



Mill Lane, Alvescot

Preliminary Ecological Appraisal

For Mr R. Rhodes

December 2023





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1. Non-technical Summary

- 1.1.1. The site that is the subject of this report comprises an area of agricultural/animal sanctuary land and channel of the Shill Brook to the north of Mill Lane in Alvescot, Oxfordshire. The landowner proposes to construct a single track bridge over the Shill Brook channel and a driveway to create a new vehicular access from Mill Lane to the land and buildings to the east of Shill Brook.
- 1.1.2. In order to gather baseline information on the existing ecological conditions within the site, an Ecological Assessment (EA) was commissioned by the landowner including a desk study and field survey comprising a UK Habitat Classification (UKHab) survey and an initial water vole survey.
- 1.1.3. The UKHab survey found that the habitats within the site included the stream channel, some associated marginal vegetation and areas of neutral grassland in addition to several mature and semi-mature bankside trees.
- 1.1.4. The water vole survey found two areas of feeding remains characteristic of water voles. Numerous burrow entrances were visible in both banks of the Shill Brook which were characteristic of brown rats. No water vole latrines or droppings were found within the site or wider area along the stream up- and downstream.
- 1.1.5. The bridge construction works site is located within the SSSI impact risk zone for Alvescot Meadows SSSI. The site is also within the South Cotswolds Valleys Conservation Target Area and a Local Key Area for water vole conservation. The Shill Brook would likely qualify as a Habitat of Principal Importance (HPI). Habitats within the site area provide opportunities for water voles, otters, common reptiles, amphibians, nesting birds and foraging/commuting bats. As the works are anticipated to have a very limited footprint, the potential impacts on notable habitats and species are limited, with options for avoidance or mitigation readily available.

2. Introduction

2.1. Site and Project Description

- 2.1.1. The subject of this report is a site to the north of Mill Lane in Alvescot, Oxfordshire. The site comprises agricultural land with an animal sanctuary and is bordered by agricultural land to the north and west, a residential property and gardens to the south with Mill Lane beyond, and farm buildings to the east. The central grid reference of the site is SP 27464 04974.
- 2.1.2. The site is predominantly characterised by neutral grassland. A channel of the Shill Brook runs approximately north to south through the site.
- 2.1.3. The landowner proposes to construct a concrete and steel bridge 3.5 m in width over Shill Brook, in addition to a driveway, to create a new vehicular access connecting Mill Lane to the agricultural land, farm buildings and animal sanctuary to the east of Shill Brook. An ecological assessment of the site is required to support the planning application for the proposed works.

2.2. Planning Background

- 2.2.1. Pre-application views for the works were sought from WODC in June 2023 and WODC responded on 10th August 2023 (Ref: 23/01626/PREAPP). The following comment by a Local Authority officer was included within the pre-application advice:
- 2.2.2. *"The applicant has already confirmed a PEA will be undertaken and submitted with any future planning application. Whilst this assessment will provide an overview of the habitats present and the species that are likely to exploit these habitats, given the sensitivity of the site, phase 2 surveys may be required. The PEA along with any phase 2 surveys should be submitted to the LPA as an ecological impact assessment report (EcIA), all survey work should be completed by a suitably qualified and experienced ecologist following best practice guidelines. It is likely mitigation will be required, this can be submitted with the planning application or dealt with via a condition however, this would need to be a prior to commencement condition and would need to be discharged prior to Natural England granting any licences which may need to be obtained in order for works to proceed lawfully."*

2.3. Aims of Study

- 2.3.1. In order to gather baseline information on the existing ecological conditions within the site, an Ecological Assessment (EA) was commissioned by the landowner, including a desk study and field survey comprising a UK Habitat Classification (UKHab) survey and an initial water vole survey. This provided information on the range of habitats currently present within the site along with any features of ecological interest, or potential interest, including the possible presence of protected or otherwise notable habitats and species. This information was used to highlight potential ecological constraints and opportunities associated with the proposed bridge and access road construction works.
- 2.3.2. The main aims of this report are to:
- Confirm the outcome of the review of biological records obtained during the desk study;

- Describe the habitats present within the site;
- Assess the potential for the site to support protected or notable species;
- Set out the legislative and/or policy protection afforded to any habitats present or any species potentially associated with the site;
- Present an assessment of any potential ecological impacts of the proposed works based on the survey findings and current proposals;
- Provide recommendations for any further surveys if considered necessary; and
- Provide recommendations for potential mitigation, compensation and/or enhancement measures to ensure that the proposed works will remain acceptable in planning terms and maximise benefits to biodiversity where possible.

3. Method

3.1. Desk Study

- 3.1.1. Existing ecological information held by the Thames Valley Environmental Records Centre (TVERC) was requested, with data received on 3rd October 2023. Records of protected and/or notable species were provided within an area including the site and land up to 1km from its boundary. In addition, information on statutory and non-statutory designated sites was also supplied.
- 3.1.2. In addition, on-line resources including the Multi Agency Geographic Information for the Countryside website (MAGIC, www.magic.gov.uk) and aerial photography of the area were reviewed for further context.

3.2. UKHab Survey

- 3.2.1. The UKHab survey was undertaken by Ed Austin MCIEEM on 27th September 2023 accompanied by Emma Hine. Field survey information was gathered in UK Habitat Classification (“UKHab”) system. This is a system of habitat mapping system which is the input format for the Defra Biodiversity Metric. Primary habitat types were identified to at least level 3, with effort made to classify them to level 4 or 5 where possible to do so (i.e. if where sufficient characteristics or plant species could be identified to meet the relevant definitions) (UKHab Ltd, 2023). The relative abundance of botanical species present in each habitat type was characterised using the DAFOR scale where D is Dominant, A is Abundant, F is Frequent, O is Occasional and R is Rare. The survey was extended to give particular consideration to the potential of the habitats present to support protected species or species of conservation importance.
- 3.2.2. The weather conditions during the site visit were dry with broken cloud (7/8 cloud cover), a gentle breeze (Beaufort scale F3) and air temperature of 18°C.

3.3. Water Vole Survey

- 3.3.1. The water vole survey was also undertaken on 27th September 2023 alongside the habitat survey. The weather conditions during the survey were as described in 3.2.2 above. Habitat characteristics of the Shill Brook channel within the proposed works area, including channel width, water depth, bank profile and substrate, and the extent and type of bankside and in-channel vegetation, were noted. Field signs of water voles (such as latrines, droppings, feeding remains, grazed lawns and burrows) were searched for along both banks of the Shill Brook within the works area and extending 50 m or more upstream. The search was also extended downstream of the proposed bridge location within the landholding (approximately 20 m of bank length). However, this area was heavily shaded by trees so was largely unsuitable for water voles.

