

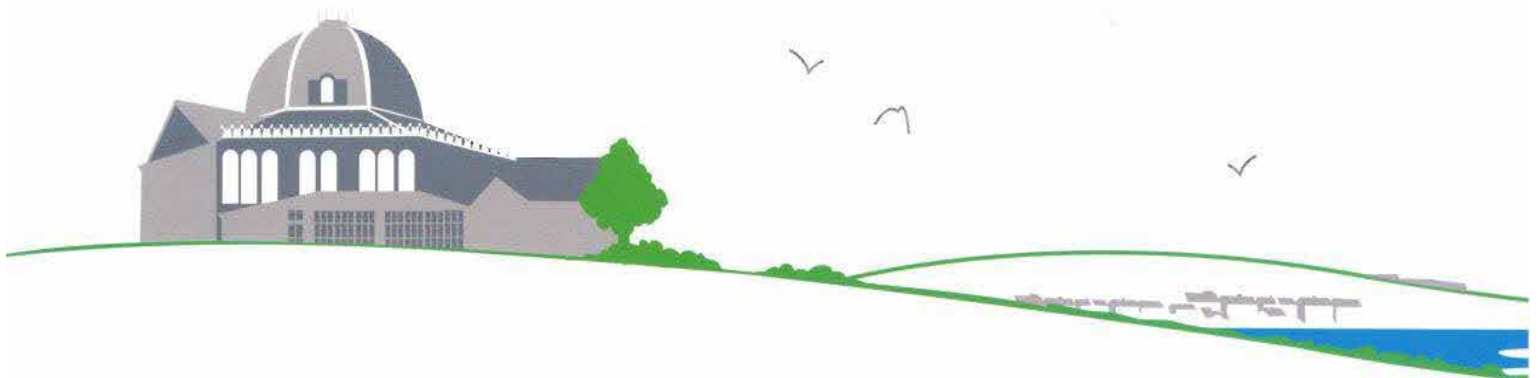


SEVERN TRENT WATER

CHURCH STOKE

UPDATED PRELIMINARY ECOLOGICAL  
APPRAISAL REPORT AND BASELINE BNG  
ASSESSMENT

CONFIDENTIAL DATA REMOVED



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Penny Anderson Associates Limited  
'Park Lea'  
60 Park Road  
Buxton  
Derbyshire  
SK17 6SN

Project Manager  
Sacha Rogers BSc (Hons), MCIEEM, CEnv (Managing Director)

Author  
Caroline Boffey BSc (Hons), MRes, ACIEEM (Ecologist)  
Sarah Ross BSc (Hons), PhD, MCIEEM, CEnv (Associate Director)

June 2021 (Report amended to remove confidential data July 2022)

This project has been undertaken in accordance with PAA policies and procedures on quality assurance.

Signed: 

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1 Extended Phase 1 Habitat Survey Church Stoke
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## APPENDICES

1 Relevant Species Legislation
2 Botanical Species List

# 1. INTRODUCTION

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## Site Description

- 1.1 Penny Anderson Associates Ltd (PAA) was commissioned by Severn Trent Water to undertake an update to the Preliminary Ecological Appraisal (PEA) of Church Stoke (hereafter referred to as the 'site') undertaken in January 2020 (PAA 2020), with survey of an additional area adjacent to the original site. The site is located at grid reference SO 27242 94717.
- 1.2 This report combines the results from both surveys and presents a baseline assessment for Biodiversity Net Gain (BNG) using the Defra Metric 2.0.
- 1.3 The PEA was undertaken in accordance with the best practice methodology detailed by the Joint Nature Conservation Committee (JNCC 2010) and the British Standard BS42020:2013 and comprised two elements:
- A desk study exercise; and
  - A Phase 1 habitat survey.
- 1.4 The purpose of the PEA was to provide a record of habitats that are present on site. During the survey, the presence, or potential presence, of protected species was also noted. Recommendations for any further ecological survey work and mitigation needed to ensure compliance with wildlife legislation and relevant planning policy are made. The results of the PEA will be used to inform development proposals for the site.
- 1.5 The purpose of the BNG baseline assessment was to identify the habitat units currently allocated to the baseline habitats on site, including the STW site and the adjacent habitats.

## Brief Description of Proposed Development

- 1.6 There are currently no firm proposals known for this site.

## Legislative Context

- 1.7 The text below provides a brief summary of the legislation in relation to the species or species group in England and Wales. The original Acts, Regulations and any amendments should be referred to for the precise wording.
- 1.8 A range of international and national legislation has been established in the UK to protect important nature conservation sites and priority species. At the international level, European Union (EU) Directives require individual member states to implement their conservation provisions nationally for the benefit of Europe as a whole. These Directives have been transposed into UK law by the Conservation of Habitats and Species Regulations 2017 (amended); further details can be obtained from the JNCC web site at [www.jncc.defra.gov.uk](http://www.jncc.defra.gov.uk).
- 1.9 Other international conventions include: the Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979), which requires the maintenance of populations of wild flora and fauna, giving particular protection to endangered and vulnerable species; and the Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979), which requires the protection of migratory species throughout their entire range. The above conventions are implemented in England and Wales via the Wildlife and Countryside Act (WCA) (1981) (as amended) and Countryside and Rights of Way (CRoW) Act 2000. This legislation also protects important habitats and sites such as Sites of Special Scientific Interest (SSSI).
- 1.10 At the national level, the UK Post-2010 Biodiversity Framework published in 2012 is the Government's response to the Convention on Biological Diversity (2010). It describes the UK's biological resources, commits a detailed plan for the protection of these resources within the

UK's devolved framework across England, Wales, Scotland and Northern Ireland. The document identifies future priorities for nature conservation and adopts a more strategic approach, including ecosystem services and sustainability alongside biodiversity. Despite administrative changes following devolution, there is still an underlying objective of protecting and enhancing a range of priority species and habitats, often still based on the objectives and classifications of the original UK Biodiversity Action Plan. *Biodiversity 2020* is England's national biodiversity strategy. Building on the *Natural Environment White Paper* published in 2011, this provides a means of delivering the international and EU commitments to biodiversity. Under Biodiversity 2020, Priority Species and Habitats referred to are those of 'Principal Importance' for the conservation of biodiversity in England listed on Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006.

- 1.11 Finally, the National Planning Policy Framework (NPPF 2019) provides guidance for local authorities on the content of the Local Plans and is a material consideration in determining planning applications. Briefly, with an overall focus on sustainable development, the NPPF states that developments should aim to engender positive outcomes for habitats and biodiversity, with a particular focus on the maintenance and creation of ecological networks. Furthermore, the NPPF also states that any planning proposals for which significant negative impacts on biodiversity cannot be avoided, mitigated or compensated for should be refused. The NPPF states that the planning system should contribute to and enhance the natural environment through a range of actions, including:

protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;

recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services; and

minimising impacts on biodiversity and providing net gains for biodiversity including establishing coherent ecological networks that are more resilient to current and future pressures.

- 1.12 To protect and enhance biodiversity and geodiversity, plans should:

Identify, map and safeguard components of local wildlife-rich habitats and wider 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 national and local partnerships for habitat management, enhancement, restoration or creation; and

promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

## Protected Species

- 1.13 Details of the protected species legislation relevant to this site can be found in Appendix 1.

## Invasive Species

- 1.14 Certain non-native species that have been introduced into the UK are regarded as being a threat to native biodiversity. Legislative measures have, therefore, been put in place to prevent the spread of these invasive species in the wild.
- 1.15 Under section 14 of the WCA 1981 (as amended), it is illegal to introduce plants listed under Part II of Schedule 9 of the WCA into the wild or sell these species. Offences include causing the spread of viable plant material or neglecting to contain or appropriately manage non-native species.

- 1.16 Commonly introduced Schedule 9 species include non-native cotoneaster species, specifically, small-leaved cotoneaster (*Cotoneaster microphyllus*)<sup>1</sup> and wall cotoneaster (*C. horizontalis*), Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Reynoutria japonica*).
- 1.17 Whilst every effort has been made to notify the client of any plant species listed on Schedule 9 of the WCA (1981, as amended) present on site, it should be noted that the PEA did not include a specific survey for these species.

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<sup>1</sup> Plant names follow Stace 2019, common names are used in this report – see Appendix 2 for scientific names of species



## 2. METHODS

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### Desk Study

- 2.1 A desk study exercise was undertaken in January 2020 in order to collect ecological baseline data relating to the site and its surrounds. Ecological data was requested from the following consultees:
- Natural Resources Wales and Natural England (via the Multi Agency Geographic Information for the Countryside (MAGIC) website, and the lle.gov.wales geo-portal website);
  - Local Biological Record Centres (in this case the Biodiversity Information Service (BIS) for Powys and Brecon Beacons National Park); and
  - Local Species Interest Groups (as required).
- 2.2 The desk study comprised a search for European statutory nature conservation sites within a 5km radius of the site (extended to 10km for European bat sites), UK statutory sites within a 2km radius and non-statutory sites and protected/notable species records within a 1km radius.
- 2.3 The results of this desk study have been used in conjunction with the results of the Phase 1 habitat survey to inform a preliminary assessment of the likely ecological impacts of the proposed development and the need, or otherwise, for further detailed ecological surveys.
- 2.4 The MAGIC website was reviewed again in June 2021 in order to account for the inclusion of the fields to the west of the original STW site.

### Phase 1 Habitat Survey

- 2.5 A Phase 1 habitat survey of the site was undertaken by Ecologist Caroline Boffey (ACIEEM<sup>2</sup>), on 23<sup>rd</sup> January 2020, and June 1<sup>st</sup> 2021.
- 2.6 All methods, equipment and assessment criteria were consistent with current good practice guidelines for each survey type and the surveyor was competent for the assigned tasks based on the CIEEM competency framework (CIEEM 2017).
- 2.7 The Phase 1 habitat survey was conducted following the Phase 1 Habitat Survey methodology of the JNCC (JNCC 2010) and the Institute of Environmental Assessment (IEA 1995). Phase 1 habitat survey is a standard technique for classifying and mapping British habitats. The aim was to provide a record of habitats that are present on site. During the survey, the presence, or potential presence, of protected species was also noted.
- 2.8 Although not specifically required by the project brief, the surveyor also prepared a list of individual plant species for the site recording common and scientific names according to Stace (2019). Common names only are referred to in the text. The relative abundance of each plant species is described using the 'DAFOR' scale (where D = dominant; A = abundant; F = frequent; O = occasional; R = rare).
- 2.9 The extent of each habitat type was mapped in the field, with target notes (TN) to highlight any features of particular ecological interest.

