



# Preliminary Ecological Appraisal

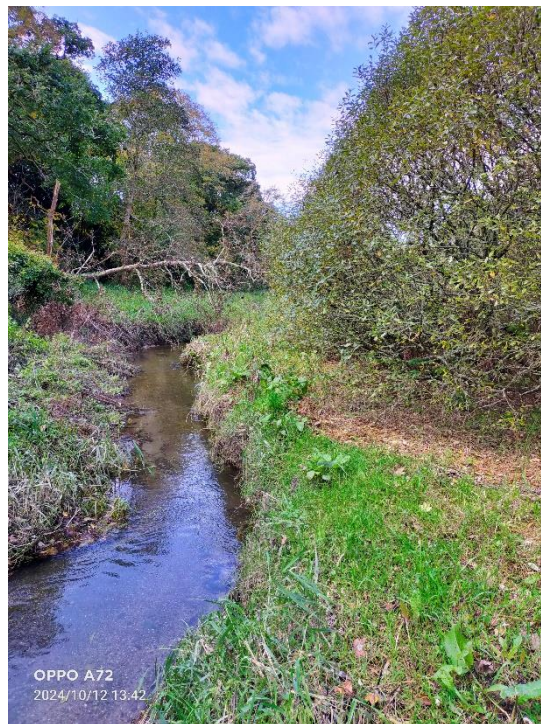
at

Ruan Lanihorne Parish Green Space, Ruan Lanihorne,  
Cornwall

For

Ruan Lanihorne Parish Council

November 2024



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November 2024



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## Summary

LT Ecological Services was commissioned by Ruan Laniorne Parish Council to undertake an ecological assessment of the site at the Parish Green Space, opposite the Reading Rooms, Ruan Laniorne, Cornwall. The aim of the assessment is to establish a baseline appraisal of the habitat types, the condition of the habitats and the flora and fauna present so the overall ecological value of the site can be determined and a plan to manage and enhance the green space can be prepared.

The site was found to have low ecological value, with broad-leaved, mixed and yew woodland and areas of unimproved neutral grassland providing the most valuable habitat types.

A Environmental Record Centre for Cornwall and the Isles of Scilly data search returned records for a number of protected and notable species within a 1km radius of the site.

Constraints and opportunities were assessed, and a number of recommendations are made to underpin the on-going management of the site and to recommend opportunities for habitat enhancement, the creation of new habitats where possible to enhance biodiversity and amenity value to the community and develop resilience to climate change.

Key recommendations include:

- Preparation of a Biodiversity and Habitat Management Plan for the site with ecological recommendations with associated monitoring programme
- Tree and shrub management and species diversification
- Restoration and enhancement of both the “improved” area of neutral grassland and the woodland in the western part of the site
- Creation of new wildflower areas and enhancement of grassland and aquatic/wetland habitat flora, especially in the eastern part of the site to increase species diversity
- Removal and/or control of non-native plant species
- Improving connectivity to other habitats nearby, e.g. pond, saltmarsh, woodland
- Create new ponds/scrapes/wetland across the site
- Install interpretation board(s), pathway and seating facilities at suitable locations for education and engagement of the community and to boost amenity value of the site
- A further botany survey is recommended in late Spring/early Summer 2025

## 1.0 Introduction

### 1.1 Background

A Preliminary Ecological Survey was commissioned by Ruan Laniorne Parish Council to establish a baseline appraisal of the habitat types, the condition of the habitats and determine the flora and fauna present on the site at the Parish Green Space, opposite the Reading Rooms, Ruan Laniorne, Cornwall TR2 5NZ, centred on national grid reference SW 8954 4186.



The survey is intended to inform the need for any additional surveys which may be required prior to any significant management actions within the site, provide recommendations for site management, identify opportunities for enhancement actions intended to promote biodiversity and habitat improvements and enhance the amenity value of the space for the benefit of the community. Recommendations are made within the context of statutory and non-statutory protected site, priority habitat and protected/priority species legislation.

