robur</i> , horse chestnut <i>Aesculus hippocastanum</i> and rowan <i>Sorbus aucuparia</i> that have been planted in the grassland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No           | Relatively low ecological value.<br><b>Moderate BNG Condition</b>                       | Retain and allow to mature over time. Plant additional native broadleaved tree species in fields D and E but maintain 'open aspect' to avoid deterring skylarks from nesting.         |
| Line of Trees                  | The eastern boundary of Field E was bordered by a line of trees comprising mainly lime <i>Tilia</i> spp. and English oak.<br>The northern boundary of Field G was bordered by a line of trees including horse chestnut and English oak.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No           | Relatively low ecological value.<br><b>Poor BNG Condition</b>                           | Retain existing lines of trees and allow to mature over time.<br>Plant an additional line of native tree species along the eastern boundary to create a broader wooded strip.         |
| Other woodland, Broadleaved/W1 | <b>W1</b> - Broad-leaved woodland (estimated to have been planted c30 years ago) of oak, cherry <i>Prunus avium</i> , sweet chestnut <i>Castanea sativa</i> , field maple <i>Acer campestre</i> , sycamore <i>Acer pseudoplatanus</i> , ash <i>Fraxinus excelsior</i> , aspen <i>Populus tremula</i> , birch <i>Betula</i> sp, hazel <i>Corylus avellana</i> , common hawthorn, holly <i>Ilex aquifolium</i> , crab apple <i>Malus sylvestris</i> and scattered Scots pine <i>Pinus sylvestris</i> , with local hornbeam <i>Carpinus betulus</i> , grey poplar <i>Populus canescens</i> , walnut <i>Juglans regia</i> and horse-chestnut <i>Aesculus hippocastanum</i> . Locally some snowberry <i>Symphoricarpos album</i> . Generally sparse to absent ground cover. Locally | No           | Moderate ecological value in a relatively urban area.<br><b>Moderate BNG Condition.</b> | Remove non-native snowberry.<br>Cut marginal scrub on rotation to control spread onto grassland. Some woodland thinning, coppicing and pollarding to create a more diverse structure. |

| Habitat/UK Hab                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NERC Habitat | BNG Condition & Evaluation                                        | Recommendations |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------|-----------------|
|                                                    | <p>frequent bramble with some wood avens <i>Geum urbanum</i>, male-fern <i>Dryopteris filix-mas</i>, broad-leaved willowherb <i>Epilobium montanum</i>, enchanter's-nightshade <i>Circaea lutetiana</i> and nettle <i>Urtica dioica</i>. Scrubby margins of blackthorn and bramble bordered the edge of the woodland.</p> <p>Southwestern site boundary contained a strip of woodland that comprised wild privet, common hawthorn, oak, bramble, hazel, guelder-rose <i>Viburnum opulus</i>, field maple and dogwood <i>Cornus sanguinea</i>.</p> |              |                                                                   |                 |
| <b>Native Species-rich Hedgerow with trees H1</b>  | Species-rich central hedge of common hawthorn, bramble, dog-rose, young oak <i>Quercus</i> sp., dogwood and blackthorn.                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes          | Moderate/high ecological value.<br><b>Good BNG condition.</b>     | Retain          |
| <b>Native Species-rich Hedgerow H2 with trees</b>  | Species-rich hedge (along eastern boundary) of wild privet <i>Ligustrum vulgare</i> , bramble, dog-rose <i>Rosa canina</i> , blackthorn, young sycamore, common hawthorn and hazel.                                                                                                                                                                                                                                                                                                                                                               | Yes          | Moderate/high ecological value.<br><b>Good BNG condition</b>      | Retain          |
| <b>Native Species-rich Hedgerow with trees H3</b>  | Species-rich hedge of dogwood, common hawthorn, cherry, hazel, bramble, blackthorn and sycamore.                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes          | Moderate/high ecological value.<br><b>Moderate BNG condition.</b> | Retain          |
| <b>Native Species-rich Hedgerow with trees H4</b>  | Species-rich hedge of bramble, common hawthorn, young English oak <i>Quercus robur</i> , field maple, dog-rose, hazel, bramble, sycamore, dog-rose, apple tree, <i>Prunus</i> sp., dogwood and guelder rose <i>Viburnum opulus</i> .                                                                                                                                                                                                                                                                                                              | Yes          | Moderate/high ecological value.<br><b>Moderate BNG condition.</b> | Retain          |
| <b>Native Hedgerow with trees and dry ditch H5</b> | Species-poor hedge of common hawthorn, hazel, bramble, ash and sycamore, with some bulrush present ( <i>Typha latifolia</i> ).                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes          | Moderate ecological value<br><b>Moderate BNG</b>                  | Retain          |

| Habitat/UK Hab                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NERC Habitat               | BNG Condition & Evaluation                                                                                                          | Recommendations                                                                                                                                                                                                                                             |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            | <b>condition.</b>                                                                                                                   |                                                                                                                                                                                                                                                             |
| Species-rich Hedgerow H6 with trees             | Species-rich hedge bordering amenity grassland along northern boundary of ash, common hawthorn, hazel, beech <i>Fagus sylvatica</i> , dogwood, English oak, dog-rose, <i>Prunus</i> sp. and Rugosa rose <i>Rosa rugosa</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                        | Moderate/high ecological value.<br><b>Moderate BNG condition.</b>                                                                   | Retain                                                                                                                                                                                                                                                      |
| Species-rich Hedgerow H7 with dry ditch & trees | Species-rich hedge of bramble, ivy <i>Hedera helix</i> , common hawthorn, dog-rose, blackthorn, lime <i>Tilia × europaea</i> , elder and holly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                        | Moderate/high ecological value.<br><b>Moderate BNG condition.</b>                                                                   | Retain                                                                                                                                                                                                                                                      |
| Species-rich Hedgerow H8 with trees             | Species-rich hedge of English oak, bramble, ivy, field maple, wych elm <i>Ulmus glabra</i> , common hawthorn, damson <i>Prunus domestica</i> , sycamore and holly, bordering other neutral grassland along northern boundary.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                        | Moderate/high ecological value.<br><b>Good BNG condition.</b>                                                                       | Retain                                                                                                                                                                                                                                                      |
| Ponds                                           | <p><b>PA</b> – dried-up pond at south-western end of Site (in Field A) with marginal yellow iris <i>Iris pseudacorus</i>, water mint <i>Mentha aquatica</i>, lesser spearwort <i>Ranunculus flammula</i>, rushes <i>Juncus</i> spp and sedge <i>Carex</i> sp.</p> <p><b>PD</b> – pond in central part of Site (in Field F) with dominant bulrush <i>Typha latifolia</i>, yellow iris, water mint, water forget-me-not <i>Myosotis scorpioides</i>, purple loosestrife <i>Lythrum salicaria</i>, fool's water-cress <i>Apium nodiflorum</i>, redshank <i>Persicaria maculosa</i>, duckweed <i>Lemna</i> sp, great willowherb <i>Epilobium hirsutum</i> and bankside alder <i>Alnus glutinosa</i> and grey willow. Several common spotted-orchids <i>Dactylorhiza fuchsii</i> in pond edge grassland.</p> <p><b>PC</b> – pond at north-western end of Site (in Field G) with lesser spearwort, silverweed <i>Potentilla anserina</i>, sedge <i>Carex</i> sp., soft rush, <i>Persicaria</i> spp., marsh cudweed and sweet-grass <i>Glyceria</i> sp., with grey willow saplings.</p> | No for PA & PC, Yes for PD | <p>Moderate ecological value for PA &amp; PC, High ecological value for PD.</p> <p><b>Moderate BNG condition for all ponds.</b></p> | Ensure buffer zone of tall grass and tall herb of several metres around ponds. Control any scrub to avoid it encroaching on ponds. Trim any overhanging trees to avoid too much shade on ponds. Prevent dogs using pond PD, in particular, for swimming in. |

| Habitat/UK Hab                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NERC Habitat              | BNG Condition & Evaluation                                                                                                                                         | Recommendations                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Watercourse –                  | Drainage ditch lies between the two large fields and is lined in parts by scrub (bramble, aspen, alder <i>Alnus</i> sp, hawthorn, blackthorn, rowan) or tall herb (nettle, bittersweet <i>Solanum dulcamara</i> , great willowherb, hedge bindweed <i>Calystegia sepium</i> , false oat-grass tufted hair-grass <i>Deschampsia cespitosa</i> ). Sections contained a wetland flora with bulrush, yellow iris, fool's water-cress, water mint, meadowsweet <i>Filipendula ulmaria</i> , hard rush <i>J. inflexus</i> and soft rush <i>J. effusus</i> . | No                        | Low/moderate ecological value.<br><b>Poor BNG condition.</b>                                                                                                       | Retain                                                                              |
| Modified grassland /Field C    | <b>Field C</b> comprised a closely mown amenity grassland of average sward height 2cm. Species include perennial rye, fescue, false-oat grass, white clover, creeping buttercup <i>Ranunculus repens</i> , smooth cat's-ear <i>Hypochaeris glabra</i> , hairy hawkbit <i>Leontodon saxatilis</i> , and greater plantain <i>Plantago major</i> .                                                                                                                                                                                                       | No                        | Low ecological value.<br><b>Poor BNG condition.</b>                                                                                                                | None as it is understood that some mown grassland is required as public open space. |
| Traditional orchard O1, O2, O3 | O1, new orchard planted in the last few years that comprised plum, pear, apple trees.<br>O2 & O3, relatively young orchard patches planted in recent years.                                                                                                                                                                                                                                                                                                                                                                                           | No to O1, Yes to O2 & O3. | Moderate ecological value.<br><b>Moderate BNG condition for all orchards.</b>                                                                                      |                                                                                     |
| Scrub areas F, H, I, J, K, L   | <b>Scrub Field F</b><br>The central pond (PD) was surrounded by <b>scattered mixed scrub</b> that comprised dense blackthorn and bramble scrub, frequent young oaks and stands of rosebay willowherb <i>Chamerion angustifolium</i> in interspersed with patches of rank grassland.<br><b>Scrub H</b><br>Patch of <b>mixed scrub</b> in Field A comprised young oak and occasional common hawthorn and goat willow <i>Salix caprea</i> .                                                                                                              | No                        | Moderate ecological value.<br><b>Moderate BNG condition for scrub areas F, H, J.</b><br><b>Poor BNG condition for scrub areas L, I and I2.</b><br>No BNG condition | Retain but control scrub spread to stop it encroaching ditch, pond and grassland.   |

| Habitat/UK Hab | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NERC Habitat | BNG Condition & Evaluation      | Recommendations |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------|-----------------|
|                | <p><b>Scrub I &amp; I2</b><br/>Dense <b>blackthorn scrub</b> that divided woodland from Fields E and A respectively.</p> <p><b>Scrub J</b><br/>Margins of 'road to nowhere' comprised <b>mixed scrub</b> of bramble, goat willow, common hawthorn and blackthorn scrub. Scrub edge comprises - nettle, bramble, creeping thistle, ragwort and rosebay willowherb.</p> <p><b>Scrub K</b><br/>Strip of <b>bramble scrub</b> bordered Field B.</p> <p><b>Scrub L</b><br/>Margins of ditch that divided Fields G and D comprised <b>mixed scrub</b> of frequent bramble and hawthorn with aspen, alder, blackthorn and rowan.</p> |              | assigned for bramble scrub of K |                 |

Table 3. Protected Species Survey Results &amp; Recommendations

| Species | Habitats/features                                                                                                                                                       | Evidence                                                                                                                                                                 | Data search                                             | Likelihood of presence                             | Potential impact                                                                                                                                                                                                                                       | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BADGERS | The tall semi-improved grassland areas and woodland provided suitable habitat for badgers to forage. The woodland provided suitable area for sett excavation in places. | An outlying badger sett that appeared to be inactive was found near to the western end of the watercourse where it runs through the woodland. See Figure 8 for location. | There are no records of badgers within 1km of the Site. | Likely to be present on Site, commuting/ foraging. | The proposed enhancements to woodland, grassland, scrub and orchards will enhance the habitat for badgers. Care should be taken during works to install leaky dams along the watercourse that no machinery is used to excavate within 30m of the sett. | Badgers are offered full protection under the PBA 1992. <b>No further surveys required.</b><br>Due to the presence of mammals on the Site it is recommended that all trenches and pits are fitted with a ramp to enable animals to escape.<br>Should it be necessary to undertake earthworks with a machine within 30m of the sett, then it is recommended that an ecologist monitor the sett to determine whether it is still inactive. Should the sett be found to be actively used by badgers then works should proceed under a Risk Avoidance Method Statement or Natural England Licence to disturb a sett (the precise course of action to be determined based on the |

| Species | Habitats/features                                                                                                                                                                                                                    | Evidence                                                      | Data search                                                                                                                                                                                                 | Likelihood of presence                                                                             | Potential impact                                                                                                                                             | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                                                                                                                                                                                                         |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                                                                                                                                                                                                                      |                                                               |                                                                                                                                                                                                             |                                                                                                    |                                                                                                                                                              | extent of the proposed watercourse works).                                                                                                                                                                                                                                                                                                                                                            |
| BATS    | The semi-improved tall grassland, woodland and ponds provided suitable foraging habitat for bats.<br>There were no buildings on Site or other large trees with crevices/established ivy to provide potential roosting opportunities. | None.                                                         | There are four records of bats within 1km of the Site, including one <i>myotis sp</i> record specific to it. The other records comprise brown long-eared <i>Plecotus auritus</i> and two unidentified bats. | Likely to be present on Site, commuting/ foraging.                                                 | The proposed enhancements to the pond, watercourse, woodland, scrub, orchards and grassland in addition to pond creation will improve the habitat for bats.  | Bats and their resting places are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.<br><b>No further surveys required.</b> Installation of bat boxes on trees in the woodland areas would provide roosting opportunities for local bats. Refer to Discussion and Ecological Enhancement Appendix for further details. |
| BIRDS   | The woodland and hedgerows provided suitable habitat for foraging and nesting birds. Although the tall grassland provided suitable habitat for ground nesting birds, it was subject to                                               | None. Gulls, crow and magpie were noted flying over the Site. | There are no records of birds within 1km of the Site. However, The Yate Common Management Plan (2015) reported a large population of skylark <i>Alauda arvensis</i> using the                               | Woodland and hedgerows likely to be used by foraging and also nesting birds during nesting season. | The proposed enhancements to the pond, watercourse, woodland, scrub, orchards and grassland in addition to pond creation will improve the habitat for birds. | <b>No further surveys required.</b> All birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). It is therefore generally unlawful to intentionally kill or injure a bird, damage or destroy an occupied nest or                                                                                                                                                   |

| Species | Habitats/features                  | Evidence | Data search                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Likelihood of presence | Potential impact | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------|------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | regular anthropogenic disturbance. |          | common, especially the largest and most open fields to the south – namely Fields D and E. In addition, The Yate Common Management Plan (2015) noted that green woodpecker <i>Picus viridis</i> and kestrel <i>Falco tinnunculus</i> use the common; while the scrub supports whitethroat <i>Sylvia communis</i> , lesser whitethroat <i>Sylvia curruca</i> , willow warbler <i>Phylloscopus trochilus</i> and linnet <i>Linaria cannabina</i> ; and the wetland areas support reed bunting <i>Emberiza schoeniclus</i> , mallard <i>Anas platyrhynchos</i> , grey heron <i>Ardea cinerea</i> , coot <i>Fulica atra</i> and |                        |                  | take or destroy eggs other than in exceptional prescribed circumstances. Therefore, hedgerow/woodland maintenance works should take care to avoid the risk of harm to birds and their nests, especially during the nesting season (generally considered to be March to August). Removal/trimming of hedgerows, trees and scrub/shrub removal plus cutting of tall grassland should be undertaken outside the main nesting season and where this is not possible a suitably qualified ecologist should be engaged to check for nesting birds and to provide advice on the most appropriate way to proceed. In order to avoid deterring ground nesting species such as skylark, the planting of additional trees or hedgerows in the fields they use for nesting (i.e. Fields D and E) |

| Species        | Habitats/features                                                                                                                                                                                                                                                               | Evidence | Data search                                                                                                                                                                      | Likelihood of presence | Potential impact                                                                                  | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                                                                                                                            |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                                                                                                                                                                                                                                                                 |          | sedge warbler<br><i>Arocephalus schoenbaenus</i> .                                                                                                                               |                        |                                                                                                   | should be avoided. Dogs in Fields D and E should be kept under control (i.e. on lead as necessary) during the bird nesting season.<br>A variety of bird boxes could be installed in the woodland areas to enhance their value for nesting birds. Refer to Discussion and Ecological Enhancement in Appendix for details. |
| <b>DORMICE</b> | The relatively recently planted small woodland patches and hedgerows were situated in an otherwise urban area and separated by main roads from other countryside to the south-west. The north, east and south-east parts of the Site were situated adjacent to urban areas. The | None.    | There is one record of dormouse within 1km of the Site, approximately 300m away. The record is from 2001, and is separated from the Site by main roads, so connectivity is poor. | Relatively unlikely    | The proposals to enhance the scrub, woodland and hedgerows will improve the habitats for dormice. | Dormice and their resting places are protected under the WCA 1981 and the CHS Regs 2017.<br><b>No further surveys required.</b><br>Hedgerows should be retained.                                                                                                                                                         |

| Species                                                | Habitats/features                                                                                                                                                                                                                                                                                                                                                                                              | Evidence | Data search                                                                                                                                                                                                                                                                                                                           | Likelihood of presence                                                                                                                                                                                                                                               | Potential impact                                                                                                                                                                                                                                                                                                                                                                                           | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                        | habitats on Site therefore did not connect to larger areas of woodland to support a dormouse population.                                                                                                                                                                                                                                                                                                       |          |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>GREAT CRESTED NEWTS (GCN)/<br/>OTHER AMPHIBIANS</b> | The hedgerows, tall grassland, tall herb, scrub and woodland patches provided suitable terrestrial habitat for amphibians. It was noted that the ponds contained emergent and marginal vegetation, which would provide cover and egg-laying substrate for amphibians. A Habitat Suitability Index (HSI) assessment of central pond PD gave an average value of 0.62. A HSI assessment of the southern (PA) and | None.    | There are 35 records of great crested newt within 1km of the Site. None are specific to the Site, and all are located from approximately 900m away. There are no records of other amphibians within 1km. The Yate Common Management Plan (2015) notes that common frog, common toad, smooth newt and palmate newt breed in the ponds. | It is considered possible that GCN and other amphibians could be present in the tall grassland and wooded parts of the Site. The central pond, PD provides particularly suitable breeding conditions for GCN and other amphibians, while the other two ponds provide | The proposed enhancements to the pond, watercourse, woodland, scrub, orchards and grassland in addition to pond creation will improve the habitat for amphibians. The proposed hand-pulling of a third of the bulrush and dredging of the central pond PD will ultimately enhance this pond for GCN and other amphibians, but needs to proceed carefully to avoid injuring/killing any amphibians present. | GCN and their resting/breeding places are protected under the WCA 1981 and CHS Regs 2017. Common toad is a Species of Principle Importance under the NERC Act. Prior to any dredging of central pond PD, it will be necessary to confirm the presence/absence of GCN using bottle-trapping methodology or eDNA sampling. Should GCN be present, then dredging works will need to proceed under an agreed methods statement and Natural England Conservation Licence. In order to avoid impacts to amphibians in any of the ponds, all works should proceed outside of the spring |

| Species | Habitats/features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Evidence | Data search | Likelihood of presence | Potential impact | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------|------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | <p>northern (PC) ponds gave below average values, each of 0.60. (Further details in Appendix 4.)</p> <p>It is therefore considered likely that GCN could use PD for breeding, and relatively less likely for the other two ponds. The ditch was generally overshadowed with trees and shrubs such that limited emergent/marginal vegetation could grow, therefore this habitat was considered suboptimal for breeding amphibians. There are no other ponds within 500m that aren't separated by dispersal barriers.</p> |          |             | suboptimal conditions. |                  | <p>breeding period and ideally avoid the summer when young amphibians could be present (i.e. outside of March to September).</p> <p>Construction of log piles and a hibernaculum as per the diagram in the Ecological Enhancements Section below will provide useful shelter.</p> <p>In order to avoid impacts to amphibians in any of the ponds or watercourse, all works should proceed outside the spring breeding period and to cover periods when young amphibians could still reside in waterbodies, i.e. outside of March to September.</p> |

| Species                                     | Habitats/features                                                                                                                                                                                                                                                                                                                                                                                      | Evidence                                                               | Data search                                                                                                                                                                                                                                                           | Likelihood of presence                                                     | Potential impact                                                                                                                                                             | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                         |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OTTERS, WATER VOLES & WHITE-CLAWED CRAYFISH | The three ponds on the Site did not provide suitable habitat for otters, white-clawed crayfish or water voles. The watercourse was so overshadowed that limited emergent/ marginal vegetation could grow, therefore this habitat was considered suboptimal for water voles, and rather narrow and shallow to be used by otters. The watercourse provided suboptimal habitat for white-clawed crayfish. | None.                                                                  | <p>There is one record of white-clawed crayfish within 1km of the Site, located approximately 700m away.</p> <p>There are 29 records of otters within 1km of the Site, but not specific to it.</p> <p>There are no records of water voles within 1km of the Site.</p> | None.                                                                      | The proposed enhancements to the ponds and watercourse in addition to pond creation will enhance the ecological value of these features.                                     | <b>No surveys required.</b> Otters, white-clawed crayfish and water voles plus water vole resting places are protected under the WCA 1981, and otters and their resting places are protected under the CHS Regs 2017. |
| REPTILES                                    | The tall grassland, tall herb and scrub areas provided suitable terrestrial habitat for reptiles. The three ponds contained emergent                                                                                                                                                                                                                                                                   | Adult grass snake was found in the south-western corner of the Site in | There are seven records of slow worm and a grass snake within 1km of the Site, including one slow-worm record which is specific to the Site.                                                                                                                          | It is considered likely that slow-worm and grass snake could be present in | The proposed enhancements to the pond, watercourse, scrub, orchards and grassland in addition to pond creation will improve the habitat for grass snakes and other reptiles. | Reptiles are protected under the Wildlife & Countryside Act 1981 (as amended).<br><b>No Further surveys required.</b> Maintain long grassland, tall herb and scrubby areas. Retain ponds with tall grassy/marginal    |

| Species                                  | Habitats/features                                                                                                                                                   | Evidence                                   | Data search                                                                                                                                                                                                                                                                                                          | Likelihood of presence                                                                                          | Potential impact                                                                                                 | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                                                                         |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | and marginal vegetation and could provide suitable grass snake habitat should the ponds be full of water during spring/winter/autumn.                               | orchard O2 (part of Pat's Paddock/Field A. | There are no records of other reptiles within 1km.<br>The Yate Common Management Plan (2015) notes that adder have sometimes been sighted in the scrub around the wetlands, while grass snakes have also been recorded around the wetland habitats with one seen in Pat's Paddock (Field A) during the 2015 surveys. | the tall grassland, tall herb and scrub. The ponds could be used by grass snakes.                               |                                                                                                                  | buffers around them for use by grass snakes.<br>Construction of two reptile shelters as per the diagram in the Ecological Enhancements Section below will provide useful shelter and enhance the available habitat on Site for reptiles/amphibians.                   |
| <b>HEDGEHOGS &amp; OTHER<br/>MAMMALS</b> | The hedgerows, grassland, tall herb, scrub and woodland patches provided suitable habitat for hedgehogs to forage and to shelter in the scrub and woodland patches. | None.                                      | There are no records of hedgehogs <i>Erinaceus europaeus</i> within 1km of the Site.                                                                                                                                                                                                                                 | The likelihood of hedgehogs being present cannot entirely be ruled out considering the suitability of habitats. | The proposed enhancements to the woodland, scrub, orchards and grassland will improve the habitat for hedgehogs. | Hedgehogs are listed as a Species of Principle Importance under the NERC Act 2006.<br><b>No further surveys required.</b><br>Construction of log and leaf piles to act as hedgehog shelters is recommended. The Site currently is relatively open, thus allowing free |

| Species | Habitats/features | Evidence | Data search | Likelihood of presence | Potential impact | Recommendations<br>Further survey required?<br>(Yes/No) /<br>Avoidance / mitigation /<br>enhancement measures                                                                                                      |
|---------|-------------------|----------|-------------|------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                   |          |             |                        |                  | passage of hedgehogs and other wildlife, which is recommended. Should more solid fencing ever need installing then the Site can be kept permeable to hedgehogs through leaving small gaps of 13x13cm under fences. |

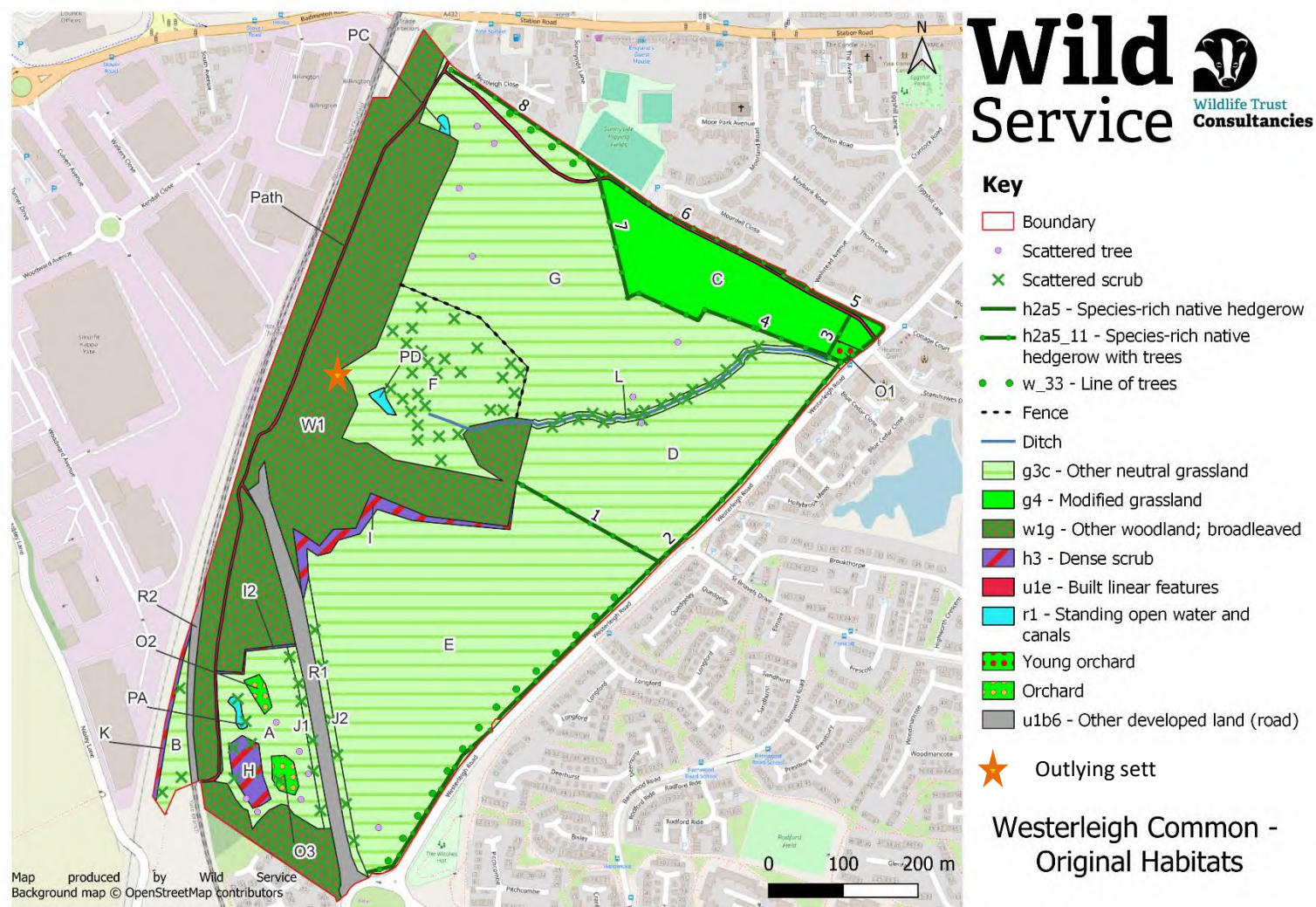


Figure 8. UK Hab Map of original habitats

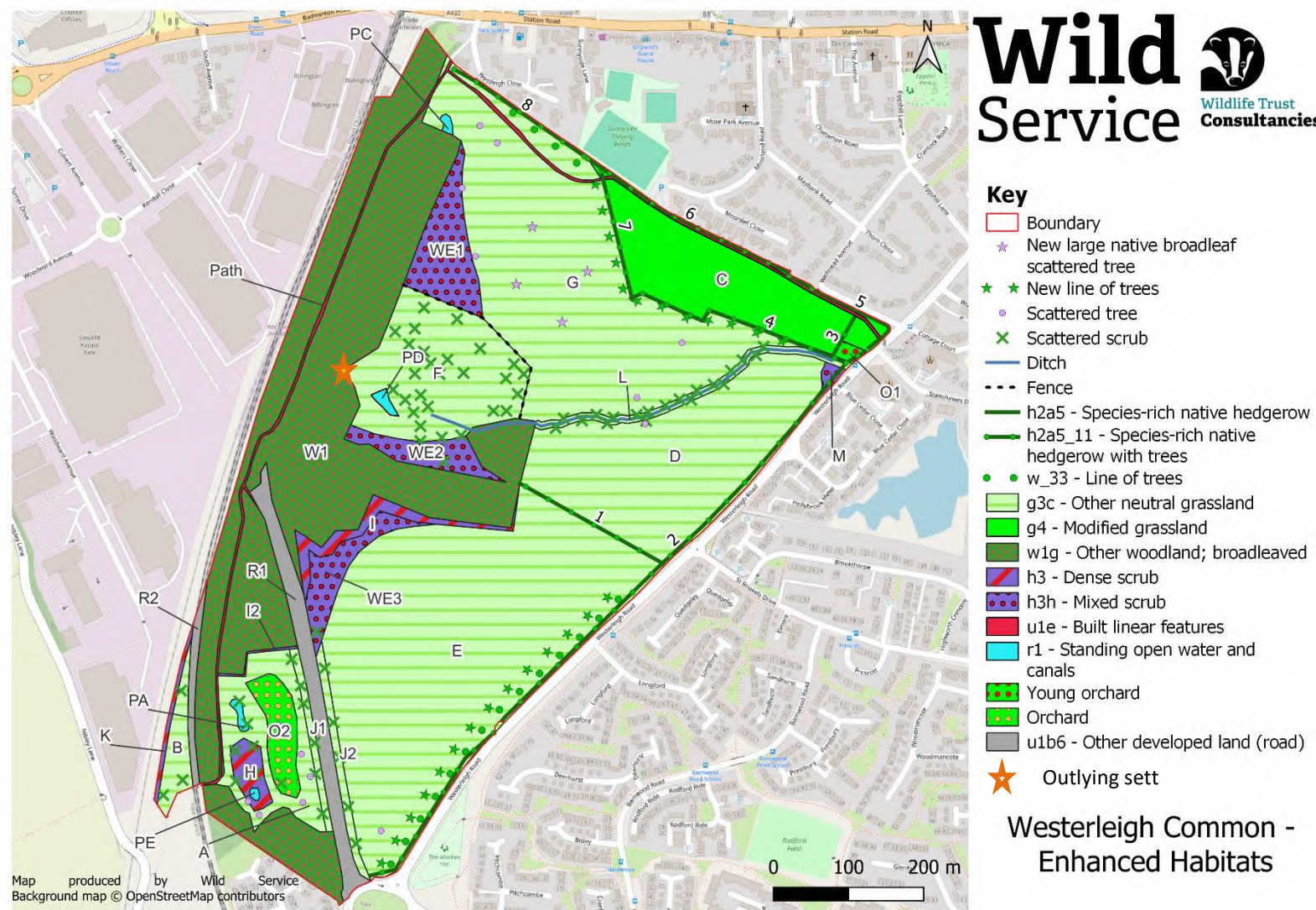


Figure 9. UK Hab Map of Enhanced Habitats (post-intervention)

## 15 Biodiversity Net Gain (BNG)

15.1.1 The condition assessment methods for the relevant habitats for this Site are included in Appendix 3 and the DEFRA BNG metric Excel workbook accompanies this report for reference.