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<sup>2</sup> Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)

- 2.10 The habitat survey was 'extended' (IEA 1995, CIEEM 2017) to include a general assessment of the suitability of the site for supporting protected or notable species. Features with suitability for any individual species were noted, together with any incidental field signs found, such as footprints, feeding remains or sightings of animals themselves.
- 2.11 Invasive species were recorded, where found.
- 2.12 For linear schemes, the Phase 1 survey area comprised all land up to 50m on either side of the proposed route (where access was granted); for all other sites, the survey area comprised all land within the site boundary.

## Limitations

- 2.13 It is important to note that the desk study results provide an indication of the species present in and around the site, but do not confirm current presence or absence of any particular species. Protected species are often under recorded in county wildlife databases.
- 2.14 Due to the timescales for completion of the project, the Phase 1 habitat survey took place outside of the optimum season for this type of survey. It is likely that some plant species may, therefore, have been under recorded due to the early time of year. However, the impact of this on the project has been minimised by ensuring that the surveys were undertaken by experienced botanists who were able to identify the majority of plant species in their vegetative state. In addition, it was considered that a sufficient number of species could be identified to be able to make a preliminary assessment of the value of the habitats present within the site.

## 3. RESULTS

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### Desk Study

#### **Statutory Protected Sites**

##### **European Sites**

- 3.1 European protected sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA), RAMSAR wetland sites, possible SAC, potential SPA and proposed RAMSAR sites.
- 3.2 Consultation with the search engine MAGIC revealed that there are no European protected sites within 5km of the central grid reference of the site within the 10km radius search.

##### **Sites of Special Scientific Interest**

- 3.3 SSSI represent a selection of this country's best wildlife and geological sites and cover approximately 12% of the terrestrial area of Wales.
- 3.4 During consultation with the search engine MAGIC it was revealed that Spy Wood and Aldress Dingle SSSI falls directly within the 2km search area, approximately 950m north-east of the site boundary. Furthermore, Roundton Hill SSSI also falls within the 2km search area and is located approximately 1.78km to the east. The search area also falls within the Impact Risk Zone<sup>3</sup> (IRZ) of Spy Wood and Aldress Dingle and The Lump, Priestweston SSSI. Further investigation revealed that within these SSSI IRZ, Natural England should be consulted on all planning applications which may pose a risk to the features for which those SSSI are designated:

##### **National Nature Reserves**

- 3.5 Consultation with the search engine MAGIC revealed that the National Nature Reserve (NNR) (Wales) Roundton Hill is situated on the eastern limits of the search area, approximately 1.78km from the site boundary.

##### **Local Nature Reserves**

- 3.6 No Local Nature Reserves (LNR) were identified within a 2km radius of the central grid reference.

##### **Non-Statutory Protected Sites**

- 3.7 One Site of Importance for Nature Conservation (SINC) was identified within the 1km search radius. This site is Upper Alport and is located approximately 524m north of the site boundary.

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<sup>3</sup> The Impact Risk Zones (IRZs) are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

## **Priority Habitats**

- 3.8 Two priority habitat deciduous woodlands were revealed within a 1km radius search. The nearest of these to the site boundary is 697m to the north.
- 3.9 Ancient semi-natural woodland is located just within the site boundary, along the northern edge, extending further outside the site to the north and north-east. There is further ancient semi-natural woodland adjacent to the site to the south, and other patches of ancient woodland at a short distance away to the north and north-east.
- 3.10 Additionally, a small area of ancient woodland belonging to Whittery Wood is located on the northern limit of the search area, approximately 943m north of the site boundary.

## **Protected and Notable Species**

### **Granted European Protected Species Application**

- 3.11 No granted European Protected Species (EPS) applications were returned within a 1km radius search of the central grid reference.

### **Badger**

- 3.12 A single record of badger (*Meles meles*) was returned within a 1km radius search of the central grid reference. This record dates from 2015 and is located to the south of the site boundary. Due to the sensitive nature of this data the precise location of the record is not disclosed in this report.

### **Otter**

- 3.13 Seven records of otter (*Lutra lutra*) were returned within a 1km radius search of the central grid reference. These records are dated between 1986 and 2009, the closest of which is located approximately 568m south of the site boundary and is likely to be associated with the River Camlad which runs adjacent to the survey site.

### **Water Vole**

- 3.14 No records for water vole (*Arvicola amphibius*) were returned within a 1km radius search of the central grid reference.

### **Bats**

- 3.15 Table 1 shows the number of records of each bat species recorded in the 1km search zone and the proximity to the site of the closest record for each species. Records are dated between 1982 and 2007.

**Table 1 Bat Records**

<b>Common Name</b>	<b>Scientific Name</b>	<b>No. of Records</b>	<b>Closest Record (approximate distance and direction from site boundary)</b>
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	1	337m S
Long-eared bat species	<i>Plecotus</i> sp.	2	337m S
Pipistrelle species	<i>Pipistrellus</i> sp.	2	668m S
Unidentified bat species	<i>Chiroptera</i>	2	773m S

## Other Mammals

- 3.16 Four records for West European hedgehog (*Erinaceus europaeus*) were returned within a 1km radius search of the central grid reference. The dates for these records range between 1970 and 2016 and the nearest record is approximately 309m to the east of the site boundary.

## Birds

- 3.17 The Red and Amber conservation status assessment (Eaton *et al.* 2015) is based on a number of criteria including historical decline, trends in population and range, rarity, localised distribution and international importance. Red listed species are the most critical group, followed by Amber. Green listed species are of least concern.
- 3.18 In addition, Schedule 1 species are protected under the WCA (1981 as amended) by the Environmental Protection Act 1990. It is an offence to intentionally disturb any of these species during the breeding season without a valid licence.
- 3.19 A number of bird species are listed under Section 41 in the NERC Act (2006) as species 'of principal importance for the purpose of conserving biodiversity'. These species are often known as the 'S41 species'. There is a legal requirement for a public body to 'have regard to' these species in relation to maintaining biodiversity. The S41 list overlaps somewhat with the UK BAP species, with national or local targets to maintain and enhance population.
- 3.20 All Schedule 1 and Section 41 bird species recorded within the 1km search area are listed in Table 2, along with their conservation status.

**Table 2 Bird Species of Principal Importance**

Common Name	Scientific Name	No. of Records	Amber	Red	Section 41	Schedule 1
Barn owl	<i>Tyto alba</i>					x
Brambling	<i>Fringilla montifringilla</i>	3				x
Bullfinch	<i>Pyrrhula pyrrhula</i>			x	x	
Cuckoo	<i>Cuculus canorus</i>	6		x	x	
Curlew	<i>Numenius arquata</i>			x	x	
Dunnock	<i>Prunella modularis</i>		x		x	
Fieldfare	<i>Turdus pilaris</i>			x		x
Hobby	<i>Falco subbuteo</i>	1				x
House sparrow	<i>Passer domesticus</i>			x	x	
Lapwing	<i>Vanellus vanellus</i>			x	x	
Lesser redpoll	<i>Acanthis cabaret</i>	2		x	x	
Lesser spotted woodpecker	<i>Dendrocopos minor</i>	1		x	x	
Marsh tit	<i>Poecile palustris</i>			x	x	
Peregrine	<i>Falco peregrinus</i>	3				x
Red kite	<i>Milvus milvus</i>					x
Redwing	<i>Turdus iliacus</i>			x		x
Skylark	<i>Alauda arvensis</i>	1		x	x	
Song thrush	<i>Turdus philomelos</i>			x	x	

Common Name	Scientific Name	No. of Records	Amber	Red	Section 41	Schedule 1
Spotted flycatcher	<i>Muscicapa striata</i>			x	x	
Starling	<i>Sturnus vulgaris</i>			x	x	
Tree sparrow	<i>Passer montanus</i>			x	x	
Yellowhammer	<i>Emberiza citrinella</i>	1		x	x	

### Amphibians

- 3.21 Two great crested newt (*Triturus cristatus*, GCN) records were returned within a 1km radius search of the central grid reference. These records are dated between 2008 and 2012, the closest of which is located approximately 345m south-east of the site boundary. Consultation with Natural England's GCN Geoportals revealed no known locations with confirmed presence of GCN within 1km of the central grid reference.
- 3.22 An ordinance survey map search of a 500m radius revealed that there is one small pond located approximately 490m north-west of the site.
- 3.23 A single record for smooth newt (*Lissotriton vulgaris*) was returned within a 1km radius search of the central grid reference. This record is dated from 2008 and is located approximately 593m north of the site boundary.
- 3.24 A single record for palmate newt (*Lissotriton helveticus*) was returned within a 1km radius search of the central grid reference. This record is dated from 2008 and is located approximately 593m north of the site boundary.

### Reptiles

- 3.25 No reptile records were returned from the 1km radius search.

### Invertebrates

- 3.26 One priority invertebrate species was returned from the 1km data search and is presented in Table 3, approximately 658m south-east of the site boundary.

**Table 3 Priority Invertebrate Species Records**

Taxon Group	Common Name	Scientific Name
Butterflies	White-letter hairstreak	<i>Satyrrium w-album</i>

### White-clawed Crayfish

- 3.27 No records of white-clawed crayfish (*Austropotamobius pallipes*) were returned from the 1km radius search.

### Notable Fish

- 3.28 A single record for Atlantic salmon (*Salmo salar*) was returned by the 1km data search, this record is dated from 1994 and is located approximately 593m north of the site boundary.
- 3.29 Two records of eel (*Anguilla anguilla*) were returned by the 1km data search, these records are dated between 1991 and 1994 and are located approximately 593m north of the site boundary.
- 3.30 No recent records of fish were returned from the 1km radius search.

## Notable Plants

- 3.31 There are several records for bluebell (*Hyacinthoides non-scripta*) within 1km of the survey site. The closest record is 285m south-east of the site.

## Invasive Non-Native Plants

- 3.32 One Schedule 9 non-native plant species was returned by the 1km radius search. This is shown in Table 4 along with its proximity to the site.