3.4. Survey Limitations

- 3.4.1. Although records secured through the desk study and supplied by third parties provide useful background information for initial ecological assessment, they often comprise individual

records supplied by members of the public or are the result of *ad hoc* surveys. The data trawl information can therefore help to further inform the likelihood of species being present in the area but should not be relied upon to definitively determine presence or absence of individual species.

3.4.2. The UKHab survey was undertaken during September which is within the main growing season for most plant species. In addition, prevailing weather conditions had remained warm and settled, so most plants were still evident. There are not considered to be any significant limitations associated with this survey.

3.4.3. The water vole survey was undertaken during September which is within the period when water voles are most active. Due to the timing of commission, it was only possible to complete a single late-season visit, with guidance indicating that two visits should be undertaken in most cases (Dean *et al*, 2016). However, a single visit can be justified if a precautionary approach is applied. This is discussed further in sections 4 and 5 of this report.

3.5. Personnel

3.5.1. Ed Austin MCIEEM has been in continuous employment as a professional ecologist since 2004 and began his career in environmental consultancy in 2002. He has completed a large number of ecological site assessments and has extensive experience in habitat and botanical survey, with a focus in riparian and wetland habitats. In addition, Ed has undertaken a wide-range of projects utilising species-specific survey and assessment techniques (e.g. for amphibians, reptiles, bats, badgers, otters and water voles).

3.5.2. Emma Hine is a Qualifying member of CIEEM and has assisted on various ecological surveys including many Preliminary Ecological Appraisals in a range of habitat types. She holds an MSc in Ecology and Conservation.

4. Results and Interpretation

4.1.1. This section sets out the results of the desk study and field surveys. The implications of the results are then explored with reference to current legislation and planning policy.

4.2. Designated Sites

Statutory Designated Sites of International Importance

4.2.1. No statutory designated sites of international importance are present within 5km of the site.

Statutory Designated Sites of National Importance

4.2.2. TVERC provided details of one designated site of national importance within 1 km of the site boundary. Alvescot Meadows Site of Special Scientific Interest (SSSI) consists of two discrete hay meadow sites designated for their botanically rich unimproved grassland and fen habitats. The westerly meadow is located approximately 80 m west from the boundary of the present site and contains a mixture of unimproved grassland and fen communities, with species including star sedge *Carex echinata*, common yellow-sedge *Carex demissa*, early marsh orchid *Dactylorhiza incarnata* and southern marsh orchid *Dactylorhiza praetermissa*. The easterly meadow is approximately 300 m to the east of the present site and is a small diverse area of unimproved neutral grassland with species including adder's-tongue *Ophioglossum vulgatum*, green-winged orchid *Orchis morio* and common milkwort *Polygala vulgaris*.

Non-statutory Designated Sites

4.2.3. TVERC provided details of two Local Wildlife Sites (LWSs) within 1km of the site boundary. These are summarised in Table 1 below.

Table 1: LWSs within 1km of the Site

LWS Name	Central Grid Ref.	Approx. Distance to Site and Bearing	Area (ha)	Description
Manor Farm Meadow	SP272049	200 m west	1.2	An area of species-rich unimproved neutral grassland with a significant population of southern marsh orchid <i>Dactylorhiza praetermissa</i> .
Willow Meadows	SP273058	900 m north	9.8	An area of species-rich grassland with a range of wet grassland, swamp and marsh species including eight species of sedge.

- 4.2.4. The site is within the South Cotswolds Valleys Conservation Target Area (CTA). This is one of 36 CTAs in Oxfordshire which were identified in 2006 with the aim of restoring biodiversity at a landscape scale within Oxfordshire through the maintenance, restoration and creation of Biodiversity Action Plan (BAP) priority habitats. Important habitats within the South Cotswolds Valleys CTA include lowland meadow, fen and limestone grassland habitats.

4.3. UKHab Survey

- 4.3.1. The survey area focussed on the habitats within and adjacent to the proposed works area. The distribution of the habitats described below is shown on Figure 1. A selection of photographs of habitats and ecological features is provided in Appendix 1.

Habitats

- 4.3.2. A channel of the Shill Brook (r2a6) approximately 8 – 10 m wide flowed through the site. Species present within in-channel vegetation included water starwort *Callitriche* sp.. Further details of the Brook are provided in the water vole survey results section below.
- 4.3.3. The area of the site to the west of Shill Brook comprised neutral grassland (g3c) (ONG1). Grass species present included abundant false oat-grass *Arrhenatherum elatius* with occasional cock's-foot *Dactylis glomerata*, Yorkshire-fog *Holcus lanatus* and perennial rye-grass *Lolium perenne*. Herbs present included several species characteristic of damp grassland such as frequent meadowsweet *Filipendula ulmaria* and creeping buttercup *Ranunculus repens* and occasional purple loosestrife *Lythrum salicaria* and Himalayan balsam *Impatiens glandulifera*. Species characteristic of enriched ground were also found to be present, including frequent creeping thistle *Cirsium arvense* and occasional broad-leaved dock *Rumex obtusifolius*.
- 4.3.4. Neutral grassland (g3c) was also present to the east of Shill Brook (ONG2). This area of grassland was characterised by abundant perennial rye-grass and frequent rough meadow-grass *Poa trivialis*. Herb species included frequent scentless mayweed *Tripleurospermum inodorum*, creeping buttercup and common nettle *Urtica dioica*, occasional broad-leaved dock, creeping thistle and black medick *Medicago lupulina*, and rare selfheal *Prunella vulgaris*, smooth hawksbeard *Crepis capillaris* and water figwort *Scrophularia auriculata*.
- 4.3.5. Aquatic marginal vegetation (f2d) was present along both banks of Shill Brook. The marginal vegetation along the western bank (MV1) was characterised by abundant meadowsweet with locally abundant greater willowherb *Epilobium hirsutum*, occasional Himalayan balsam, and rare gipsywort *Lycopus europaeus*, water mint *Mentha aquatica*, and branched bur-reed *Sparganium erectum*.
- 4.3.6. Along the eastern bank, the aquatic marginal vegetation (MV2) comprised abundant hard rush *Juncus inflexus* and occasional meadowsweet, purple loosestrife, and gipsywort.
- 4.3.7. Several trees were present adjacent to the works area. A goat willow *Salix caprea*, crack willow *Salix fragilis*, hawthorn *Crataegus monogyna* and elder *Sambucus nigra* were present on the western bank of Shill Brook, and a goat willow, crack willow and ash *Fraxinus excelsior* on the eastern bank. Three planted trees were present within the ONG1 neutral grassland: one young horse chestnut *Aesculus hippocastanum* and two young cherry trees *Prunus* sp.