### Summary of Baseline Units

15.1.2 Within the Site, area-based habitats currently total 55.25ha and are generating 449.08 biodiversity units (See Figures 8. & 10).

15.1.3 Within the Site, hedgerows/lines of trees currently total 3.04km and are generating 42.21 biodiversity units (See Figures 8. & 10).

15.1.4 Within the Site, watercourse currently total 0.57km and are generating 2.64 biodiversity units (See Figures 8 & 10).

### Summary of Enhanced/Created Units

15.1.5 Post-intervention, within the site, enhanced/created/retained<sup>2</sup> area-based habitats will total 55.25ha and generate a total of 623.84 biodiversity units thus enabling an additional 174.76 biodiversity units to be generated (See Figures 9. & 10).

15.1.6 Post-intervention, within the site, enhanced, created and retained<sup>3</sup> hedgerows/lines of trees will total 3.04km and generate a total of 54.30 biodiversity units thus enabling an additional 10.09 biodiversity units to be generated (See Figures 9. & 10).

15.1.7 Post-intervention, within the site, enhanced, created and retained watercourse will total 0.57km and generate a total of 6.60 biodiversity units thus enabling an additional 3.96 biodiversity units to be generated (See Figures 9. & 10).

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<sup>3</sup> Some hedgerows are already in good condition and of high ecological value and thus cannot be further enhanced for BNG purposes.

**Figure 10. BNG Headline Results from Statutory DEFRA Biodiversity metric**

|                                                                                                          |                          |        |         |  |
|----------------------------------------------------------------------------------------------------------|--------------------------|--------|---------|--|
| On-site baseline                                                                                         | <i>Habitat units</i>     | 449.08 |         |  |
|                                                                                                          | <i>Hedgerow units</i>    | 44.21  |         |  |
|                                                                                                          | <i>Watercourse units</i> | 2.64   |         |  |
| On-site post-intervention<br>(Including habitat retention, creation & enhancement)                       | <i>Habitat units</i>     | 623.84 |         |  |
|                                                                                                          | <i>Hedgerow units</i>    | 54.30  |         |  |
|                                                                                                          | <i>Watercourse units</i> | 6.60   |         |  |
| On-site net change<br>(units & percentage)                                                               | <i>Habitat units</i>     | 174.76 | 38.92%  |  |
|                                                                                                          | <i>Hedgerow units</i>    | 10.09  | 22.81%  |  |
|                                                                                                          | <i>Watercourse units</i> | 3.96   | 150.40% |  |
| Off-site baseline                                                                                        | <i>Habitat units</i>     | 0.00   |         |  |
|                                                                                                          | <i>Hedgerow units</i>    | 0.00   |         |  |
|                                                                                                          | <i>Watercourse units</i> | 0.00   |         |  |
| Off-site post-intervention<br>(Including habitat retention, creation & enhancement)                      | <i>Habitat units</i>     | 0.00   |         |  |
|                                                                                                          | <i>Hedgerow units</i>    | 0.00   |         |  |
|                                                                                                          | <i>Watercourse units</i> | 0.00   |         |  |
| Off-site net change<br>(units & percentage)                                                              | <i>Habitat units</i>     | 0.00   | 0.00%   |  |
|                                                                                                          | <i>Hedgerow units</i>    | 0.00   | 0.00%   |  |
|                                                                                                          | <i>Watercourse units</i> | 0.00   | 0.00%   |  |
| Combined net unit change<br>(Including all on-site & off-site habitat retention, creation & enhancement) | <i>Habitat units</i>     | 174.76 |         |  |
|                                                                                                          | <i>Hedgerow units</i>    | 10.09  |         |  |
|                                                                                                          | <i>Watercourse units</i> | 3.96   |         |  |
| Spatial risk multiplier (SRM) deductions                                                                 | <i>Habitat units</i>     | 0.00   |         |  |
|                                                                                                          | <i>Hedgerow units</i>    | 0.00   |         |  |

|                                                                                                              |                          |                |
|--------------------------------------------------------------------------------------------------------------|--------------------------|----------------|
|                                                                                                              | <i>Watercourse units</i> | <b>0.00</b>    |
| <b>FINAL RESULTS</b>                                                                                         |                          |                |
| <b>Total net unit change</b><br>(Including all on-site & off-site habitat retention, creation & enhancement) | <i>Habitat units</i>     | <b>174.76</b>  |
|                                                                                                              | <i>Hedgerow units</i>    | <b>10.09</b>   |
|                                                                                                              | <i>Watercourse units</i> | <b>3.96</b>    |
| <b>Total net % change</b><br>(Including all on-site & off-site habitat retention, creation & enhancement)    | <i>Habitat units</i>     | <b>38.92%</b>  |
|                                                                                                              | <i>Hedgerow units</i>    | <b>22.81%</b>  |
|                                                                                                              | <i>Watercourse units</i> | <b>150.40%</b> |
| <b>Trading rules satisfied?</b>                                                                              | <b>Yes ✓</b>             |                |

## Community Engagement Surveys Summary

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- 15.1.8 The majority of users of the Common tended to be walkers, which was fairly evenly split between those with dogs and those without. It should be noted that a minority of common users had disability aids (i.e. walking sticks, wheelchairs etc) and this could be due to access issues for people with disabilities.
- 15.1.9 The results of the community and stakeholder engagement surveys indicated that the local community did not desire any major changes to the Common and liked it in its current layout. However, they were keen for the ecological value of the Common to be improved through enhancement of the grassland areas to form more species rich wildflower meadows and the installation of 'wildlife homes' (i.e. bird/bat boxes etc). The local community were also keen for wider ecological enhancements, such as for the ponds and watercourse, especially to alleviate flooding issues. There was also some support for the planting of more parkland trees and hedgerows.
- 15.1.10 There was a desire for access points to the Common and paths across the Common to be improved and better maintained to enable access for all users of the Common, including those with disabilities. However, it should be noted that the community enjoyed the natural aspect of the Common too.
- 15.1.11 The local community (including dog walkers) were supportive of the idea of having some areas of the Common with restricted access for dogs, while having other areas where dogs could have off-lead exercise.
- 15.1.12 The local community had concerns regarding conservation grazing, although there was some support for this management option.
- 15.1.13 There was no consensus among the local community regarding the future of the 'road to nowhere'.
- 15.1.14 The local community were interested in opportunities for involvement in enhancing and managing the Common.

## Habitat Management & Protected Species Recommendations

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### 16 Nature Conservation Sites

16.1.1 The nature conservation sites identified in the desk study of this report are sufficiently distant from the Site for there to be no effect on the ecological value of these sites due to any future works at the Site.

16.1.2 It was noted that Yate Common was listed as a candidate for SNCI status and it is considered that the non-amenity part of the Site is suitable for consideration for SNCI status especially following the proposed habitats enhancement measures, although such determination was beyond the scope of this report.

### 16.2 Habitats

16.2.1 The habitats that need consideration in relation to this project with outline enhancement and management measures are mentioned below.

#### **Hedgerows & Lines of Trees & Scattered Trees**

16.2.2 The hedgerows and line of trees together provide a valuable linear woody habitat. In order to enhance the ecological value of the hedgerows, any gaps along the hedgerows will be planted with native species of trees to enhance the ecological value of this habitat. . Additional lines of native broadleaved trees will be planted along Hedgerows H4 and H7 and along the existing line of trees along the eastern boundary to enhance the ecological value of these woody linear features.

16.2.3 The hedgerows tend to be species rich with trees (H1, H2, H3, H4, H6, H7, H8), while H5 is a species-poor hedgerow with trees. Hedgerows H2, H3, H4, H5, H7 are in moderate condition and can be enhanced to good condition through appropriate management such as allowing tall herb/grass strip to grow alongside hedgerow of minimum 1.5m width and planting up any gaps with native species of shrub/tree. Suitable species are given in Appendix 2.

16.2.4 The target habitat (for enhancement and creation) will be species-rich native hedgerows with trees planted and managed for the benefit of wildlife. In order to qualify as species-rich, the hedgerow should have a minimum of five native woody species and a list of suitable native species of trees/shrubs is provided in Appendix 2 below.

- 16.2.5 Hedge planting will comprise a mix of locally occurring native species, planted in staggered double rows 40cm apart with six 45-60cm high plants per metre between November and March, ideally before Christmas so plants available as saplings have time to establish root system before summer and risk of droughts. No one plant species will comprise more than 60% of the mix. Trees/shrubs will be native species from local nurseries and be of height 30-90cm, they will be planted with guarding as necessary and with marked stakes to avoid damage during hedge trimming until they are clearly standard trees above the top hedge height.
- 16.2.6 To protect against grazing by rabbits, a spiral sleeve guard will be placed around each tree/shrub trunk, ensuring the base is bedded into the soil. After the first year, should monitoring indicate that deer browsing is an issue, then more robust tree guards (e.g. two stakes dug in either side of the tree with weld mesh wire netting wrapped around them) will be installed that will be at least 1.8m in height. Should deer/livestock browsing pose an issue, the entire length of hedgerow could be fenced off<sup>[1]</sup> (with deer-proof fencing) to allow it to establish. Any fencing should be installed at least 1.2m from the centre of the hedge.
- 16.2.7 During the first three summers, weeding (spot spray/by hand) will take place around the base of the shrubs/trees to prevent competition or mulch to minimize encroachment by weeds, and the shrubs/trees will be watered only if a drought occurs regularly. In late summer, some shrubs/trees may have died and, if so, they will be replaced with new ones in autumn/winter.
- 16.2.8 The hedge will be left to establish for the first two years before being trimmed to encourage bushy growth. Guards will be removed once hedge plants established. Once established the hedgerow will be cut on rotation every three years targeting different sections each year, which will ensure there are always flowers for pollinators in spring and berries for birds/small mammals in autumn. Hedges cut every three years can produce two and a half times as much blossom as those cut annually as flower buds often form on second-year growth.
- 16.2.9 Rotational cutting also reduces the costs of annual hedgerow maintenance. The hedgerows will be trimmed to make the hedge thick and bushy (i.e. form an approximate 'A' shape), which is thicker at the base and gets narrower at the top. This

provides maximum protection for wildlife, while allowing light to reach the ground flora.

16.2.10 Hedgerow cutting will not be undertaken during the bird nesting season, which runs from March to August (and ideally September will also be avoided to avoid the risk of disturbing birds with second broods). Where possible, maintenance work will be delayed until January or February, as hedgerow berries provide a valuable autumn and winter food source for wild birds and small mammals.

16.2.11 Hedges may be laid in accordance with good practice, at the landowner's discretion (and not as a requirement) in the local style during the agreement period but no more frequently than every seven years leave out ref to hedge laying cycles as is so dependent on variations in tree growth rates and species planted.

16.2.12 As the hedge network is fairly extensive, a sharp flail may be the most efficient way to cut. A circular saw creates a cleaner cut, which encourages better re-growth and is less likely to encourage disease.

16.2.13 Buffer strips are important for wildlife (especially small mammals, reptiles, amphibians and invertebrates) and a 1.5-2 metre width of uncut and unsprayed grass/tall herb next to the hedge will be left.

16.2.14 As part of the ongoing hedgerow maintenance, trees will be allowed to develop at approximately 20-30m intervals to provide a greater diversity of wildlife habitat within the hedgerow. Mature and dying trees will be retained where they are not a health and safety hazard, as they provide important habitat for invertebrates, roosting bats and hole-nesting birds.

16.2.15 Infilling of gaps with native species of local provenance will also be necessary. Suitable native species of shrubs to plant in hedgerow gaps include hazel, wild privet, holly, common hawthorn and blackthorn. A more detailed list is provided in Appendix 2 below.

16.2.16 The ideal time to plant new shrubs/trees in the hedgerow is late October/November if saplings are available. However, planting in very cold or windy weather will be avoided in order to reduce the risk of damage to the new roots, and shrubs/trees will not be planted in waterlogged or frozen soil. Warm and damp weather

is ideal to prevent roots drying out. For the same reason keep plant roots covered until immediately before planting.

16.2.17 The hedge will be left to establish for the first two years before being trimmed to encourage bushy growth. Guards will be removed once hedge plants established. Once established the hedgerow will be cut on rotation every three years targeting different sections each year, which will ensure there are always flowers for pollinators in spring and berries for birds/small mammals in autumn. Hedges cut every three years can produce two and a half times as much blossom as those cut annually as flower buds often form on second-year growth.

16.2.18 Rotational cutting also reduces the costs of annual hedgerow maintenance. The hedgerows will be trimmed to make the hedge thick and bushy (i.e. form an approximate 'A' shape), which is thicker at the base and gets narrower at the top. This provides maximum protection for wildlife, while allowing light to reach the ground flora.

16.2.19 Hedgerow cutting will not be undertaken during the bird nesting season, which runs from March to August (and ideally September will also be avoided to avoid the risk of disturbing birds with second broods). Where possible, maintenance work will be delayed until January or February, as hedgerow berries provide a valuable autumn and winter food source for wild birds and small mammals.

16.2.20 Hedges may be laid in accordance with good practice, at the landowner's discretion (and not as a requirement) in the local style during the agreement period but no more frequently than every seven years.

16.2.21 As the hedge network is fairly extensive, a sharp flail may be the most efficient way to cut. A circular saw creates a cleaner cut, which encourages better re-growth and is less likely to encourage disease.

16.2.22 Buffer strips are important for wildlife (especially small mammals, reptiles, amphibians and invertebrates) and a one to two metre width of uncut grass/tall herb next to the hedge will be left.

16.2.23 As part of the ongoing hedgerow maintenance, trees will be allowed to develop at approximately 20-30m intervals to provide a greater diversity of wildlife habitat

within the hedgerow. Mature and dying trees will be retained where they are not a health and safety hazard, as they provide important habitat for invertebrates, roosting bats and hole-nesting birds.

16.2.24        Infilling of gaps with native species of local provenance will also be necessary. Suitable native species of shrubs to plant in hedgerow gaps include hazel, wild privet, holly, common hawthorn and blackthorn. A more detailed list is provided in Appendix 2 below.

16.2.25        The ideal time to plant new shrubs/trees in the hedgerow is late October/November to March. However, planting in very cold or windy weather will be avoided in order to reduce the risk of damage to the new roots, and shrubs/trees will not be planted in waterlogged or frozen soil.

16.2.26        **BNG assessment criteria for the hedgerows to achieve the predicted good condition** are included on the next page.

| Attributes and functional groupings |                               | Criteria -                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------|-------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A1.                                 | Height                        | >1.5 m average along length                                     | <p>The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.</p> <p>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is &gt;1.5 m height).</p>                      |
| A2.                                 | Width                         | >1.5 m average along length                                     | <p>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are &gt;0.5 m in height.</p> <p>Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> |
| B1.                                 | Gap - hedge base              | Gap between ground and base of canopy <0.5 m for >90% of length | <p>This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.</p> <p>Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).</p>                                                                                                                                                                                                                  |
| B2.                                 | Gap - hedge canopy continuity | Gaps make up <10% of total length; and<br>No canopy gaps >5 m   | <p>This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</p> <p>Access points and gates contribute to the overall 'gappiness' but are not subject to the &gt;5 m criterion (as this is the typical size of a gate).</p>                                                                                                                                                        |

|     |                                             |                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C1. | Undisturbed ground and perennial vegetation | <p>&gt;1 m width of undisturbed ground with perennial herbaceous vegetation for &gt;90% of length:</p> <ul style="list-style-type: none"> <li>· Measured from outer edge of hedgerow; and</li> <li>· Is present on one side of the hedgerow (at least).</li> </ul> | <p>This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow.</p> <p>Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow.</p> <p>This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.</p> |
| C2. | Nutrient-enriched perennial vegetation      | Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.                                                                                                                                                    | The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.                                                                                                                                                                                                                                                                                                              |
| D1. | Invasive and neophyte species               | >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA <sup>3</sup> ) and recently introduced species.                                                                              | Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website <sup>4</sup> , as well as the BSBI website <sup>5</sup> where the 'Online Atlas of the British and Irish Flora' <sup>6</sup> contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website <sup>7</sup> .                  |
| D2. | Current damage                              | >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.                                                                                                                                                                           | <p>This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes.</p> <p>This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting).</p>                                                                                                                                                                                                                                           |
| E1. | Tree class                                  | There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient <sup>8</sup> ), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.                        | This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.                                                                                                                                                                                                                                                                                                                                                     |
| E2. | Tree health                                 | At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or                                                       | This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.                                                                                                                                                                                                                                                                                                                                                                                    |

|                                                                                                                        |  |                                                     |  |
|------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------|--|
|                                                                                                                        |  | wild animals, pests or diseases, or human activity. |  |
| <p>Good condition: "</p> <p>No more than 2 failures in total; AND No more than 1 failure in any functional group."</p> |  |                                                     |  |

16.2.27      The existing lines of trees are in poor condition and will be enhanced to good condition through appropriate management such as allowing tall herb/grass strip to grow around the trees, with a 6m buffer strip alongside the lines of trees. Additional lines of native broadleaved trees will be planted along Hedgerows H4 and H7 and along the existing line of trees along the eastern boundary to enhance the ecological value of these woody linear features. It is important to ensure that the root protection zones of the existing trees and hedgerow are avoided when digging pits to plant new trees. Suitable species are included in Appendix 2.

16.2.28      As the original lines of trees are well established, it is envisaged that some trees could achieve veteran status within the management period, and if necessary with some input to speed up the process. In order to ensure that some veteran trees develop in the newly planted lines of trees over the management period, it will be necessary to plant several mature standards to speed up this process (NB oaks and sweet chestnut trees make good veterans). The ideal time to plant new trees is late October/November. However, planting in very cold or windy weather will be avoided in order to reduce the risk of damage to the new roots, and trees will not be planted in waterlogged or frozen soil.

16.2.29      In order to promote the veteranisation process, standard trees within the line of trees, can be slightly damaged (taking care not to kill the tree) in order to start the process of decay and 'ageing'. The process may include: cutting the tops of trees that are likely to respond to pollarding; making holes in live standing trees to initiate rot; deliberately damaging the bark to induce decay or simulate sap runs; breaking branches, rather than sawing them off flush, or creating 'coronet' ends (i.e. chainsaw pruning technique that mimics the jagged edges characteristically seen on broken

branches following storm damage or natural limb failure); increasing water retention in forks and crowns of trees by drilling holes; and creating nest boxes for birds / bats.

16.2.30 To protect against grazing by rabbits, a spiral sleeve guard will be placed around each tree trunk, ensuring the base is bedded into the soil. After the first year, should monitoring indicate that deer browsing is an issue, then more robust tree guards (e.g. two stakes dug in either side of the tree with weld mesh wire netting wrapped around them) will be installed that will be at least 1.8 metres in height. Should deer/livestock browsing pose an issue, the entire length of hedgerow could be fenced off (with deer-proof fencing) to allow it to establish.

16.2.31 During the first three summers, weeding (spot spray/by hand) will take place around the base of the shrubs/trees to prevent competition or mulch to minimize encroachment by weeds, and the shrubs/trees will be watered if drought occurs regularly. In late summer, some trees may have died and, if so, they will be replaced with new ones in autumn/winter.

16.2.32 **BNG assessment criteria for the lines of trees to achieve the predicted good condition** are included below.

| Condition Assessment Criteria     |                                                                                                                                                                                                                                                                                      |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                                 | At least 70% of trees are native species.                                                                                                                                                                                                                                            |
| B                                 | Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.                                                                                                                                                |
| C                                 | One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.                                                                                          |
| D                                 | There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice <sup>2</sup> .        |
| E                                 | At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity. |
| Good condition: Passes 5 criteria |                                                                                                                                                                                                                                                                                      |

- 16.2.33      The scattered trees within the fields are in moderate condition. Several additional native broadleaved trees (such as English and sessile oaks that make good veteran species, bird cherry, with other species listed in Appendix 2) will be planted in Field G. Standard tree specimens should be planted to ensure that they can become well established within the management period.
- 16.2.34      If necessary, in order to promote the veteranisation process and thus provide additional wildlife features, trees can be slightly damaged (taking care not to kill the tree) in order to start the process of decay and 'ageing'. The process may include: cutting the tops of trees that are likely to respond to pollarding; making holes in live standing trees to initiate rot; deliberately damaging the bark to induce decay or simulate sap runs; breaking branches, rather than sawing them off flush, or creating 'coronet' ends (i.e. chainsaw pruning technique that mimics the jagged edges characteristically seen on broken branches following storm damage or natural limb failure); increasing water retention in forks and crowns of trees by drilling holes; and creating nest boxes for birds / bats.
- 16.2.35      In order to ensure the development of mature trees over the management period, it will be necessary to plant the proposed new broadleaved native trees in Field G, as mature standards in order to speed up this process. The ideal time to plant new trees is late October/November to March. However, planting in very cold or windy weather will be avoided in order to reduce the risk of damage to the new roots, and trees will not be planted in waterlogged or frozen soil.
- 16.2.36      To protect against grazing by rabbits, a spiral sleeve guard will be placed around each tree trunk, ensuring the base is bedded into the soil. After the first year, should monitoring indicate that deer browsing is an issue, then more robust tree guards (e.g. two stakes dug in either side of the tree with weld mesh wire netting wrapped around them) will be installed that will be 1.8m in height. Should deer/livestock browsing pose an issue, the entire length of hedgerow could be fenced off<sup>4</sup> (with deer-proof fencing) to allow it to establish.
- 16.2.37      During the first three summers, weeding (spot spray/by hand) will take place around the base of the shrubs/trees to prevent competition or mulch to minimize

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<sup>4</sup> Leave 13cmx13cm hedgehog passes at base of fencing

encroachment by weeds, and the shrubs/trees will be watered, only if drought regularly occurs. In late summer, some trees may have died and, if so, they will be replaced with new ones in autumn/winter.

16.2.38 **BNG assessment criteria for the scattered trees to achieve the predicted good condition** are included below.

| Condition Assessment Criteria          |                                                                                                                                                                                                                                                                                         |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                                      | The tree is a native species (or at least 70% within the block are native species).                                                                                                                                                                                                     |
| B                                      | The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).                                                                                         |
| C                                      | The tree is mature (or more than 50% within the block are mature).                                                                                                                                                                                                                      |
| D                                      | There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height. |
| E                                      | Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.                                                                                                                                                     |
| F                                      | More than 20% of the tree canopy area is oversailing vegetation beneath.                                                                                                                                                                                                                |
| Good condition: Passes 5 or 6 criteria |                                                                                                                                                                                                                                                                                         |

### **Woodland, other broadleaved**

16.2.39 Management recommendations for the broadleaved woodland plantations are included below:

- The broadleaved woodland plantations will be enhanced with some woodland thinning, coppicing and pollarding to create a more diverse structure and allow more light into the woodland floor thereby promoting the development of a more diverse ground flora.

- The non-native snowberry plants present in the woodland will be removed outside the nesting bird period (i.e. outside March to August).
- The woodland has numerous footpaths running through it, that lead to considerable disturbance to woodland wildlife. Some of these paths should be closed down to allow the woodland to provide a more sheltered environment for local wildlife.
- Targeted and gradual thinning of diseased/weak trees along existing paths and woodland edges will benefit woodland ground flora and also provide habitat for insects especially woodland butterflies such as the small pearl-bordered fritillary and the white admiral. The aim is to maximise variation in height along woodland edges and paths, from short vegetation to scrub and canopy. Selective thinning will be used to create a varied age structure in the tree canopy. This will be done over a number of seasons to ensure that conditions are not altered too rapidly and cause a negative impact on the wildlife assemblages.
- Glades will be created within the woodlands to allow light into the woodland and thus promote growth of a diversity of ground flora. This will also benefit insects especially woodland butterflies.
- Scalloped edges will be reinstated/created along the cycle path where trees are cleared thereby allowing scrubs, herbs and grasses to grow thus creating a varied woodland edge. To benefit from the sunshine, a scallop is best placed on the north side of an east–west path and on the south-facing side of a woodland. Planting of mixed scrub along the northern and eastern woodland edges will add more structure to the woodland (refer to scrub section below).
- During management of these open areas, grass cuttings will be removed to avoid enriching the soil and thus diminishing the diversity of ground flora. Any twigs/branches will be piled up to create habitat for deadwood invertebrates, small mammals (such as hedgehogs) and amphibians.
- Standing dead wood provides an important habitat for invertebrates, birds, bats and various small mammals. The dead/damaged trees, trunks (as long as they

are not unsafe), rotten coppice and fallen/felled tree trunks/branches will be retained within the woodland, especially those with cracks and holes, which provide roosting habitat for bats and nesting habitat for birds such as woodpeckers plus small mammals such as dormice (if this species is present).