**Table 4 Schedule 9 Non-native Plant Species Records**

Common Name	Scientific Name	Distance and Direction from Site
Himalayan balsam	<i>Impatiens glandulifera</i>	763m N

## Phase 1 Habitat Survey

### General Site Description

- 3.33 The site comprises the sewage treatment works (STW) containing operational infrastructure with a range of tanks, two with reedbeds, connected by concrete paths. This is surrounded by poor semi-improved grassland and areas of bramble-dominated scrub with scattered hawthorn, elder and a cluster of grey willow and alder. A small area of scattered ephemeral/short perennial vegetation tops a narrow low stone wall at the south. The treatment works are bounded by 2m high chain-link fencing and accessed by a concrete track which leads off the main road at the west. A small intact building is present at the entrance to the STW.
- 3.34 Areas of mature mixed woodland, hawthorn/blackthorn scrub and recently cut scrub lie to the north and north-west of the track and contain two disused birds' nests. There is one badger sett within the hawthorn/blackthorn scrub, and two setts just outside the site in the mixed woodland. There is a narrow, shallow stream of flowing water through the woodland and cut scrub areas.
- 3.35 The additional area surveyed in 2021 comprises four predominantly improved grassland fields, with the two larger central fields bisected by the concrete track leading to the STW, a small field to the south and narrow band at the field edge to the north. The far north area and southern field are grazed, the two central fields are likely to be cut for silage. The fields are bounded by hedgerows ranging from species-poor hawthorn-dominated to species-rich, most with narrow margins of common nettle and cow parsley-dominated tall ruderal vegetation. Verges of semi-improved and unimproved neutral grassland lie adjacent to the main road, part of which lies within the western boundary of the site. At the south of the site are several patches of blackthorn and gorse scrub, and there is a small area of bare ground along a track, created by vehicles and poaching.
- 3.36 The River Camlad lies a short distance to the east of the site, flowing northwards.

### Habitats

- 3.37 The field survey recorded the following habitats on site, as illustrated on Figure 1:
- Mixed woodland – plantation;
  - Scrub – dense/continuous;
  - Scrub – scattered (recently cleared);
  - Neutral grassland – unimproved;

Neutral grassland – semi-improved;  
Poor semi-improved grassland;  
Improved grassland;  
Tall ruderal;  
Swamp;  
Running water;  
Cultivated/disturbed land – ephemeral/short perennial;  
Hedgerows; and  
Building and hardstanding.

- 3.38 Each habitat is described in more detail below and a complete botanical species list is included in Appendix 2.

### ***Mixed Woodland – Plantation***

- 3.39 Mature, mixed woodland is present at the north-east of the site. Although the woodland has a semi-natural appearance, it contains Douglas fir and Sitka spruce, typically planted species in commercial forestry, along with broadleaved trees including pedunculate oak, hybrid oak and sycamore, with elder in the understory, approximately 65% conifer: 35% broadleaved. There has been some thinning of the woodland and some fallen deadwood on the woodland floor.
- 3.40 Bramble is the dominant ground flora vegetation, with other species such as dog's mercury, an ancient woodland indicator (AWI) species, occurring rarely.

### ***Scrub***

- 3.41 Patches of dense bramble scrub are present around the treatment works. The area along the site fencing next to the concrete track is overwhelmingly dominated by bramble, with a small patch of bracken in the corner. Further south, there is scattered hawthorn, elder, and young alder over a ground layer of bramble and abundant bracken, with a concentration of grey willow and alder trees at the northern end of the patch of scrub.
- 3.42 An area of hawthorn/blackthorn-dominated scrub with occasional elder is present next to the track. The ground flora is poor, dominated by leaf litter/bare ground, with mossy patches and occasional forbs of red campion, ground-ivy, common nettle, and bramble. The AWI species of dog's mercury and primrose occur rarely. There has been some recent thinning of the scrub.
- 3.43 On the bank next to the track at the north-east of the site was an area of recently cut scattered scrub with stems of bramble and blackthorn, occasional dog rose and an ash tree stump. There were patches of cleavers and ivy in the ground flora and other scattered forbs including herb-Robert, dog's mercury and wood sage. This area had become grown up with tall ruderal vegetation by the 2021 survey, with common nettle, hogweed, barren brome and wood dock, and occasional red campion.
- 3.44 At the south of the site is an area of dense blackthorn scrub with abundant bramble and occasional hawthorn and dog rose, and ivy-dominated ground flora. Patches of blackthorn scrub have also extended out into the grassland field along the edge of the block of scrub next to the south-east boundary. There are small patches of gorse scrub with bramble at the south with bare ground, common nettles and cleavers beneath.



### ***Neutral Grassland – Unimproved and Semi-improved***

- 3.45 Neutral grassland is present along the grassland road verge at the west of the site, the majority is semi-improved, with varying species-richness along its length. A range of species is present including abundant creeping bent, rough meadow-grass and red fescue, with forbs including ribwort plantain, common knapweed, yarrow, common vetch, lesser celandine, germander speedwell and creeping cinquefoil.
- 3.46 An area of unimproved neutral grassland lies along the southern verge containing increased frequency of forbs of common knapweed and ribwort plantain.

### ***Poor Semi-Improved Grassland***

- 3.47 Grass-dominated poor semi-improved grassland surrounds the operational infrastructure of the sewage works. Yorkshire fog, rough meadow-grass and common bent are abundant in the sward, with perennial rye-grass, an indicator of nutrient enrichment, occurring occasionally. Creeping buttercup is frequent to abundant throughout the grassland, with all other forbs occurring only rarely. The grassland is generally damp, as indicated by the presence of species such as soft-rush, marsh thistle, cuckooflower and pointed spear-moss.
- 3.48 A small area of poor semi-improved grassland is also present in the field at the south of the site, with abundant rough meadow-grass, white clover and meadow buttercup, and occasional blackthorn suckers.

### ***Improved Grassland***

- 3.49 Improved grassland habitat dominates at the west of the site with two fields of uncut grassland, bisected by the concrete track. Both fields contain abundant rough meadow-grass, perennial rye-grass and white clover, with also abundant dandelion, occasional to frequent broadleaved dock and occasional cock's-foot in the field to the north, and abundant annual meadow-grass and frequent to abundant creeping bent in the field to the south. The northern field had grassland with sward height approximately 30-40cm, whilst the field to the south had shorter sward, approximately 10-25cm high.
- 3.50 The small triangular field at the south of the site contains improved grassland on part of it, with abundant perennial rye-grass, rough meadow-grass and creeping bent. A track has created an area of bare ground along it, exacerbated by poaching.
- 3.51 At the north-west of the site is a narrow band of improved grassland at the edge of a cattle-grazed field.

### ***Tall Ruderal***

- 3.52 Bands of tall ruderal vegetation are present at the edges of the hedgerows, with abundant to dominant common nettle and abundant rough meadow-grass. Cow parsley is abundant along some sections, with other prominent species including false oat-grass and hogweed.

### ***Swamp***

- 3.53 Reedbed swamp, a Section 41 Priority Habitat, is present in two of the sewage beds as part of the sewage treatment works. The vegetation is single species of common reed amongst wastewater.

## ***Running Water***

- 3.54 A narrow channel approximately 0.5m wide of very shallow water flows through the woodland and down the bank of cut scattered scrub. A small clump of opposite-leaved golden saxifrage grows at the edge of the water.

## ***Ephemeral/Short Perennial***

- 3.55 Scattered ephemeral/short perennial vegetation containing frequent willowherb grows along the narrow ledge of a low, mortared stone wall at the south of the STW. Bramble is occasional through the vegetation.

## ***Hedgerows***

- 3.56 There are seven hedgerows within the site (H1-H7 on Figure 1), each are described below:
- 3.57 Hedgerow H1 is species-poor, hawthorn-dominated with blackthorn occurring rarely at the southern end. It is intact, managed (cut this year), with a rounded-top box shape, and approximately 2m high and c.2.5m wide with base of canopy at ground level. The hedgerow sits on an earth bank and has signs of historic management (laying). Narrow margins of common nettle-dominated tall ruderal vegetation are present along the edges.
- 3.58 H2 is a short section of intact species-poor hedgerow, with hawthorn dominant and blackthorn abundant, dog rose occurring rarely. The hedgerow has been cut this year and is roughly triangular in shape, widest at the base, with blackthorn suckers extending from the edge. The hedge is approximately 1.5m high and c.3-3.5m wide with base of canopy at ground level. The ground flora is dominated by lesser celandine with occasional lords-and-ladies and locally frequent ground ivy. A band of common nettle-dominated tall ruderal vegetation is present along the northern edge.
- 3.59 H3 is a short line of unmanaged hawthorn scrub, with dog rose occurring rarely. It is approximately 5-6m high and c.4-5m wide with base of canopy approximately 1m high. There are no gaps along its length.
- 3.60 H4 is an intact, hawthorn-dominated rounded box-shaped hedgerow, cut this year. Blackthorn and ash are also present, with blackthorn suckers occasional along its length spreading out into the adjacent field, and a mature ash tree. Ivy is abundant in the ground flora beneath, with other species including occasional dog's mercury and ground ivy, and wood avens and lords-and-ladies occurring rarely. The hedgerow is approximately 1.5-2m high and c.2m wide with height of base of canopy at ground level. It lacks a tall ruderal margin.
- 3.61 H5 is an intact species-rich hedgerow, cut this year, and is roughly box-shaped although slightly wider at the base, with young blackthorn suckers extending out into the field approximately 1m from the base of the hedge. Seven tree/shrub species are present, with blackthorn dominating, hawthorn, dogwood and field maple occasional, and pedunculate oak, ash and wych elm occurring rarely. There is one hedgerow tree present, a mature coppiced ash. The ground flora beneath contains abundant ivy, with occasional herb-Robert and dog's mercury, slender false-brome locally occasional, and bluebell and lords-and-ladies occurring rarely. The hedgerow sits atop a low earth bank (c.15cm high) and is approximately 3m wide and c.1.5m high, with base of canopy at ground level. The hedgerow satisfies the criteria listed in the Hedgerow Regulations, 1997 to qualify as 'Important' due to containing six woody species in the central

30m stretch, having three additional features, and bluebell (a Schedule 8-listed species)<sup>4</sup> being present in the ground flora.