Condition Assessments

- 4.3.8. The condition of terrestrial habitats is summarised in Table 2 below with detailed condition assessments provided in Appendix 2.

Table 2: Habitat Condition Assessments

Habitat	Condition
Other neutral grassland (g3c) (ONG1)	Moderate
Other neutral grassland (g3c) (ONG2)	Moderate

4.4. Habitats of Principal Importance

- 4.4.1. The Shill Brook in this location would likely qualify as a Habitat of Principal Importance (HPI) as it has the potential to support protected species such as water voles (*Arvicola amphibius*) (see below).
- 4.4.2. The list of Habitats of Principal Importance (HPI) was prepared in response to Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. This means they are priorities for conservation and a material consideration in the planning process.

4.5. Water Vole Survey

- 4.5.1. The results of the water vole survey are summarised below with full results provided in Appendix 3 and photographs provided in Appendix 1. The locations of target notes are shown on Figure 1.
- 4.5.2. The section of the Shill Brook within the survey area was slow-flowing, between 8 – 10 m wide and approximately 0.8 m in depth. The banks were steep (>45°) and comprised clay, topped by an aggregate of sand and gravel in places. The stream bed was formed of a gravel substrate overlain by silt. Bankside herbaceous cover was 90% for the majority of the survey section, although the western bank within the proposed bridge location was largely devoid of marginal vegetation. Approximately 30% of the channel and bank was overshadowed by bankside trees. Overshadowing increased immediately downstream of the proposed bridge location to around 90%, with parts of the channel being fully shaded in places with no marginal or aquatic vegetation present. In-channel vegetation cover in more open areas within and upstream of the bridge location was around 50%, predominantly comprising water starwort *Callitriche* sp.
- 4.5.3. Two areas of likely feeding remains were present on the eastern bank (Target Note 3). These comprised areas of gnawed rush with stems cut at a 45° angle, which potentially indicates water vole feeding activity. However, no other clear evidence was found.
- 4.5.4. Numerous burrow entrances were visible in both banks within the area of proposed works (Target Notes 1 and 2). Many of these were linked by visible runs, which is a sign characteristic of brown rats *Rattus norvegicus*.
- 4.5.5. No water voles latrines, droppings or other clear evidence of water vole activity were found within the survey area.

4.6. Protected Species and Species of Conservation Importance

- 4.6.1. This section presents records of protected species or species of conservation importance provided in the desk study, in addition to any evidence of these species identified during the survey. The potential for the site to support these and other species of conservation importance is evaluated. The relevant legislation and policy for each species or species group is also briefly summarised below with detailed legislation and policy information presented in Appendix 4.
- 4.6.2. Please note that records dated pre-2013 have been excluded as over 10 years has now passed making this data less relevant. In addition to this, where a species has been recorded multiple times, only the most recent and closest record to the site has been included.

Water Vole

- 4.6.3. Six records of water vole (*Arvicola amphibius*) since 2013 were provided in the desk study. The most recent records were from 2021 from three locations along Shill Brook: one approximately 150 m to the south-east of the site (latrines, droppings and feeding signs); one approximately 500 m to the east of the site (latrine and feeding signs), and one approximately 950 m to the south-east of the site (burrow and feeding signs).
- 4.6.4. The site is within the Upper Thames Local Key Area (LKA) for water voles. Local Key Areas have been identified by the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) and are monitored for water voles on a regular basis. The results from this monitoring are used to inform water vole alert maps which may be used to identify the location of water voles vulnerable to development pressures. Water voles were recorded on nineteen out of twenty-nine sections of the Shill Brook surveyed by BBOWT in 2021 (BBOWT, 2021).
- 4.6.5. The landowner stated that water voles have previously been seen along the stretch of Shill Brook within the wider site.
- 4.6.6. Several burrows were found in the banks of Shill Brook within the proposed works area. These were characteristic of brown rats rather than water voles due to the presence of interlinking well-trodden runs. The burrows were located close to areas of stored animal feed in the adjacent farmyard, with the landowner noting that rats are seen regularly in this area.
- 4.6.7. Some evidence of potential water vole feeding activity was found within the proposed works area (see above under results of water vole survey). This, coupled with landowner knowledge and the records from the desk study, suggests that the species does occur locally, so water vole presence in the proximity of the proposed works area cannot be ruled out. However, no clear evidence of water voles (latrines or droppings) was found during the field survey within the area affected by the proposed bridge construction. The habitat within the proposed works area was found to be of limited suitability for water voles due to a lack of marginal vegetation and heavy shading from overhanging trees immediately downstream.
- 4.6.8. Water voles and their breeding and resting habitats receive protection under the Wildlife and Countryside Act (WCA) 1981 (as amended). The water vole is classed as a Species of Principal Importance (SPI) under Section 41 of the Natural Environment and Rural Communities (NERC)

Act 2006. This means the species is a priority for conservation and is a material consideration in the planning process.

Otter

- 4.6.9. Two records of otter (*Lutra lutra*) were provided in the desk study. These were both from 2016 and were records of otter spraint found in two locations: one approximately 150 m south-east of the site and the second approximately 500 m east of the site. The landowner stated that otters have previously been seen along the Shill Brook locally.
- 4.6.10. No evidence of otters was found during the field survey. However, the desk study records and landowner knowledge, combined with the presence of suitable habitat for otters within the site, means that otters may potentially use the stretch of Shill Brook which includes the proposed works area as a routeway and for foraging. No suitable holt sites or resting places were present within the proposed works area. However, resting areas could occur locally under bankside trees and other vegetation.
- 4.6.11. Otters and their places of shelter are afforded protection under the Habitats Regulations 2010 (making them a European Protected Species) and the WCA. In broad terms, these pieces of legislation jointly mean that the animals themselves are protected against killing, injury, taking (capture) and disturbance. In addition, their places of shelter are protected against damage, destruction and obstruction. Otters are also an SPI.

Common Reptiles

- 4.6.12. One record was provided in the desk study of a juvenile grass snake (*Natrix helvetica*) from 2019, from a location approximately 300 m to the south of the site.
- 4.6.13. The neutral grassland habitats present on site provide limited potential habitat for common reptile species including grass snakes and slow worms (*Anguis fragilis*).
- 4.6.14. Reptiles are legally protected from intentional killing and injury and from sale under the WCA. All common species of reptiles are also SPIs.