- Coppicing will create temporary areas of open space shall enable native flora to re-flourish benefitting insects particularly butterflies, small mammals and woodland bird specialists. Hazel coppicing will be undertaken in phases on a 10-15-year cycle to enable hazel to reach a stage of maturity to produce fruits to serve as food for birds and small mammals such as dormice (if this species is present). Coppicing to be undertaken outside bird nesting period (i.e. outside March to August).
- Brash resulting from coppicing will be left in the woodland to provide nesting habitat for woodland birds, amphibians and small mammals such as hedgehogs and dormice (if this species is present). Brash will also be placed around newly cut stools or around cut coupes to reduce deer browsing of coppice regrowth.
- Some cut timber will be left in the wood to rot down and the logs can then be used to create habitat piles. Where possible, the lower layers of felled wood will be buried and a compact stack of wood created. Such log piles offer sheltered places for small mammals, reptiles and amphibians and the rotting timber itself provides a valuable habitat for a variety of invertebrates and fungi.
- Where ash dieback is present in some of the woodland trees, these will need to be cut down outside the bird nesting period. At present there is no way to eradicate the ash dieback and there is little that can be done to prevent its spread. There is no reliable estimate as to the prevalence of resistance within ash populations, but it is thought that resistance development should respond well to natural selection and selective breeding (Gloucestershire Wildlife Trust 2019). Mitigation will also account for the impact that climate change is likely to have on the UK's tree assemblages. In addition to felling diseased ash trees, proactive felling of ash in areas of high safety risk, e.g. along footpaths will be considered. Replacement planting with suitable alternative native tree/shrub

species, listed in Appendix 2 will need to be undertaken in the area where ash are removed from within Woodland C

16.2.40 In order to alleviate the problems with flooding on the Common, a natural flood management technique that will be applied involves the strategic placing of large woody debris, or leaky dams in the watercourse, to slow the flow during heavy rainfall events. In the right places leaky dams can provide a cheap and easy way to reducing flood risk, when applied at a landscape scale. Leaky dams are effectively large logs that are manipulated into place across the watercourse from one bank to the other. The leaky dams create a partial blockage of the stream, where water in normal and low flows can freely pass under the structures but after heavy rain at high flows, some water will be attenuated behind the leaky dam and be pushed out onto minor floodplains. Further details are given in the watercourse section below and Appendix 2.

16.2.41 **BNG assessment criteria for the woodland to achieve the predicted good condition** are included on the next page.

| Condition Assessment Criteria |                                           |                                                                                                                                                                        |                                                                                                                                                        |                                                                                                                                                                        |
|-------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicator                     |                                           | Good (3 points)                                                                                                                                                        | Moderate (2 points)                                                                                                                                    | Poor (1 point)                                                                                                                                                         |
| A                             | Age distribution of trees                 | Three age-classes <sup>1</sup> present.                                                                                                                                | Two age-classes <sup>1</sup> present.                                                                                                                  | One age-class <sup>1</sup> present.                                                                                                                                    |
| B                             | Wild, domestic and feral herbivore damage | No significant browsing damage evident in woodland <sup>2</sup> .                                                                                                      | Evidence of significant browsing pressure is present in less than 40% of whole woodland <sup>2</sup> .                                                 | Evidence of significant browsing pressure is present in 40% or more of whole woodland <sup>2</sup> .                                                                   |
| C                             | Invasive plant species                    | No invasive species <sup>3</sup> present in woodland.                                                                                                                  | Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, and other invasive species <sup>3</sup> <10% cover. | Rhododendron or cherry laurel present, or other invasive species <sup>3</sup> ≥10% cover.                                                                              |
| D                             | Number of native tree species             | Five or more native tree or shrub species <sup>4</sup> found across woodland parcel.                                                                                   | Three to four native tree or shrub species <sup>4</sup> found across woodland parcel.                                                                  | Two or less native tree or shrub species <sup>4</sup> across woodland parcel.                                                                                          |
| E                             | Cover of native tree and shrub species    | >80% of canopy trees and >80% of understory shrubs are native <sup>5</sup> .                                                                                           | 50 - 80% of canopy trees and 50 - 80% of understory shrubs are native <sup>5</sup> .                                                                   | <50% of canopy trees and <50% of understory shrubs are native <sup>5</sup> .                                                                                           |
| F                             | Open space within woodland                | 10 - 20% of woodland has areas of temporary open space <sup>6</sup> . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted <sup>7</sup> . | 21 - 40% of woodland has areas of temporary open space <sup>6</sup> .                                                                                  | <10% or >40% of woodland has areas of temporary open space <sup>6</sup> . But if woodland <10ha has <10% temporary open space, please see Good category <sup>7</sup> . |
| G                             | Woodland regeneration                     | All three classes present in woodland <sup>8</sup> ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.              | One or two classes only present in woodland <sup>8</sup> .                                                                                             | No classes or coppice regrowth present in woodland <sup>8</sup> .                                                                                                      |

|                                                                                                                                                                        |                                    |                                                                                                                                                                                                                      |                                                                                                                                                                                                                               |                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>H</b>                                                                                                                                                               | <b>Tree health</b>                 | Tree mortality 10% or less, no pests or diseases and no crown dieback <sup>9</sup> .                                                                                                                                 | 11% to 25% tree mortality and or crown dieback or low-risk pest or disease present <sup>9</sup> .                                                                                                                             | Greater than 25% tree mortality and or any high-risk pest or disease present <sup>9</sup> .                                                                                                                             |
| <b>I</b>                                                                                                                                                               | <b>Vegetation and ground flora</b> | Recognisable NVC plant community <sup>10</sup> at ground layer present, strongly characterised by ancient woodland flora specialists.                                                                                | Recognisable woodland NVC plant community <sup>10</sup> at ground layer present.                                                                                                                                              | No recognisable woodland NVC plant community <sup>10</sup> at ground layer present.                                                                                                                                     |
| <b>J</b>                                                                                                                                                               | <b>Woodland vertical structure</b> | Three or more storeys across all survey plots, or a complex woodland <sup>11</sup> .                                                                                                                                 | Two storeys across all survey plots <sup>11</sup> .                                                                                                                                                                           | One or less storey across all survey plots <sup>11</sup> .                                                                                                                                                              |
| <b>K</b>                                                                                                                                                               | <b>Veteran trees</b>               | Two or more veteran trees <sup>12</sup> per hectare.                                                                                                                                                                 | One veteran tree <sup>12</sup> per hectare.                                                                                                                                                                                   | No veteran trees <sup>12</sup> present in woodland.                                                                                                                                                                     |
| <b>L</b>                                                                                                                                                               | <b>Amount of deadwood</b>          | 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities <sup>13</sup> . | Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities <sup>13</sup> . | Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities <sup>13</sup> . |
| <b>M</b>                                                                                                                                                               | <b>Woodland disturbance</b>        | No nutrient enrichment or damaged ground evident <sup>14</sup> .                                                                                                                                                     | Less than 1 hectare in total of nutrient enrichment across woodland area, and or less than 20% of woodland area has damaged ground <sup>14</sup> .                                                                            | 1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground <sup>14</sup> .                                                                                                        |
| <p>Good condition: Total score &gt;32 (33 to 39)</p> <p>NB footnote references can be found in the BNG Condition Assessment spreadsheet for woodland in Appendix 3</p> |                                    |                                                                                                                                                                                                                      |                                                                                                                                                                                                                               |                                                                                                                                                                                                                         |

## Scrub

- 16.2.42 The majority of areas of scrub would benefit from better structure and species diversity, by controlling the bramble and blackthorn, which tend to dominate the scrub areas especially bordering the southern woodland edge, the ditch, bordering Field B and surrounding pond PD.
- 16.2.43 The aim of scrub management is to obtain a scrub mosaic with tussocky, rough, uncut natural vegetation will be formed, by natural recolonization and where necessary by planting a variety of native shrub species and a few standard native, locally found trees may also be planted. All plants will be guarded as necessary for the local area in line with good practice. Over time there will be a mosaic of scrub with a variety of heights, widths, shapes and species composition across the parcels.
- 16.2.44 The marginal scrub bordering the woodland (especially the dense blackthorn scrub on the southern side of the woodland) will be cut on rotation to control spread onto the grassland.
- 16.2.45 No fertilisers/manures or pesticides will be used in the scrub area, except for herbicides to weed wipe or spot treat injurious weeds or invasive non-native species
- 16.2.46 It is proposed to plant up a small copse (or area of mixed scrub) comprising native species of shrubs and trees in the north-eastern corner of Field D where the hedgerows H4 and H2 meet to increase the woody habitat on Site. In addition, areas of mixed scrub are proposed to be planted around the northern and eastern edges of the woodland to enhance the woodland edge habitat. A similar tree/shrub planting protocol to that outlined for hedgerows and lines of trees above applies.
- 16.2.47 Where mixed scrub planting is proposed to form woodland edge habitat, suitable native species of shrub will be planted at 1.5m spacings. Suitable species include common hawthorn, hazel, elder, dog rose, guelder rose, blackthorn (in moderation as this species can become too dominant) and low growing willow *Salix* species. A more detailed list of suitable native species of trees and shrubs that could be included is provided in Appendix 2.

- 16.2.48 Planting (where necessary) will be undertaken between November and March avoiding periods of strong winds, ground frost/snow, and shrubs will not be planted in waterlogged or frozen soil.
- 16.2.49 To protect against grazing by rabbits, a spiral sleeve guard will be placed around each sapling, ensuring they are supported with a cane. After the first year, should monitoring indicate that deer browsing is an issue, then more robust tree guards (e.g. two stakes dug in either side of the tree with weld mesh wire netting wrapped around them) will be installed that will be at least 2m in height.
- 16.2.50 Should deer/livestock browsing pose an issue, the entire area of scrub could be fenced off (with deer-proof fencing) to allow it to establish.
- 16.2.51 During the first summer, weeding will take place around the base of any new shrubs to prevent competition, and the shrubs will be watered regularly. In late summer, some shrubs may have died and, if so, they will be replaced with new ones in autumn/winter.
- 16.2.52 Care will be taken to ensure that tree guards do not damage growing trees/shrubs and these guards will be removed once the trees/shrubs are established.
- 16.2.53 Care will be taken to ensure that plants are free from pests and disease, and grown in the UK and preferably of local provenance.
- 16.2.54 Any new planting will be undertaken in clumps with gaps left in order to create open ground as part of the mosaic. Species will be randomly mixed and planting in rows will be avoided. The edges of the scrub will be scalloped by planting patches of shrubs in semi-circles and creating areas of open ground between them.
- 16.2.55 The scrub will be managed through a coppice of 20% of the shrubs every five years on rotation, ensuring a diversity of structure including open areas within the scrub.
- 16.2.56 Any necessary scrub management will be undertaken during September to February, outside the main bird nesting season.
- 16.2.57 **BNG assessment criteria for the scrub to achieve the predicted good condition** are included on the next page.

| Condition Assessment Criteria     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                                 | <p>The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type.</p> <p>At least 80% of scrub is native, and there are at least three native woody species<sup>1</sup>, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover).</p> |
| B                                 | Seedlings, saplings, young shrubs and mature (or ancient or veteran <sup>2</sup> ) shrubs are all present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| C                                 | There is an absence of invasive non-native plant species <sup>3</sup> (as listed on Schedule 9 of WCA <sup>4</sup> ) and species indicative of sub-optimal condition <sup>5</sup> make up less than 5% of ground cover.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| D                                 | The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| E                                 | There are clearings, glades or rides present within the scrub, providing sheltered edges.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Good condition: Passes 5 criteria |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

### Watercourse

16.2.58 A drainage ditch is situated between the two large fields D and G on the eastern/central part of the Site, where it is bordered in parts by mixed scrub or tall herb. It then runs through the woodland plantation on the western side of the Site.

16.2.59 The dense scrub along the eastern stretch of the watercourse should be cut back from the water channel to ensure that sufficient light reaches the watercourse. Cutting back of scrub should be undertaken on a rotational basis, with one side of the watercourse being cut in alternate years (i.e. two-year rotation). Cut material should

be removed to prevent it falling into the drainage channel. Such cut material can be arranged into piles around the edges of the Site to provide cover for reptiles, amphibians and small mammals (e.g. hedgehogs). Such tree/scrub removal works should be undertaken outside the nesting bird season, i.e. outside the period March to August. As the watercourse runs alongside Field D, where conservation grazing is proposed, it is recommended that grazing of bankside vegetation is allowed as this will introduce greater structural diversity to the bank.

16.2.60 In order to alleviate the problems with flooding on the Common, a natural flood management technique that will be applied involves the strategic placing of large woody debris, or leaky dams in the watercourse, to slow the flow during heavy rainfall events. In the right places leaky dams can provide a cheap and easy way to reducing flood risk, when applied at a landscape scale. Leaky dams are effectively large logs that are manipulated into place across the watercourse from one bank to the other as outlined in Appendix 2. The leaky dams create a partial blockage of the stream, where water in normal and low flows can freely pass under the structures but after heavy rain at high flows, some water will be attenuated behind the leaky dam and be pushed out onto minor floodplains. These dams help to create habitat within the watercourse and encourage more diverse spatial patterns of flow and sediment, as well as encouraging more water to be pushed up and out of the channel onto the floodplain.

16.2.61 Where the watercourse runs through the woodland (on the western side of the Site), up to 10 leaky dams (i.e. woody debris structures) will be created in collaboration with Bristol and Avon Rivers Trust (BART) to encourage the development of some wet woodland areas to enhance the woodland and also to alleviate flooding issues on the footpaths. The leaky woody debris will comprise a series of hinged trees, large logs and crossed logs as shown in the plans in Appendix 2, which also details the methodology for creating these features.

16.2.62 Trees for the leaky dam will be sourced locally, by removing less mature trees thinner specimens bordering the watercourse where it runs through the woodland, thereby allowing more light into the watercourse and its banks, thus facilitating the development of both marginal and aquatic vegetation, thereby improving the ecological value of the watercourse. Trees (such as ash) used to create the leaky dam

should be of minimum 30cm diameter to ensure they are not washed away once incorporated into the dam.

16.2.63 In order to promote the development of marginal and aquatic vegetation, plug planting of suitable native species from the pond planting list in Appendix 2 can be undertaken in areas where trees/shrubs have been removed.

16.2.64 The creation of leaky dams will utilise the storage capacity of this area during high flows and the structures will be positioned where this is maximised. Special care will be taken where the watercourse is incised and the banks are tall, as these areas will cause bank erosion if structures are located here. Using longer pieces of wood is better as if things do become unsecure then the pieces will not travel far down the system. The rule of thumb is that the length of timber should be 2.5 times the width of the watercourse. 2m long rebar nails can be used to secure the structures

16.2.65 **BNG criteria for the watercourse (drainage ditch) to achieve the desired good condition** are detailed on the next page.

| Condition Assessment Criteria     |                                                                                                                                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                                 | The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.                                                                                        |
| B                                 | A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.                               |
| C                                 | There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).                                                                              |
| D                                 | A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.                                                                                                                  |
| E                                 | Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities. |
| F                                 | Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.                                                            |
| G                                 | Less than 10% of the ditch is heavily shaded.                                                                                                                                                         |
| H                                 | There is an absence of non-native plant and animal species <sup>1</sup> .                                                                                                                             |
| Good condition: Passes 8 criteria |                                                                                                                                                                                                       |

## Grassland

16.2.66 The baseline phosphorus index of the grassland areas is not known as no soil tests have been provided. A check of <https://www.landis.org.uk/soilscapes/> describes

the soil in that area as 'Soilscape 6: Freely draining slightly acid loamy soils' and that soils tend to be freely draining with low fertility levels.

Field C – Modified grassland in poor condition

16.2.67 The modified/amenity grassland of Field C will be left in its current state as regularly mown grassland with short sward height to maintain its recreational status. However, through removal of arisings after mowing, it is envisaged that soil fertility of this area will gradually decrease over time thus enabling a more diverse sward to develop within the modified grassland and enable its condition to be enhanced to good. A 1.5m to 2m margin of uncut and unsprayed grass/tall herb will be left along the hedgerows to provide a tall grassland layer, thus giving more structural diversity to the field and enhancing the hedgerow's value for wildlife too, and the arisings will also be removed from this area.

16.2.68 **BNG assessment criteria for the modified grassland to achieve the desired good condition** are included on the next page.

16.2.69 It is noted that should recreational use constraints make it impossible to achieve the proposed good condition, then this target may need to be lowered to moderate condition following discussion within South Gloucestershire LPA.

| Condition Assessment Criteria |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                             | <p>There are 6-8 vascular plant species per m<sup>2</sup> present, including at least 2 forbs. <b>Note - this criterion is essential for achieving Moderate or Good condition.</b></p> <p>Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m<sup>2</sup> (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland.</p> <p>Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.</p> |
| B                             | <p>Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| C                             | <p>Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present).</p> <p>Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.</p>                                                                                                                                                                                                                                                                                                                                                                                                          |
| D                             | <p>Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| E                             | <p>Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)<sup>2</sup>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| F                             | <p>Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| G                             | <p>There is an absence of invasive non-native plant species<sup>3</sup> (as listed on Schedule 9 of WCA<sup>4</sup>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Good Condition: Passes 6 or 7 criteria including passing essential criterion A

Fields A, B, D, E, G- Other neutral grassland in poor condition (Fields A, B) and in moderate condition (Fields D, E,G)

- 16.2.70 The sward diversity of the remaining other neutral grassland Fields A, B, D, E, G would suggest that although the phosphorus levels would be expected to be lower than that found in modified grasslands/arable land but higher than in lowland meadows, particularly for Fields A and B. It will therefore be necessary to reduce the phosphorus levels to nearer 1, thus a minimum of two years nutrient stripping is considered necessary . The precise length of time to be determined by regular monitoring. This will be achieved by taking up to two cuts annually in Fields A, B, G (late July and September/October) and by taking one cut annually in Fields D and E (to avoid any ground-nesting skylarks) plus in all fields removal of arisings with no additional inputs.
- 16.2.71 Sowing of yellow rattle in late summer on freshly cut sward will also be necessary in the second year of nutrient stripping of Fields A, B, D, E, G.
- 16.2.72 Once the desired soil nutrient status has been achieved (presumed to be after two years and verified by soil testing), a final cut will be taken with all arisings removed. After a minimum of two weeks and prior to seeding in September, a spring tine grass harrow (such as an Einbock) to remove thatch and create some bare earth (avoiding going below soil surface) will be used. Sowing a small amount of native grass/wild flower seed can be undertaken with a grass seed drill. The recommended approach is to collect seed from a nearby wildflower-rich donor site using a brush harvester (and this is much cheaper than purchasing seed although suitable commercial seed mixes can be used with sowing of green hay being another option).
- 16.2.73 The Fields will be shut up for at least 10 weeks during the flowering season (early spring to August), before a cut and bale. For Fields D and E where conservation cattle breeds are proposed, this will be followed by aftermath grazing between September and November to produce greater height diversity in the sward than can be achieved by just mowing. (Due to the wetness of the Site over winter, cattle need to be removed in the wet winter months to avoid undue poaching of the ground.) However, once the

desired floristic diversity has been achieved, these grassland Fields D and E can be managed as low intensity grazed pasture, with a conservation breed of cattle. The traditional, native cattle breeds that will be used are more suited to promoting diversity and adapting to the wetter areas across the Site. Recommended cattle breeds for conservation grazing tend to be Dexters, Sussex, South Devons, Beef shorthorn, Shetlands, Belted Galloway. Following establishment, no ploughing, cultivation or re-seeding on a whole field scale will be undertaken, except for re-seeding any failed/thin areas. Areas around water troughs and field gateways may be stoned in order to reduce poaching.

16.2.74 In order to ensure that ground nesting birds (i.e. skylarks) are protected from disturbance/injury and to facilitate the ecological enhancement of the grassland in Fields D and E, it is proposed to restrict dogs to lead walking in these areas, which will also avoid complications with dogs and cattle. It would also be useful to restrict all visitors to these fields to the footpaths to reduce disturbance to nesting birds, cattle and the grassland.

16.2.75 The target habitat for these fields will be other neutral grassland in good condition, with a rich mixture of native grasses and broad-leaved herbs associated with neutral soils. There will likely be subtle changes in the floristic composition reflected by the differing environmental conditions across the Site. The meadow will be monitored for species diversity and the presence of indicator species. Reseeding may be necessary to increase species diversity.

16.2.76 Sward height restrictions do not apply during the period that the land is closed up for hay/silage making and the reasonable period after cutting to allow for re-growth.

16.2.77 Sprays, including herbicides, will only be used to spot treat or weed wipe for the control of injurious weeds, invasive non-natives, nettles, bracken, thistles, docks, ragwort or hemlock.

16.2.78 Mechanical operations or other activities that may cause disturbance to breeding birds (particularly skylarks) will only be undertaken from September to February inclusive, ground conditions permitting.

16.2.79 It should be noted that as it is proposed to introduce conservation grazing in Fields D and E. In order to avoid cattle straying out these designated grazing areas

either improvement of kissing gates and stock proof fencing or use of virtual fencing system will be necessary. Virtual fencing is an invisible fencing system whereby each cow wears a GPS collar unit which plays an audible melody and if necessary, emits an electric pulse to the neck to deter the animal from crossing a virtual boundary. A grazing area or pasture is created using a mapping app which then communicates with the collar on the animal. When the cow approaches the Nofence boundary, the collar emits the audio melody warning to deter it from crossing the line. Further information is available at the following link <https://www.nofence.no/en-gb/what-is-nofence>.

16.2.80        **BNG assessment criteria for the other neutral grassland to achieve the desired good condition** are included on the next page.

16.2.81        It is noted that the recommended enhancement measures may lead to Fields D and E ultimately becoming lowland meadow (a more species-rich grassland than other neutral grassland) , however, due to the suburban location of the Site and thus relatively high public use, a precautionary approach to target grassland type has been adopted.

| Condition Assessment Criteria |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                             | <p>The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description).<sup>1</sup></p> <p><b>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</b></p>                         |
| B                             | <p>Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</p>                                                                                                                                                                                                                             |
| C                             | <p>Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens<sup>2</sup>.</p>                                                                                                                                                                                                                                                                                                                                 |
| D                             | <p>Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.</p>                                                                                                                                                                                                                                                                                              |
| E                             | <p>Combined cover of species indicative of suboptimal condition<sup>3</sup> and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.</p> <p>If any invasive non-native plant species<sup>4</sup> (as listed on Schedule 9 of WCA<sup>5</sup>) are present, this criterion is automatically failed.</p> |
| F                             | <p>There are 10 or more vascular plant species per m<sup>2</sup> present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count).</p> <p><b>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</b></p>                                                                                                             |

Good Condition: Passes 5 or 6 criteria, including essential criterion A and additional criterion F.

### **Ponds**

- 16.2.82 In order to maintain/enhance existing ponds PC, PD, PA and any the new pond PE as valuable features for wildlife it is important to ensure sufficient sunlight reaches the pond and good edge habitat of marginal vegetation around the ponds. Therefore, overhanging trees/shrubs will be cut back outside the bird nesting period (that is outside the period March to August) to ensure sufficient sunlight penetrates the ponds and thus facilitates the growth of marginal vegetation around the ponds.
- 16.2.83 Tall grass/marginal plants will be maintained/encouraged to grow around the ponds and the marginal buffer will be increased to 1.5m to 2m with spring planting of native species of marginal plants as detailed in Appendix 2, should natural recolonisation not prove successful during the initial part of the BNG monitoring period.
- 16.2.84 In order to ensure a varied age structure of marginal habitat available each year, marginal habitat will be cut every seven years on a rotational basis (i.e. no more than one seventh of entire marginal habitat to be cut and cleared in any single year) and the arisings removed. This will prevent the build-up of dead material and leaf litter and ensure vigorous growth is promoted in the spring, producing dense re-growth.
- 16.2.85 Management will ensure that marginals and aquatics do not cover more than two thirds of the surface area of the water in the ponds. Where removal of some emergent vegetation is required to ensure one third open water remains, this work will be undertaken outside the period, March to September, when birds are nesting plus amphibians are breeding and when young amphibians could be present in the ponds.
- 16.2.86 Discarded vegetation will be left on the banks for 48 hours to allow mobile invertebrates/any amphibians to re-enter the water, then the vegetation can be removed.
- 16.2.87 Fallen trees/shrubs and any trees/shrubs that start growing in the ponds will be removed to create open water and cut vegetation will be placed far enough away from the top of the bank to prevent decaying material and run-off from falling in and

polluting the pond. Such works will be undertaken between September to February, which is outside the period when the majority of amphibians/nesting waterfowl could be using the pond.

16.2.88 No new trees or shrubs will be planted around the margins of the ponds to ensure sufficient sunlight reaches them.

16.2.89 No herbicides will be used to control aquatic plants and bankside vegetation, which will be achieved by hand weeding as required. No animals (such as fish and ducks) will be introduced to the ponds.

16.2.90 The entire ponds will not be worked on at any one time, with most of the existing habitat including any the leaf litter, logs and woody debris being retained.

16.2.91 One third of the bullrush will be hand-pulled out of central pond PD every five years and carefully clear silt from the open water area outside the period, March to September, when amphibians are breeding and young are present in the ponds) following clarification (via eDNA survey for GCN) as to whether GCN are present or not, and therefore whether dredging will need to proceed under a risk avoidance methods statement/Natural England conservation licence as outlined in the GCN/amphibian mitigation section below.

16.2.92 The ponds are located within areas where dogs are exercised and therefore will have a level of disturbance from dogs. Therefore, the ponds (particularly pond PD) will be fenced-off with well-maintained stock fencing to ensure that the ponds are able to reach target condition. Any fencing will be installed at least 2m away from the bank top.

16.2.93 Should it be necessary to leave one pond unfenced to allow public access for recreational purposes, then pond PC (in the north-western corner of the Site) may be a suitable one for this purpose as it lies relatively near the amenity grassland area and connects to it via a footpath. However, if this is the case then it will not be possible to fully enhance the pond and thus its desired BNG value will need to be lowered to moderate.

16.2.94 A wildlife pond (Pond PE) is to be created within a sunny location within Field A in order to provide additional habitat for amphibians, grass snakes and aquatic

invertebrates. Any trees/shrubs nearby should be trimmed back (outside the nesting bird period, i.e. outside March to August) to ensure sufficient light reaches the pond. Due to the likely presence of reptiles and amphibians in Field A and the scrubby areas, it will be necessary to excavate the pond in a careful manner as outlined in the GCN/reptile mitigation sections to avoid killing/injuring any animals.

- 16.2.95 The outline of the pond will be pegged out before excavations start, making sure that the pond has an irregular edge. The pond dimensions will be approximately 5m x 6m and it will have an approximate depth of 1.5m in the centre with a variety of water depths. Due to the free draining nature of the soil in this area, it will be necessary to line the pond. A guide to wildlife pond creation, including pond diagram and a list of suitable native species to plant around and within the pond is provided in Appendix 2.
- 16.2.96 The pond will have gently shelving banks, with shallow, marshy water levels at the margins gradually leading to deep water in the middle. This will enable plants with differing requirements to flourish whilst aiding amphibians to access the water more easily. Invertebrates such as dragonflies will be able to use the taller vegetation when emerging as larvae, whilst other insects will use the flowers as a nectar source or as food plants.
- 16.2.97 Plants will colonise more readily where the bank profile provides suitable niches for their varying requirements. Gently shelving banks are also safer from a health and safety point of view as well as allowing any animals that may fall in the pond to escape.
- 16.2.98 Mechanical means or a weed wiper will be used to control injurious weeds that colonise the spoil.
- 16.2.99 Once the pond has been dug, sharp stones will be removed and a layer of sand approximately 5cm deep will be used to line the hole. A trench will be dug around the edge of the pond for the overhanging butyl rubber pond liner to drop into. This liner will be placed in the hole and the edge tucked into the trench and then weighed down with large rocks (which will also provide crevices for invertebrates and amphibians to use). The remaining sand mixed with gravel will be deposited on the bottom of the pond. Collected rainwater will be used to fill the pond if possible, or if tap water is used, it will be left to stand for a few days beforehand.