- 3.62 H6 is an intact, box-shaped hedgerow, cut this year, and sits on a low earth bank. It is approximately 2m wide and c.1.5m high, with height of base of canopy approximately 0-30cm high. There are signs of historic management (laying). Hawthorn dominates in the southern two-thirds stretch, however, the remaining stretch at the north is species-rich containing eight tree/shrub species: hawthorn, blackthorn, field maple, hazel, holly, ash, wych elm and dog rose. The ground flora contains abundant cleavers, with garlic mustard and ground-ivy, and dog's mercury and lords-and-ladies occurring rarely. Although species-rich in part, the hedgerow does not meet the criteria to qualify as 'Important' across its whole length. Narrow margins of tall ruderal vegetation with abundant cow parsley, common nettle, rough meadow-grass and false oat-grass, with locally abundant barren brome and hogweed and occasional common vetch lie along the edges.
- 3.63 H7 at the far north of the site is an intact, species-rich box-shaped hedgerow (cut this year). Field maple, hazel and blackthorn are the dominant species, with hawthorn, holly, ash, wych elm, and dog rose occurring rarely. The ground flora contains abundant cleavers and ivy, with occasional dog's mercury, and wood avens occurring rarely. The hedgerow is approximately 1m high and c.2m wide, with base of canopy c.0-30cm high. A very narrow band of cow parsley/common nettle/false oat-grass tall ruderal vegetation lies along the base. The hedgerow continues northwards beyond the site boundary.

### ***Buildings***

- 3.64 There is one building within the site, at the north-eastern end of the STW, surrounded by concrete and grassland, with mature woodland nearby. The building is composed of brick walls and tiled roof, both intact, with wooden fascias and soffits beneath the roof.
- 3.65 There is a narrow space between the soffit and the brick wall, although probably too narrow for bats to access the space behind the soffit for roosting.

### ***Hardstanding***

- 3.66 A concrete track runs from the main road at the west of the site, through the central grassland area and into the sewage treatment works. It is largely devoid of vegetation except very sparse grasses and forbs that have been able to get a hold in the cracks. Concrete paths connect the different treatment areas within the operational infrastructure. A short section of the track at the western end was stony ground leading onto the tarmac main road, part of which lies within the site.

## **Protected and Notable Species**

### ***Badger***

- 3.67 This data is presented in a separate and confidential badger report.

### ***Bats***

- 3.68 The building within the treatment works was considered to offer negligible potential for roosting bats.

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<sup>4</sup> listed on Schedule 8 of the WCA, 1981, as amended

- 3.69 One of the trees in the mixed woodland contained a potential roost feature, and the nearby habitats of mature woodland, scrub, hedgerows and grassland offer suitable foraging habitat for bats.

### **Other Mammals**

- 3.70 Rabbits (*Oryctolagus cuniculus*) were seen grazing on the grassland within the treatment works, and there was a pile of droppings present next to the concrete track.
- 3.71 The areas of dense scrub, woodland and hedgerows offer suitable foraging, nesting and hibernation sites for hedgehog.
- 3.72 Whilst there are no desk study records for common dormouse (*Muscardinus avellanarius*) within the search area it is possible that this species could occur within suitable habitats which have good connectivity to other areas of woodland, scrub and hedgerows within the wider area. In this case the site is well connected via habitats to the adjacent River Camlad and, upstream, to extensive areas of riverside woodland.
- 3.73 It is highly likely that the River Camlad supports otter but, although the river is in close proximity to the site, i.e. approximately 20m to the south, the site itself lacks suitable habitat to support otter.

### **Birds**

- 3.74 Two disused birds' nests were observed (in the woodland and in the adjacent hawthorn/blackthorn scrub) as well as much bird activity within and surrounding the site. The woodlands, scrub and hedgerows offer suitable nesting habitat, as well as a food resource in the berries. Forb species in the grassland and tall ruderal vegetation also offer a seed food resource, and the open tanks of the treatment works are likely to have associated flying insects which birds can forage.

### **Amphibians**

- 3.75 There were no waterbodies within the site considered suitable for amphibians and the nearest pond which could provide potential breeding sites for GCN is c.335m away, beyond the main road. It is considered unlikely that the site provides terrestrial habitat for GCN due to the distance between the site and the nearest ponds, and the road acting as a barrier.
- 3.76 Other amphibian species, namely common toad (*Bufo bufo*), could potentially be present within areas of suitable terrestrial habitat, such as dense scrub which provides shelter and over-wintering sites.

### **Reptiles**

- 3.77 The areas of dense scrub at the east and south of the site provide suitable habitat for reptiles where this is adjacent to areas of open grassland that could be used as potential basking sites.
- 3.78 A couple of corrugated metal tins were present under the blackthorn scrub at the south-east of the site (TN2), which could present suitable reptile refugia.

### **Notable and Invasive Non-Native Plants**

- 3.79 No invasive non-native plant species were noted within the site.
- 3.80 Small populations of bluebell, a plant species listed on Schedule 8 of the Wildlife and Countryside Act, 1981, as amended, were present in the mixed woodland edge (TN1) and adjacent grassland, and under hedgerow H5.

## 4. DISCUSSION

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- 4.1 The following ecological constraints are present, or likely to be present, within the Zone of Influence<sup>5</sup> of the proposed development:

Designated sites - there are a number of designated sites comprising Upper Alport SINC a Local Wildlife Site (LWS) located 524m north, and two SSSI: Spy Wood and Aldress Dingle (noted for its earth heritage and located approximately 950m north-east from the site boundary) and Roundton Hill located approximately 1.78km east. In addition, the site falls within the IRZ of one further SSSI, The Lump, Priestweston, noted for its lowland acid grassland, for which Natural England should be consulted (if works are likely to adversely impact on the SSSI). Ancient woodland lies within the site itself, as a narrow band along the northern boundary, extending further north and north-east outside of the site. Another area of ancient woodland lies adjacent to the site to the south, and further areas of ancient woodland are present at a short distance from the site.

Habitats - the site supports a range of habitats including grassland (improved, poor semi-improved, semi-improved neutral and unimproved neutral), scrub, mixed plantation woodland, hedgerows, tall ruderal, swamp, ephemeral/short perennial, running water and a building and hardstanding.

Protected and notable species - roosting and foraging bats (roosting potential identified in a single tree), dormouse, hedgehog, nesting birds, reptiles and amphibian species, namely common toad.

- 4.2 A preliminary evaluation of the importance of each feature and the likely effects of the proposed development are discussed in more detail below.

### Designated Sites

- 4.3 The SSSI and LWS sites are considered to be at such a distance from the site to be unlikely to be impacted by any development proposals. In addition, it is unlikely that the scale of any works would necessitate consultation with Natural England in respect of the SSSI IRZ. However, the Ancient woodland areas fall within, adjacent, and at a short distance from the site, and would potentially be affected by the development works. The woodland areas directly associated with the site would be particularly at risk.

### Habitats

- 4.4 The site supports a number of habitats of ecological value comprising mixed plantation woodland, hedgerows, scrub, unimproved and semi-improved neutral grassland, swamp and running water. The mixed woodland (containing a small, shallow stream) is of particular value by virtue of its connectivity with adjacent woodlands that extend upstream along the River Camlad. These habitats are considered to be of local value as important habitats in their own right. The hedgerows are a Priority Habitat, and of the seven present on site, three are species-rich, and one was assessed as 'Important' under the Habitat Regulations, 1997. The neutral grasslands (unimproved and semi-improved) along the road verges either are, or have the potential to be, lowland meadow Priority Habitat.

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<sup>5</sup> Zone of Influence is defined as the area within which the identified ecological features are likely to be affected by the proposed development and associated activities (CIEEM 2018)

- 4.5 The improved and poor semi-improved grassland, tall ruderal, and ephemeral/short perennial vegetation are of limited value due to the lack of structural and botanical diversity.

### **Protected and Notable Species**

- 4.6 The site has the potential to support a range of protected species but is considered unlikely to provide a significant or unique resource, due to its relatively small size and the availability of suitable habitats elsewhere. It is likely to be of site or local value, at most, for protected species. A range of mitigation measures are proposed to retain and safeguard habitats which may be used by protected species or, where habitats are unavoidably impacted, then mitigation may be required to avoid or minimise disturbance or harm.

## 5. RECOMMENDATIONS

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### Further Survey Requirements

- 5.1 Due to the presence, or likely presence, of the following ecological constraints, further surveys are recommended with the scope and timing of surveys as set out below:

Badger - Findings and recommendations are presented in the separate and confidential badger report;

Bats - should any felling or arboricultural works be required to the tree identified as having potential to support roosting bats, or construction activity be proposed within 15m of the tree, then a further survey to assess potential for roosting bats should be undertaken. This should comprise a preliminary ground level inspection of the tree to assess bat roost potential. If the tree is assessed as being of low, moderate or high bat roost potential (or a confirmed roost) and the works involve loss or significant disturbance to a potential roost site, then additional dusk/dawn surveys may be required. The preliminary inspections can be undertaken at any time of year but dusk/dawn surveys may only be undertaken between May and August, inclusive; and

Dormouse - if any areas of dense woodland and/or scrub are likely to be impacted by the proposals, either directly through habitat loss, or indirectly through significant disturbance, then a further habitat suitability assessment followed by presence/absence survey for dormouse will be required. Nest tube surveys should be carried out between April and November.

### Outline Mitigation Recommendations

- 5.2 The development proposals for this site are at an early stage of development. As such it is not possible to provide detailed mitigation recommendations at this stage. However, the following outline mitigation measures should be used to inform the detailed design proposals and precautionary methods of working, and will be refined as necessary once further surveys have been completed.

#### ***Designated Sites***

- 5.3 Development works should be avoided within or immediately adjacent to the ancient woodland sites to avoid any direct or indirect habitat loss or disturbance. Additionally, replacing non-native species with appropriate native trees would be recommended.

#### ***Habitats***

- 5.4 It is recommended that any new infrastructure is restricted to areas of existing improved and poor semi-improved grassland, tall ruderal, and/or ephemeral/short perennial vegetation as far as possible, avoiding any areas of woodland, scrub, neutral grassland, swamp and running water. Where works must encroach into these habitats it is recommended that the advice of an ecologist is sought to determine the most appropriate location to minimise impacts on these habitats. The footprint of any proposed works should be kept to the minimum necessary and protective fencing used to clearly demarcate any working areas. Arboricultural works may be required along any woodland edge which is to be retained to ensure that the remaining trees are maintained in good health and vigour.

## ***Protected and Notable Species***

### ***Badger***

- 5.5 Findings and recommendations are presented in the separate and confidential badger report.