Amphibians

- 4.6.15. TVERC provided sixteen records of amphibians of two species: fourteen records of great crested newt (*Triturus cristatus*) and two records of common frog (*Rana temporaria*). In addition, a review of great crested newt class survey licence returns on the MAGIC website found two locations within 500 m of the site where great crested newts have been found to be present within the last 10 years. However, all records from the desk study data, as well as both class survey licence returns, were from locations which are separated from the site by the flowing channel of Shill Brook. Flowing water presents a significant barrier to the dispersal of amphibians, so it is therefore unlikely that great crested newts could disperse to the terrestrial habitats on site from these specific locations.
- 4.6.16. The stream channel within the site is flowing water, which is unsuitable as breeding habitat for amphibians. The marginal vegetation and grassland habitats within the site provide potentially suitable terrestrial habitat for amphibian species including great crested newt and common

frog, in addition to common toad (*Bufo bufo*). Although the presence of great crested newts cannot be entirely ruled out, the presence of Shill Brook as a significant dispersal barrier means that the likelihood of individuals occurring in the works area is low.

- 4.6.17. The great crested newt and its habitats are fully protected under both the Habitats Regulations and the WCA. This species is also an SPI. The common toad is not specifically legally protected but is an SPI. The common frog is not an SPI and has no special protections under the WCA other than protection against sale and trade.

Breeding Birds

- 4.6.18. TVERC provided records of nine bird species from within 1 km of the site boundary: house sparrow (*Passer domesticus*), lesser black-backed gull (*Larus fuscus*), red kite (*Milvus milvus*), starling (*Sturnus vulgaris*), stock dove (*Columba oenas*), swift (*Apus apus*), tawny owl (*Strix aluco*), woodpigeon (*Columba palumbus*) and wren (*Troglodytes troglodytes*).
- 4.6.19. A red kite (*Milvus milvus*) was noted calling from within trees close to the site during the field survey.
- 4.6.20. The bankside trees adjacent to the proposed works area provide potential suitable nesting sites for a range of common species of birds. However, these trees are largely unsuitable as nesting sites for red kite due to their relatively low height. Kites would be more likely to nest locally in taller trees and woodland away from the site.
- 4.6.21. All wild birds are legally protected from killing and injury with their active nests and eggs being protected from damage and destruction under the WCA. A selection of bird species (including the dunnock and song thrush among others) are also SPIs. Some bird species are on the 'Red List and Amber List' of species of high and medium conservation concern respectively. This does not confer any additional legal protection or status, but these species can be a focus when planning works or conservation efforts.
- 4.6.22. A selection of bird species, including red kite, are listed on Schedule 1 of the WCA. This confers additional protection from disturbance at or near an active nest site. Note this also applies to dependent young.

Bats

- 4.6.23. TVERC provided records of eight bat species from within 1 km of the site boundary: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), serotine (*Eptesicus serotinus*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), a Myotis bat species (*Myotis* sp.), Leisler's (*Nyctalus leisleri*) and barbastelle (*Barbastella barbastellus*). Bat roosts may occur in the surrounding area; however, no suitable features were found within the area of proposed works or in the adjacent trees on the bank immediately downstream. The stream corridor and marginal vegetation within the site provide potential high-quality foraging and commuting habitat for bat species.
- 4.6.24. Bats and their roosts are legally protected under the Habitats Regulations (making them a European Protected Species (EPS)) and the WCA. Some species of bat (e.g. the brown long-

eared, noctule and soprano pipistrelle) are also Section 41 species. This means they are priorities for conservation and a material consideration in the planning process.

Invertebrates

- 4.6.25. The stream channel, marginal vegetation and grassland within the survey area provide habitat for a range of aquatic and terrestrial invertebrates. TVERC provided records of one butterfly species, small heath (*Coenonympha pamphilus*), and one moth species, small eggar (*Eriogaster lanestris*), from the 1 km search area. The small heath butterfly is an SPI; however, given the small footprint of the works and limited potential for adverse impacts, there is no reason to suspect that the presence of this species within or close to the works area would present any constraints.
- 4.6.26. No records of white-clawed crayfish (*Austropotamobius pallipes*) from the local area were provided by TVERC, and it is unlikely that white-clawed crayfish are present within Shill Brook where it passes through the site. As the extent of the proposed works is very localised, it is very unlikely that native crayfish would occur in the areas affected by works, even if present nearby. For these reasons, this species is not considered further in this report.
- 4.6.27. The Brook channel is suitable for non-native crayfish, with the landowner mentioning that American signal crayfish (*Pacifastacus leniusculus*) are present within the channel. No direct evidence of this species was seen during the survey, but some holes in the banks below water level could be attributed to this species, with the stream habitats being suitable.
- 4.6.28. The signal crayfish is listed on Schedule 9 of the WCA. This makes it an offence to release, or allow to escape, this species into the wild in the UK except under licence.

Flora

- 4.6.29. TVERC provided eighteen records of fifteen plant species from within 1 km of the site boundary. These did not include any species protected by UK legislation or any SPIs.
- 4.6.30. Small stands of the non-native Himalayan balsam (*Impatiens glandulifera*) was found to be present along the western bank of Shill Brook and within the neutral grassland in the western part of the site. Himalayan balsam is listed on Schedule 9 of the WCA, meaning that it is an offence to plant or cause it to grow in the wild.

5. Potential Impacts and Recommendations

5.1. Overview

5.1.1. This section discusses the potential implications of the proposed bridge development within the site on ecological features of the site and surrounding area identified in Section 4 of this report. Outline options for avoidance or mitigation are provided, with opportunities for enhancement also discussed as appropriate.

5.2. Designated Sites

Statutory Designated Sites

5.2.1. The proposed works are within the SSSI impact risk zone for Alvescot Meadows SSSI. However, due to the highly localised nature of the proposed works, no adverse impacts on the SSSI are anticipated to occur. The use of general good working practice methods (see 5.3.2 below) is nonetheless recommended to minimise the very low risk of any adverse impacts on designated sites occurring.

Non-Statutory Designated Sites

5.2.2. The works will take place within the South Cotswolds Valleys Conservation Target Area. However, the very small-scale nature of works is such that adverse impacts on the biodiversity of the CTA are not anticipated, assuming appropriate measures are put in place to safeguard associated species (e.g. water voles). This is discussed further below.