- 16.2.100 Aquatic native non-invasive plants will only be introduced to the pond approximately one to two weeks after the initial filling with water. Aquatic native non-invasive plants will be grown in containers filled with stones at the base and aquatic compost, which will be covered with a thin layer of gravel.
- 16.2.101 Floating aquatic native non-invasive plants will be introduced to the pond by placing them gently on the water's surface (at a maximum density of one plant per square metre). Native emergent non-invasive species will be planted in the pond and native marginal species will be planted to a minimum width of 1m around the edge. Planting up the pond will be undertaken in spring.
- 16.2.102 The pond will not be linked to inflowing water from ditches and streams.
- 16.2.103 The pond will be fenced-off with well-maintained stock fencing and access restricted for certain periods to ensure that the ponds are able to reach target condition.. Any fencing will be installed at least 1.5m away from the bank top.
- 16.2.104 Any spoil resulting from the pond excavation will not be used to form a mound or bank around the pond or to fill and level neighbouring wet areas. Spoil will not be disposed of on historic or archaeological features.
- 16.2.105 **BNG assessment criteria for the ponds to achieve the desired good condition** are included on the net page.

| Condition Assessment Criteria     |                                                                                                                                                                           |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                                 | The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock. |
| B                                 | There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.         |
| C                                 | Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.                                                                       |
| D                                 | The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.                                                            |
| E                                 | Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams <sup>2</sup> , pumps or pipework.                                               |
| F                                 | There is an absence of listed non-native plant and animal species <sup>3</sup> .                                                                                          |
| G                                 | The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.                                     |
| H                                 | Emergent, submerged or floating plants (excluding duckweed) <sup>4</sup> cover at least 50% of the pond area which is less than 3 m deep.                                 |
| I                                 | The pond surface is no more than 50% shaded by adjacent trees and scrub.                                                                                                  |
| Good condition: Passes 7 criteria |                                                                                                                                                                           |

## Orchards

- 16.2.106 The orchards are classed as being in moderate condition. The recently planted orchard (O1) in the northwestern corner of the Site needs time to mature, while the more established orchards (O2, O3) in the southwestern corner can be expanded to form one large orchard area. Local fruit tree varieties will be used to enhance this community feature of high ecological value. The orchard trees will be sufficiently spaced (i.e. 5-10m) to allow sunlight into the grassland to promote the development of species-rich grassland. Fruit trees should be planted on vigorous rootstocks to grow into standard trees at low densities.
- 16.2.107 Orchard creation and management practices will be guided by recommendations set out in the NE Technical Information note TIN012: Traditional Orchards<sup>5</sup>. Local varieties of fruit tree will be sourced from local suppliers and by working in collaboration with existing specialist groups such as Gloucestershire Orchard Trust (local fruit tree varieties are listed in Appendix 2).
- 16.2.108 Key management principles to enable this habitat to achieve its full ecological value are included below.
- 16.2.109 Planting in very cold or windy weather will be avoided in order to reduce the risk of damage to the new roots, and trees will not be planted in waterlogged or frozen soil. Damp and warm planting conditions are ideal.
- 16.2.110 Orchard trees will be of local fruit varieties (such as those provided in Appendix 2) and planting will be undertaken between October/November when there are no hard frosts. Traditional local varieties of fruit trees will be generally planted at minimum of 5m spacings, the precise spacing depends on the root stock used.
- 16.2.111 As the orchards are relatively young, in order to promote the veteranisation process, over the management period, some of the existing trees may need to be slightly damaged (taking care not to kill the tree) in order to start the process of decay and 'ageing'. The process may include: cutting the tops of trees that are likely to respond to pollarding; making holes in live standing trees to initiate rot; deliberately damaging the bark to induce decay or simulate sap runs; breaking branches, rather than

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<sup>5</sup> <https://publications.naturalengland.org.uk/publication/19007>

sawing them off flush, or creating 'coronet' ends (i.e. chainsaw pruning technique that mimics the jagged edges characteristically seen on broken branches following storm damage or natural limb failure); increasing water retention in forks and crowns of trees by drilling holes; and creating nest boxes for birds / bats.

16.2.112 Tree stations to be protected from livestock using suitable guards. To protect against grazing by rabbits, a spiral sleeve guard will be placed around each tree trunk, ensuring the base is bedded into the soil. After the first year, should monitoring indicate that deer browsing is an issue, then more robust tree guards will be installed that will be at least 1.8m in height.

16.2.113 During the first three summers, weeding will take place around the base of the trees to prevent competition, and the trees will be watered if drought occurs regularly. Mulching with wood chip around the tree base will minimise weed competition and help maintain the soil moisture. After three years the grass can be left to grow tall around the trees. In late summer, some trees may have died and, if so, they will be replaced with new ones in autumn/winter.

16.2.114 Pruning will be undertaken on an annual basis to ensure development and maintenance of balanced trees, of manageable size and even shape. Regular pruning rejuvenates the tree, stimulating strong growth and new fruit-bearing branches. Pruning also lets in light and air, encouraging a regular crop of healthy fruit. By removing branches that are diseased, damaged, crossing and badly placed, regular pruning ensures the health and longevity of the orchard. Further details are outlined in Natural England Technical Information Note TIN012.

16.2.115 Old trees and dead wood, standing or fallen, provide habitat for decayed-wood insects and other invertebrates, as well as bat roosting habitat and nesting and feeding opportunities for a variety of birds. Dead and decaying wood will be retained wherever possible and only removed where it is diseased, unsafe or interferes with necessary operations. Dead trees will be left standing, and large cut branches and fallen dead wood will be retained on site.

16.2.116 In order to increase the diversity of the grassland sward and thus ensure that the orchards reach good condition the following aforementioned grassland enhancement measures are also necessary.

- 16.2.117 The baseline phosphorus index is not known as no soil tests have been provided. However, the low sward diversity for the northern orchard (O1) would suggest that the phosphorus levels would be expected to be that typical of modified grassland. Therefore, at least three years of nutrient stripping is considered necessary, the precise time to be determined by regular monitoring. The higher sward diversity of the southwestern orchards (O1, O2) would suggest phosphorus levels lower than that found in modified grasslands but higher than in lowland meadows. It will therefore be necessary to reduce the phosphorus levels to nearer 1, thus a minimum of two years nutrient stripping is considered necessary. The precise length of time to be determined by regular monitoring. This will be achieved by taking up to two cuts annually (late July to September/October) and removal of arisings, with no additional inputs. Testing of the soil for Phosphate should be undertaken after the two years of nutrient reduction actions.
- 16.2.118 Sowing of yellow rattle in late summer immediately following cutting of the sward will be helpful as it reduces the vigour of grasses that can prevent wild flower establishment.
- 16.2.119 Once the desired soil nutrient status has been achieved (presumed to be after two/three years and verified by soil testing), a final cut will be taken with all arisings removed. After a minimum of two weeks and prior to seeding in August/September, a spring tine grass harrow (such as an Einbock) to remove thatch and create some bare earth (avoiding going below soil surface) will be used. Sowing a small amount of native grass/wild flower seed can be undertaken with a grass seed drill. The recommended approach is to collect seed from a nearby wildflower-rich donor site using a brush harvester (and this is much cheaper than purchasing seed although suitable commercial seed mixes can be used with sowing of green hay being another option).
- 16.2.120 The orchard grassland in the northern and southwestern orchards will be maintained at tall grassland through late summer hay cuts as will be similarly undertaken for Fields A, B, G no sooner than mid-July.
- 16.2.121 Sprays, including herbicides, will only be used to spot treat or weed wipe for the control of injurious weeds, invasive non-natives, nettles, bracken, thistles, docks, ragwort or hemlock. Mechanical operations or other activities that may cause

disturbance to breeding birds will only be undertaken from September to February, ground conditions permitting.

16.2.122 The target habitat underlying the orchard will be other neutral grassland in good condition, with a rich mixture of native grasses and broad-leaved herbs associated with neutral soils. There will likely be subtle changes in the floristic composition reflected by the differing environmental conditions across the Site. The meadow will be monitored for species diversity and the presence of indicator species.

16.2.123 BNG assessment criteria for the orchards to achieve the desired good condition are included below.

| Condition Assessment Criteria |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                             | <p>Presence of ancient<sup>1</sup> and or veteran<sup>1</sup> trees.</p> <p><b>Note - this criterion is essential for achieving Good condition.</b></p>                                                                                                                                                                                                                                                                                                                                                                           |
| B                             | <p>Presence of deadwood in or on trees, or on the ground: at least 20% of mature trees have deadwood associated with them.</p> <p>Some examples of deadwood are: standing, attached and fallen trees or limbs; dead stems; branches and branch stubs greater than 10 cm diameter; and internal cavities. The types and distribution of deadwood provide a range of habitats suitable to support a wide assemblage of saproxylic invertebrates.</p> <p><b>Note - this criterion is essential for achieving Good condition.</b></p> |
| C                             | <p>Less than 5% of fruit trees are smothered by scrub. Small patches of dense scrub and or scattered scrub growing between trees can be beneficial to biodiversity, however these occupy less than 10% of ground cover.</p>                                                                                                                                                                                                                                                                                                       |
| D                             | <p>There is evidence of formative and or restorative pruning to maintain longevity of trees.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| E                             | <p>At least 95% of the trees are free from damage caused by humans or animals, for example browsing, bark stripping or rubbing on non-adjusted ties.</p>                                                                                                                                                                                                                                                                                                                                                                          |
| F                             | <p>Grassland is not overgrazed, poaching is not evident around the trees, with no more than 10% of trees poached under the canopy.</p>                                                                                                                                                                                                                                                                                                                                                                                            |

|                                                                             |                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G                                                                           | Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.                                                                                                               |
| H                                                                           | There is an absence of invasive non-native plant species <sup>2</sup> (as listed on Schedule 9 of WCA <sup>3</sup> ) and species indicative of sub-optimal condition <sup>4</sup> make up less than 10% of ground cover. |
| Good condition: Passes 6- 8 criteria, including essential criteria A and B. |                                                                                                                                                                                                                          |

### **General advice**

16.2.124 Ideally only pesticides branded as ‘wildlife friendly’ should be used. Wildlife planting tips and advice can be found here: <https://www.gloucestershirewildlifetrust.co.uk/wildlife/wildlife-gardening>. Further information is provided in the Ecological Enhancements Appendix below.

## **16.3 Biodiversity Net Gain**

16.3.1 A review of the West of England Nature Partnership’s map<sup>6</sup> at [www.wenp.org.uk](http://www.wenp.org.uk), highlights that the Site is situated near to woodland and wetland strategic networks, and the nearest part of the grassland strategic network is approximately three miles away. The South Gloucestershire Biodiversity Action Plan (south Gloucestershire Council 2016) identifies the following Priority Habitats that are of relevance to the Site: broadleaf woodland (including woodland edge scrub), hedges and field margins, old meadows and pastures, orchards, ponds and rhines (or drainage ditches). Therefore, the proposed enhancements will contribute to the local strategy for biodiversity enhancement.

16.3.2 Assuming that the enhanced and created habitats establish well, it is predicted that the planting proposals outlined in this report will result in a **positive biodiversity net gain of 38.92%/174.76 units for habitats, 22.81%/10.09 units for hedgerows/tree lines and 150.40%/3.96 units for watercourse.**

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<sup>6</sup> Across the West of England three ecological networks (grassland, woodland and wetland) are recognised and these networks are supported by biodiversity opportunity maps which identify the best areas for habitat restoration and creation.

## **16.4 Protected Species**

16.4.1 The protected species and their mitigation/enhancements that need consideration in relation to this development are mentioned below.

## **17 Badgers**

17.1.1 Badgers are offered full protection under the PBA 1992. The woodland, scrub and tall grassland provided suitable habitat for badgers.

17.1.2 Due to the potential presence of mammals on the Site, it is recommended that all trenches and pits are fitted with a ramp to enable animals to escape.

## **18 Bats**

18.1.1 Bats and their resting places are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. The woodland, hedgerow network, tall grassland, ponds, watercourse and orchards provided suitable foraging habitat for a variety of bats. The majority of trees did not provide any obvious roosting features (e.g. holes, cracks, established ivy) for use by bats, however, such features could develop with age in some of the more mature specimens.

18.1.2 Additional roosting opportunities for local bats can be provided by installing suitable bat boxes (e.g. Schwegler 2FN) on medium - large trees. Bat boxes should ideally be installed at a minimum height of 4m on such a public site, facing away from external illumination and should ideally face in different directions with south-east and south-west tending to be preferred by bats.

18.1.3 It is recommended that no lighting be installed on the Site to avoid negatively affecting bats and other nocturnal wildlife such as badgers and hedgehogs. However, as the 'road to nowhere' will become linked to the Bristol-Bath cycle path, it is anticipated that there will be public demand for lighting down this stretch of the route in the future. Should this be deemed necessary for security reasons, then it is essential that the lighting is installed in a manner to avoid negatively affecting the value of this bat foraging corridor.

18.1.4 Light sources, lamps, LEDs and their fittings come in a variety of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features (Institution of Lighting Professionals 2023):

- All luminaires should avoid UV elements when manufactured. Metal halide, compact fluorescent sources should not be used
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component. Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand.
- NB Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS.

- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

## **19 Birds**

- 19.1.1 All birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). It is therefore generally unlawful to intentionally kill or injure a bird, damage or destroy an occupied nest or take or destroy eggs other than in exceptional prescribed circumstances. Therefore, any woody habitat works should take care to avoid the risk of harm to birds and their nests, especially during the nesting season (generally considered to be March to August). Removal of trees and scrub/shrub removal should be undertaken outside the main nesting season and where this is not possible a suitably qualified ecologist should be engaged to check for nesting birds and to provide advice on the most appropriate way to proceed.
- 19.1.2 The tall grassland could provide habitat for ground nesting birds, although the area is subject to anthropogenic disturbance, especially from pet dogs and this lessens the suitability of the habitat for nesting birds.
- 19.1.3 In order to avoid deterring ground nesting species such as skylark that are known to use the southerly Fields D and E, the planting of additional trees or hedgerows in the fields they use for nesting should be avoided. Dogs in Fields D and E should be kept under control (i.e. on lead as necessary) during the bird nesting season to avoid the risk of deterring birds from nesting or disturbing nesting birds.

19.1.4 The woodland and scrub provided nesting habitat for local birds, which could be enhanced by the addition of hole-fronted and open-fronted bird boxes. Such boxes can be installed on medium-large trees at minimum height of 4m on such a public site and face in a north to south-east direction. Examples are provided in the Ecological Enhancements Appendix below.

## **20 Great Crested Newts/Other Amphibians/Reptiles**

20.1.1 GCN and their resting/breeding places are protected under the WCA 1981 and CHS Regs 2017. Common toad is a Species of Principle Importance under the NERC Act. Reptiles are protected under the Wildlife & Countryside Act 1981 (as amended). It is considered possible that GCN, other amphibians and reptiles (slow-worms and grass snakes in particular) could be present in the tall grassland, scrub, orchards and for amphibians the woodland too.

20.1.2 Prior to any dredging of central pond PD in order to ultimately enhance its ecological value, it will be necessary to confirm the presence/absence of GCN using bottle-trapping methodology or eDNA sampling.

20.1.3 Presence/absence of GCN can be established either by an eDNA test for GCN or by undertaking four GCN surveys (and two additional population assessment surveys if GCN present) . Should GCN be present, then dredging works will need to proceed under an agreed methods statement and Natural England Conservation Licence for GCN.

20.1.4 In order to avoid impacts to amphibians and grass snakes in any of the ponds or watercourse, all works (such as the recommended hand removal of a third of the bullrush overwhelming the central pond PD) should proceed outside of the spring breeding period and ideally avoid the summer when young amphibians could be present (i.e. outside of March to September).

20.1.5 Leaving piles of wood in the woodland areas would enhance these areas for amphibians. Adding wood piles and/or constructing hibernacula (as per the diagram in the Ecological Enhancements Section) around the edges of the tall grassland would provide areas of shelter for reptiles and amphibians. Examples are provided in the Ecological Enhancements Appendix below.

20.1.6 Maintaining the tall grass around the ponds and planting additional marginal vegetation around the ponds in addition to ensuring the scrub does not encroach on the ponds will maintain and enhance their ecological value.

20.1.7 The habitat enhancement measures will benefit GCN and other amphibians.

## **21 Hedgehogs and other mammals**

21.1.1 Hedgehogs are listed as a Species of Principal Importance under the NERC Act 2006. The grassland, hedgerows and woodland provided suitable habitat. Construction of log and leaf piles to act as hedgehog shelters is recommended and these should be located within the woodland and along the boundary scrub/trees. An example hedgehog home is provided in the Ecological Enhancement Appendix below. Should any solid fencing need installing in the future, then small gaps of 13x13cm should be left under fences to enable free passage of hedgehogs and other small animals.

## **22 General Protected Species**

22.1.1 There appear to be no other obvious and immediate issues for this development with regard to any other species protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 and no further dedicated surveys for any other species are recommended. However, in the unlikely event that any protected species listed in Section 2 are found on the site during the works then all works must cease immediately and the advice of a suitably qualified ecologist must be sought.

## **23 Timeframe For Survey Validity**

23.1.1 Please note that unless otherwise stated, the contents of this report will remain valid for a maximum period of 12 months from date of issue (CIEEM 2019). Beyond this updated survey work may be required to establish any changes in baseline conditions.

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## Appendix 1: Policy and Legal Considerations

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Statutory nature conservation sites and protected species are a ‘material consideration’ in the UK planning process (DCLG, March 2012). Where planning permission is not required, for example on proposals for external repair to structures, consideration of protected species remains necessary given their protection under UK law.

The **Conservation of Habitats and Species Regulations 2017** transpose the requirements of European Directives such as the Habitats Directive and Birds Directive<sup>7</sup> into UK law, enabling the designation of protected sites and species at a European level.

The **Wildlife and Countryside Act 1981** (as amended) forms the key piece of UK legislation relating to the protection of habitats and species. The **Countryside and Rights of Way Act 2000** provides additional support to the 1981 Act, for example, increasing the protection of certain reptile species. Specific protection for badger is provided by the **Protection of Badger Act 1992**. The **Wild Mammals (Protection) Act 1996** sets out the welfare framework with respect to wild mammals prohibiting a range of activities which may cause unnecessary suffering.

The Government has a duty to ensure that parties take reasonable practicable steps to further the conservation of habitats and species of Principal Importance for Conservation in England listed under Section 41 of the **Natural Environment and Rural Communities Bill 2006**<sup>8</sup>. In addition, the 2006 Act places a Biodiversity Duty on public authorities who ‘must, in exercising [their] functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity’ (Section 40 (1)). Criteria for selection of priority habitats and species include, for example, international threat (such that species may be protected in their strong holds) and marked national decline.

The **National Planning Policy Framework 2021**<sup>9</sup> states that the planning system should minimise impacts on biodiversity, providing net gains in biodiversity, wherever possible. Section 15 states that when determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons<sup>10</sup> and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Biodiversity net gain (BNG) is a way of creating and improving natural habitats. BNG makes sure development has a measurably positive impact (‘net gain’) on biodiversity, compared to what was there before development.

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<sup>7</sup>Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, and Council Directive 79/409/EEC on the Conservation of Wild Birds, respectively.

<sup>8</sup>The **NERC Act** refers to “*species of principle importance for the conservation of biodiversity*”, which translates to BAP habitats and species occurring in England.

<sup>9</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1005759/NPPF\\_July\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf)

<sup>10</sup> For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

In England, BNG is becoming mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the **Environment Act 2021**). Developers must deliver a biodiversity net gain of 10%. This means a development will result in more or better quality natural habitat than there was before development. For significant on-site gains, and all off-site gains, the BNG must be maintained for at least 30 years. Responsibilities will be set out in a legal agreement. Further guidance can be found at: <https://www.gov.uk/guidance/understanding-biodiversity-net-gain>

## Appendix 2: Ecological Enhancements

### Hedgerow/line of trees/copse planting

The following is a list of native trees and shrubs that could be used.

| Scientific Name                                 | Common Name                                      |
|-------------------------------------------------|--------------------------------------------------|
| <i>Acer campestre</i>                           | Field maple                                      |
| <i>Betula pendula</i>                           | Silver birch                                     |
| <i>Carpinus betulus</i>                         | Hornbeam                                         |
| <i>Cornus sanguineum</i>                        | Common dogwood                                   |
| <i>Corylus avellana</i>                         | Hazel                                            |
| <i>Crataegus monogya</i>                        | Hawthorn                                         |
| <i>Euonymus europaeus</i>                       | Spindle                                          |
| <i>Ilex aquifolium</i>                          | Holly                                            |
| <i>Salix caprea</i>                             | Goat willow                                      |
| <i>Sorbus aria</i>                              | Whitebeam                                        |
| <i>Sorbus aucuparia</i>                         | Mountain ash (Rowan)                             |
| <i>Populus Tremula</i>                          | Aspen                                            |
| <i>Prunus avium</i>                             | Wild cherry                                      |
| <i>Prunus padus</i>                             | Bird cherry                                      |
| <i>Prunus spinosa</i>                           | blackthorn                                       |
| <i>Pyrus communis</i>                           | Wild pear                                        |
| <i>Viburnum lantana</i>                         | Wayfaring tree                                   |
| <i>Viburnum opulus</i>                          | Guelder rose                                     |
| Species to replace Ash                          |                                                  |
| <i>Quercus robur</i>                            | Pedunculate/English oak                          |
| <i>Fagus sylvatica</i>                          | Beech                                            |
| <i>Tilia cordata</i>                            | Small leaved lime                                |
| <i>Tilia platyphyllos</i>                       | Large leaved lime                                |
| <i>Ulmus species</i>                            | Elm (disease resistant)                          |
| <i>Populus nigra</i>                            | Black poplar (suited to damp conditions)         |
| <i>Acer campestre</i>                           | Field maple                                      |
| <i>Crataegus monogya</i>                        | Hawthorn                                         |
| <i>Corylus avellana</i>                         | Hazel                                            |
| <i>Ulmus glabra</i>                             | Wych elm                                         |
| <i>Sorbus aria</i>                              | Whitebeam                                        |
| <i>Acer pseudoplatanus</i>                      | Sycamore                                         |
| <i>Carpinus betulus</i>                         | Hornbeam                                         |
| <i>Juglans regia</i>                            | Common walnut                                    |
| <i>Alnus glutinosa</i>                          | Alder (suited to damp conditions)                |
| <i>Malus domestica</i>                          | Apple (on M25 rootstock)                         |
| <i>Prunus sp.</i>                               | Plum - particularly Pershore Purple and Blaisdon |
| <i>Prunus domestica</i> subsp. <i>insititia</i> | Damson                                           |
| <i>Malus sylvestris</i>                         | Crab apple                                       |
| <i>Pyrus communis</i> subsp.                    | Perry pear                                       |

## Wildlife Pond planting

The following is a list of plants suitable for planting in new wildlife ponds.

### Floating plants and waterlilies (provide perch for insects and frogs)

| Scientific Name                 | Common Name     |
|---------------------------------|-----------------|
| <i>Hydrocharis morsus-ranae</i> | Frogbit         |
| <i>Stratiotes aloides</i>       | Water soldier   |
| <i>Nymphaea alba</i>            | White waterlily |

### Submerged plants (function as oxygenators)

| Scientific Name                | Common Name           |
|--------------------------------|-----------------------|
| <i>Ceratophyllum demersum</i>  | Rigid hornwort        |
| <i>Hippuris vulgaris</i>       | Mare's-tail           |
| <i>Potamogeton berchtoldii</i> | Small pondweed        |
| <i>Potamogeton crispus</i>     | Curled pondweed       |
| <i>Potamogeton natans</i>      | Broad-leaved pondweed |
| <i>Potamogeton pectinatus</i>  | Fennel pondweed       |

### Marginal and surrounding grassland plants

| Scientific Name                 | Common Name           |
|---------------------------------|-----------------------|
| <i>Acorus calamus</i>           | Sweet flag            |
| <i>Alisma plantago-aquatica</i> | Water plantain        |
| <i>Butomus umbellatus</i>       | Flowering rush        |
| <i>Caltha palustris</i>         | Marsh marigold        |
| <i>Cardamine pratensis</i>      | Cuckoo flower         |
| <i>Carex paniculata</i>         | Greater tussock-sedge |
| <i>Carex pseudocyperus</i>      | Cyperus sedge         |
| <i>Filipendula ulmaria</i>      | Meadowsweet           |
| <i>Iris pseudacorus</i>         | Yellow flag           |
| <i>Lychnis flos-cuculi</i>      | Ragged robin          |
| <i>Lycopus europaeus</i>        | Gypsywort             |
| <i>Lysimachia nummularia</i>    | Creeping jenny        |
| <i>Lythrum salicaria</i>        | Purple loosestrife    |
| <i>Mentha aquatica</i>          | Water mint            |
| <i>Menyanthes trifoliata</i>    | Bogbean               |
| <i>Myosotis scorpiodes</i>      | Water forget-me-not   |
| <i>Ranunculus lingua</i>        | Greater spearwort     |
| <i>Sagittaria sagittifolia</i>  | Arrowhead             |
| <i>Scrophularia auriculata</i>  | Water figwort         |
| <i>Veronica beccabunga</i>      | Brooklime             |
| <i>Vicia cracca</i>             | Tufted vetch          |

**Grasses**

| Scientific Name               | Common Name         |
|-------------------------------|---------------------|
| <i>Agrostis stolonifera</i>   | Creeping bent       |
| <i>Alepocurus geniculatus</i> | Marsh foxtail       |
| <i>Alepocurus pratensis</i>   | Meadow foxtail      |
| <i>Festuca arundinacea.</i>   | Tall fescue         |
| <i>Festuca pratensis</i>      | Meadow fescue       |
| <i>Glyceria maxima</i>        | Reed sweet-grass    |
| <i>Poa annua</i>              | Annual meadow-grass |

The following is a list of trees suitable for the traditional orchard

| Apples                                            |
|---------------------------------------------------|
| Ampney red (dessert apple)                        |
| Gloucester quoining (culinary and cider apple)    |
| Port wine pippin (dessert apple)                  |
| Gloucestershire underleaf (general purpose apple) |
| Chaceley kernel                                   |
| Jenny lind                                        |
| Lake's kernel                                     |
| Spout                                             |
| Flower of the west                                |
| Kenchy pippin                                     |
| Ben lans                                          |
| Reynold's kernel                                  |
| Cambridge queening                                |
| Tippets                                           |
| Siddington russet                                 |
| Arlingham schoolboy                               |
| Ashmead's kernel                                  |
| Lady Sudeley                                      |

|                                                              |
|--------------------------------------------------------------|
| Hunt's Duke of Glos                                          |
| (Stroud) Lodgemore sans Pareil                               |
| Rhead's reinette                                             |
| <b>Pear</b>                                                  |
| Bertestree squash                                            |
| Beurre Clairgeau                                             |
| Doyenne de Comice                                            |
| <b>Plum</b>                                                  |
| Victoria: Well-known and heavy cropping, harvested in August |

The illustration below shows an ideal profile for a wildlife pond.