### ***Foraging and Roosting Bats***

- 5.6 The mitigation measures already recommended in respect of habitats will also ensure that disturbance to foraging bats is minimised. In addition, night-time working and the use of associated lighting near sensitive habitats should be avoided unless absolutely necessary (it is currently not anticipated that night works will be required).
- 5.7 With regard to roosting bats and detailed mitigation that may be required, this will be informed by the findings of the ground level tree inspection (if required) and subsequent dusk/dawn activity surveys. If any roosts are located and at risk of loss (e.g. due to felling or arboricultural works) or significant disturbance (due to proximity to works) then a licence would be required from Natural England. Mitigation is likely to include restrictions on timing of works, the requirement for sectional felling and provision of replacement roost features. Alternatively, if risk to roosting bats is low, then it should be possible to proceed under a precautionary method statement, e.g. toolbox talk and supervision of works by a suitably experienced bat ecologist.

### ***Dormouse***

- 5.8 If dormouse are found to be present then a suitable mitigation strategy will be required to avoid harm to individual dormouse and to retain and/or provide suitable replacement habitat. Measures are likely to comprise sensitive timing and methods of vegetation removal, e.g. cutting in phases to allow dormouse to evacuate the area and ensuring that suitable alternative habitat is available adjacent to the working area. A licence is likely to be required from Natural England to allow works to take place.

### ***Other Mammals (Hedgehog)***

- 5.9 As a precautionary measure, if any works are carried out within areas of woodland, scrub or hedgerows then a check for hedgehog should be carried out by a suitably experienced ecologist immediately prior to works commencing. If any hedgehog are found, these should be carefully relocated by the ecologist to a suitable undisturbed location (additional measures would be required to safeguard hedgehog welfare if this takes place during the winter hibernation season). Care should be taken to clear any areas of vegetation working from the inside out to allow any wildlife to safely leave the area.

### ***Nesting Birds***

- 5.10 The mitigation measures already recommended in respect of habitats will also ensure that disturbance to nesting birds is minimised. Where these habitats must be unavoidably lost or disturbed then the vegetation should either be cut to 150mm above ground level outside of the bird nesting season or, if works take place during the nesting season (March to end August), then a check for nesting birds must first be undertaken by a suitably experienced ecologist. Any active nests should be retained with a suitable buffer zone (usually 5m) until the young have fledged. This may take several weeks, depending on the species. If no active nests are found then the vegetation should be removed within 48hrs.



## ***Amphibians and Reptiles***

- 5.11 Precautionary methods of working should be adopted in respect of amphibians and reptiles and this is likely to comprise:
- A toolbox talk;
  - Avoiding vegetation clearance during the reptile hibernation season (November to March);
  - A pre-commencement inspection by an experienced ecologist of any suitable habitat to be disturbed and any reptiles found to be safely relocated to an undisturbed area; and
  - Destructive searches during site clearance, and clearance of vegetation by hand at particularly sensitive locations (this may need to be carried out in stages so that cleared areas can be checked by the ecologist before proceeding).
- 5.12 The need for mitigation and any protected species licensing requirements should be reviewed and updated as necessary once the proposals for the site have been finalised and following the completion of the further, detailed ecological surveys (if required).

## 6. BASELINE BIODIVERSITY NET GAIN ASSESSMENT

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- 6.1 The Calculator applied in this BNG assessment is the Biodiversity Metric 2.0, which replaces the earlier Defra Metric. This Metric is used to calculate the biodiversity units of a site before and after the proposed development. The Calculator spreadsheet and associated guidance notes were available via the Natural England 'Access to Evidence' web pages<sup>6</sup>.
- 6.2 For the purposes of the baseline BNG assessment the Phase 1 Habitat classifications were transcribed into the appropriate BNG habitat types, as follows:
- Mixed woodland = 'other woodland – mixed';
  - Scrub – divided depending on dominant species = 'bramble scrub', 'gorse scrub', etc.;
  - Unimproved species-rich grassland = 'lowland meadow';
  - Semi-improved grassland = 'other neutral grassland'; and
  - Improved grassland and poor semi-improved grassland = 'modified grassland'.
- 6.3 Several Phase 1 Habitat features could be transcribed directly into BNG habitat types including ditches, reedbed, bare ground, ephemeral/short perennial habitat and sealed hardstanding/operational infrastructure areas.
- 6.4 The hedges were characterised depending on their species-richness, the presence of any trees within them and/or banks or ditches next to them, as follows:
- H1 Native Hedgerow - Associated with bank or ditch;
  - H2 Native Hedgerow;
  - H3 Native Hedgerow;
  - H4 Native Hedgerow with trees;
  - H5 Native Species Rich Hedgerow - Associated with bank or ditch;
  - H6a Native Hedgerow - Associated with bank or ditch ;
  - H6b Native Species Rich Hedgerow – Associated with bank or ditch; and
  - H7 Native Species Rich Hedgerow
- 6.5 The Calculator requires a 'condition' assessment for each habitat and feature, and this is allocated to each habitat based on the guidelines provided in the Metric methodology guidance (Crosher *et al.* 2019a) and the Phase 1 habitat survey results along with ecological expertise and knowledge of the site where necessary. Condition categories available within the Calculator, which vary slightly depending on the habitat in question, are:
- Good;
  - Fairly Good;
  - Moderate;
  - Fairly Poor;
  - Poor; and

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<sup>6</sup> <http://publications.naturalengland.org.uk/publication/5850908674228224> (downloaded April 2020)

Not Applicable.

- 6.6 The Calculator also requires an indication of ‘ecological connectivity’ of the habitat in relation to nearby surroundings in relation to biological and ecosystem flows. Within the Biodiversity Metric 2.0 the guidance (Crosher *et al.* 2019b) indicates that all High or Very High distinctiveness habitats should be assigned a ‘connectivity value of Medium, while all other habitats should be assigned Low’.
- 6.7 Finally, the ‘strategic significance’ of the habitat is allocated depending on the identification of the habitat in that location being nationally or locally significant. This is evaluated from local plans, designations, etc. In the absence of any relevant strategic documentation indicating the habitat in that area is of strategic significance for biodiversity, the area is given a value of 1.
- 6.8 The habitats present on site were assessed within the Defra Metric 2.0 as presented within Table 5 below, with the calculated biodiversity Units for each baseline habitat and linear feature (hedgerow):

**Table 5 Summary of BNG Baseline Data**

<b>Metric Habitats</b>	<b>Area (ha)</b>	<b>Distinctive-ness</b>	<b>Condition</b>	<b>Connectivity</b>	<b>Significance</b>	<b>Total Habitat Units</b>
Woodland and forest - Other woodland; mixed	0.0390	Medium	Poor	Low	Low	0.16
Heathland and shrub - Bramble scrub	0.0219	Medium	Poor	Low	Low	0.09
Heathland and shrub - Mixed scrub	0.1191	Medium	Moderate	Low	Low	0.95
Heathland and shrub - Blackthorn scrub	0.0164	Medium	Poor	Low	Low	0.07
Heathland and shrub - Gorse scrub	0.0104	Medium	Poor	Low	Low	0.04
Sparsely vegetated land - Ruderal/Ephemeral	0.2260	Low	Poor	Low	Low	0.45
Grassland - Other neutral grassland	0.0209	Medium	Good	Low	Low	0.25
Grassland - Other neutral grassland	0.2061	Medium	Poor	Low	Low	0.82
Grassland - Modified grassland	2.9866	Low	Poor	Low	Low	5.97

Metric Habitats	Area (ha)	Distinctive-ness	Condition	Connectivity	Significance	Total Habitat Units
Grassland - Bracken	0.0034	Medium	Poor	Low	Low	0.01
Wetland - Reedbeds	0.0067	High	Poor	Medium	Low	0.04
Sparsely vegetated land - Ruderal/Ephemeral	0.0020	Low	Poor	Low	Low	0.00
Urban - Vacant/derelict land/ bare ground	0.0235	Low	Poor	Low	Low	0.05
Lakes - Ditches	0.0012	Medium	Poor	Low	Low	0.00
Urban - Developed land; sealed surface	0.4261	Very Low	N/A - Other	N/A	Low	0.00
<b>Totals</b>	<b>4.1093</b>					<b>8.91</b>

Hedgerows	Length (km)	Distinctiveness	Condition	Connectivity	Significance	Total Hedgerow
H1	0.181	Medium	Good	Low	Low	2.1720
H2	0.016	Low	Good	Low	Low	0.0960
H3	0.005	Low	Good	Low	Low	0.0300
H4	0.064	Low	Good	Low	Low	0.3840
H5	0.078	High	Good	Medium	Low	1.5444
H6a	0.116	Medium	Good	Low	Low	1.3920
H6b	0.038	High	Good	Medium	Low	0.7524
H7	0.059	Medium	Good	Low	Low	0.7080
<b>Totals</b>	<b>0.560</b>					<b>7.0800</b>

- 6.9 The Metric output identifies that the site has 8.91 Habitat Units and 7.08 Hedgerow Units overall.
- 6.10 The following biodiversity enhancements could be considered on site:
- Enhance grassland diversity by improving species richness and employing suitable management to maintain and improve biodiversity;
  - Extend native hedgerow planting; and
  - Plant a mix of native scrub and trees within the poorer grassland and tall herb areas and employ suitable management.
- 6.11 Once proposals for the site have been developed, these can also be entered into the Metric and the overall BNG in terms of Units for habitats and linear features (hedgerows) can be calculated, including a percentage change if required.
- 6.12 Any BNG proposals must take account of the presence of/potential for protected and notable species on the entire site.