5.3. Habitats

5.3.1. The proposed bridge will cross a HPI stream (Shill Brook). However, due to the small scale of the proposals, only very minor changes to the stream habitats in this location are expected to occur, with the bridge location being a suitable choice due to its proximity to existing well-used farm areas, presence of dense trees downstream and limited semi-natural habitat and largely absent marginal vegetation in the proposed bridge crossing.

5.3.2. General good working practices should be employed to avoid damage to the stream habitat and bankside areas. These could include:

- Limiting the works area as far as is possible.
- Avoiding or restricting in-channel working to the minimum necessary.
- Taking care to store materials away from the riverbank to avoid any spillages or objects entering the watercourse.
- Using appropriate materials, in particular avoiding any substances or other materials that are known to be toxic or can result in environmental damage.

5.4. Protected Species and Species of Conservation Importance

Water Voles

- 5.4.1. Given the recent records of water voles from within 200 m of the site, it is possible that water voles may be utilising the habitat within the stream channel as well as the bankside vegetation. The suitability of habitat for water voles immediately within the proposed works area was found to be limited due to a lack of marginal vegetation and shading from overhanging vegetation immediately downstream. Higher-quality potential habitat for water voles was present further upstream (c. 50 m from the proposed works area), although a search for field signs was undertaken here with no evidence of water voles found. This higher-quality habitat will be unaffected by works.
- 5.4.2. Due to the possibility of water voles being present locally, it is recommended that a check of the works area for water voles by a suitably qualified ecologist is undertaken prior to the commencement of works. This would ideally take place in the spring (from the beginning of April onwards). In the unlikely event that a water vole burrow was discovered in the area affected by works, this would then need to be carefully excavated under the supervision of a water vole class licence holder, to ensure that legislation regarding the protection of water voles is not contravened.
- 5.4.3. No significant habitat loss or fragmentation is anticipated as a result of the bridge construction due to the limited area of the proposed bridge. The bridge is not anticipated to present a barrier to water voles dispersing along the stream channel given its narrow span and the presence of heavily shaded areas immediately downstream (i.e. water voles, if present, would not be expected to be travelling up- and downstream past the bridge with any regularity as the downstream habitat is largely unsuitable).
- 5.4.4. The footprint of the works should be kept to the minimum possible in order to minimise potential impacts on water voles.
- 5.4.5. The on-site habitat for water voles could be enhanced through encouraging the growth of marginal vegetation along the section of Shill Brook immediately upstream of the works area. This could include methods to enable establishment of and to protect marginal vegetation from waterfowl such as installing small sections of coir rolls or willow spiling. Habitat enhancement for water voles within this stretch of Shill Brook could contribute to furthering the wider aims of the Upper Thames Local Key Area for water voles.

Otters

- 5.4.6. No specific survey for otters is deemed necessary. To ensure any otters passing through the area are not adversely affected by works, simple measures are recommended, including the avoidance of works overnight or during early morning/late evening and general best practice such as covering any open excavations overnight and keeping the works area tidy and free of debris.
- 5.4.7. The bridge is not anticipated to present a barrier to otters dispersing along the stream channel.

Common Reptiles

- 5.4.8. The grassland habitat to the west of Shill Brook, within the proposed works area for the construction of the new driveway, provides some limited habitat for common reptiles such as grass snakes and slow worms. It is possible that grass snakes in particular, being highly mobile, may pass through this area on occasion if present locally. Precautionary sensitive working methods are recommended within this area of the site. This would involve strimming vegetation to a low height (around 15cm) to encourage any animals present to naturally disperse, before removing vegetation down to ground level. This should be undertaken in the period April to October inclusive, when reptiles are active. If this is not possible during these times, as there are no obvious hibernation areas present, it may be possible for this to be carried out in winter in the presence of a suitably qualified ecologist.

Amphibians

- 5.4.9. The works area has only very limited suitability to support amphibian species. However, precautions should be taken to watch for amphibian species during works, and, if any individuals are found, they should be moved away from the works area to prevent them being harmed. In the unlikely event that great crested newts are identified within the works area, all works should stop, and the advice of a suitably qualified ecologist sought.

Breeding Birds

- 5.4.10. Further survey for bird species is not required, but appropriate working methods should be employed to safeguard birds, their nests and eggs. It is anticipated that the proposed works will not involve any significant clearance of tree or scrub vegetation, and it is recommended that the bankside trees adjacent to the works area are retained and protected during works. However, if any branches are to be trimmed back, it is recommended that this activity is limited to the period September to February inclusive to avoid the main bird nesting period. If this is not possible, any areas should be checked by an ecologist prior to clearance. If areas do not contain active nests, they should be taken out as soon as possible following this check. Note that any active nests found will need to be left intact until no longer in use, with the ecologist advising on an appropriate buffer within which works do not take place.

Bats

- 5.4.11. No further survey for bats is required. Although no obvious suitable roosting features were found during the field survey, as a precaution it is recommended that the bankside trees adjacent to the works area are retained and protected during works, in particular the large crack willow tree which is located immediately downstream of the works area. However, selective removal of overhanging branches or pruning back of branches adjacent to the proposed bridge location is acceptable as these limbs do not have any suitable potential roosting features.
- 5.4.12. The quality of the stream and marginal vegetation habitats for commuting and foraging bats will not be affected by the proposed works, with no artificial lighting anticipated.

Signal Crayfish

- 5.4.13. The works should not pose a risk of spreading or introducing signal crayfish if present in the Brook, as works will be limited to a small area and will not require linking watercourses. However, as a precaution, works within the channel should be avoided or minimised with any tools and equipment used being cleaned and dried before use on other sites.

Flora

- 5.4.14. Himalayan balsam was found along the western bank of Shill Brook immediately adjacent to the proposed works area. As it is an offence to cause this plant to spread in the wild, it is recommended that precautionary measures are taken to prevent works causing the seeds of this plant to spread. These could include cleaning any machinery or equipment which may be contaminated with seeds to ensure seeds are not carried to another site. Ideally any Himalayan balsam plants within the works area should be pulled out before they set-seed and disposed of by incineration or composting on site.

5.5. Summary of Mitigation and Enhancement Measures

- 5.5.1. A summary of proposed mitigation and enhancement measures is provided in Table 3 below.