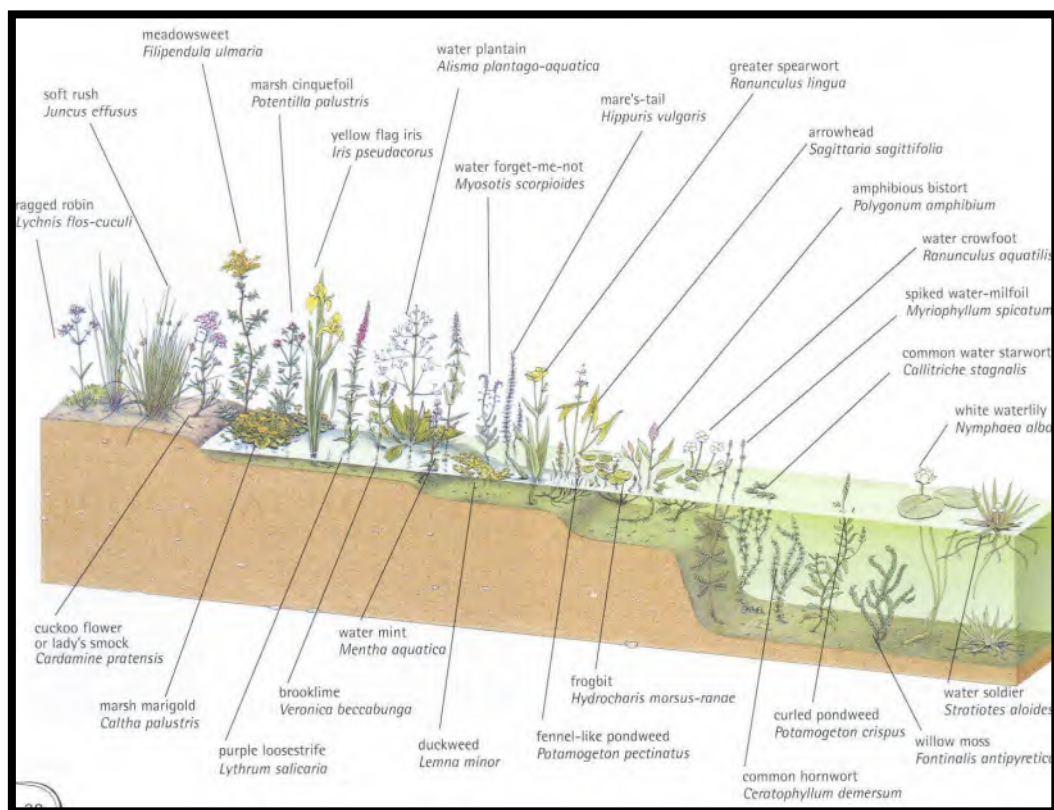


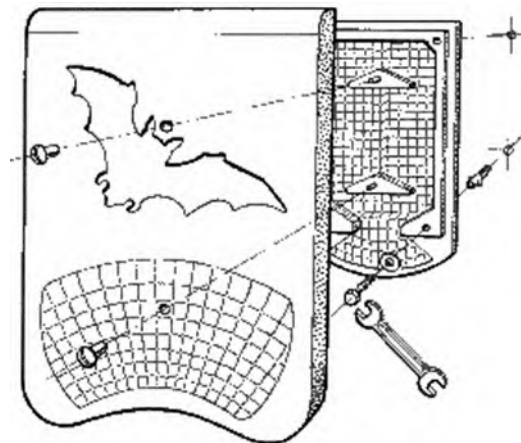
Illustration taken from *The Great Crested Newt Conservation Handbook* © Froglife 2001.

## BAT ROOSTING FEATURES

### Schwegler 1FF Bat Box



### Schwegler 1WQ Summer & Winter Bat Box



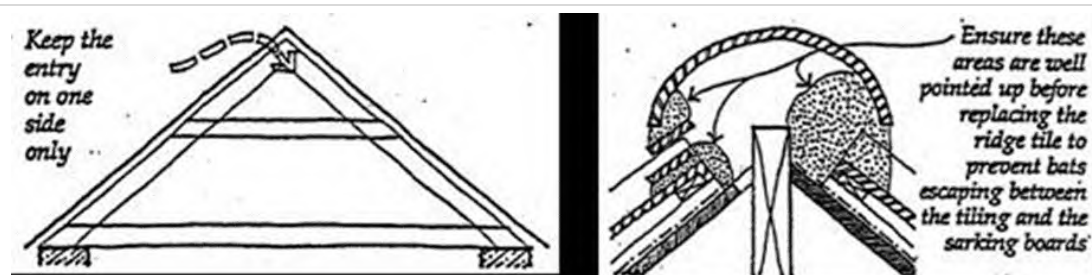
### Habibat 001 Bat Box – integral bat box, fitted into wall



**Schwegler 2FN Bat Box - for installation in trees**



**Diagrammatic view of ridge tile and cross section through ridge tile** showing access point (taken from Scottish Natural Heritage 1996). Bitumastic lining must be used near/on the ridge beam to ensure bats can only have contact with this type of membrane to avoid any possible entanglement with a breathable membrane.



## BIRD BOXES

### Various designs of swift boxes



**Swift Brick**



**Swallow Cup**



**Hole-fronted bird box (for trees)**



**Open-fronted bird box (for trees)**



**House Martin Terrace Box**



## HEDGEHOG NEST BOX



## HEDGEHOG HOUSE

### Make a deluxe hedgehog house

wildlife  
watch



**You will need**

- 20mm FSC plywood boards cut to the sizes shown
- Hammer and nails
- 2 metal hinges
- Soil
- Dry leaves
- Straw or dry grass
- Newspapers
- Polythene sheeting

*Birch is ideal*

**1** Construct the hedgehog house from the following diagram and dimensions.

Diagram showing the components and dimensions of the hedgehog house:

- Back: 40cm x 30cm
- Side: 26cm x 30cm
- Base: 40cm x 30cm
- Front: 40cm x 17cm
- Tunnel top: 30cm x 17cm
- Tunnel base: 30cm x 17cm
- Tunnel side: 13cm x 17cm
- Tunnel side: 13cm x 17cm
- Feet: 8cm x 8cm (4 pieces)

**2** Put the newspaper and straw or dry grass inside, cover the house with polythene sheeting, then pack soil and dead leaves around the outside.

The roof is hinged so you can clean the box in future

Make sure the entrance tunnel faces south, and is kept clear at all times

Do not creosote or treat the wood

raised up on feet

[www.wildlifewatch.org.uk](http://www.wildlifewatch.org.uk)

©corinne welch, 2015

**INVERTEBRATES****BEE BRICK****SCHWEGLER INSECT  
NESTING AID**

## INVERTEBRATES



### How to Make an insect hotel



wildlife  
watch



#### the express way!

**What you need:**

- hollow plant stems, like bamboo canes
- twigs and sticks
- String

- 1 Collect handfuls of stems, twigs and sticks.
- 2 Tie the bundles quite tightly in two places.
- 3 Post into a hedge/bush or hang in a sheltered place.

#### the deluxe way!

**What you need:**

- Small logs or untreated timber
- hollow plant stems, like bamboo canes
- twigs and sticks

**An adult to help with tools:**

- wood saw
- nails and hammer or screwdriver and wood screws
- drill and 5mm wood bit

- 1 Make a wooden frame, fixing the wood with screws or nails.
- 2 Fill the frame with stems, twigs and sticks.
- 3 Fix a wire loop to the back of the frame and hang somewhere sheltered.

[www.wildlifewatch.org.uk](http://www.wildlifewatch.org.uk)

Illustration: Corinne Welch © Copyright Royal Society of Wildlife Trusts 2015

### How to build a bug hotel



wildlife  
watch



**You will need:**

- Wooden pallets x4
- Bricks
- Plastic bottles\*
- Bamboo canes
- Straw
- Leaves
- Tiles
- Cardboard
- Stones/pebbles
- Twigs/loose bark

\*Use old plastic bottles for this, and always recycle after use.

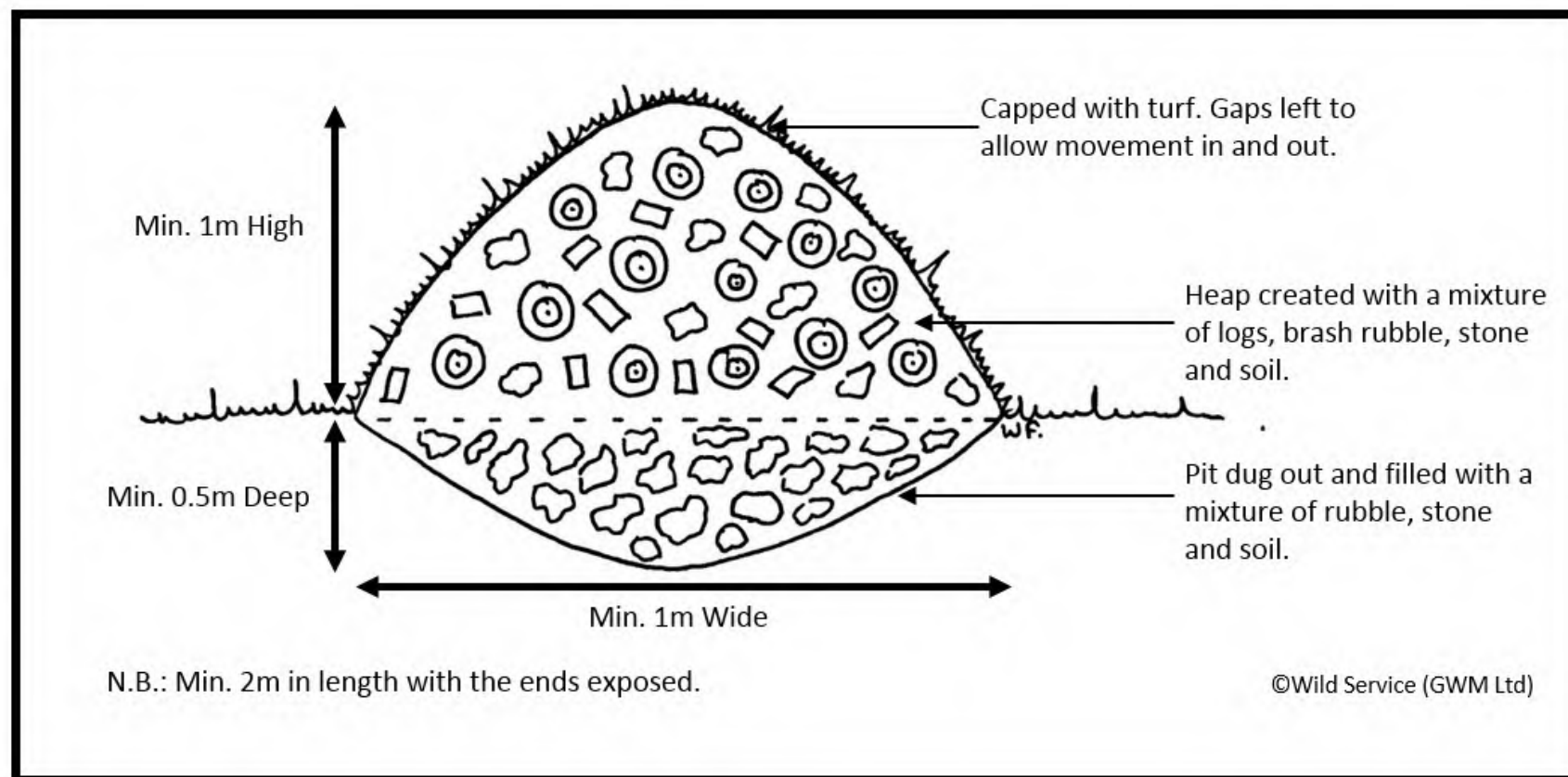
- 1 Place a wooden pallet in your chosen location. On top of the pallet, line bricks around the corners and across the middle.
- 2 Place your next pallet on top of this and repeat the process for all of your pallets.
- 3 Cut off the top two-thirds of your bottles. Fill up half of them with bamboo canes/plastic straws and the other half with rolled up cardboard. Place these inside the hotel.
- 4 Fill in the remaining spaces with bricks, leaves, pebbles, stones, tiles, loose bark and straw.
- 5 Add in any extra materials that you want to recycle e.g. old pipes, carpeting, toilet tubes, old plant pots. Be creative - add a welcome sign or give your hotel a name!

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Illustration: Corinne Welch © Copyright Royal Society of Wildlife Trusts 2015

## **DORMOUSE BOX**



**AMPHIBIAN/REPTILE HIBERNACULUM**



Many wildlife species benefit greatly from considerate planting choices that still meet our practical and aesthetic needs. Plants and trees provide food for wildlife as well as places to nest and rest. Vegetation providing a variety of these functions creates an environment more beneficial for wildlife.

### Non native species

Native species provide the best habitat for UK wildlife but there are also many non-native species, which are single flowering and/or provide fruits/nuts/seeds that can be used as food sources for insects, birds and small mammals. When using these non-native species in planting schemes, care should be taken to avoid invasive species such as Cotoneaster and Rhododendron. This is especially important when sites are adjacent to open countryside particularly nature reserves.



Butterfly bush

### Uses of Wildlife Planting

Wildlife value can be easily incorporated into visually pleasing and useful green areas and amenity spaces, such as borders, grass verges and tree screens.

**Attractive Borders:** Well selected decorative borders can be valuable for many insects and birds. Native plants can be mixed with single flowering ornamental species to add aesthetic interest and increase the flowering period of a planting scheme.

**Shrubs and hedges:** Native spiky species like blackthorn and hawthorn are effective barriers when used in hedges. They also provide an attractive feature at all times of year especially when in blossom and fruit. Bushy areas of foliage provide useful nesting and feeding areas for birds and small mammals, as well as foraging/commuting corridors for bats.

**Grasses mixes and verges:** Leaving uncut areas of suitable grasses provides great wildlife value and is economical to manage. Diverse grassy areas and verges also create an attractive human environment with different flowers and colours. There are a range of native grass and flower mixes for various soil types available on the market.



Wild flower grass mix



## Selecting Suitable Species

There are wildlife friendly species suitable for all situations, from fields, verges, shady corners or small gardens. Listed below are native wildlife friendly plant species organised by type and suitability for different locations.

### Large Trees

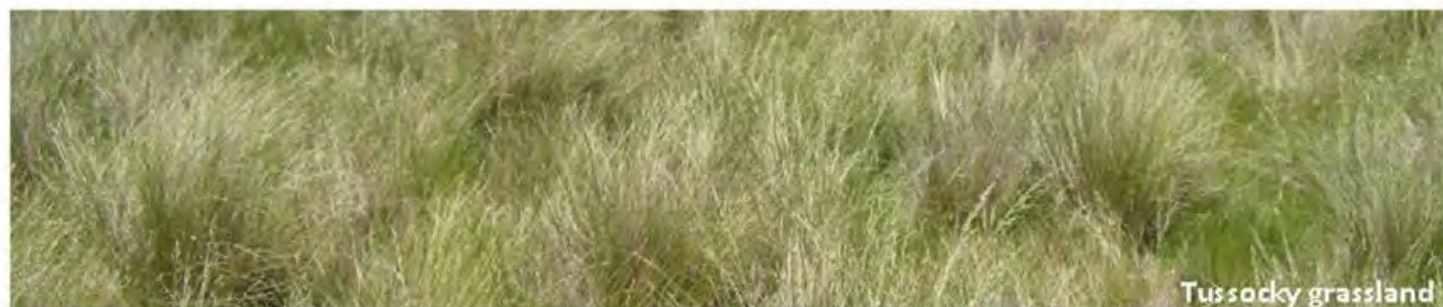
Ash *Fraxinus excelsior*  
 Beech *Fagus sylvatica*  
 English Elm *Ulmus procera*  
 Oak *Quercus robur* or *Q. petraea*  
 Small-leaved lime *Tilia cordata*  
 White willow *Salix alba*  
 Wild cherry *Prunus avium*



White willow

### Medium/small trees

Alder *Alnus glutinosa*  
 Aspen *Populus tremula*  
 Crab apple *Malus sylvestris*  
 Field maple *Acer campestre*  
 Holly *Ilex aquifolium*  
 Rowan *Sorbus aucuparia*  
 Silver birch *Betula pendula*  
 Yew *Taxus baccata*



Tussocky grassland

### Native shrubs

Blackthorn *Prunus spinosa*  
 Dogwood *Cornus sanguinea*  
 Elder *Sambucus nigra*  
 Guelder rose *Viburnum opulus*  
 Hawthorn *Crataegus monogyna*  
 Hazel *Corylus avellana*



Blackthorn

### Plants for shady areas

Archangel *Lamium galeobdolon*  
 Betony *Stachys officinalis*  
 Bluebell *Hyacinthoides non-scriptus*  
 Bugle *Ajuga reptans*  
 Foxglove *Digitalis purpurea*  
 Ground ivy *Glechoma hederacea*  
 Lily of the valley *Convallaria majalis*  
 Lords-and ladies/cuckoopint *Arum maculatum*  
 Nettle-leaved bellflower *Campanula trachelium*  
 Primrose *Primula vulgaris*  
 Sweet violet *Viola odorata*  
 Wild daffodil *Narcissus pseudo-narcissus*

### Plants for marshy areas & pond edges

Bugle *Ajuga reptans*  
 Hemp agrimony *Eupatorium cannabinum*  
 Marsh marigold *Caltha palustris*  
 Marsh woundwort *Stachys palustris*  
 Meadowsweet *Filipendula ulmaria*  
 Purple loosestrife *Lythrum salicaria*  
 Ragged robin *Lychnis flos-cuculi*  
 Water avens *Geum rivale*  
 Water forget-me-not *Myosotis scorpioides*  
 Water mint *Mentha aquatica*  
 Water violet *Hottonia palustris*  
 Yellow flag *Iris pseudacorus*

**Beneficial cultivated plants**  
(generally non-natives)

Grecian windflower *Anemone blanda*  
Angelica *Angelica archangelica*  
Aubretia *Aubretia deltoidea*  
California poppy *Eschscholtzia californica*  
Candytuft *Iberis sempervirens*  
Christmas rose *Helleborus niger*  
Cosmos *Cosmos bipinnatus*  
Evening primrose *Oenothera biennis*  
Fleabane *Erigeron* spp.  
Forget-me-not *Myosotis* spp.  
French marigold *Tagetes patula*  
Globe thistle *Echinops ritro*  
Grape hyacinth *Muscari botryodes*  
Hollyhock *Althaea rosea*  
Honesty *Lunaria rediviva*  
Ice plant *Sedum spectabile*  
Lenten rose *Helleborus orientalis*  
Tree mallow *Lavatera* spp.  
Michaelmas daisy *Aster nova-belgii*  
Mint *Mentha x rotundifolia*  
Perennial cornflower *Centaurea montana*  
Perennial sunflower *Helianthus decapetalus*  
Phlox *Phlox paniculata*  
Poached-egg plant *Limnantes douglasii*  
Red valerian *Centranthus ruber*  
Snapdragon *Antirrhinum majus*  
Spring crocus *Crocus chrysanthus* and hybrids  
Sweet alyssum *Lobularia maritima*  
Sweet bergamot *Monarda didyma*  
Sweet William *Dianthus barbatus*  
Tobacco plant *Nicotiana affinis*  
Wallflower *Cheiranthus cheiri*  
Alpine rock-cress *Arabis alpina*  
Winter aconite *Eranthis hyemalis*  
Yellow alyssum *Alyssum saxatile*

**Native wildflowers for borders**

Agrimony *Agrimonia eupatoria*  
Betony *Stachys officinalis*  
Bluebell *Hyacinthoides non-scriptus*  
Chicory *Cichorium intybus*  
Chives *Allium schoenoprasum*  
Common poppy *Papaver rhoeas*  
Corncockle *Agrostemma githago*  
Cornflower *Centaurea cyanus*  
Corn marigold *Chrysanthemum segetum*  
Cowslip *Primula veris*  
Cuckooflower *Cardamine pratensis*  
Dame's-violet *Hesperis matronalis*  
Devil's-bit scabious *Succisa pratensis*  
Field scabious *Knautia arvensis*  
Foxglove *Digitalis purpurea*  
Goldenrod *Solidago virgaurea*  
Great mullein *Verbascum thapsus*  
Greater knapweed *Centaurea scabiosa*  
Harebell *Campanula rotundifolia*  
Herb-robert *Geranium robertianum*  
Lady's bedstraw *Galium verum*  
Marjoram *Origanum vulgare*  
Meadow cranesbill *Geranium pratense*  
Common mallow *Malva sylvestris*  
Oxeye daisy *Leucanthemum vulgare*  
Primrose *Primula vulgaris*  
Red campion *Silene dioica*  
Snowdrop *Galanthus nivalis*  
Spiked speedwell *Veronica spicata*  
Tansy *Tanacetum vulgare*  
Teasel *Dipsacus fullonum*  
Toadflax *Linaria vulgaris*  
White campion *Silene alba*  
Wild thyme *Thymus drucei*  
Yellow loosestrife *Lysimachia vulgaris*



Marjoram



Cornflower



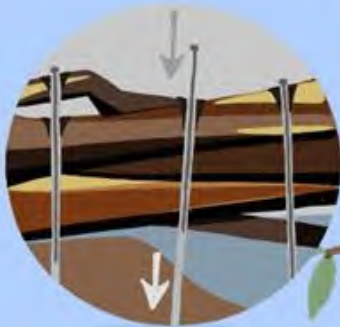
Perennial sunflower

# Natural Flood Management

## Leaky Dams



Trees are sourced from the immediate stream side and used to **build a lattice**. Over time but especially in high flows, smaller woody debris accumulates naturally, which increases the effectiveness of the leaky dam.



Holes are drilled into the wood and 2 metre long steel nails are inserted. These **fix the structure** to river bank and river bed, holding it in place.

*JR*

Leaky dams **mimic natural processes** where over time branches or whole trees fall into a watercourse, creating a **food source and habitat for river wildlife**.

Leaky dams are constructed to allow free passage of water in normal flows, and only hold water back when required during high rainfall. The backed up water is pushed out of the channel into appropriate sites upstream where silts are deposited.

A single structure has little impact, but a series of leaky dams at various locations can **help reduce the risk of flooding downstream**. Felling directly by the river bank allows more sunlight to reach the watercourse and its banks, leading to the growth of **marginal vegetation** and thereby creating further food sources and habitats for wildlife.

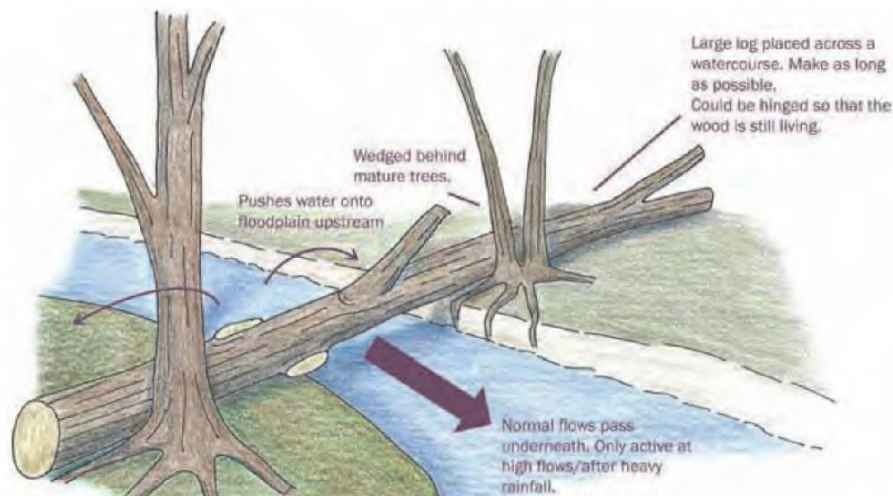
## Leaky Dams (information provided by BART)

### Design – Yate Common NFM

The leaky woody debris will be a series of hinged trees, large logs and crossed logs. The design and examples of these are shown below.

*Table 1: design of hinged tree, large logs and crossed logs. A mixture of these techniques will be used on this project (Credit – Ciria NFM Manual 2022).*

| Type                                                                                                                                         | Material        | Restraint                        | Advantages and disadvantages                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hinged tree</b><br>Fell entire trees into the watercourse. Trees are 'live-hinged'.<br>(Figure 10.8)                                      | Live materials  | Live materials                   | Interacts with all flows. Slows flow by increasing in-channel roughness. Increases habitat diversity. Makes use of locally-sourced materials. Can be self-sustaining. Does not require bank excavation. Minimal artificial materials are required. Ensure that branches are removed to allow gaps for fish passage and for sediment transport to downstream habitats. |
| <b>Banktop diverter or flow spreader/large log</b><br>Large log of piece of woody material laid across the stream or ditch.<br>(Figure 10.9) | Living material | Natural features                 | Pushes water out onto floodplains. Allow normal and low flows to pass under them. Only active under heavy rainfall/high flows. Reconnects watercourses with floodplain. Makes use of locally-sourced materials. Minimal artificial materials are required. Should be designed to leave a gap to allow fish passage in normal flows.                                   |
| <b>Crossed logs</b><br>Similar to bank top diverters but with additional wood within the channel.                                            | Living material | Natural features and self-weight | Makes use of locally-sourced materials. Minimal artificial materials are required. Some (minimal) interaction with base-flow. Requires more securing to reduce likelihood of washout. Should be designed so as not to damage sensitive floral communities such as ghyll streams. Should be designed to leave a gap to allow fish passage in normal flows.             |



*Figure 1: Hinged tree or large log design (Credit – Ciria NFM Manual 2022).*

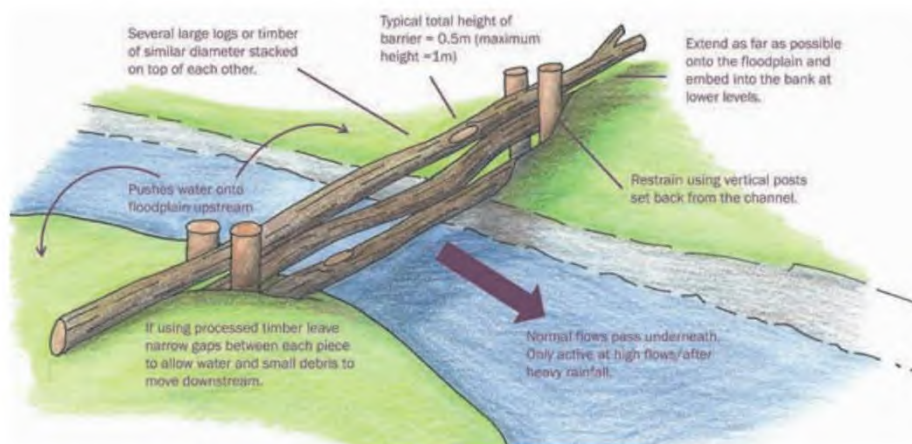


Figure 2: Crossed log design (Credit – Ciria NFM Manual 2022).



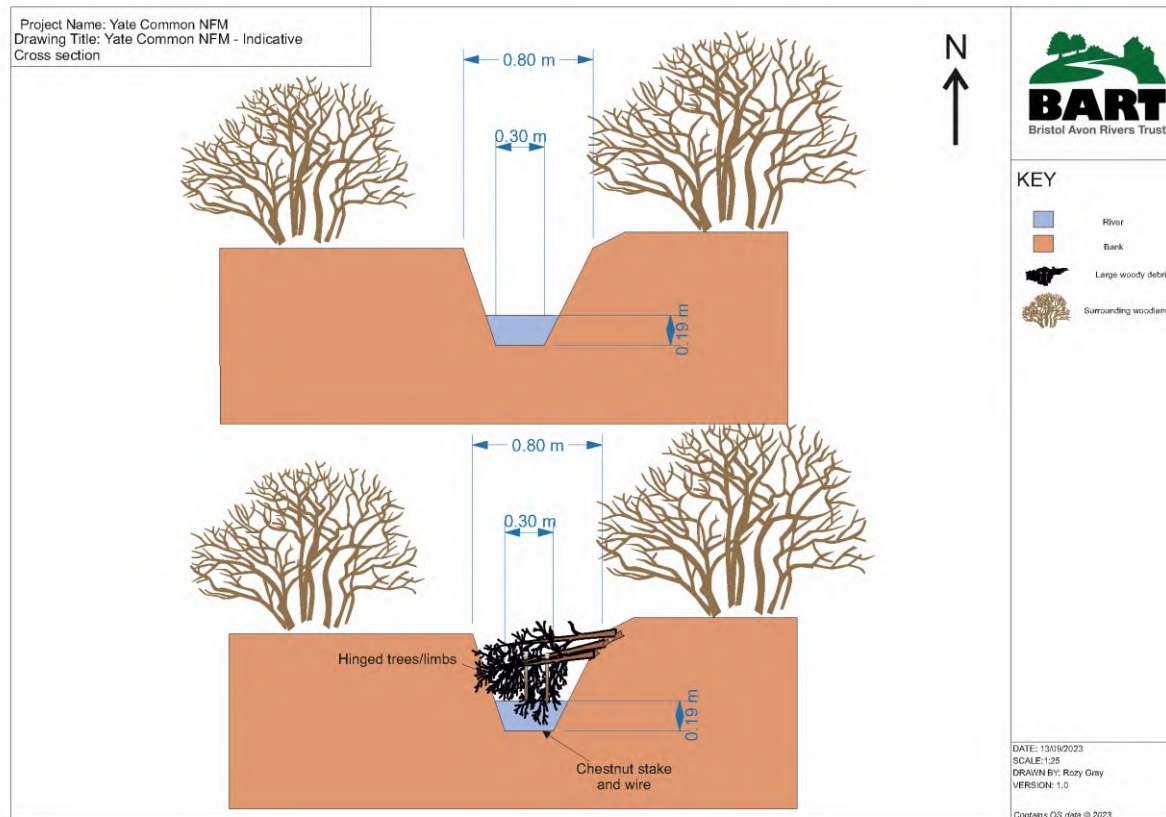
Figure 3: Hinged tree example, delivered by BART in the River Chew Catchment.