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## 8. ABBREVIATIONS

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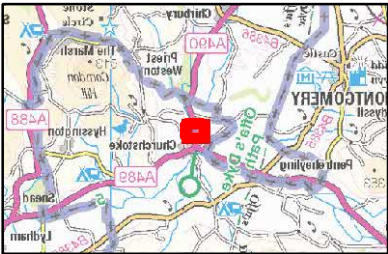
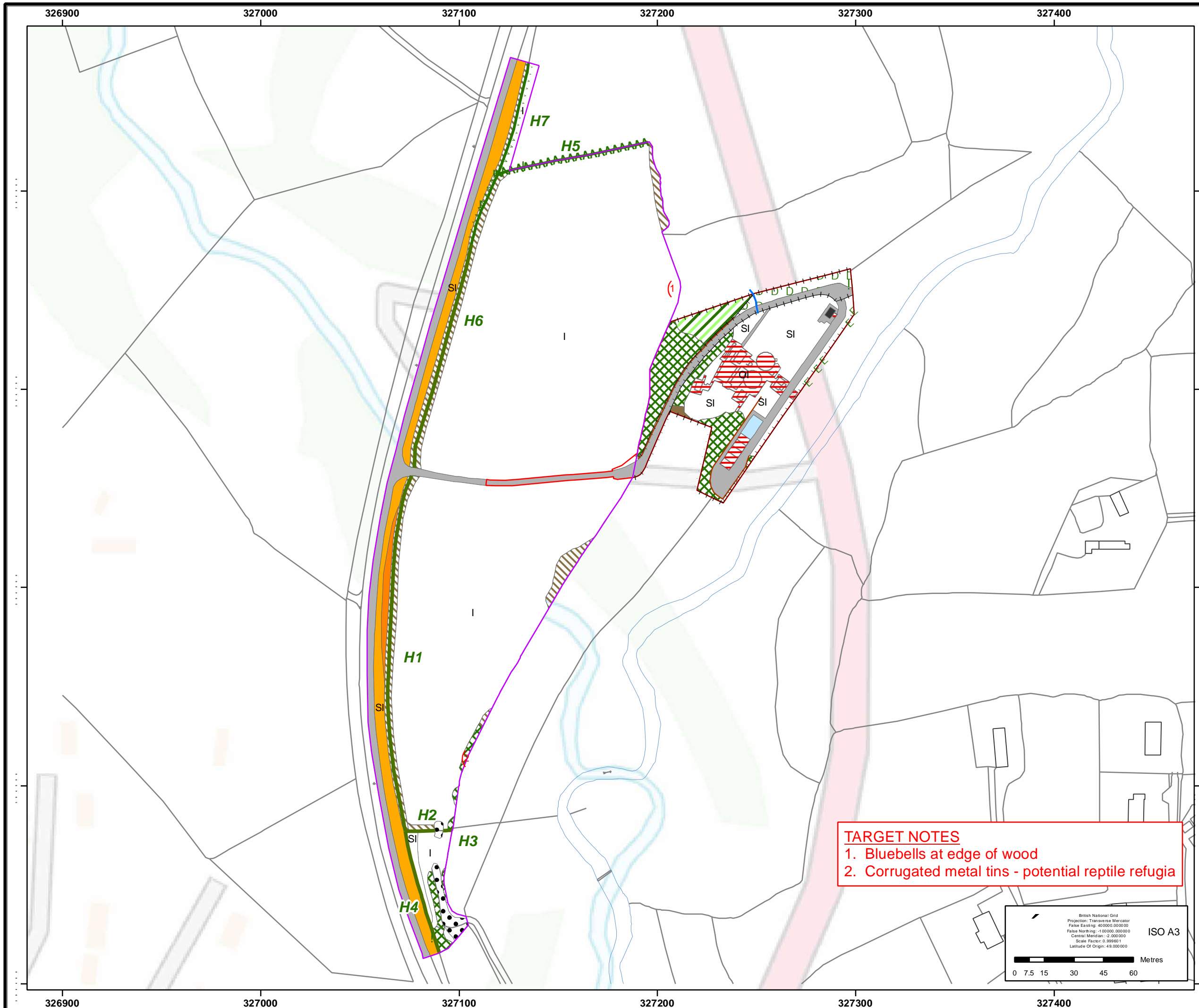
AWI	Ancient Woodland Indicator
BIS	Biodiversity Information Service
BNG	Biodiversity Net Gain
CIEEM	Chartered Institute of Ecology and Environmental Management
CRoW	Countryside and Rights of Way
EPS	European Protected Species
EU	European Union
GCN	Great Crested Newt(s)
IEA	Institute of Environmental Assessment
IRZ	Impact Risk Zone
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve(s)
LWS	Local Wildlife Site(s)
MAGIC	Multi Agency Geographic Information for the Countryside
NERC	Natural Environment and Rural Communities
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
PAA	Penny Anderson Associates Ltd
PEA	Preliminary Ecological Appraisal
SAC	Special Area(s) of Conservation
SINC	Site of Importance for Nature Conservation
SPA	Special Protection Area(s)
SSSI	Site(s) of Special Scientific Interest
STW	Sewage Treatment Works
TN	Target Note(s)
WCA	Wildlife and Countryside Act

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**FIGURE**

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**Legend**

- Site boundary
- Addendum Survey Area

**Habitat**

- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Neutral grassland - unimproved
- Neutral grassland - semi-improved
- Improved grassland
- Poor semi-improved grassland
- Continuous bracken
- Tall ruderal
- Swamp
- Ephemeral/short perennial
- Building
- Bare ground
- Hardstanding
- Operational infrastructure
- Intact species-rich hedgerow
- Intact species-poor hedgerow
- Running water
- Fence
- Wall
- Scrub
- Broadleaved tree
- ( Target note

**TARGET NOTES**

1. Bluebells at edge of wood
2. Corrugated metal tins - potential reptile refugia

British National Grid  
 Projection: Transverse Mercator  
 False Easting: 400000.000000  
 False Northing: -100000.000000  
 Central Meridian: 2.000000  
 Scale Factor: 0.999801  
 Latitude Of Origin: 49.000000

ISO A3

0 7.5 15 30 45 60 Metres

**SEVERN  
TRENT  
WATER**

Penny Anderson Associates Ltd  
 Associates Ltd  
 CONSULTANT ECOLOGISTS

Penny Anderson Associates Ltd,  
 Parklea, 60 Park Road,  
 Buxton, Derbyshire, SK17 6SN.  
 Telephone 01298 27086

Project Name: Church Stoke STW

Discipline: Ecology

Title:  
**Extended Phase 1  
 Habitat Survey  
 Church Stoke**

Scale: 1:1,800      Drawing No.: Figure 1

Drawn By: CC      Originator: BH      Date: 20/07/2022

PAA Ref.: G\SETW66\_Church\_Stoke\Maps\Figures1      Revision: 1.0

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# APPENDICES

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## **APPENDIX 1**

### **Relevant Species Legislation**

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## SUMMARY OF THE LEGISLATION RELATING TO BATS (WALES)

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All wild species of bat are protected under the Wildlife and Countryside Act (WCA) 1981 (amended), which has also been amended by later legislation including the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (amended), and this legislation is applicable to England and Wales. Bats are listed on Schedule 5 of the WCA and are therefore subject to some of the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection (S9:4b).
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat (S9:4c).

There are additional offences in relation to buying and selling (S9:5) any live or dead animal of this species or anything derived from them.

Bats species are also listed under Annexes IIa and IVa of EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017.

The Conservation of Habitats and Species Regulations 2017 (amended) states that a person commits an offence if they:

- (a) deliberately capture, injure or kill any wild animal of a European protected species,
- (b) deliberately disturb wild animals of any such species, in such a way as –
  - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or
  - (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- (c) deliberately take or destroy the eggs of such an animal, or
- (d) damage or destroy a breeding site or resting place of such an animal.

Under these Regulations it is an offence to damage or destroy a breeding site or resting place, whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead bat or part of such an animal.

In addition, seven native British bat species, including the soprano pipistrelle (*Pipistrellus pygmaeus*) and the brown long-eared bat (*Plecotus auritus*), that are frequently found in buildings, are listed as 'Priority Species' under the 2012 UK Post-2010 UK Biodiversity Framework<sup>1</sup>. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity in Wales within Section 7 of the Environment (Wales) Act 2016. More broadly, the Environment Act (Wales) Part 1 sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act. Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty. Section 7 replaces the duty in section 42 of the NERC

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<sup>1</sup> <http://jncc.defra.gov.uk/page-5170>

Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Nature Recovery Plan for Wales aims to address the underlying causes of biodiversity loss by:

- putting nature at the heart of our decision-making;
- increasing the resilience of our natural environment; and
- taking specific action for habitats and species.

It sets out how Wales will deliver the commitments of the UN Convention on Biological Diversity and the EU Biodiversity Strategy to halt the decline in biodiversity by 2020 and then reverse that decline.

*Please note: the above text provides a brief summary of the legislation in relation to bats for England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.*

## SUMMARY OF THE LEGISLATION RELATING TO BATS

---

All wild species of bat are protected under the Wildlife and Countryside Act (WCA) 1981, which has also been amended by later legislation, including the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (amended), and this legislation is applicable to England and Wales. Bats are listed on Schedule 5 of the WCA and are therefore subject to some the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection (S9:4b).
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat (S9:4c).

There are additional offences in relation to buying and selling (S9:5) any live or dead animal of this species or anything derived from them.

Bat species are also listed under Annexes IIa and IVa of the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017 (amended).

The Conservation of Habitats and Species Regulations 2017 (amended) state that a person commits an offence if they:

- (a) deliberately capture, injure or kill any wild animal of a European protected species,
- (b) deliberately disturb wild animals of any such species, in such a way as –
  - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or
  - (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- (c) deliberately take or destroy the eggs of such an animal, or
- (d) damage or destroy a breeding site or resting place of such an animal.

Under these Regulations it is an offence to damage or destroy a breeding site or resting place whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead bat or part of such an animal.

In addition, seven native British bat species, including the soprano pipistrelle (*Pipistrellus pygmaeus*) and the brown long-eared bat (*Plecotus auritus*), that are frequently found in buildings, are listed as a 'Priority Species' under the under the 2011 biodiversity strategy for England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, under the 2012 UK Post-2010 UK Biodiversity Framework. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CRoW Act 2000, and Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006.

In addition, the National Planning Policy Framework (NPPF 2019) has an overall focus on sustainable development, and states that developments should aim to engender positive outcomes for habitats and biodiversity, with a particular focus on the maintenance and creation of ecological networks. Furthermore, the NPPF also states that any planning proposals for which significant negative impacts on biodiversity cannot be avoided, mitigated or compensated for should be refused. Reference is made to Circular 06/2005 *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System* in respect of statutory obligations for biodiversity and geodiversity conservation.

The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

*Please note: the above text provides a brief summary of the legislation in relation to bats in England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.*

## SUMMARY OF THE LEGISLATION RELATING TO BADGERS AND THEIR SETTS

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Badgers (*Meles meles*) are not an endangered species but have a long history of persecution and cruelty. As such, badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended), which makes it illegal for any person to kill, injure or take a badger. It is also an offence to destroy, damage or obstruct a badger sett, or to disturb a badger whilst it is within a sett. There are also additional offences relating to possession of, buying and selling a dead badger, or anything derived from a badger, and causing a dog to enter a sett.