Table 3: Summary of Proposed Mitigation and Enhancement Measures

Ecological Feature	Proposed Mitigation and/or Enhancement Measures
Shill Brook	Limiting the works area as far as is possible. Avoiding or restricting in-channel working to the minimum necessary. Taking care to store materials away from the riverbank to avoid any spillages or objects entering the watercourse. Using appropriate materials, in particular avoiding any substances or other materials that are known to be toxic or can result in environmental damage.
Water voles	Check of the works area for water voles undertaken by a qualified ecologist prior to the commencement of works. This would ideally take place in the spring. If a water vole burrow was discovered within the works area, this would need to be carefully excavated under the supervision of a water vole class licence holder. Footprint of works kept to the minimum possible. Habitat enhancement through encouraging the growth of marginal vegetation immediately upstream of the works area.
Otters	Avoidance of working overnight or during early morning/late evening. Covering any open excavations overnight. Keeping the works area tidy and free of any debris.
Common reptiles	Strimming of vegetation to a low height (15 cm) prior to commencement of works and during the period April – October to allow animals to disperse. Subsequent removal of vegetation down to ground level prior to commencement of works.

Ecological Feature	Proposed Mitigation and/or Enhancement Measures
Amphibians	Stopping works immediately and seeking advice of a qualified ecologist if great crested newts identified within the works area. Carefully moving other species of amphibian away from works area if any individuals are found during works.
Breeding birds	Retain and protect bankside trees adjacent to works area. Trim/cut back any branches during the period September – February inclusive; otherwise, any areas should be checked by an ecologist prior to clearance, with no clearance taking place until any active nests are no longer in use.
Bats	Retain and protected bankside trees adjacent to works area.

6. Conclusion

- 6.1.1. The field survey in conjunction with the desk study indicates that, with the application of appropriate mitigation measures, there are no significant issues which would prevent the proposed bridge construction.
- 6.1.2. Considerations which need to be taken into account include the potential presence of water voles, otters, common reptiles, amphibians, common nesting birds, foraging/commuting bats, potential presence of non-native crayfish and the presence of a non-native invasive plant species. The Shill Brook is a habitat of principal importance. The works are also situated within a Conservation Target Area and a Local Key Area for water vole conservation. However, as the extent of works is limited to a small footprint, and the bridge is not expected to significantly alter the character of the stream or adjacent habitats, there should be no substantive change to the ecological function of these habitats or the local area.

7. References

BBOWT (2021). Shill Brook Water Vole Recovery Project Update 2021. Accessed at <https://www.bbowt.org.uk/wildlife/wildlife-conservation/water-vole-recovery-project>

Dean M, Strachan R, Gow D and Andrews R (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

UKHab Ltd (2023) UK Habitat Classification Version 2.0. Accessed at <https://www.ukhab.org>

7.1. Websites

MAGIC: www.magic.gov.uk (accessed 05/10/23)

8. Figures

Figure 1: UKHab Survey Results



9. Appendix 1 –Photographs

Photograph 1: View of proposed works area from eastern bank of Shill Brook



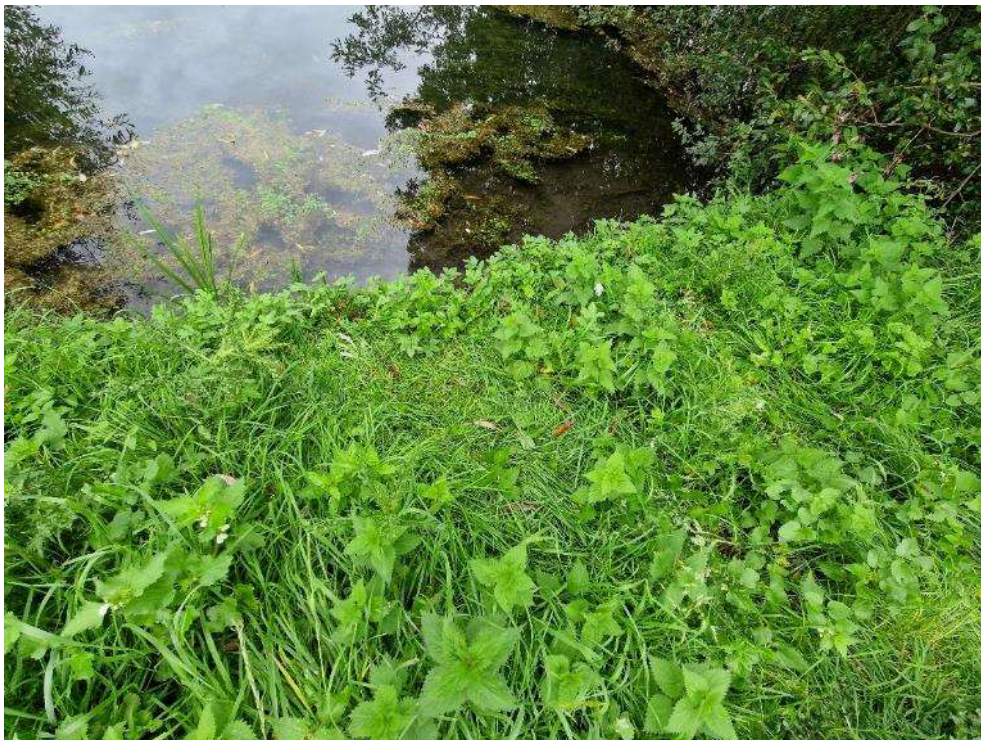
Photograph 2: Neutral grassland (ONG1) in the western part of the site



Photograph 3: Neutral grassland (ONG2) in the eastern part of the site



Photograph 4: Bankside vegetation (MV1) on western bank of Shill Brook



Photograph 5: Bankside vegetation (MV2) on eastern bank of Shill Brook



Photograph 6: Goat willow (T1) adjacent to proposed works area on western bank of Shill Brook



Photograph 7: Himalayan balsam (Impatiens glandulifera) on the western bank of Shill Brook adjacent to the proposed works area.



Photograph 8: Likely rat burrows in western bank of Shill Brook within proposed works area



Photograph 9: Single burrow in western bank of Shill Brook within proposed works area – moss cover suggests disuse with other likely rat burrows nearby



Photograph 10: Potential feeding remains within bankside vegetation on eastern bank of Shill Brook



Photograph 11: Possible feeding evidence within bankside vegetation on eastern bank of Shill Brook



Photograph 12: Likely rat burrows in western bank of Shill Brook



10. Appendix 2 – Habitat Condition Assessments

Neutral grassland (ONG1)

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Lowland calcareous grassland Grassland - Lowland dry acid grassland Grassland - Lowland meadows Grassland - Other lowland acid grassland Grassland - Other neutral grassland 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.] Grassland - Upland acid grassland Grassland - Upland calcareous grassland Grassland - Upland hay meadows Sparsely vegetated land - Calaminarian grassland			
Site name and location	Mill Lane, Alvescot	On-site or off-site	On-site
Limitations (if applicable)	None	Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	ONG1
Habitat Description			

Neutral grassland (g3)			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	<p>The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.</p> <p>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</p>	Y	The grassland is a good representation of g3 habitat. Indicator species for g3 were found to be consistently present.
B	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.	N	Long/lush sward with little variation in height.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	Y	1% bare ground cover.
D	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%.	Y	Bracken and scrub absent.