*Figure 4: Large log example, delivered by BART in the River Chew Catchment.*



*Figure 5: Crossed logs example, delivered by BART in the River Chew Catchment.*



## Appendix 3: BNG Habitat Condition Assessment Method Tables

|                                             |                                                                                                                                                                         |                                                         |                                      |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------|
| <b>Condition Sheet: DITCH Habitat Type</b>  |                                                                                                                                                                         |                                                         |                                      |
| <b>Habitat Type</b>                         |                                                                                                                                                                         |                                                         |                                      |
| <b>Watercourses - Ditches</b>               |                                                                                                                                                                         |                                                         |                                      |
| <b>Habitat Description</b>                  |                                                                                                                                                                         |                                                         |                                      |
| See the Biodiversity Metric 4.0 User Guide. |                                                                                                                                                                         |                                                         |                                      |
|                                             |                                                                                                                                                                         |                                                         |                                      |
| <b>Site name and location</b>               | yate common                                                                                                                                                             | <b>On-site or off-site</b>                              | on site                              |
| <b>Limitations (if applicable)</b>          |                                                                                                                                                                         | <b>Survey reference (if relating to a wider survey)</b> |                                      |
| <b>Grid reference</b>                       |                                                                                                                                                                         | <b>Habitat parcel reference</b>                         |                                      |
| <b>Condition Assessment Criteria</b>        |                                                                                                                                                                         | <b>Criterion passed (Yes or No)</b>                     | <b>Notes (such as justification)</b> |
| A                                           | The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.                                                          | y                                                       |                                      |
| B                                           | A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length. | n                                                       |                                      |
| C                                           | There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).                                                | y                                                       |                                      |

|                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                       |                    |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--|
| D                                                                                                                                                                                                                                                                                                                                                                            | A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.                                                                                                                  | n                  |  |
| E                                                                                                                                                                                                                                                                                                                                                                            | Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities. | y                  |  |
| F                                                                                                                                                                                                                                                                                                                                                                            | Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.                                                            | n                  |  |
| G                                                                                                                                                                                                                                                                                                                                                                            | Less than 10% of the ditch is heavily shaded.                                                                                                                                                         | n                  |  |
| H                                                                                                                                                                                                                                                                                                                                                                            | There is an absence of non-native plant and animal species <sup>1</sup> .                                                                                                                             | y                  |  |
| Number of criteria passed                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                       | 3                  |  |
| Condition Assessment Result (out of 8 criteria)                                                                                                                                                                                                                                                                                                                              | Condition Assessment Score                                                                                                                                                                            | Score Achieved x/✓ |  |
| Passes 8 criteria                                                                                                                                                                                                                                                                                                                                                            | Good (3)                                                                                                                                                                                              |                    |  |
| Passes 6 or 7 criteria                                                                                                                                                                                                                                                                                                                                                       | Moderate (2)                                                                                                                                                                                          |                    |  |
| Passes 5 or fewer criteria                                                                                                                                                                                                                                                                                                                                                   | Poor (1)                                                                                                                                                                                              | 4                  |  |
| Suggested enhancement interventions to improve condition score                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                       |                    |  |
|                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                       |                    |  |
| Footnotes                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                       |                    |  |
| <b>Footnote 1</b> – This includes any species listed on the Water Framework Directive UKTAG GB High Impact Species List: Water Framework Directive (WFD) UKTAG (2021) <i>Classification of aquatic alien species according to their level of impact</i> [online]. Available from:<br><a href="#">UKTAG classification of alien species working paper v8.pdf (wfd.uk.org)</a> |                                                                                                                                                                                                       |                    |  |

- Frequently occurring non-native plant species include water fern *Azolla filiculoides*, Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides*, Japanese knotweed *Reynoutria japonica* and giant hogweed *Heracleum mantegazzianum* (on the bank).
- Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussel *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, and carp *Cyprinus carpio*.

| Condition Sheet: LINE OF TREES Habitat Type                                                                                                                                                                                                                                                                         |                                                            |  |  |  |                                                  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--|--|--|--------------------------------------------------|--|--|--|--|--|--|--|--|
| Habitat Type(s)                                                                                                                                                                                                                                                                                                     |                                                            |  |  |  |                                                  |  |  |  |  |  |  |  |  |
| <b>Line of trees</b><br><b>Line of trees – associated with bank or ditch</b><br><b>Ecologically valuable line of trees</b><br><b>Ecologically valuable line of trees – associated with bank or ditch</b>                                                                                                            |                                                            |  |  |  |                                                  |  |  |  |  |  |  |  |  |
| Habitat Description                                                                                                                                                                                                                                                                                                 |                                                            |  |  |  |                                                  |  |  |  |  |  |  |  |  |
| <p>See the Biodiversity Metric 4.0 User Guide Section 9.</p> <p>This assessment is based on the Hedgerow Survey Handbook<sup>1</sup>. For further clarifications please refer to the Handbook.</p> <p>Where ancient and veteran trees are present within the line of trees, see Footnote 2 for standing advice.</p> |                                                            |  |  |  |                                                  |  |  |  |  |  |  |  |  |
| Site name and location                                                                                                                                                                                                                                                                                              | Yate Common - North side of Field G & East side of Field E |  |  |  | On-site or off-site                              |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                     |                                                            |  |  |  | Survey reference (if relating to a wider survey) |  |  |  |  |  |  |  |  |
| Limitations (if applicable)                                                                                                                                                                                                                                                                                         |                                                            |  |  |  | Habitat parcel reference                         |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                     |                                                            |  |  |  | E/G                                              |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                     |                                                            |  |  |  | Grid reference                                   |  |  |  |  |  |  |  |  |
| Condition Assessment Criteria                                                                                                                                                                                                                                                                                       |                                                            |  |  |  |                                                  |  |  |  |  |  |  |  |  |

|                                                                |                                                                                                                                                                                                                                                                                      | Criterion passed (Yes or No) |  |  |  |  |  |  |  |  |  | Notes<br>(such as justification) |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--|--|--|--|--|--|--|--|--|----------------------------------|
| A                                                              | At least 70% of trees are native species.                                                                                                                                                                                                                                            | Y                            |  |  |  |  |  |  |  |  |  |                                  |
| B                                                              | Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.                                                                                                                                                | N                            |  |  |  |  |  |  |  |  |  |                                  |
| C                                                              | One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.                                                                                          | N                            |  |  |  |  |  |  |  |  |  |                                  |
| D                                                              | There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice <sup>2</sup> .        | N                            |  |  |  |  |  |  |  |  |  |                                  |
| E                                                              | At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity. | Y                            |  |  |  |  |  |  |  |  |  |                                  |
| Number of criteria passed                                      |                                                                                                                                                                                                                                                                                      | 2                            |  |  |  |  |  |  |  |  |  |                                  |
| Condition Assessment Result (out of 5 criteria)                | Condition Assessment Score                                                                                                                                                                                                                                                           | Score Achieved ×/✓           |  |  |  |  |  |  |  |  |  |                                  |
| Passes 5 criteria                                              | Good (3)                                                                                                                                                                                                                                                                             |                              |  |  |  |  |  |  |  |  |  |                                  |
| Passes 3 or 4 criteria                                         | Moderate (2)                                                                                                                                                                                                                                                                         |                              |  |  |  |  |  |  |  |  |  |                                  |
| Passes 2 or fewer criteria                                     | Poor (1)                                                                                                                                                                                                                                                                             | PO<br>OR                     |  |  |  |  |  |  |  |  |  |                                  |
| Suggested enhancement interventions to improve condition score |                                                                                                                                                                                                                                                                                      |                              |  |  |  |  |  |  |  |  |  |                                  |

### Footnotes

**Footnote 1** – DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK*. 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

**Footnote 2** – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/61442/Keepers_of_time_-_ancient_and_native_woodland_and_trees_policy_in_England.pdf)

and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61442/Ancient_woodland,_ancient_trees_and_veteran_trees_advice_for_making_planning_decisions_-_GOV.UK.pdf)

### Condition Sheet: SCRUB Habitat Type

#### UK Habitat Classification (UKHab) Habitat Type

Heathland and shrub - Blackthorn scrub

Heathland and shrub - Gorse scrub

Heathland and shrub - Hawthorn scrub

Heathland and shrub - Hazel scrub

Heathland and shrub - Mixed scrub

Heathland and shrub - Dunes with sea buckthorn (H2160)

Heathland and shrub - Willow scrub

#### Habitat Description

|                                   |                                                                                                                                                                                                                |                                          |  |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--|
| For Dunes with sea buckthorn see: | <a href="https://jncc.gov.uk/conservation/special-areas-of-conservation/dunes-with-sea-buckthorn">Dunes with sea-buckthorn (Dunes with Hippophae rhamnoides) - Special Areas of Conservation (jncc.gov.uk)</a> |                                          |  |
| For other scrub types see:        | <a href="https://jncc.gov.uk/conservation/special-areas-of-conservation/dunes-with-sea-buckthorn">ukhab – UK Habitat Classification</a>                                                                        |                                          |  |
| Site name and location            | YATE COMMON - F MIXED SCRUB BY PA; L MIXED SCRUB BY DITCH; H MIXED SCRUB IN FIELD A; I BLACKTHORN SCRUB EDGING WOOD AT FIELDS A & E; J1/J2 MIXED SCRUB BORDERS RD TO NOWHERE; K mixed scrub bordering field B  | On-site or off-site                      |  |
|                                   |                                                                                                                                                                                                                | Survey reference (if relating to a wider |  |

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |   |   |   |                       |   |  |  |  |  |                               |  |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---|---|---|-----------------------|---|--|--|--|--|-------------------------------|--|
|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | survey)                      |   |   |   |                       |   |  |  |  |  |                               |  |
| Limitations (if applicable)   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Habitat parcel reference     |   |   |   |                       |   |  |  |  |  |                               |  |
|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | F                            | L | H | I | J<br>1<br>/<br>J<br>2 | K |  |  |  |  |                               |  |
|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Grid reference               |   |   |   |                       |   |  |  |  |  |                               |  |
| Condition Assessment Criteria |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |   |   |   |                       |   |  |  |  |  |                               |  |
|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Criterion passed (Yes or No) |   |   |   |                       |   |  |  |  |  | Notes (such as justification) |  |
| A                             | <p>The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type.</p> <p>At least 80% of scrub is native, and there are at least three native woody species<sup>1</sup>, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae</i></p> | N                            | Y | Y | Y | Y                     |   |  |  |  |  |                               |  |

[illegible]

### Footnotes

**Footnote 1** – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK*. 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook ([publishing.service.gov.uk](http://publishing.service.gov.uk)).

**Footnote 2** - See gov.uk standing advice on ancient and veteran species. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](http://publishing.service.gov.uk)

a  
n  
d

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

**Footnote 3** – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

**Footnote 4** – Wildlife and Countryside Act 1981 (as amended).

**Footnote 5** - Species indicative of sub-optimal condition for this habitat type may include: non-native conifers, tree-of-heaven *Alianthus altissima*, holm oak *Quercus ilex*, European turkey oak *Quercus cerris*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos* spp., shallon *Gaultheria shallon*, American skunk cabbage *Lysichiton americanus*, buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* and hybrid bluebells *Hyacinthoides x massartiana*. There may be additional relevant species local to the region and or site.

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](http://publishing.service.gov.uk)

and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

| Condition Sheet: INDIVIDUAL TREES Habitat Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                 |                                                         |                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------|
| Habitat Type(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                 |                                                         |                               |
| <b>Individual trees – Urban trees</b><br><b>Individual trees – Rural trees</b><br>Complete a condition sheet for each tree or block of trees.<br><br><u><b>Please see separate Line of trees condition sheet for a line of Rural trees.</b></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                 |                                                         |                               |
| Habitat Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                 |                                                         |                               |
| <b>Individual trees (description applied to the urban or rural environment):</b><br>Young trees over 7.5 cm in diameter at breast height whose canopies are not touching.<br><br><b>Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only):</b><br>Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies must overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category. |                                                                                                                                                                                                 |                                                         |                               |
| <b>Site name and location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yate Common                                                                                                                                                                                     | <b>On-site or off-site</b>                              |                               |
| <b>Limitations (if applicable)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Average value for scattered trees in Fields G & D                                                                                                                                               | <b>Survey reference (if relating to a wider survey)</b> |                               |
| <b>Grid reference</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                 | <b>Habitat parcel reference</b>                         |                               |
| Condition Assessment Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                 | Criterion passed (Yes or No)                            | Notes (such as justification) |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The tree is a native species (or at least 70% within the block are native species).                                                                                                             | Y                                                       |                               |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion). | Y                                                       |                               |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                         |                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--|
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The tree is mature (or more than 50% within the block are mature).                                                                                                                                                                                                                      | N                     |  |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height. | Y                     |  |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.                                                                                                                                                     | N                     |  |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | More than 20% of the tree canopy area is oversailing vegetation beneath.                                                                                                                                                                                                                | Y                     |  |
| Number of criteria passed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                         | 4                     |  |
| Condition Assessment Result (out of 6 criteria)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Condition Assessment Score                                                                                                                                                                                                                                                              | Score Achieved<br>×/✓ |  |
| Passes 5 or 6 criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Good (3)                                                                                                                                                                                                                                                                                |                       |  |
| Passes 3 or 4 criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Moderate (2)                                                                                                                                                                                                                                                                            | MODERATE              |  |
| Passes 2 or fewer criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Poor (1)                                                                                                                                                                                                                                                                                |                       |  |
| Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                         |                       |  |
| Suggested enhancement interventions to improve condition score                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                         |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                         |                       |  |
| Footnotes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                         |                       |  |
| <b>Footnote 1</b> - See gov.uk standing advice on ancient and veteran trees. Available from: <a href="https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/101444/Keepers_of_time_-_ancient_and_native_woodland_and_trees_policy_in_England.pdf">Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)</a> and: <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/101444/Ancient_woodland,_ancient_trees_and_veteran_trees_advice_for_making_planning_decisions_-_GOV.UK.pdf">Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</a> |                                                                                                                                                                                                                                                                                         |                       |  |

| Condition sheet: HEDGEROW Habitat Types                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------|---------------------------------|----|----|----|----|----|----|----|--|--|--|
| <b>Habitat Type</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
| Native hedgerow<br>Native hedgerow - associated with bank or ditch<br>Native hedgerow with trees<br>Native hedgerow with trees - associated with bank or ditch<br>Species-rich native hedgerow<br>Species-rich native hedgerow - associated with bank or ditch<br>Species-rich native hedgerow with trees<br>Species-rich native hedgerow with trees - associated with bank or ditch                                                                                                                                                                       |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
| <b>Habitat Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
| See the Biodiversity Metric 4.0 User Guide Section 9.<br>Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.                                                                                                                                                                                                                                                        |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
| <b>Site name and location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | <b>On-site or off-site</b>                              |                                 |    |    |    |    |    |    |    |  |  |  |
| <b>Limitations (if applicable)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                        | <b>Survey reference (if relating to a wider survey)</b> |                                 |    |    |    |    |    |    |    |  |  |  |
| <b>Condition Assessment Criteria</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
| A series of ten attributes, representing key physical characteristics are used for this assessment. This assessment is based on the Hedgerow Survey Handbook <sup>1</sup> and Favourable Conservation Status document <sup>2</sup> . For further clarification please refer to the Hedgerow Survey Handbook.<br>Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria. |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
| <b>Hedgerow favourable condition attributes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                                                         |                                 |    |    |    |    |    |    |    |  |  |  |
| <b>Attributes and functional grouping</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Criteria - the minimum required</b> | <b>Criteria description</b>                             | <b>Habitat parcel reference</b> |    |    |    |    |    |    |    |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                                                         | H1                              | H2 | H3 | H4 | H5 | H6 | H7 | H8 |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                                                         | <b>Grid reference</b>           |    |    |    |    |    |    |    |  |  |  |

|                                                |        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                  |                  |                  |                  |                  |                  |                  |  |                               |  |
|------------------------------------------------|--------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|-------------------------------|--|
| s (A, B, C, D and E)                           |        | ement s for 'favourable condition' |                                                                                                                                                                                                                                                                                                                                                                                                                                                    | g<br>o<br>o<br>d             | g<br>o<br>o<br>d | mo<br>der<br>ate | mo<br>der<br>ate | mo<br>der<br>ate | mo<br>der<br>ate | mo<br>der<br>ate | g<br>o<br>o<br>d |  |                               |  |
| Core groups - applicable to all hedgerow types |        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Criterion passed (Yes or No) |                  |                  |                  |                  |                  |                  |                  |  | Notes (such as justification) |  |
| A1.                                            | Height | >1.5 m average along length        | <p>The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.</p> <p>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is &gt;1.5 m height).</p> | Y                            | Y                | Y                | Y                | Y                | Y                | Y                | Y                |  |                               |  |

|     |                     |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |   |   |   |   |   |   |   |   |  |  |  |
|-----|---------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|--|--|--|
| A2. | Width               | >1.5 m average along length                                     | <p>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are &gt;0.5 m in height.</p> <p>Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> | Y | Y | N | N | N | N | N | Y |  |  |  |
| B1. | Gap - hedgerow base | Gap between ground and base of canopy <0.5 m for >90% of length | <p>This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.</p> <p>Certain exceptions to this criterion are acceptable (see page 65</p>                                                                                                                                                                                                                                                    | Y | Y | Y | Y | Y | Y | Y | Y |  |  |  |

|     |                                             |                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                  |   |   |   |   |   |   |   |   |  |  |  |  |
|-----|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|--|--|--|--|
|     |                                             |                                                                                                                                                                                                                        | of the Hedgerow Survey Handbook).                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |  |  |  |  |
| B2. | Gap - hedgerow canopy continuity            | Gaps make up <10% of total length; and No canopy gaps >5 m                                                                                                                                                             | <p>This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</p> <p>Access points and gates contribute to the overall 'gappiness' but are not subject to the &gt;5 m criterion (as this is the typical size of a gate).</p> | Y | Y | Y | Y | Y | Y | Y | N |  |  |  |  |
| C1. | Undisturbed ground and perennial vegetation | <p>&gt;1 m width of undisturbed ground with perennial herbaceous vegetation for &gt;90% of length:</p> <ul style="list-style-type: none"> <li>Measured from outer edge of hedgerow; and</li> <li>Is present</li> </ul> | <p>This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow.</p> <p>Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow.</p>                                       | N | N | N | N | N | N | N | N |  |  |  |  |

|     |                                        |                                                                                                                                                          |                                                                                                                                                                                                                                                                              |   |   |   |   |   |   |   |   |  |  |  |
|-----|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|--|--|--|
|     |                                        | on one side of the hedgerow (at least).                                                                                                                  | This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.                                         |   |   |   |   |   |   |   |   |  |  |  |
| C2. | Nutrient-enriched perennial vegetation | Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.                                          | The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.                                                                    | Y | Y | Y | Y | Y | Y | Y | Y |  |  |  |
| D1. | Invasive and neophyte species          | >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA <sup>3</sup> ) and | Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website <sup>4</sup> , as well as the BSBI website <sup>5</sup> where the | Y | Y | Y | Y | Y | Y | Y | Y |  |  |  |

|                                                                   |                |                                                                                                              |                                                                                                                                                                                                                                                                       |   |     |   |   |   |   |   |   |  |  |  |
|-------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----|---|---|---|---|---|---|--|--|--|
|                                                                   |                | recently introduced species.                                                                                 | 'Online Atlas of the British and Irish Flora' <sup>6</sup> contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website <sup>7</sup> .                                              |   |     |   |   |   |   |   |   |  |  |  |
| D2.                                                               | Current damage | >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.                     | This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes.<br><br>This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting). | Y | Y   | Y | Y | Y | Y | Y | Y |  |  |  |
| <b>Additional group - applicable to hedgerows with trees only</b> |                |                                                                                                              |                                                                                                                                                                                                                                                                       |   |     |   |   |   |   |   |   |  |  |  |
| E1.                                                               | Tree classes   | There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or | This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.                                                                                                    | N | N A | N | N | N | N | N | Y |  |  |  |

|                                                                                                                                                                           |             |                                                                                                                                                                                                                                                                  |                                                                                                                                     |   |        |   |   |   |   |   |   |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---|--------|---|---|---|---|---|---|--|--|--|
|                                                                                                                                                                           |             | ancient <sup>8</sup> ), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.                                                                                                                                   |                                                                                                                                     |   |        |   |   |   |   |   |   |  |  |  |
| E3.                                                                                                                                                                       | Tree health | At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity. | This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens. | Y | N<br>A | N | Y | Y | Y | Y | Y |  |  |  |
| The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the metric. The scores for each are set out in the tables below. |             |                                                                                                                                                                                                                                                                  |                                                                                                                                     |   |        |   |   |   |   |   |   |  |  |  |
| Condition categories for hedgerows without trees                                                                                                                          |             |                                                                                                                                                                                                                                                                  |                                                                                                                                     |   |        |   |   |   |   |   |   |  |  |  |

| Category                                      |  | Category Requirements                                                                                                                                                                          | Metric Score |
|-----------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Good                                          |  | No more than 2 failures in total;<br><b>AND</b><br>No more than 1 failure in any functional group.                                                                                             | 3            |
| Moderate                                      |  | No more than 4 failures in total;<br><b>AND</b><br><u>Does not fail both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and C2 = Moderate condition).      | 2            |
| Poor                                          |  | Fails a total of more than 4 attributes;<br><b>OR</b><br><u>Fails both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).            | 1            |
| Score achieved:                               |  |                                                                                                                                                                                                |              |
| Condition categories for hedgerows with trees |  |                                                                                                                                                                                                |              |
| Category                                      |  | Category Requirements                                                                                                                                                                          | Metric score |
| Good                                          |  | No more than 2 failures in total;<br><b>AND</b><br>No more than 1 failure in any functional group.                                                                                             | 3            |
| Moderate                                      |  | No more than 5 failures in total;<br><b>AND</b><br><u>Does not fail both attributes</u> in more than one functional group (e.g., fails attributes A1, A2, B1, C2 and E1 = Moderate condition). | 2            |
| Poor                                          |  | Fails a total of more than 5 attributes;<br><b>OR</b><br><u>Fails both attributes</u> in more than one functional group (e.g. fails attributes A1, A2,                                         | 1            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | B1 and B2 = Poor condition). |  |  |
| <b>Score achieved:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |  |  |
| <b>Suggested enhancement interventions to improve condition score</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |  |  |
| <b>Footnotes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |  |  |
| <p><b>Footnote 1</b> – DEFRA (2007) <i>Hedgerow Survey Handbook. A standard procedure for local surveys in the UK</i>. [online] Available on: <a href="https://hedgelink.org.uk/layout">layout (hedgelink.org.uk)</a> -</p> <p><b>Footnote 2</b> – STALEY, J.T. ET AL. (2020) <i>Definition of Favourable Conservation Status for Hedgerows</i>. [online] Available on: <a href="https://naturalengland.org.uk/Hedgerows-RP2943">Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)</a> -</p> <p><b>Footnote 3</b> – Wildlife and Countryside Act 1981 (as amended).</p> <p><b>Footnote 4</b> – CHEFFINGS, C. M. et al. (2005) <i>The Vascular Plant Red Data List for Great Britain</i>. Species Status 7: 1-116. [online] Available on: <a href="https://jnccresource.org/Hub/The-Vascular-Plant-Red-Data-List-for-Great-Britain-Species-Status-No.-7">The Vascular Plant Red Data List for Great Britain (Species Status No. 7)   JNCC Resource Hub</a> -</p> <p><b>Footnote 5</b> – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). <i>Definitions: wild, native or alien?</i> [online] Available on: <a href="https://bsbi.org/Definitions:wild-native-or-alien">Definitions: wild, native or alien? – Botanical Society of Britain &amp; Ireland (bsbi.org)</a> -</p> <p><b>Footnote 6</b> – BSBI and Biological Records Centre (BRC) (2022) <i>Online Atlas of the British and Irish Flora</i>. [online] Available on: <a href="https://brc.ac.uk/Acknowledgements Online-Atlas-of-the-British-and-Irish-Flora">Acknowledgements   Online Atlas of the British and Irish Flora (brc.ac.uk)</a> -</p> <p><b>Footnote 7</b> – GB NON-NATIVE SPECIES SECRETARIAT (GBNNS) (2022) Available on: <a href="https://nonnativespecies.org/Home%20NNSS">Home » NNSS (nonnativespecies.org)</a> -</p> <p><b>Footnote 8</b> – See gov.uk standing advice on ancient and veteran trees. Available from: <a href="https://publishing.service.gov.uk/Keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-England">Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)</a> -</p> <p>and <a href="https://www.gov.uk/Ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions">Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</a> - - - -</p> |                              |  |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------|-------|--|--|--|--|--|--|--------------------------------------|
| <b>Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
| <b>UK Habitat Classification (UKHab) Habitat Type(s)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
| Grassland - Lowland calcareous grassland<br>Grassland - Lowland dry acid grassland<br>Grassland - Lowland meadows<br>Grassland - Other lowland acid grassland<br>Grassland - Other neutral grassland<br>Grassland - Tall herb communities (H6430) [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland'] [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.]<br>Grassland - Upland acid grassland<br>Grassland - Upland calcareous grassland<br>Grassland - Upland hay meadows<br>Sparsely vegetated land - Calaminarian grassland |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
| <b>Habitat Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
| Other neutral grassland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
| <a href="#">ukhab – UK Habitat Classification</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
| <b>Site name and location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yate common - other neutral grassland<br>Fields A, B, D, E, G | <b>On-site or off-site</b>                              |       |  |  |  |  |  |  |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                               | <b>Survey reference (if relating to a wider survey)</b> |       |  |  |  |  |  |  |                                      |
| <b>Limitations (if applicable)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                               | <b>Habitat parcel reference</b>                         |       |  |  |  |  |  |  |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                               | A/B                                                     | D/E/G |  |  |  |  |  |  |                                      |
| <b>Condition Assessment Criteria</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                               | <b>Grid reference</b>                                   |       |  |  |  |  |  |  |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                               |                                                         |       |  |  |  |  |  |  |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                               | <b>Criterion passed (Yes or No)</b>                     |       |  |  |  |  |  |  | <b>Notes (such as justification)</b> |