The Act defines a sett as 'any structure or place which displays signs of current use by a badger'. Setts are defined by English Nature (1995) as 'usually underground tunnel systems providing shelter for badgers, but may include other structures used by badgers such as hay bales, drainage culverts, or cellars'. 'Current use' is more difficult to define but is usually interpreted by the presence/absence of badger field signs over several observations of the sett (Natural England 2006).

In addition, the National Planning Policy Framework (NPPF 2019) has an overall focus on sustainable development, and states that developments should aim to engender positive outcomes for habitats and biodiversity, with a particular focus on the maintenance and creation of ecological networks. Furthermore, the NPPF also states that any planning proposals for which significant negative impacts on biodiversity cannot be avoided, mitigated or compensated for should be refused. Reference is made to Circular 06/2005 *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System* in respect of statutory obligations for biodiversity and geodiversity conservation.

The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

Local authorities in England are required to consider the likelihood of any proposed development adversely affecting badgers' foraging territory, or links between them, or significantly increasing the likelihood of road or rail casualties amongst badger populations. The planning guidance for Wales, Technical Advice Note (Wales) 5, identifies the need to comply with the Protection of Badgers Act 1992.

English Nature, 1995. *Species Conservation Handbook*. English Nature, Peterborough.

Natural England, 2006. *Guidance on 'Current Use' in the definition of a badger sett*. Natural England, Peterborough.

*Please note: the above text provides a brief summary of the legislation in relation to badgers for England and Wales and the original Act and amendments should be referred to for the precise wording.*

## SUMMARY OF THE LEGISLATION RELATING TO BREEDING BIRDS

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All wild species of breeding birds and their nests are protected under Part 1 of the Wildlife and Countryside Act (WCA) 1981, as amended by later legislation including the Countryside and Rights of Way (CRoW) Act 2000. This legislation applies in England and Wales.

Part 1 (Section 1:1) of the WCA states that:

'If any person intentionally,

- (a) kills, injures or takes any wild bird;
- (b) takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- (c) takes or destroys an egg of any wild bird,

he shall be guilty of an offence.'

Part 1 (Section 1:5) of the WCA (amended by the CRoW Act 2000) refers to specific birds listed on Schedule 1 of the WCA, and states that:

'If any person intentionally or recklessly,

- (a) disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- (b) disturbs dependent young of such a bird,

he shall be guilty of an offence and liable to a special penalty.'

Schedule 1 includes birds such as Western barn owl (*Tyto alba*), black redstart (*Phoenicurus ochruros*), woodlark (*Lullula arborea*) and Cetti's warbler (*Cettia cetti*). Please refer to the WCA for a complete list of Schedule 1 species.

Some provisions are made to allow the killing and taking of certain species under certain circumstances, as follows:

- Birds listed on Schedule 2 (Part 1) of the Act may be taken or killed outside of the 'close season' for each individual species (the 'close season' is defined by the Act). This includes various wild duck and geese species.
- Birds listed on Schedule 2 (Part 2) of the Act may be killed or taken by authorised persons at all times. This includes species such as carrion crow (*Corvus corone*), Eurasian magpie (*Pica pica*), feral pigeon<sup>1</sup> (*Columba livia*) and greater Canada goose (*Branta canadensis*). An 'authorised person' is defined as a person who has written authorisation to undertake the act from the relevant statutory authority. The written authority is in the form of a licence, either a general licence which covers a number of the more typical 'pest' species, or an individual licence for other individual species. In England these licences are issued by Natural England and in Wales by the Welsh Assembly Government.

*Please note: the above text provides a brief summary of the legislation in relation to breeding birds in England and Wales and the original Act and any amendments should be referred to for the precise wording.*

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<sup>1</sup> Also known as rock dove



## SUMMARY OF THE LEGISLATION RELATING TO GREAT CRESTED NEWTS (WALES)

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Great crested (or warty) newts (*Triturus cristatus*) (GCN) are protected under the Wildlife and Countryside Act (WCA) 1981 (amended), which has been also amended by various legislation including the Countryside and Rights of Way (CROW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (amended), and this legislation is applicable to England and Wales. Great crested newts are listed on Schedule 5 of the WCA and are therefore subject to some the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a GCN while it is occupying a structure or place which it uses for shelter or protection (S9:4b).
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a GCN (S9:4c).

There are additional offences in relation to buying and selling (S9:5) any live or dead animal of this species or anything derived from them.

Great crested newts are also listed under Annexes IIa and IVa of EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017 (amended).

The Conservation of Habitats and Species Regulations 2017 (amended) state that a person commits an offence if they:

- (a) deliberately capture, injure or kill any wild animal of a European protected species,
- (b) deliberately disturb wild animals of any such species, in such a way as –
  - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or
  - (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- (c) deliberately take or destroy the eggs of such an animal, or
- (d) damage or destroy a breeding site or resting place of such an animal.

Under these Regulations it is an offence to damage or destroy a breeding site or resting place, whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead GCN or part of such an animal.

Environment (Wales) Act 2016 Section 7 lists GCN as a species of Principal Importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. More broadly, the Environment Act (Wales) Part 1 sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act. Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty. Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Nature Recovery Plan for Wales aims to address the underlying causes of biodiversity loss by:

- putting nature at the heart of our decision-making

- increasing the resilience of our natural environment
- taking specific action for habitats and species.

It sets out how Wales will deliver the commitments of the UN Convention on Biological Diversity and the EU Biodiversity Strategy to halt the decline in biodiversity by 2020 and then reverse that decline.

*Please note: the above text provides a brief summary of the legislation in relation to GCN for England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.*

## SUMMARY OF THE LEGISLATION RELATING TO GREAT CRESTED NEWTS (GCN)

---

Great crested (or warty) newts (*Triturus cristatus*) (GCN) are protected under the Wildlife and Countryside Act (WCA) 1981 (amended), which has been also amended by various legislation including the Countryside and Rights of Way (CROW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (amended), and this legislation is applicable to England and Wales. Great crested newts are listed on Schedule 5 of the WCA and are therefore subject to some the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a GCN while it is occupying a structure or place which it uses for shelter or protection (S9:4b).
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a GCN (S9:4c).

There are additional offences in relation to buying and selling (S9:5) any live or dead animal of this species or anything derived from them.

Great crested newts are also listed under Annexes IIa and IVa of EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017 (amended).

The Conservation of Habitats and Species Regulations 2017 (amended) state that a person commits an offence if they:

- (a) deliberately capture, injure or kill any wild animal of a European protected species,
- (b) deliberately disturb wild animals of any such species, in such a way as –
  - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or
  - (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- (c) deliberately take or destroy the eggs of such an animal, or
- (d) damage or destroy a breeding site or resting place of such an animal.

Under these Regulations it is an offence to damage or destroy a breeding site or resting place, whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead GCN or part of such an animal.

In addition, GCN are listed as a 'Priority Species' under the under the 2011 biodiversity strategy for England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, under the 2012 UK Post-2010 UK Biodiversity Framework. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CROW Act 2000, and Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006.

In addition, the National Planning Policy Framework (NPPF 2019) has an overall focus on sustainable development, and states that developments should aim to engender positive outcomes for habitats and biodiversity, with a particular focus on the maintenance and creation of ecological networks. Furthermore, the NPPF also states that any planning proposals for which significant negative impacts on biodiversity cannot be avoided, mitigated or compensated for should be refused. Reference is made to Circular 06/2005 *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System* in respect of statutory obligations for biodiversity and geodiversity conservation.

The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

*Please note: the above text provides a brief summary of the legislation in relation to GCN for England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.*

## SUMMARY OF THE LEGISLATION RELATING TO DORMICE

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Dormice (*Muscardinus avellanarius*), also known as common or hazel dormice, are protected under the Wildlife and Countryside Act (WCA) 1981 (amended), which has also been amended by later legislation, including the Countryside and Rights of Way (CROW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (amended), and this legislation is applicable to England and Wales. Dormice are listed on Schedule 5 of the WCA and are therefore subject to some of the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for shelter or protection (S9:4b).
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a dormouse (S9:4c).

There are additional offences in relation to buying and selling (S9:5) any live or dead animal of this species or anything derived from them.

Dormice are also listed under Annex IVa of EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017 (amended).

The Conservation of Habitats and Species Regulations 2017 (amended) state that a person commits an offence if they:

- (a) deliberately capture, injure or kill any wild animal of a European protected species,
- (b) deliberately disturb wild animals of any such species, in such a way as –
  - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or
  - (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- (c) deliberately take or destroy the eggs of such an animal, or
- (d) damage or destroy a breeding site or resting place of such an animal.

Under these Regulations it is an offence to damage or destroy a breeding site or resting place, whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead dormouse or part of such an animal.

In addition, dormice are listed as a 'Priority Species' under the 2011 biodiversity strategy for England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, under the 2012 UK Post-2010 UK Biodiversity Framework. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CROW Act 2000, and Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006.

In addition, the National Planning Policy Framework (NPPF 2019) has an overall focus on sustainable development, and states that developments should aim to engender positive outcomes for habitats and biodiversity, with a particular focus on the maintenance and creation of ecological networks. Furthermore, the NPPF also states that any planning proposals for which significant negative impacts on biodiversity cannot be avoided, mitigated or compensated for should be refused. Reference is made to Circular 06/2005 *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System* in respect of statutory obligations for biodiversity and geodiversity conservation.

The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

*Please note: the above text provides a brief summary of the legislation in relation to dormice for England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.*

## SUMMARY OF THE LEGISLATION RELATING TO REPTILES

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All six of the native British reptile species are afforded varying degrees of protection under the Wildlife and Countryside Act (WCA) 1981, as amended by various later legislation, and this legislation is applicable to England and Wales. All six species are listed on Schedule 5 of the WCA.

The four widespread species, common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), grass snake (*Natrix helvetica*) and adder (*Vipera berus*) are afforded part protection under Section 9(1), making it an offence to intentionally kill or injure any of these species of reptile. The two rarer species, sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*), are subject to a greater degree of protection under Section 9(4) which, with the amendments, make it (in brief) an offence to:

- Intentionally or recklessly disturb a sand lizard or smooth snake while it is occupying a structure or place used for shelter or protection (S9:4b); or
- Intentionally or recklessly obstruct access to any structure or place a sand lizard or smooth snake uses for shelter or protection (S9:4c).