E	<p>Combined cover of species indicative of sub-optimal condition² 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 species³ (as listed on Schedule 9 of WCA⁴) are present, this criterion is automatically failed.</p>	N	Himalayan balsam <i>Impatiens glandulifera</i> present.
Additional Criterion - must be assessed for all non-acid grassland types			
F	<p>There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count).</p> <p>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</p>	N	8 – 9 species per m ² present including creeping thistle/creeping buttercup.
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		N	
Number of criteria passed		3	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓	
Acid Grassland Types (Result out of 5 criteria)			
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)	Y	
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		
Suggested enhancement interventions to improve condition score			
Notes			
<p>Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.</p> <p>Footnote 2 - 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>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, by applying professional judgement.</p> <p>Footnote 4 – Wildlife and Countryside Act 1981 (as amended).</p>			

Neutral grassland (ONG2)

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
<p>Grassland - Lowland calcareous grassland Grassland - Lowland dry acid grassland Grassland - Lowland meadows Grassland - Other lowland acid grassland Grassland - Other neutral grassland 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.] Grassland - Upland acid grassland Grassland - Upland calcareous grassland Grassland - Upland hay meadows Sparsely vegetated land - Calaminarian grassland</p>			
Site name and location	Mill Lane, Alvescot	On-site or off-site	On-site
Limitations (if applicable)	None	Survey reference (if relating to a wider survey)	
Grid reference		Habitat parcel reference	ONG2
Habitat Description			
Neutral grassland (g3)			

ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	<p>The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.</p> <p>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</p>	Y	The grassland is a good representation of g3 habitat. Indicator species for g3 were found to be consistently present.
B	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.	Y	50 – 60% >7 cm height; c.20% <7 cm height.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	Y	3 - 4% bare ground cover.
D	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%.	Y	Bracken and scrub absent.
E	<p>Combined cover of species indicative of sub-optimal condition² 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 species³ (as listed on Schedule 9 of WCA⁴) are present, this criterion is automatically failed.</p>	N	>5% combined cover of common nettle, creeping buttercup, creeping thistle, broad-leaved dock.

Additional Criterion - must be assessed for all non-acid grassland types			
F	<p>There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count).</p> <p>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</p>	N	6 – 8 species per m ² .
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		N	
Number of criteria passed		4	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓	
Acid Grassland Types (Result out of 5 criteria)			
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)	Y	
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		
Suggested enhancement interventions to improve condition score			

Notes

Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.

Footnote 2 - 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*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*. There may be additional relevant species local to the region and or site.

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, by applying professional judgement.

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

11. Appendix 3 – Water Vole Survey Results

Site Information

Feature	Observation	Notes
Feature Type	Stream	
Grid Ref/WP No.	SP 27468 04982	
Approx. Length (m)		
Channel Width (m)	8	
Water Depth (m)	0.8	
Bank Profile	Steep (>45)	
Bank Material	Clay	Overlain by aggregate sand/gravel in places
Channel Substrate	Gravel	Overlain by silt
Tidal/Variable Depth	No	
Height of level change relative to bank height (m)		
Burrow/Nest Sites Available (if not in bank)		
Bankside vegetation type (e.g. grassland, ruderal, etc.)	Grassland	
Bankside Herbaceous Vegetation Cover (%)	90	
Bankside Shading (% of survey length)	30	
In-channel vegetation type (e.g. marginals, aquatics)	Aquatics	
In-channel vegetation cover (%)	50	
In-channel vegetation width (m)	6	
Connecting Watercourses (number)	2	
Current of recent management evident	No	

Evidence of Water Vole Activity

Target Note No.	Type	Number	Location/Habitat	Notes
3	Feeding remains	2	Bank	Two areas of gnawed rush with ends cut at 45°

Evidence of Other Species

Target Note No.	Type	Species/Likely Species	Number	Location/Habitat	Notes
1	Other Burrow	Brown Rat	10	Bank	Burrows with visible runs
2	Other Burrow	Brown Rat	5	Bank	Burrows with visible runs. Possible water vole feeding remains nearby.

12. Appendix 4 – Relevant Legislation and Planning Policy

12.1.1. This section briefly summarises the relevant national and local planning policies and legislation pertaining to habitats and species mentioned within this report. Please note that the following text does not constitute legal advice.

12.2. National Planning Policy Framework

12.2.1. The National Planning Policy Framework (NPPF) supersedes Planning Policy Statement 9 (PPS9) and was published in March 2012. This NPPF states that, "*the planning system should contribute to and enhance the natural and local environment by.*

- Protecting and enhancing valued landscapes, geological conservation interests and soils;
- Minimising impacts on biodiversity and providing net gains in biodiversity, where possible contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; and
- Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability".

Planning – land allocation and policies

12.2.2. The NPPF states that 'in preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework.'

12.2.3. Paragraph 113 relates to Local Authorities and recommends that they 'set criteria-based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.'

12.2.4. The NPPF advises LPAs to 'set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure...'

12.2.5. The NPPF also states that, "to minimise impacts on biodiversity and geodiversity, planning policies should:

- Plan for biodiversity at a landscape-scale across local authority boundaries;
- Identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;

- Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets; and identify suitable indicators for monitoring biodiversity in the plan; and
- Where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.”

Planning applications and biodiversity

12.2.6. The NPPF states that, “When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- If significant harm 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;
- Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest features is likely, an exception should only be made where the benefits of the development, at this site clearly outweigh both the impacts that it is likely to have 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;
- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
- Opportunities to incorporate biodiversity in and around developments should be encouraged”.

12.2.7. With regard to the possible impacts that insensitive lighting can have, paragraph 125 states that ‘by encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.’

12.2.8. The Government Circular 06/2005 currently remains valid and Paragraph 99 provides guidance stating “It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision”.