[illegible]

|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| E                                                                                           | <p>Combined cover of species indicative of sub-optimal condition<sup>2</sup> and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.</p> <p>If any invasive non-native plant species<sup>3</sup> (as listed on Schedule 9 of WCA<sup>4</sup>) are present, this criterion is automatically failed.</p> | Y                         | Y |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Additional Criterion - must be assessed for all non-acid grassland types</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F                                                                                           | <p>There are 10 or more vascular plant species per m<sup>2</sup> present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count).</p> <p><b>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</b></p>                                                                                                              | N                         | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N                         | Y |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Number of criteria passed</b>                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3                         | 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Condition Assessment Result</b>                                                          | <b>Condition Assessment Score</b>                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Score Achieved ×/√</b> |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Acid Grassland types (Result out of 5 criteria)</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Passes 5 criteria                                                                           | Good (3)                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Passes 3 or 4 criteria                                                                      | Moderate (2)                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Passes 2 or fewer criteria                                                                  | Poor (1)                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| Non-acid grassland types (Result out of 6 criteria)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |   |   |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---|---|--|--|--|--|--|--|--|--|--|
| Passes 5 or 6 criteria, including essential criterion A and additional criterion F.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Good (3)     |   |   |  |  |  |  |  |  |  |  |  |
| Passes 3 - 5 criteria, including essential criterion A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Moderate (2) | 3 | 4 |  |  |  |  |  |  |  |  |  |
| Passes 2 or fewer criteria;<br>OR<br>Passes 3 or 4 criteria excluding criterion A and F.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Poor (1)     |   |   |  |  |  |  |  |  |  |  |  |
| Suggested enhancement interventions to improve condition score                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |   |   |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |   |   |  |  |  |  |  |  |  |  |  |
| Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |   |   |  |  |  |  |  |  |  |  |  |
| <p><b>Footnote 1</b> – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.</p> <p><b>Footnote 2</b> - Species indicative of sub-optimal condition for this habitat type include: creeping thistle <i>Cirsium arvense</i>, spear thistle <i>Cirsium vulgare</i>, curled dock <i>Rumex crispus</i>, broad-leaved dock <i>Rumex obtusifolius</i>, common nettle <i>Urtica dioica</i>, creeping buttercup <i>Ranunculus repens</i>, greater plantain <i>Plantago major</i>, white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i>. There may be additional relevant species local to the region and or site.</p> <p><b>Footnote 3</b> – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.</p> <p><b>Footnote 4</b> – Wildlife and Countryside Act 1981 (as amended).</p> |              |   |   |  |  |  |  |  |  |  |  |  |

|                                                                      |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  |                               |  |  |  |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--|--|--|--|--|--|--|-------------------------------|--|--|--|
| <b>Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)</b> |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  |                               |  |  |  |
| UK Habitat Classification (UKHab) Habitat Type(s)                    |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  |                               |  |  |  |
| Grassland - Modified grassland                                       |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  |                               |  |  |  |
| Habitat Description                                                  |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  |                               |  |  |  |
|                                                                      |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  |                               |  |  |  |
| <a href="#">ukhab – UK Habitat Classification</a> - - - - -          |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  |                               |  |  |  |
| Site name and location                                               | yate common Field C - amenity/modified grassland                                                                                                                                                                                                         | On-site or off-site                              |  |  |  |  |  |  |  |                               |  |  |  |
|                                                                      |                                                                                                                                                                                                                                                          | Survey reference (if relating to a wider survey) |  |  |  |  |  |  |  |                               |  |  |  |
| Limitations (if applicable)                                          |                                                                                                                                                                                                                                                          | Habitat parcel reference                         |  |  |  |  |  |  |  |                               |  |  |  |
|                                                                      |                                                                                                                                                                                                                                                          | C                                                |  |  |  |  |  |  |  |                               |  |  |  |
|                                                                      |                                                                                                                                                                                                                                                          | Grid reference                                   |  |  |  |  |  |  |  |                               |  |  |  |
| Condition Assessment Criteria                                        |                                                                                                                                                                                                                                                          |                                                  |  |  |  |  |  |  |  | Notes (such as justification) |  |  |  |
|                                                                      |                                                                                                                                                                                                                                                          | Criterion passed (Yes or No)                     |  |  |  |  |  |  |  |                               |  |  |  |
| A                                                                    | There are 6-8 vascular plant species per m <sup>2</sup> present, including at least 2 forbs (this may include those listed in Footnote 1). <b>Note - this criterion is essential for achieving Moderate or Good condition.</b><br><br>Where the vascular | N                                                |  |  |  |  |  |  |  |                               |  |  |  |

[illegible]



|                                                                                                                                                                                                                                                                                                                                                                                                       |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Passes 3 or fewer criteria;<br>OR<br>Passes 4 - 6 criteria (excluding criterion A)                                                                                                                                                                                                                                                                                                                    | Poor (1) | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Suggested enhancement interventions to improve condition score                                                                                                                                                                                                                                                                                                                                        |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                       |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Footnotes                                                                                                                                                                                                                                                                                                                                                                                             |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Footnote 1</b> – Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Footnote 2</b> – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.                                                                                                                                                                                                                  |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Footnote 3</b> – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.                                                         |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Footnote 4</b> – Wildlife and Countryside Act 1981 (as amended).                                                                                                                                                                                                                                                                                                                                   |          |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| Condition Sheet: POND Habitat Type                                                                                                                                                                                                                                                                                                                                                               |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--|--------------------------------------------------|-----|-----|--|--|--|--|--|--|--|-------------------------------|
| Habitat Type(s)                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
| <b>Lakes - Ponds (priority habitat)</b><br><b>Lakes - Ponds (non-priority habitat)</b><br><b>Lakes - Temporary lakes ponds and pools (H3170)</b> [Use this condition sheet for Temporary ponds and pools, use Lake condition sheet for Temporary lakes]<br><b>Lakes - Ornamental lake or pond</b> [Use this condition sheet for Ornamental ponds, use Lake condition sheet for Ornamental lakes] |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
| Habitat Description                                                                                                                                                                                                                                                                                                                                                                              |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
| <a href="#">ukhab – UK Habitat Classification</a> - - - - -                                                                                                                                                                                                                                                                                                                                      |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
| For ponds (non-priority) – see the Biodiversity Metric 4.0 Technical Annex 2.                                                                                                                                                                                                                                                                                                                    |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
| Site name and location                                                                                                                                                                                                                                                                                                                                                                           | Yate Common, PA in Field A, PB in field F, PD in Field G                                  |  | On-site or off-site                              |     |     |  |  |  |  |  |  |  |                               |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |  | Survey reference (if relating to a wider survey) |     |     |  |  |  |  |  |  |  |                               |
| Limitations (if applicable)                                                                                                                                                                                                                                                                                                                                                                      |                                                                                           |  | Habitat parcel reference                         |     |     |  |  |  |  |  |  |  |                               |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |  | P A                                              | P B | P C |  |  |  |  |  |  |  |                               |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |  | Grid reference                                   |     |     |  |  |  |  |  |  |  |                               |
| Condition Assessment Criteria                                                                                                                                                                                                                                                                                                                                                                    |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  | Notes (such as justification) |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |  | Criterion passed (Yes or No)                     |     |     |  |  |  |  |  |  |  |                               |
| Core Criteria - applicable to all ponds (woodland <sup>1</sup> and non-woodland):                                                                                                                                                                                                                                                                                                                |                                                                                           |  |                                                  |     |     |  |  |  |  |  |  |  |                               |
| A                                                                                                                                                                                                                                                                                                                                                                                                | The pond is of good water quality, with clear water (low turbidity) indicating no obvious |  | N                                                | N   | N   |  |  |  |  |  |  |  |                               |

|                                                                           |                                                                                                                                                                   |                    |   |   |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---|---|--|--|--|--|--|--|--|--|--|--|
|                                                                           | signs of pollution.<br>Turbidity is acceptable if the pond is grazed by livestock.                                                                                |                    |   |   |  |  |  |  |  |  |  |  |  |  |
| B                                                                         | There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter. | N                  | N | N |  |  |  |  |  |  |  |  |  |  |
| C                                                                         | Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.                                                               | Y                  | Y | Y |  |  |  |  |  |  |  |  |  |  |
| D                                                                         | The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.                                                    | Y                  | Y | Y |  |  |  |  |  |  |  |  |  |  |
| E                                                                         | Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams <sup>2</sup> , pumps or pipework.                                       | Y                  | Y | Y |  |  |  |  |  |  |  |  |  |  |
| F                                                                         | There is an absence of listed non-native plant and animal species <sup>3</sup> .                                                                                  | Y                  | Y | Y |  |  |  |  |  |  |  |  |  |  |
| G                                                                         | The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.                             | Y                  | Y | Y |  |  |  |  |  |  |  |  |  |  |
| <b>Additional Criteria - must be assessed for all non-woodland ponds:</b> |                                                                                                                                                                   |                    |   |   |  |  |  |  |  |  |  |  |  |  |
| H                                                                         | Emergent, submerged or floating plants (excluding duckweed) <sup>4</sup> cover at least 50% of the pond area which is less than 3 m deep.                         | Y                  | Y | Y |  |  |  |  |  |  |  |  |  |  |
| I                                                                         | The pond surface is no more than 50% shaded by adjacent trees and scrub.                                                                                          | Y                  | Y | Y |  |  |  |  |  |  |  |  |  |  |
| Number of criteria passed                                                 |                                                                                                                                                                   | 7                  | 7 | 7 |  |  |  |  |  |  |  |  |  |  |
| Condition Assessment Result                                               | Condition Assessment Score                                                                                                                                        | Score Achieved ×/✓ |   |   |  |  |  |  |  |  |  |  |  |  |

| Results for woodland ponds which require assessment of 7 core criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |   |   |   |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---|---|---|--|--|--|--|--|--|--|--|
| Passes 7 criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Good (3)     |   |   |   |  |  |  |  |  |  |  |  |
| Passes 5 or 6 criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Moderate (2) |   |   |   |  |  |  |  |  |  |  |  |
| Passes 4 or fewer criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Poor (1)     |   |   |   |  |  |  |  |  |  |  |  |
| Results for non-woodland ponds which require assessment of 9 criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |   |   |   |  |  |  |  |  |  |  |  |
| Passes 9 criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Good (3)     |   |   |   |  |  |  |  |  |  |  |  |
| Passes 6 to 8 criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Moderate (2) | 7 | 7 | 7 |  |  |  |  |  |  |  |  |
| Passes 5 or fewer criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Poor (1)     |   |   |   |  |  |  |  |  |  |  |  |
| Suggested enhancement interventions to improve condition score                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |   |   |   |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |   |   |   |  |  |  |  |  |  |  |  |
| <p><b>Footnote 1</b> - A woodland pond will be surrounded on all sides by woodland habitat.</p> <p><b>Footnote 2</b> – This excludes natural dams such as those created by Eurasian beaver <i>Castor fiber</i>.</p> <p><b>Footnote 3</b> - Any species included on the Water Framework Directive (WFD) UKTAG GB High Impact Species List should be absent: WFD UKTAG (2021) <i>Classification of aquatic alien species according to their level of impact</i> [online]. Available from: <a href="#">UKTAG classification of alien species working paper v8.pdf (wfduk.org)</a></p> <ul style="list-style-type: none"><li>• Frequently occurring non-native plant species include water fern <i>Azolla filiculoides</i>, Australian swamp stonecrop <i>Crassula helmsii</i>, parrot’s feather <i>Myriophyllum aquaticum</i>, floating pennywort <i>Hydrocotyle ranunculoides</i> and Japanese knotweed <i>Reynoutria japonica</i>, giant hogweed <i>Heracleum mantegazzianum</i> (on the bank).</li><li>• Frequently occurring non-native animals include signal crayfish <i>Pacifastacus leniusculus</i>, zebra mussels <i>Dreissena polymorpha</i>, killer shrimp <i>Dikerogammarus villosus</i>, demon shrimp <i>Dikerogammarus haemobaphes</i>, carp <i>Cyprinus carpio</i>.</li></ul> <p><b>Footnote 4</b> - If the pond is seasonal (as in, it dries out in most summers) then emergent species alone are likely to be found.</p> |              |   |   |   |  |  |  |  |  |  |  |  |

|                                                       |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|-------------------------------------|---------------------------------------------------------|---------|--|--|--|--|--|--------------------------------------|--|--|
| <b>Condition Sheet: ORCHARD Habitat Type</b>          |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
| <b>UK Habitat Classification (UKHab) Habitat Type</b> |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
| <b>Grassland - Traditional orchard</b>                |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
| <b>Habitat Description</b>                            |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
| new orchard planting                                  |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
| <a href="#">ukhab – UK Habitat Classification</a>     |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
| <b>Site name and location</b>                         | yate common - NE corner of Site in modified (amentiy) grassland, Field C; Southern part of Site in Field A - other neutral grassland               |  |  |  |  |  |  |                                     | <b>On-site or off-site</b>                              | on site |  |  |  |  |  |                                      |  |  |
|                                                       |                                                                                                                                                    |  |  |  |  |  |  |                                     | <b>Survey reference (if relating to a wider survey)</b> |         |  |  |  |  |  |                                      |  |  |
| <b>Limitations (if applicable)</b>                    |                                                                                                                                                    |  |  |  |  |  |  |                                     | <b>Habitat parcel reference</b>                         |         |  |  |  |  |  |                                      |  |  |
|                                                       |                                                                                                                                                    |  |  |  |  |  |  |                                     | O1                                                      | O2/O3   |  |  |  |  |  |                                      |  |  |
|                                                       |                                                                                                                                                    |  |  |  |  |  |  |                                     | <b>Grid reference</b>                                   |         |  |  |  |  |  |                                      |  |  |
| <b>Condition Assessment Criteria</b>                  |                                                                                                                                                    |  |  |  |  |  |  |                                     |                                                         |         |  |  |  |  |  |                                      |  |  |
|                                                       |                                                                                                                                                    |  |  |  |  |  |  | <b>Criterion passed (Yes or No)</b> |                                                         |         |  |  |  |  |  | <b>Notes (such as justification)</b> |  |  |
| A                                                     | Presence of ancient <sup>1</sup> and or veteran <sup>1</sup> trees.<br><br><b>Note - this criterion is essential for achieving Good condition.</b> |  |  |  |  |  |  |                                     | N                                                       | N       |  |  |  |  |  |                                      |  |  |

[illegible]

|                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                          |                    |   |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---|--|--|--|--|--|--|--|--|--|--|--|
| G                                                                                                                                                                                                                                                                                                                                                           | Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.                                                                                                               | N                  | Y |  |  |  |  |  |  |  |  |  |  |  |
| H                                                                                                                                                                                                                                                                                                                                                           | There is an absence of invasive non-native plant species <sup>2</sup> (as listed on Schedule 9 of WCA <sup>3</sup> ) and species indicative of sub-optimal condition <sup>4</sup> make up less than 10% of ground cover. | Y                  | Y |  |  |  |  |  |  |  |  |  |  |  |
| Essential criteria achieved (required for Good condition - Yes or No)                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                          | N                  | N |  |  |  |  |  |  |  |  |  |  |  |
| Number of criteria passed                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                          | 4                  | 5 |  |  |  |  |  |  |  |  |  |  |  |
| Condition Assessment Result (out of 8 criteria)                                                                                                                                                                                                                                                                                                             | Condition Assessment Score                                                                                                                                                                                               | Score Achieved x/✓ |   |  |  |  |  |  |  |  |  |  |  |  |
| Passes 6- 8 criteria, including essential criteria A and B.                                                                                                                                                                                                                                                                                                 | Good (3)                                                                                                                                                                                                                 |                    |   |  |  |  |  |  |  |  |  |  |  |  |
| Passes 4 or 5 criteria; OR<br>Passes 6 or 7 criteria but fails an essential criterion.                                                                                                                                                                                                                                                                      | Moderate (2)                                                                                                                                                                                                             | 4                  | 5 |  |  |  |  |  |  |  |  |  |  |  |
| Passes 3 or fewer criteria.                                                                                                                                                                                                                                                                                                                                 | Poor (1)                                                                                                                                                                                                                 |                    |   |  |  |  |  |  |  |  |  |  |  |  |
| Suggested enhancement interventions to improve condition score                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                          |                    |   |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                          |                    |   |  |  |  |  |  |  |  |  |  |  |  |
| Footnotes                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                          |                    |   |  |  |  |  |  |  |  |  |  |  |  |
| <p><b>Footnote 1</b> - See gov.uk standing advice on ancient and veteran trees. Available from: <a href="#">Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)</a> and: <a href="#">Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</a></p> |                                                                                                                                                                                                                          |                    |   |  |  |  |  |  |  |  |  |  |  |  |

**Footnote 2** – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

**Footnote 3** – Wildlife and Countryside Act 1981 (as amended).

**Footnote 4** - Species indicative of sub-optimal condition for this habitat type include: creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius* and common nettle *Urtica dioica*. There may be additional relevant species local to the region and or site.

| Condition Sheet: WOODLAND Habitat Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                       |                                                                     |  |                          |  |  |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------|--|--------------------------|--|--|--|--|--|--|--|--|--|
| UK Habitat Classification (UKHab) Habitat Type(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                       |                                                                     |  |                          |  |  |  |  |  |  |  |  |  |
| <p>Woodland and forest - Lowland beech and yew woodland</p> <p>Woodland and forest - Lowland mixed deciduous woodland</p> <p>Woodland and forest - Native pine woodlands</p> <p>Woodland and forest - Other coniferous woodland</p> <p>Woodland and forest - Other Scot's pine woodland</p> <p>Woodland and forest - Other woodland; broadleaved</p> <p>Woodland and forest - Other woodland; mixed</p> <p>Woodland and forest - Upland birchwoods</p> <p>Woodland and forest - Upland mixed ashwoods</p> <p>Woodland and forest - Upland oakwood</p> <p>Woodland and forest - Wet woodland</p>                                                                                                                                                                                                                 |                                                                       |                                                                     |  |                          |  |  |  |  |  |  |  |  |  |
| Habitat Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                       |                                                                     |  |                          |  |  |  |  |  |  |  |  |  |
| <p><a href="#">ukhab – UK Habitat Classification</a></p> <p>This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here: <a href="#">Woodland Wildlife Toolkit (sylva.org.uk)</a></p> <p>IMPORTANT: This biodiversity metric woodland condition assessment must be used to assess woodland being input into the biodiversity metric. The outputs of this condition assessment are not equivalent to, nor are they comparable with the scores from the EWBG condition assessment, because the EWBG assessment has been adapted for the biodiversity metric, including the removal of EWBG Indicator 7 (Proportion of favourable land cover around woodland) and Indicator 14 (Size of woodland), and minor changes to other indicators.</p> |                                                                       |                                                                     |  |                          |  |  |  |  |  |  |  |  |  |
| Site name and location                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | YATE<br>COMMO<br>N -<br>OTHER<br>WOODL<br>AND<br>BROADL<br>EAVED<br>A | On-site<br>or off-<br>site                                          |  | Habitat parcel reference |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                       |                                                                     |  | A                        |  |  |  |  |  |  |  |  |  |
| Limitations<br>(if<br>applicable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                       | Survey<br>referenc<br>e (if<br>relating<br>to a<br>wider<br>survey) |  | Grid reference           |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                       |                                                                     |  |                          |  |  |  |  |  |  |  |  |  |
| Condition Assessment Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                       |                                                                     |  |                          |  |  |  |  |  |  |  |  |  |

| Indicator |                                           | Good (3 points)                                                                      | Moderate (2 points)                                                                                                                                | Poor (1 point)                                                                                       | Score per indicator |  |  |  |  |  |  |  | Notes (such as justification) |
|-----------|-------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------|--|--|--|--|--|--|--|-------------------------------|
| A         | Age distribution of trees                 | Three age-classes <sup>1</sup> present.                                              | Two age-classes <sup>1</sup> present.                                                                                                              | One age-class <sup>1</sup> present.                                                                  | 2                   |  |  |  |  |  |  |  |                               |
| B         | Wild, domestic and feral herbivore damage | No significant browsing damage evident in woodland <sup>2</sup> .                    | Evidence of significant browsing pressure is present in 40% or less of whole woodland <sup>2</sup> .                                               | Evidence of significant browsing pressure is present in 40% or more of whole woodland <sup>2</sup> . | 3                   |  |  |  |  |  |  |  |                               |
| C         | Invasive plant species                    | No invasive species <sup>3</sup> present in woodland.                                | Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species <sup>3</sup> <10% cover. | Rhododendron or cherry laurel present, or other invasive species <sup>3</sup> >10% cover.            | 3                   |  |  |  |  |  |  |  |                               |
| D         | Number of native tree species             | Five or more native tree or shrub species <sup>4</sup> found across woodland parcel. | Three to four native tree or shrub species <sup>4</sup> found across woodland parcel.                                                              | Two or less native tree or shrub species <sup>4</sup> across woodland parcel.                        | 3                   |  |  |  |  |  |  |  |                               |

|          |                                               |                                                                                                                                                                        |                                                                                       |                                                                                                                                                                        |   |  |  |  |  |  |  |  |  |  |  |  |  |
|----------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>E</b> | <b>Cover of native tree and shrub species</b> | >80% of canopy trees and >80% of understorey shrubs are native <sup>5</sup> .                                                                                          | 50 - 80% of canopy trees and 50 - 80% of understorey shrubs are native <sup>5</sup> . | <50% of canopy trees and <50% of understorey shrubs are native <sup>5</sup> .                                                                                          | 3 |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>F</b> | <b>Open space within woodland</b>             | 10 - 20% of woodland has areas of temporary open space <sup>6</sup> . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted <sup>7</sup> . | 21 - 40% of woodland has areas of temporary open space <sup>6</sup> .                 | <10% or >40% of woodland has areas of temporary open space <sup>6</sup> . But if woodland <10ha has <10% temporary open space, please see Good category <sup>7</sup> . | 3 |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>G</b> | <b>Woodland regeneration</b>                  | All three classes present in woodland <sup>8</sup> ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.              | One or two classes only present in woodland <sup>8</sup> .                            | No classes or coppice regrowth present in woodland <sup>8</sup> .                                                                                                      | 2 |  |  |  |  |  |  |  |  |  |  |  |  |

|          |                                    |                                                                                                                                       |                                                                                                   |                                                                                             |   |  |  |  |  |  |  |  |  |  |  |  |  |
|----------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>H</b> | <b>Tree health</b>                 | Tree mortality less than 10%, no pests or diseases and no crown dieback <sup>9</sup> .                                                | 11% to 25% tree mortality and or crown dieback or low-risk pest or disease present <sup>9</sup> . | Greater than 25% tree mortality and or any high-risk pest or disease present <sup>9</sup> . | 3 |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>I</b> | <b>Vegetation and ground flora</b> | Recognisable NVC plant community <sup>10</sup> at ground layer present, strongly characterised by ancient woodland flora specialists. | Recognisable woodland NVC plant community <sup>10</sup> at ground layer present.                  | No recognisable woodland NVC plant community <sup>10</sup> at ground layer present.         | 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>J</b> | <b>Woodland vertical structure</b> | Three or more storeys across all survey plots, or a complex woodland <sup>11</sup> .                                                  | Two storeys across all survey plots <sup>11</sup> .                                               | One or less storey across all survey plots <sup>11</sup> .                                  | 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>K</b> | <b>Veteran trees</b>               | Two or more veteran trees <sup>12</sup> per hectare.                                                                                  | One veteran tree <sup>12</sup> per hectare.                                                       | No veteran trees <sup>12</sup> present in woodland.                                         | 1 |  |  |  |  |  |  |  |  |  |  |  |  |

|                                    |                       |                                                                                                                                                                                                           |                                                                                                                                                                                                                    |                                                                                                                                                                                                              |    |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--|--|--|--|--|--|--|--|--|--|--|--|
| L                                  | Amount of dead wood   | 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities <sup>13</sup> . | Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities <sup>13</sup> . | Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities <sup>13</sup> . | 2  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                    |                       |                                                                                                                                                                                                           |                                                                                                                                                                                                                    |                                                                                                                                                                                                              |    |  |  |  |  |  |  |  |  |  |  |  |  |
| M                                  | Woodl and disturbance | No nutrient enrichment or damaged ground evident <sup>14</sup> .                                                                                                                                          | Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground <sup>14</sup> .                                                                  | More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground <sup>14</sup> .                                                                                          | 3  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                    |                       |                                                                                                                                                                                                           |                                                                                                                                                                                                                    |                                                                                                                                                                                                              |    |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Score (out of a possible 39) |                       |                                                                                                                                                                                                           |                                                                                                                                                                                                                    |                                                                                                                                                                                                              | 31 |  |  |  |  |  |  |  |  |  |  |  |  |

| Condition Assessment Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Condition Assessment Score | Result Achieved |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|--|--|--|--|--|--|--|--|--|
| Total score >32 (33 to 39)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Good (3)                   |                 |  |  |  |  |  |  |  |  |  |
| Total score 26 to 32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Moderate (2)               | 3               |  |  |  |  |  |  |  |  |  |
| Total score <26 (13 to 25)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Poor (1)                   | 1               |  |  |  |  |  |  |  |  |  |
| Suggested enhancement interventions to improve condition score                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |                 |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            |                 |  |  |  |  |  |  |  |  |  |
| Footnotes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            |                 |  |  |  |  |  |  |  |  |  |
| <p>Footnotes below refer to the EWBG woodland condition assessment methodology: EWBG (No date). <i>Assessing your Woodland's Condition</i> [online]. Available from: <a href="http://sylva.org.uk/Woodland_Wildlife_Toolkit">Woodland Wildlife Toolkit (sylva.org.uk)</a></p> <p>When applying this condition sheet, good practice would be to use the methodology associated with the EWBG toolkit.</p> <p><b>Footnote 1</b> - See EWBG method INDICATOR 1 for more information. If tree species is not a birch <i>Betula</i> sp., cherry <i>Prunus</i> sp. or <i>Sorbus</i> sp.: 0 - 20 years (Young); 21 - 150 years (Intermediate); and &gt;150 years (Old). For birch, cherry or <i>Sorbus</i> species; 0 - 20 years = Young; 21 - 60 years = Intermediate; &gt;60 years = Old. A recognisable age-class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age-class' of young trees.</p> <p><b>Footnote 2</b> - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where &gt;20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.</p> <p><b>Footnote 3</b> - See EWBG method INDICATOR 3 for more information. Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly.</p> <p>Check for the presence of all plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), particularly the following invasive non-native species: American skunk cabbage <i>Lysichiton americanus</i>; Himalayan balsam <i>Impatiens glandulifera</i>; Japanese knotweed <i>Reynoutria japonica</i>; cherry laurel <i>Prunus laurocerasus</i>; shallon <i>Gaultheria shallon</i>; snowberry <i>Symphoricarpos albus</i>; variegated yellow archangel <i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>; rhododendron <i>Rhododendron ponticum</i>; and tree-of-heaven <i>Ailanthus altissima</i>.</p> <p><b>Footnote 4</b> - See EWBG method INDICATOR 4 and Table 2 for more information. The number of different native tree or shrub species including young trees and shrubs. A list of commonly found native tree and shrub species is provided in Table 2. Not all species listed are native to all parts of the UK. Note a list of commonly found non-native tree species are also included and should be recorded if present.</p> <p><b>Footnote 5</b> - See EWBG method INDICATOR 5 and for more information. The</p> |                            |                 |  |  |  |  |  |  |  |  |  |

abundance of native tree species in upper (>5 m) and understorey (up to 5 m) layers including young trees and shrubs.

**Footnote 6** - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (for example, glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (for example, tarmac, buildings, rivers). Area is at least 10 m wide with less than 20% covered by shrubs or trees.

**Footnote 7** – Given the increased ratio of edge habitat to woodland where the woodland is <10ha.

**Footnote 8** - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, but the regeneration indicator gathers additional information by considering regeneration potential - if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

**Footnote 9** - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.

**Footnote 10** - See EWBG method INDICATOR 10 directing to NVC key for more information. The 'UKHab to NVC translation table' in the UK Habitat Classification resources may also be useful to assess this.