## 1.2 Objectives

The survey objectives are listed as follows:

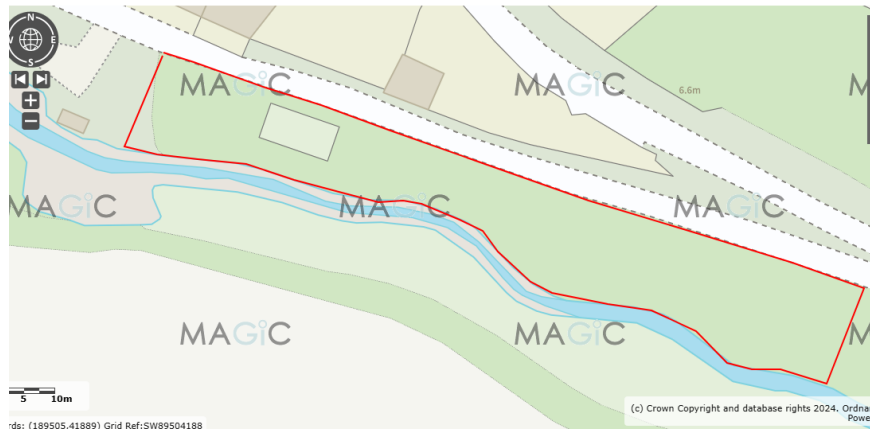
- Identify all relevant statutory and non-statutory designated areas of conservation importance and features of ecological significance within the site and within a 1km radius of the site
- Broadly categorise habitat types within the site in accordance with the ERCCIS habitat mapping methodology and where appropriate the UK Hab habitat survey and mapping technique. Identify any Priority Habitats present within or adjoining the site
- Assess the potential for the presence of protected species and species of principal conservation importance within the site
- Assess the presence and potential impacts of any Non-Native Invasive species and provide recommendations for mitigation
- Provide recommendations for any further surveys which may be required
- Assess the condition and ecological value of the habitats present within the site
- Provide recommendations for habitat enhancements, management actions and the creation of new features which will promote greater biodiversity, promote the conservation of species and build resilience to any identified pressures and impacts
- Provide baseline data to enable the potential production of a post works monitoring programme and an ecological management plan

## 1.3 Site description

The parish green space is located opposite the Reading Rooms on the north bank of the Ruan River at the southeastern end of the village of Ruan Lanihorne. The bulk of the village occupies the landscape to the north of the site. Intensive agriculture, mainly pasture associated with dairy/livestock production, dominates the landscape to the east and south with pockets of deciduous woodland connected by hedgerow field boundaries. The Fal Estuary lies to the west of the site with extensive areas of saltmarsh and occasional mudflats present. The site is just upstream of the junction between the brackish waters of the estuary and the dominant freshwater discharge of the Ruan River. However, portions of the site are still subject to flooding during Spring tides as the Ruan River backs up under tide lock conditions. This flooding is exacerbated when Spring tides coincide with surface water flooding. The Ruan River forms the southern site boundary and the road from Ruan Highlanes to St

Michael Penkivel forms the northern boundary. The small western and eastern boundaries adjoin gardens and small holdings respectively. The site boundary is shown in Plan 1.

**Plan1:** Parish Green Space location and site boundary



The site is approximately 0.2 Ha in area.

Within the site, there are two distinct areas determined by topography, levels of drainage and occurrence of non-native species. The western portion of the site had been more extensively managed with areas of regularly mown grass noted and a number of introduced non-native plants have been established. Frequent, broad-leaved trees and shrubs were present. This area was mainly above 2.5m in elevation and was consequently drier and less prone to periodic inundation, (Photo 1).



**Photo 1:** Western area of the site looking east.

Fewer non-native plants were observed in the eastern portion of the site. This area lay largely below 2.5m and was much wetter with a greater frequency of inundation. No discernable mowing or grazing regime was noted in this part of the site with the neutral grassland displaying a tussocky and more diverse structure. Only occasional broad-leaved trees and shrubs, including an area of bramble scrub, were noted in the eastern part of the site and these were mainly on the northern boundary adjoining the road (Photo 2).



Photo 2: Eastern area of the site looking east.