All six species are afforded protection from buying, selling or exchange under Section 9(5) of the WCA.

Sand lizard and smooth snake are also listed under Annexes IIa and IVa of EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017 (amended).

The Conservation of Habitats and Species Regulations 2017 (amended) state that a person commits an offence if they:

- (a) deliberately capture, injure or kill any wild animal of a European protected species,
- (b) deliberately disturb wild animals of any such species, in such a way as –
  - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or
  - (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- (c) deliberately take or destroy the eggs of such an animal, or
- (d) damage or destroy a breeding site or resting place of such an animal.

Under these Regulations it is an offence to damage or destroy a breeding site or resting place whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead sand lizard or smooth snake or part of such an animal.

In addition, all six reptile species are listed as a 'Priority Species' under the under the 2011 biodiversity strategy for England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, under the 2012 UK Post-2010 UK Biodiversity Framework. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CRoW Act 2000, and Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006.

In addition, the National Planning Policy Framework (NPPF 2019) has an overall focus on sustainable development, and states that developments should aim to engender positive outcomes for habitats and biodiversity, with a particular focus on the maintenance and creation of ecological networks. Furthermore, the NPPF also states that any planning proposals for which significant negative impacts on biodiversity cannot be avoided, mitigated or compensated for should be refused. Reference is made to Circular 06/2005 *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System* in respect of statutory obligations for biodiversity and geodiversity conservation.

The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

*Please note: the above text provides a brief summary of the legislation in relation to reptiles for England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.*

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**APPENDIX 2**  
**Botanical Species List**

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## Appendix 2 Botanical Species List

Common Name	Scientific Name	DAFOR
<b>Woody Species</b>		
Alder	<i>Alnus glutinosa</i>	LO
Ash	<i>Fraxinus excelsior</i>	R-LO
Blackthorn	<i>Prunus spinosa</i>	O-LA
Bramble	<i>Rubus fruticosus</i> agg.	O-LD
Dog rose	<i>Rosa canina</i>	R-O
Dogwood	<i>Cornus sanguinea</i>	R
Douglas fir	<i>Pseudotsuga menziesii</i>	LF
Elder	<i>Sambucus nigra</i>	O
Field maple	<i>Acer campestre</i>	LO
Gorse	<i>Ulex europaeus</i>	R-LA
Grey willow	<i>Salix cinerea</i>	R-LO
Hawthorn	<i>Crataegus monogyna</i>	F-LD
Hazel	<i>Corylus avellana</i>	R-LO
Holly	<i>Ilex aquifolium</i>	R-LO
Honeysuckle	<i>Lonicera periclymenum</i>	R
Hybrid oak	<i>Quercus x rosacea</i>	LO
Pedunculate oak	<i>Quercus robur</i>	LO
Sitka spruce	<i>Picea sitchensis</i>	LO
Sycamore	<i>Acer pseudoplatanus</i>	R
Wych elm	<i>Ulmus glabra</i>	R
<b>Herbs, Grasses and Ferns</b>		
Annual meadow-grass	<i>Poa annua</i>	F
Autumn hawkbit	<i>Scorzoneroides autumnalis</i>	R
Barren brome	<i>Anisantha sterilis</i>	O-LA
Barren strawberry	<i>Potentilla sterilis</i>	R
Bird's-foot trefoil	<i>Lotus corniculatus</i>	R
Bluebell	<i>Hyacinthoides non-scripta</i>	R
Bracken	<i>Pteridium aquilinum</i>	LA
Broad buckler-fern	<i>Dryopteris dilatata</i>	R
Broad-leaved dock	<i>Rumex obtusifolius</i>	O-F
Burdock species	<i>Arctium</i> sp.	LO
Bush vetch	<i>Vicia sepium</i>	R
Cleavers	<i>Galium aparine</i>	LA
Cock's-foot	<i>Dactylis glomerata</i>	O-F
Common bent	<i>Agrostis capillaris</i>	LA
Common chickweed	<i>Stellaria media</i>	R
Common comfrey	<i>Symphytum officinale</i>	R
Common knapweed	<i>Centaurea nigra</i>	LF
Common mouse-ear	<i>Cerastium fontanum</i>	R-O
Common nettle	<i>Urtica dioica</i>	O-LD
Common ragwort	<i>Jacobaea vulgaris</i>	R
Common reed	<i>Phragmites australis</i>	LD
Common vetch	<i>Vicia sativa</i>	LO
Cow parsley	<i>Anthriscus sylvestris</i>	LD
Creeping bent	<i>Agrostis stolonifera</i>	F-A
Creeping buttercup	<i>Ranunculus repens</i>	F-LA
Creeping cinquefoil	<i>Potentilla reptans</i>	O-LA
Creeping thistle	<i>Cirsium arvense</i>	O
Cuckooflower	<i>Cardamine pratensis</i>	R
Cut-leaved crane's-bill	<i>Geranium dissectum</i>	LO
Dandelion	<i>Taraxacum officinale</i> agg.	A
Dog's mercury	<i>Mercurialis perennis</i>	LO
False oat-grass	<i>Arrhenatherum elatius</i>	O-LA
Field forget-me-not	<i>Myosotis arvensis</i>	R
Field wood-rush	<i>Luzula campestris</i>	R
Foxglove	<i>Digitalis purpurea</i>	R
Garlic mustard	<i>Alliaria petiolata</i>	LF
Germander speedwell	<i>Veronica chamaedrys</i>	R-O

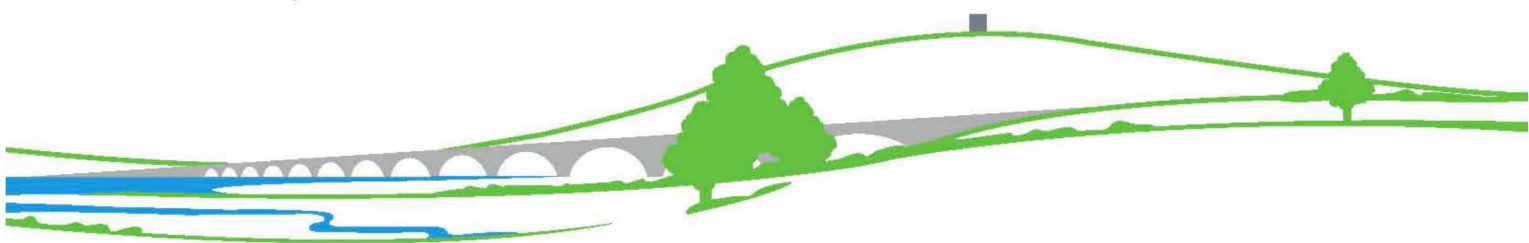
Common Name	Scientific Name	DAFOR
Greater plantain	<i>Plantago major</i>	R
Greater stitchwort	<i>Stellaria holostea</i>	LF
Ground-ivy	<i>Glechoma hederacea</i>	LF
Hairy tare	<i>Ervilla hirsuta</i>	LO
Herb-Robert	<i>Geranium robertianum</i>	O
Hogweed	<i>Heracleum sphondylium</i>	LF
Italian rye-grass	<i>Lolium multiflorum</i>	R
Ivy	<i>Hedera helix</i>	O-LA
Lesser celandine	<i>Ficaria verna</i>	LA
Lesser trefoil	<i>Trifolium dubium</i>	R
Lords-and-Ladies	<i>Arum maculatum</i>	LO
Marsh thistle	<i>Cirsium palustre</i>	R
Meadow buttercup	<i>Ranunculus acris</i>	O-LA
Meadow foxtail	<i>Alopecurus pratensis</i>	LO
Meadow vetchling	<i>Lathyrus pratensis</i>	LO
Musk-mallow	<i>Malva moschata</i>	R
Nipplewort	<i>Lapsana communis</i>	R
Opposite-leaved golden-saxifrage	<i>Chrysosplenium oppositifolium</i>	R (streamside)
Perennial rye-grass	<i>Lolium perenne</i>	O-A
Primrose	<i>Primula vulgaris</i>	R
Procumbent pearlwort	<i>Sagina procumbens</i>	R
Rape	<i>Brassica napus</i>	R
Red campion	<i>Silene dioica</i>	R-LF
Red clover	<i>Trifolium pratense</i>	R
Red fescue	<i>Festuca rubra</i>	F-A
Ribwort plantain	<i>Plantago lanceolata</i>	LA
Rough chervil	<i>Chaerophyllum temulentum</i>	R
Rough meadow-grass	<i>Poa trivialis</i>	A
Round-leaved crane's-bill	<i>Geranium rotundifolium</i>	O
Slender false-brome	<i>Brachypodium sylvaticum</i>	LF
Smooth meadow-grass	<i>Poa pratensis</i>	O
Soft brome	<i>Bromus hordeaceus</i>	R
Soft-rush	<i>Juncus effusus</i>	R
St John's-wort species	<i>Hypericum</i> sp.	R
Sticky mouse-ear	<i>Cerastium glomeratum</i>	LO
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>	R-O
Tare species	<i>Vicia</i> sp.	R
Thale cress	<i>Arabidopsis thaliana</i>	R
Thyme-leaved speedwell	<i>Veronica serpyllifolia</i>	R
Tufted hair-grass	<i>Deschampsia caespitosa</i>	R
Water avens	<i>Geum rivale</i>	R
White clover	<i>Trifolium repens</i>	O-A
Willowherb species	<i>Epilobium</i> sp. (annual)	LF
Wood avens	<i>Geum urbanum</i>	R
Wood dock	<i>Rumex sanguineus</i>	R
Wood sage	<i>Teucrium scorodonia</i>	R
Yarrow	<i>Achillea millefolium</i>	R-LO
Yorkshire-fog	<i>Holcus lanatus</i>	O-A
<b>Mosses</b>		
Common feather-moss	<i>Kindbergia praelonga</i>	O-LA
Neat feather-moss	<i>Scleropodium purum</i>	R
Pointed spear-moss	<i>Calliergonella cuspidata</i>	LA
Rough-stalked feather-moss	<i>Brachythecium rutabulum</i>	LO
Springy turf-moss	<i>Rhytidiadelphus squarrosus</i>	LO

#### KEY

D-Dominant, A-Abundant, F-Frequent, O-Occasional, R-Rare, L-Locally



Penny Anderson  
Associates Ltd  
CONSULTANT ECOLOGISTS



Park Lea, 60 Park Road, Buxton, Derbyshire SK17 6SN