Species and Habitats of Principal Importance

12.2.9. The NPPF (paragraph 117) advises LPAs to “promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species” linking to national and local targets through local planning policies. Priority species are those species shown on the England Biodiversity List published by the Secretary of State in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Planning authorities have a duty under Section 40 of the NERC Act to have regard to

priority species and habitats in exercising their functions including development control and planning.

12.3. West Oxfordshire Local Plan 2031

12.3.1. The West Oxfordshire Local Plan 2031 contains proposed policies for determining planning applications and identifying strategic allocations for housing, employment and other uses.

12.3.2. Policy EH3: Biodiversity and geodiversity states that:

12.3.3. 'The biodiversity of West Oxfordshire shall be protected and enhanced to achieve an overall net gain in biodiversity and minimise impacts on geodiversity, including by:

- giving sites and species of international nature conservation importance and nationally important sites and special scientific interest the highest level of protection from any development that will have an adverse impact;
- protecting and mitigating for impacts on priority habitats, protected species and priority species, both for their importance individually and as part of a wider network;
- avoiding loss, deterioration or harm to locally important wildlife and geological sites and sites supporting irreplaceable habitats (including ancient woodland, Plantations on Ancient Woodland Sites and aged or veteran trees), UK priority habitats and priority species, except in exceptional circumstances where the importance of the development significantly and demonstrably outweighs the harm and the harm can be mitigated through appropriate measures and a net gain in biodiversity is secured;
- ensuring development works towards achieving the aims and objectives of the Conservation Target Areas (CTAs) and Nature Improvement Areas (NIAs);
- promoting the conservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, particularly within the CTAs and NIAs;
- taking all opportunities to enhance the biodiversity of the site or the locality, especially where this will help deliver networks of biodiversity and green infrastructure and UK priority habitats and species targets and meet the aims of CTAs;
- ensuring that all applications that might adversely affect biodiversity are accompanied by adequate ecological survey information in accordance with BS 42020:2013 unless alternative approaches are agreed as being appropriate with the District Council's ecologist;
- all major and minor applications demonstrating a net gain in biodiversity where possible. For major applications this should be demonstrated in a quantifiable way through the use of a Biodiversity Impact Assessment Calculator (BIAC) based on that described in the DEFRA Biodiversity Offsetting guidance or a suitably amended version. For minor applications a BIAC will not usually be required but might be requested at the Council's discretion;
- all development incorporating biodiversity enhancement features.'

12.3.4. 'All developments will be expected to provide towards the provision of necessary enhancements in areas of biodiversity importance.'

12.4. Relevant Legislation

Conservation of Habitats and Species Regulations 2017 (as amended)

- 12.4.1. The conservation of Habitats and Species Regulations transpose the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (“The Habitats Directive”) into law.
- 12.4.2. The 2017 Regulations consolidate the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The regulations provide for:
- designation and protection of European Sites (Special Protection Areas (SPA) and Special Areas of Conservation (SAC)) including the need for ‘Appropriate Assessment’ of plans and proposals;
 - protection of European protected species;
 - adaptation of planning and other controls for the protection of European Sites; and
 - make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2.
- 12.4.3. No steps that will impact upon a European protected species or its habitat can be undertaken unless authorised by a European Protected Species licence issued by Natural England. Such a licence is granted until after planning consent has been granted once Natural England are satisfied that adequate measures are to be put in place to mitigate for the impact of the development.

Water Voles

- 12.4.4. Water voles are protected under Section 9(4) of the Wildlife and Countryside Act (WCA) 1981 (as amended), making it an offence to intentionally:
- Kill, injure or take any water vole;
 - Possess or control a water vole (alive or dead).

It is also an offence to intentionally or recklessly:

- Damage or destroy a structure or place used by a water vole for shelter or protection;
- Disturb a water vole in a place used for shelter or protection;
- Obstruct access to a place used by a water vole for shelter or protection.

Common Reptiles

- 12.4.5. The common, widespread species of reptile (slow worm, grass snake, adder and common lizard) are protected through Sections 9(1) and 9(5) of the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000, making it an offence to:
- Intentionally or recklessly kill or injure any reptile;
 - Sell, offer for sale, possess or transport for the purchase of sale or publish advertisements to buy or sell any reptile.

12.4.6. Reptiles across the UK have undergone significant declines in recent years and all species of reptile within the UK are now included on the list of species of principal importance prepared in response to Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. This legislation placed a duty on the Secretary of State to publish, review and revise lists of living organisms in England that are of principal importance for the purpose of conserving biodiversity. The NERC Act also required the Secretary of State to take, and promote the taking of, steps to further the conservation of the listed organism.

Amphibians

12.4.7. Great crested newts are a European Protected Species and as such are protected under Regulation 41 of the Conservation of Habitats and Species Regulations (Habitats Regulations) 2010 (see 12.4.2 – 12.4.4 above). Great crested newts are also protected under Section 9 of the WCA 1981.

12.4.8. Common toads and common frogs are protected under Section 9(5) of the WCA 1981 which makes it an offence to sell, offer for sale, possess or transport for the purchase of sale or publish advertisements to buy or sell these species. Common toads are also included on the list of species of principal importance in relation to Section 41 of the NERC Act 2006.

Nesting Birds

12.4.9. All nesting birds are protected under the WCA 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs.

Schedule 1 Bird Species

12.4.10. Bird species listed on Schedule 1 of the WCA (e.g. red kite) receive additional protection from disturbance at or near an occupied nest site. Schedule 1 of the Act makes it an offence to intentionally or recklessly disturb this species while it is building a nest or is in, on or near a nest containing eggs or young. It also makes it an offence to intentionally or recklessly disturb dependent young of this species.

Bats

12.4.11. All bat species found in the UK are European Protected Species and as such are protected under Regulation 41 of the Conservation of Habitats and Species Regulations (Habitats Regulations) 2010 (see 12.4.2 – 12.4.4 above). All species of UK bats are also protected under Section 9 of the WCA and also under Section 11, which makes it an offence to kill or take bats using certain methods. Five species of UK bats (the barbastelle, Bechstein's, brown long-eared, greater and lesser horseshoe bats) are also listed as Species of Principal Importance.

Invasive Non-native Species

12.4.12. Section 14(1) of the WCA 1981 (as amended) makes it illegal to release or allow to escape into the wild any animal which is not ordinarily resident in Great Britain and is not a regular visitor to Great Britain in a wild state, or is listed in Schedule 9 to the Act. The list of species on Schedule

9 includes Himalayan balsam (*Impatiens glandulifera*) and the signal crayfish (*Pacifastacus leniusculus*).