The underlying geology of the site is sandstone and mudstone from the Portscatho Formation which are alkaline sedimentary strata. This is overlaid by soil from the soilscape 6 classification, (Cranfield University 2020. *The Soils Guide*. Available: [www.landis.org.uk](http://www.landis.org.uk). Cranfield University, UK. Last accessed 16/11/2024) which are freely draining slightly acid loamy soils. Waterlogged conditions are normally brief in deeper soil layers of this type but can be more protracted where soil depth is shallow in conjunction with high groundwater levels. This is likely to be the case in the eastern portion of the site giving rise to the wetter conditions. In combination the bedrock and soil gives rise to the circum-neutral habitat conditions demonstrated by the site vegetation and the contrast in damp conditions between the western and eastern areas of the site. This pH will need to be taken into account when selecting plant species for enhancement.

#### 1.4 Scope of survey

The survey did not extend beyond the boundaries of the parish green space into areas which have good connectivity with the site. Of particular note is the Ruan River which provides an excellent corridor to the east and west of the site and links the space with a variety of priority habitats in the wider landscape. The recommendations made in this report should be read within the context of this level of connectivity.





## 2.0 Methodology

### 2.1 Desk Study

#### 2.1.1 Data Search

The desk study involved the compilation of ecological information relating to the site and surrounding area within a 1km radius of the site. The resources consulted included the following:

- The Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS) was commissioned to conduct a data search for statutory and non-statutory designated sites of conservation importance<sup>1</sup> and legally protected and biodiversity priority species, red data book species and county notable species.
- The Multi-Agency Geographic Information for the Countryside (MAGIC) website was consulted to identify designated conservation sites and Biodiversity Action Plan (BAP) priority habitats. The British Geological Survey and Landis websites were consulted to provide geology and soil information for the site.
- Ordnance Survey master maps and aerial photographs were used to identify habitats of potential value to protected species including woodlands, lines of trees, hedgerows, scrub, areas of grassland and waterbodies.

Please note that a lack of protected species data does not mean that such species are absent from an area, only that the environmental records centre does not hold any records for that particular species. This study does not include landscape designations, such as whether the site lies within a Conservation Area or whether there are any Tree Preservation Orders (TPOs) on the site.

### 2.2 Field Surveys

#### 2.2.1 Preliminary Ecological Appraisal

The survey was completed in accordance with best practice methodologies:

- Joint Nature Conservation Committee (2003). Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough.
- British Standards Institution (2013). BS42020: Biodiversity Code of Practice for Planning and Development. British Standards Institution, London.

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<sup>1</sup> Evaluated statutory designated areas are Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar Sites, Sites of Special Scientific Interest (SSSI), Marine Protected Areas (MPA), National Nature Reserves (NNR), Local Nature Reserves (LNR) and National Parks. Evaluated non-statutory designations included Local Wildlife Sites (LWS) and Local Geological Sites (LGS).



- Chartered Institute of Ecology and Environmental Management (2017), Guidelines for Preliminary Ecological Appraisal, Second Edition. CIEEM, Winchester.
- UKHab Ltd (2023). UK Habitat Classification Version 2.0, (at <https://www.ukhab.org>)

The site survey was undertaken on the 12<sup>th</sup> October 2024 by Lorne Thomson, LT Ecological Services, Ecologist, Bachelor of Science (BSc (Hons)), practitioner member of the Institute of Environmental Management and Assessment (PIEMA), DipEnv (NEBOSH) and associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM).

During the survey the following information was recorded:

- Habitat types classified in accordance with the data returned by ERCCIS and where appropriate using the UK Habitat Classification methodology.
- Dominant, notable and invasive, non-native plant species.
- Direct evidence of protected and notable animal species.
- Features of value for protected and notable animal species.

### 2.2.2 Habitats

The main habitats on the Site were mapped according to the data returned by the ERCCIS data search and, where appropriate, the latest guidance provided by the UKHab Ltd., (2023) methodology for the classification and mapping of habitats. Plant names follow New Flora of the British Isles (Stace 2010). Common plant names are used in the text of the document and a list of the dominant species recorded during the survey with common and scientific names is given at Appendix A.