**Footnote 11** – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

**Footnote 12** - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england)

and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions)

**Footnote 13** – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

**Footnote 14** - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter.

## Appendix 4: Habitat Suitability Index Assessment GCN

In order to evaluate the habitat suitability (HSI) for great crested newts a series of factors must be considered as described below. A description of each factor considered in the HSI is provided below and the value ascribed to each factor is provided in the table below the description. The overall **Habitat Suitability Index** for the site is calculated as the mean of the suitability indices (Oldham *et al* 2000).

| HABITAT SUITABILITY ASSESSMENT GCN – DESCRIPTION OF FACTORS FOR ASSESSMENT |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HS1 - Geographic Location</b>                                           | Based on known distribution of great crested newts, Gloucestershire is located within Zone A and has a high probability of the presence of great crested newts within each 10km square.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>HS2 - Pond Area</b>                                                     | Pond area is a determinant of the magnitude of biological productivity of the pond ecosystem upon which the newt population depends. Ponds between 500 and 750m <sup>2</sup> provide the optimal size but small ponds under 50m <sup>2</sup> are given a nominal value.                                                                                                                                                                                                                                                                                                                                                                   |
| <b>HS3 - Pond Permanence</b>                                               | Pond permanence is essential to permit the completion of metamorphosis in any given year. However, intermittent (every few years) drying out may be beneficial in excluding fish populations. The optimum drying out frequency is assumed to be one in every three to four years.                                                                                                                                                                                                                                                                                                                                                         |
| <b>HS4 - Water Quality</b>                                                 | Although the adult great crested newt is relatively tolerant of eutrophic conditions, the larvae are more vulnerable and require reasonably well aerated water with a number of aquatic invertebrates.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>HS5 - Pond Shading</b>                                                  | Shade counteracts the growth of macrophytes and the benefits they provide. Additionally, heavy tree cover increases the organic content through leaf fall potentially causing eutrophication. Great crested newts tend to favour ponds with a shade cover of between 0% and 60%.                                                                                                                                                                                                                                                                                                                                                          |
| <b>HS6 - Waterfowl</b>                                                     | Common waterfowl in naturally occurring numbers have little effect on great crested newt populations, however if at high artificial numbers due to supplementary feeding they can seriously damage the habitat.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>HS7 - Fish</b>                                                          | The effect of fish on newt populations varies across species and ponds. However, in general the presence of fish species is detrimental to newt populations. In particular the stickleback has a very serious impact, through predation and competition.                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>HS8 - Pond density</b>                                                  | A network of suitable ponds within a landscape increase the chances of great crested newts in an area, through the metapopulation processes of recolonisations from surrounding ponds if any one population becomes extinct.                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>HS9 - Proportion of 'Newt Friendly' Habitat</b>                         | The habitat occupied by crested newts is highly variable and we do not understand the species' detailed requirements at different phases of their life on land. However, scrub, unimproved grassland, woodland and gardens are regarded as newt friendly habitat, unlike improved pasture, arable and urban habitats. Additionally, features such as ditches and hedges enhance the habitat suitability of any site. Features such as roads and rivers form serious barriers dependent on width and flow of traffic and water. Such barriers cause issues with direct mortality but also through their impact on metapopulation dynamics. |
| <b>HS10 - Macrophyte Content</b>                                           | Macrophytes are important for newts as they provide habitat for their prey organisms, provide cover from predators and a substrate for egg attachment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

### Habitat Suitability Index Results for the Site

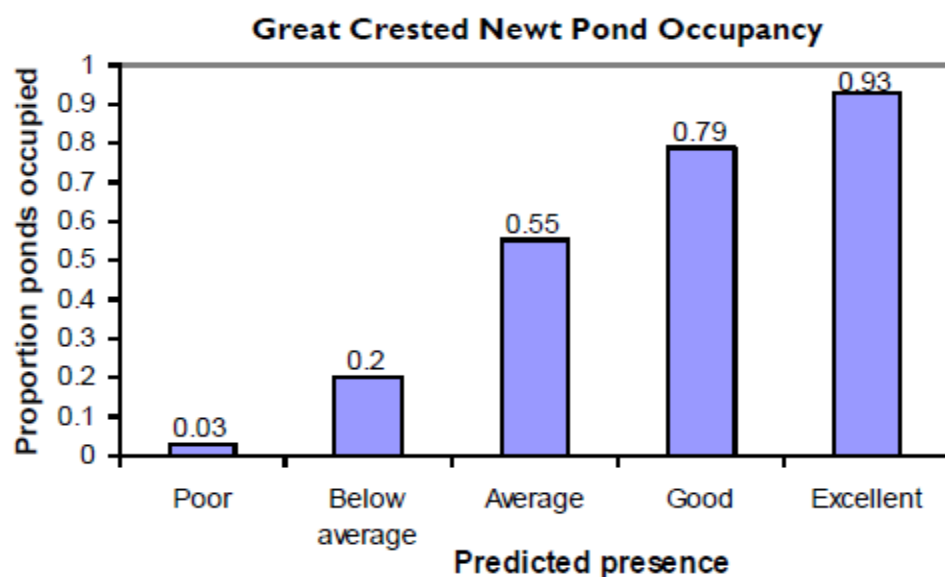
#### North (PC) & South (PA) Ponds

| Habitat Suitability Index | Factor               | Value       | Rating for Index     |
|---------------------------|----------------------|-------------|----------------------|
| HS1                       | Geographic Location  | 1.00        | <i>Excellent</i>     |
| HS2                       | Pond Area            | 0.05        | <i>Poor</i>          |
| HS3                       | Drying out frequency | 0.50        | <i>Below Average</i> |
| HS4                       | Water Quality        | 0.67        | <i>Average</i>       |
| HS5                       | Shade                | 1.00        | <i>Excellent</i>     |
| HS6                       | Fowl                 | 0.67        | <i>Average</i>       |
| HS7                       | Fish                 | 1.00        | <i>Excellent</i>     |
| HS8                       | Pond Count           | 1.00        | <i>Excellent</i>     |
| HS9                       | Terrestrial habitat  | 1.00        | <i>Excellent</i>     |
| HS10                      | Macrophytes          | 0.50        | <i>Below Average</i> |
| <b>Overall HSI Value</b>  |                      | <b>0.60</b> | <b>Below Average</b> |

#### Central Pond PD

| Habitat Suitability Index | Factor               | Value       | Rating for Index     |
|---------------------------|----------------------|-------------|----------------------|
| HS1                       | Geographic Location  | 1.00        | <i>Excellent</i>     |
| HS2                       | Pond Area            | 0.05        | <i>Poor</i>          |
| HS3                       | Drying out frequency | 0.50        | <i>Below Average</i> |
| HS4                       | Water Quality        | 0.67        | <i>Average</i>       |
| HS5                       | Shade                | 1.00        | <i>Excellent</i>     |
| HS6                       | Fowl                 | 0.67        | <i>Average</i>       |
| HS7                       | Fish                 | 1.00        | <i>Excellent</i>     |
| HS8                       | Pond Count           | 1.00        | <i>Excellent</i>     |
| HS9                       | Terrestrial habitat  | 1.00        | <i>Excellent</i>     |
| HS10                      | Macrophytes          | 0.90        | <i>Excellent</i>     |
| <b>Overall HSI Value</b>  |                      | <b>0.63</b> | <b>Average</b>       |

The graph below is reproduced from the ARG-UK Advice Note 5 and shows the predicted presence of great crested newts in relation to the Habitat Suitability Index value.



## **Appendix 5 : Community Questionnaire**

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## Protecting and enhancing The Common, Yate for people and nature

We currently face unprecedented climate and nature challenges, threatening the survival of many species. As part of our work to counter the challenge of the climate and nature emergency, South Gloucestershire Council is looking to secure funding to protect and enhance The Common, Yate. We are looking to attract investment aimed at preserving the character of the common, maintaining and enhancing it for the public, whilst tackling the climate and nature emergency.

Through this survey we want to understand your views to help guide our planning and ensure that we balance the needs of people with nature recovery.

### Section 1: How you use the common

Q1 How close do you live to the common?

- ☐ I live bordering the common
- ☐ I live within a 15-minute walk of the common (less than a mile)
- ☐ I live in the local area (1-3 miles)
- ☐ I live outside the local area (more than 3 miles away)

Q2 How do you usually travel to the common?

- ☐ On foot
- ☐ Cycle
- ☐ Car
- ☐ Public transport

Other (please specify)

Q3 How often do you visit the common?

- ☐ Every day/ most days
- ☐ Once or twice a week
- ☐ Once or twice a month
- ☐ A few times a year
- ☐ I have never visited

Q4 Please let us know why you have never visited

Q5 Do you usually visit the common alone or with others?

- ☐ On my own with friends/family (usually with children)
- ☐ With friends/family (usually without children)
- ☐ As part of an organised group (usually with children)
- ☐ As part of an organised group (usually without children)

Other (please specify)

Q6 Which of the following activities do you most frequently use the common for? Rank up to four.

|                                               | Most<br>common           | Second<br>most<br>common | Third most<br>common     | Fourth<br>most<br>common |
|-----------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Dog walking                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Walking (for pleasure/exercise)               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Walking (as part of commute/to get somewhere) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Running                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cycling (for pleasure/exercise)               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cycling (as part of commute/to get somewhere) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To enjoy nature                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Taking part in nature conservation            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Foraging e.g. picking blackberries            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Quiet relaxation                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Meeting friends                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Entertaining children                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q7 Other (please specify and let us know how often you use the common for this purpose)

## Section 2: Creating a space where everyone can enjoy and experience nature thriving

We want to manage the common as a space where people and nature can co-exist and thrive. But we know that there can sometimes be compromises. By answering the following questions, you will help us prioritise enhancements to strike the right balance between different priorities.

Q8 How important do you think the following priorities are?

|                                                                           | Very important           | Important                | Neither important nor unimportant | Not important            | Not at all important     |
|---------------------------------------------------------------------------|--------------------------|--------------------------|-----------------------------------|--------------------------|--------------------------|
| Restoring and improving habitats that support nature                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Increasing interactions with animals, nature and wildlife for visitors    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Restoring the traditional/historic landscape and appearance of the common | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Protecting the common for future generations                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Making the common an attractive and enjoyable place to spend time         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |

Q9 Which of these features or improvements would you like to see for the common?

|                                                                                                 | Very important           | Important                | Neither important nor unimportant | Not important            | Not at all important     |
|-------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-----------------------------------|--------------------------|--------------------------|
| Hedgerow planting                                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Orchard fruit tree planting                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildflower meadow enhancements                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Parkland tree planting (large widely spaced within the grass areas)                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| Water improvements e.g. pond improvements, reed bed creation, small woody dams to slow the flow | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| New homes for wildlife e.g. bat boxes, bird boxes                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |
| New habitats e.g. wet woodland                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> |

Q10 Other (please specify and rank importance)

Many people use the common to walk their dogs and it is important that it remains a place to exercise pets. However, we know that some wildlife (including pond life and ground nesting birds like skylarks) can suffer from disturbance by dogs.

Q11 To what extent would you support the following measures?

|                                                                                       | Strongly support         | Somewhat support         | Neutral                  | Somewhat opposed         | Strongly opposed         |
|---------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Restrict access to dogs from small areas of the common which are preserved for nature | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Dogs to be kept on leads in small areas of the common which are preserved for nature  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| No restrictions on dog walking on the common                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q12 Please use this space for any comments

Historically, the common would have used traditional farming techniques such as grazing. Management by grazing animals have been shown to benefit biodiversity and have been successfully reintroduced onto many similar public open spaces to protect their landscape, character and address biodiversity decline.

Q13 Such projects are complex and take considerable planning, so is not something which could be considered in the short term. However, if funding could be secured to enable animals, such as suitable breeds of cattle, to be managed on the common in a safe and sustainable manner, would you be supportive?

- ☐ Strongly support
- ☐ Somewhat support
- ☐ Neutral
- ☐ Oppose somewhat
- ☐ Strongly oppose

Q14 Use this space to tell us why you have answered in this way.

Q15 Finally, please share with us any other thoughts or comments about how we can best achieve our aim of creating a space where everyone can enjoy and experience nature thriving.

## Keep me informed

Q16 If you would like to receive further information about the vision for the common, please leave your email address below.

## Final section - About You

This section is really important. It's vital that we understand the experiences of a wide range of respondents in order to ensure that everyone is treated equally. By understanding more about what people from diverse backgrounds tell us, we can ensure we act appropriately to meet needs. All questions are optional and any responses to these questions will remain confidential. Individuals will not be identified and personal details will not be published.

Q17 What is your age?

- ☐ 18 or under  
☐ 19 to 29  
☐ 30 to 39  
☐ 40 to 49  
☐ 50 to 59

- ☐ 60 to 69  
☐ 70 to 79  
☐ Over 80  
☐ Prefer not to say

Q18 Are you?

- ☐ Female  
☐ Male

- ☐ Other  
☐ Prefer not to say

Q19 Please tell us your sexual orientation

- ☐ Straight or Heterosexual  
☐ Gay or Lesbian  
☐ Bisexual

- ☐ All other sexual orientations  
☐ Prefer not to say

Q20 Do you consider yourself to be disabled? **(Please tick all that apply)**

- ☐ No  
☐ Prefer not to say  
☐ Yes - Physical impairment, such as difficulty using arms or mobility issues which may mean using a wheelchair or crutches  
☐ Yes - Sensory impairment, such as being blind/having a serious visual impairment or being deaf/have a hearing impairment  
☐ Yes - Mental health condition, such as depression, anxiety or schizophrenia (please specify)

- ☐ Yes - Learning disability/difficulty (such as Down's Syndrome, dyslexia, dyspraxia) or cognitive impairment (such as autism spectrum condition)  
☐ Yes - Long standing illness or health condition, such as cancer, HIV, diabetes, chronic heart disease or epilepsy  
☐ Yes - Other (please state)

Q21 Please tell us your ethnic origin

- ☐ Arab/Arab British  
☐ Asian/Asian British - Bangladeshi  
☐ Asian/Asian British - Chinese  
☐ Asian/Asian British - Indian  
☐ Asian/Asian British - Other  
☐ Asian/Asian British - Pakistani  
☐ Black/African/Caribbean/Black British - African  
☐ Black/African/Caribbean/Black British - Caribbean  
☐ Black/African/Caribbean/Black British - Other  
☐ Gypsy or Irish Traveller

- ☐ Mixed/multiple ethnic group - Other  
☐ Mixed/multiple ethnic group - White & Asian  
☐ Mixed/multiple ethnic group - White & Black African  
☐ Mixed/multiple ethnic group - White & Black Caribbean  
☐ White - English / Welsh / Scottish / Northern Irish / British  
☐ White - Other (please state)  
☐ White Irish  
☐ White - Roma  
☐ Other ethnic group  
☐ Prefer not to say

If other, please state

Q22 Please tell us your ethnic origin

- |                                                   |    |                                                   |    |                                                  |    |
|---------------------------------------------------|----|---------------------------------------------------|----|--------------------------------------------------|----|
| <input type="checkbox"/> Arab/Arab British        | 01 | <input type="checkbox"/> Black/African/Caribbean  | 08 | <input type="checkbox"/> Mixed/multiple ethnic   | 14 |
| <input type="checkbox"/> Asian/Asian British -    | 02 | <input type="checkbox"/> /Black British -         |    | <input type="checkbox"/> group - White & Black   |    |
| <input type="checkbox"/> Bangladeshi              |    | <input type="checkbox"/> Caribbean                |    | <input type="checkbox"/> Caribbean               |    |
| <input type="checkbox"/> Asian/Asian British -    | 03 | <input type="checkbox"/> Black/African/Caribbean  | 09 | <input type="checkbox"/> White - English / Welsh | 15 |
| <input type="checkbox"/> Chinese                  |    | <input type="checkbox"/> /Black British - Other   |    | <input type="checkbox"/> / Scottish / Northern   |    |
| <input type="checkbox"/> Asian/Asian British -    | 04 | <input type="checkbox"/> Gypsy or Irish Traveller | 10 | <input type="checkbox"/> Irish / British         |    |
| <input type="checkbox"/> Indian                   |    | <input type="checkbox"/> Mixed/multiple ethnic    | 11 | <input type="checkbox"/> White - Other (please   | 16 |
| <input type="checkbox"/> Asian/Asian British -    | 05 | <input type="checkbox"/> group - Other            |    | <input type="checkbox"/> state)                  |    |
| <input type="checkbox"/> Other                    |    | <input type="checkbox"/> Mixed/multiple ethnic    | 12 | <input type="checkbox"/> White Irish             | 17 |
| <input type="checkbox"/> Asian/Asian British -    | 06 | <input type="checkbox"/> group - White & Asian    |    | <input type="checkbox"/> White - Roma            | 18 |
| <input type="checkbox"/> Pakistani                |    | <input type="checkbox"/> Mixed/multiple ethnic    | 13 | <input type="checkbox"/> Other ethnic group      | 19 |
| <input type="checkbox"/> Black/African/Caribbean  | 07 | <input type="checkbox"/> group - White & Black    |    | <input type="checkbox"/> Prefer not to say       | 20 |
| <input type="checkbox"/> /Black British - African |    | <input type="checkbox"/> African                  |    |                                                  |    |

Please return your completed questionnaire to:

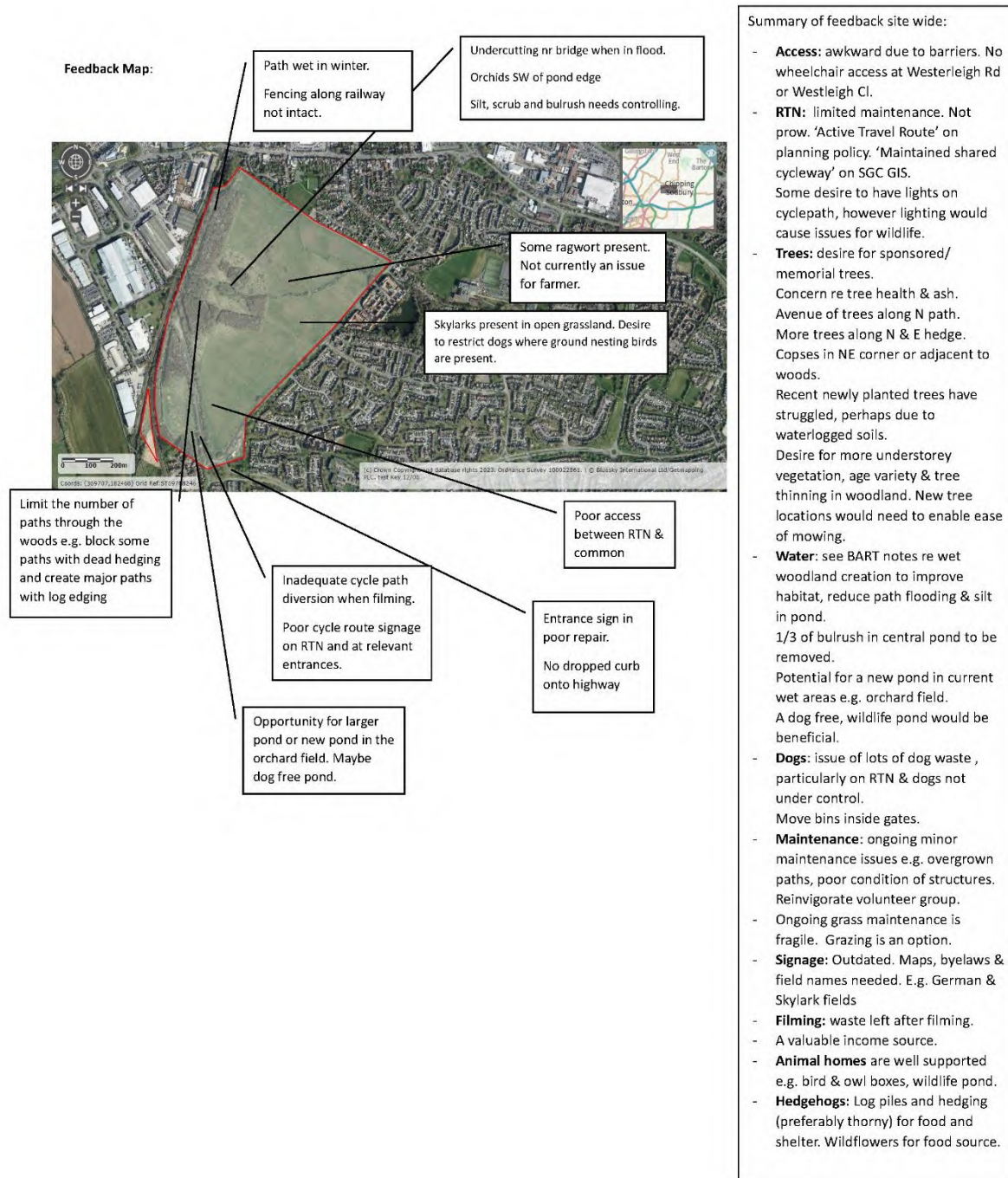
Insight and Engagement  
 South Gloucestershire Council,  
 Council Offices,  
 Badminton Road,  
 Yate,  
 Bristol,  
 BS37 5AF

Any personal information that you have supplied will be held by South Gloucestershire Council in accordance with the Data Protection Act 2018 and UK General Data Protection Regulations (UKGDPR) 2021. This information will only be used as part of this exercise and personal information will not be published or passed onto any other organisation. Your personal information collected as part of this survey will be kept for two years to help us improve services before being securely destroyed. Our privacy notice, which explains how we will process your personal information, how long we will retain it and your rights as a data subject, is available at <http://www.southglos.gov.uk/privacy>

For any enquiries, please contact us via email at: [Consultation@southglos.gov.uk](mailto:Consultation@southglos.gov.uk)



## Appendix 6 : Engagement Feedback



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**Feedback collected during community/stakeholder engagement sessions**


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We may get kick back from creating more wet areas on an already wet site. There are normally a few comments about the flooding that occurs during the winter months, no direct complaints as most site users are sensible enough to wear wellies. If there were signs that we were looking to increase areas of wet or flooded ground on the common this may not be welcomed. I wouldn't be averse to a project that seeks to keep areas wet for longer whilst not affecting the cyclepath / footpath.

South area of woods and north of orchard get flooded in winter  
major works will need to check for great crested newts. Edna analysis done in spring to assess presence. Minor works by hand can be done, preferably with a gcN licenced ecologist overseeing it. See Elizabeth's saved email for more info. Water works e.g. pond widening, silt removal, bulrush removal, to be done in winter months.

scrub around central pond should be thinned.

bulrush in central pond to be removed 1/3 at a time. Removing the silt would increase capacity and may help alleviate surrounding flooding.

Some people were keen to open up the ponds and stream and reduce the vegetation (however, BART advise that this is not necessary)

ideally work in combination with woodland works to use wood arisings for dams.

Potential for more ponds. The orchard is quite wet and could have new ponds and scrapes.

Woody debris dams would divert water from paths, reduce silt going into the central pond. Could direct water away from oaks towards more tolerant tree species.

Wet woodland could be in two locations in central woodland block to the west of the pond and the first wood on the east of the central pond by the stream.

strong support for a dog free pond. Could use existing pond, central pond may be the most successful. Or could create a new pond. Fencing and some planting to prevent access to dogs.

---

Large amounts of dog waste and potential to cause abortion in cattle and death in sheep

Complaints due to working late

Complaints due to dogs off leads and chasing machinery

Would like an earlier cut for higher yield. Could cut 2/3 per year but earlier.

The grass left on site at the orchard is blocking the gateways

Could have buffer strip of 1m of unmown or cut and collect grass either side of all hedges

---

Need a map with field names - historical or local field names?

Poor signage at all entrances but particularly the RTN south end

map, field names, byelaws and up to date reporting info needed. Space needed for updates re explaining why we are cutting grass and where it goes.

---

When flooded, undercutting of bridge and sinkhole near large, central pond

no access at Westerleigh Rd or Westerleigh Close for wheelchair

poor access for electric bikes, possibly cargo bikes/ post office bikes an issue, pushchairs tricky

no PROW complaints. Can help with barrier advice if on prow.

poor access at most points. Open up access for legitimate users, use signs or ANPR to dissuade motorbikes - see report from John Emms.

Dropped curbs needed at all entrances.

Reduce the access to the woods. Use deadhedges on minor paths and use logs as edging to highlight main paths.

Would like to revive practical work parties

Good network of community litter pickers already

desire for education activities or trail information

---

Dogs off leads therefore dog waste and wildlife disturbance  
 Dogs off leads may disturb and predate hedgehogs (Yvonne Hedgehog Rescue)  
 Dog poo - problem for site visitors and for hay cut

dogs on leads in first field so nervous people/ dogs can comfortably use at least that area.  
 move dog bins inside the gates rather than outside gates.  
 Fence along railway track is in poor repair and not dog proof.  
 Selsey National Trust land has temporary fencing for dog free areas.

Poor access due to barriers, particularly at One Stop entrance  
 Diversion when filming is not easily accessible  
 Desire for lights on path. Low level lighting such as on Avonmouth cyclepath.  
 Poor condition of cycle path and wet in winter.

Log piles and hedging (preferably spikey and thorny) are the best options to increase their habitat and log piles as a hiding place but also good for bug life. Wildflowers too for insect life, increasing food source.  
 Should it be put forward for LNR? Does this give it much more protection? Is it worthwhile? It is already SNCI  
 strong support for wildlife boxes e.g. bird and bat boxes  
 Fence off a pond or create a new wildlife pond  
 cuckoo heard this summer!

---

Some waste e.g. glass left after filming sometimes  
 very useful income stream

Hedge cutting needs to be done more frequently along Westerleigh Rd to enable views from properties opposite  
 concern re tree health e.g. ash dieback, and desire for tree surveys  
 potential for copse in NE corner. Could be wild, native fruit trees e.g. wild cherry.  
 area used to have more trees but these were felled in WW2. Historic maps indicate more trees in Fox Covert  
 Recently planted trees have struggled, perhaps due to waterlogged soil. Many trees are oaks, future trees could be more water tolerant e.g. willow, birch and alder.  
 Leave areas where there are skylark as grassland with no trees planted.  
 Infill trees along the hedge on Westerleigh Road.  
 Woods need some thinning, coppicing and understory planting for age and plant diversity.  
 Reduce the access to the woods. Use deadhedges on minor paths and use logs as edging to highlight main paths.  
 Could infill the orchard with more fruit trees but would have to ensure that mowing could still happen around the trees.

coms plan for major changes needs to be done well in advance, two months before changes. E.g. dog control and grazing.  
 use key species to highlight why we are making changes. E.g. dog free for ground nesting birds like skylarks  
 Field names could focus on species. E.g. skylark field, also German field has been mentioned.  
 signage by woody debris dams so people do not remove them.

## Appendix 7: Ecological Experience

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**Elizabeth Pimley:** Head of Ecology & Principal Ecologist, BSc (Hons) PhD, CEnv MCIEEM

Elizabeth has worked in both the academic and consultancy ecology sectors since 2000 with a focus on mammalian ecology, particularly badgers, dormice, bats, water voles and otters. Elizabeth manages the Consultancy as well as being involved in project delivery. She has managed ecological projects, ranging in size and type, both in the UK and abroad. She regularly advises clients on the planning process in relation to Ecology. Elizabeth has expertise in a wide variety of ecological survey techniques including Preliminary Ecological Appraisals/Phase 1 habitat assessments and a variety of protected species surveys (e.g. the aforementioned mammal species as well as reptiles and great crested newts).

Elizabeth also devises ecological mitigation schemes, both as part of protected species mitigation licences (e.g. bats, great crested newts, badgers, dormice, water voles, otters) and for projects not requiring licensing (e.g. reptiles). She has produced a wide variety of preliminary ecological appraisals, BREEAM/CSH Ecology Assessments, mitigation licences for protected species (including Bat Mitigation Class Licences), Ecological Impact Assessments (EcIA), Construction Ecological Management Plans, Habitat Regulations Assessments, Biodiversity Net Gain assessments, Biodiversity Enhancement Schemes, Ecological Design Strategies as well as writing for scientific journals, books and magazines. As a Building with Nature Assessor, Elizabeth also has expertise in providing green infrastructure advice to projects.

Elizabeth offers a scientific approach to projects with additional skills in radiotracking, bat call analysis, statistical analysis, home range and compositional habitat analysis and Geographical Information Systems (GIS) mapping. Elizabeth holds Natural England and Natural Resources Wales licences for bats and dormice as well as Natural England licences for great crested newts and water voles. She is also a Registered Consultant of the Bat Low Impact Class (BLIC) Licence and holds a CSCS card.

# Wild Service



Wildlife Trust  
Consultancies

ECOLOGICAL SERVICES

MITIGATION

CONSERVATION

- We provide ecological surveys and assessments, mitigation, advice and guidance regarding wildlife, plants and habitats for both development and conservation projects throughout the UK.
- Wild Service is the Ecological Consultancy for Gloucestershire Wildlife Trust. As such, the company reinvests its profits into local conservation work.
- We are also part of a wider network of Wildlife Trust Consultancies enabling us to offer national delivery with local expertise.

• We offer the following types of service to clients:

Ecological Surveys  
Protected Species Licences  
Ecological Management Plans  
Biodiversity Net Gain  
Ecological Impact Assessments (EcIA)  
BREEAM Assessments  
Mitigation, Enhancement & Rewilding  
Green Infrastructure Planning (Building with Nature)  
Arboricultural Surveys  
Landscape Consultancy Services

Contact us at  
Wild Service,  
Conservation Centre  
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