### 2.2.3 Protected and Notable Species

The site was inspected for evidence of and its potential to support protected or notable species, especially those listed under the Conservation of Habitats and Species Regulations 2010 (as amended), the Wildlife & Countryside Act 1981 (as amended), the Natural Environment and Rural Communities (NERC) Act 2006, the Countryside & Rights of Way (CRoW) Act 2000.

Species survey methods were conducted in accordance with guidance notes and best practice guidelines issued by the relevant authorities (see Reference Section). Due to the nature of the habitats present within the site, consideration was given, in particular, to the potential for the site to support birds, bats, kingfisher, otter, water vole, amphibians and reptiles.

The site was also appraised for its suitability to support other protected or notable fauna including mammals and invertebrates in accordance with the CIEEM's Guidelines for Preliminary Ecological



Appraisal: Second Edition (2017). Evidence of any current or historical presence of such species was recorded.

The site was also searched for the presence of any invasive non-native species, notably plant species such as Himalayan Balsam, giant hogweed and Japanese Knotweed.

## 2.3 Survey Limitations

The comprehensiveness of any ecological assessment will be limited by the season in which surveys are completed. The optimum season for carrying out habitat survey is April to September. The Extended Phase 1/UK Habs habitat survey was carried out in October outside the optimum survey season. However, while all habitat types on site could be identified, the season had advanced to the point where a suitably comprehensive floral species assessment was not practical in the time available. It is recommended that a further botanical survey is undertaken between May and June 2025. This will provide a more detailed assessment of the flora on the site and can form a supplement to this report.

To determine likely presence or absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity, especially those given protection under UK or European wildlife legislation.

This report cannot be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day of the visit and highlights areas where further survey work may be recommended.

It is considered that the survey undertaken is sufficient to evaluate the ecological resources within the site and thus to meet the objectives of the survey.

## 3.0 Baseline Conditions

### 3.1 Desk Study

#### 3.1.1 Designated Sites

Data provided by the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS) indicate that three statutory designated sites occur within the site. The entire site lies within the Cornwall National Landscape (formerly the Cornwall Area of Outstanding Natural Beauty). The western portion and the entire southern boundary of the site falls within the Upper Fal Estuary and Woods Site of Special Scientific Interest (SSSI). This same area is also part of the Fal and Helford Special Area of Conservation (SAC). Full site details and maps are detailed in the ERCCIS report appended to this document.



No non-statutory designated sites lie within the site. However, there are records of six non-statutory designated sites of conservation importance located within the 1km radius search area to the west and north of the site, (Table 1). Full site details and maps are detailed in the ERCCIS report appended to this document.

**Table 1:** Evaluated sites with non-statutory designations recorded within the area of search:

Location	Site Code	Site Type	Site Name
1	AW433	Ancient Woodland	LAMORRAN WOOD
2	AW601	Ancient Woodland	RUAN LANIHORNE WOOD
3	CK13.7	CWS	Upper Fal Woodlands
4	CK13.8	CWS	Mellingoose Woods
5	15	CWT Reserve	Fal-Ruan Estuary
6	11243	NT Land	The Roseland

### 3.1.2 Protected and Notable Species

A comprehensive list of protected, priority and local priority species of flora and fauna recorded within a 1km radius of the site is provided in the ERCCIS report appended to this document. Highly mobile species, notably birds, bats, most mammals, and flying invertebrates recorded within the search radius may frequent the site for foraging, commuting or refuge purposes. The protected species recorded within the search radius which are likely to have a high level of association with the site are summarized in Table 2.

**Table 2:** Protected species with a potentially high site association (Table continues).

Common name	Scientific name
<b>Bats</b>	
Brown Long-eared bat	<i>Plecotus auritus</i>
Serotine	<i>Eptesicus serotinus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Western Barbastelle	<i>Barbastella barbastellus</i>
Noctule	<i>Nyctalus noctula</i>



Daubenton's Bat	<i>Myotis daubentonii</i>
Greater Horseshoe	<i>Rhinolophus ferrumequinum</i>
Lesser Horseshoe	<i>Rhinolophus hiposideros</i>
<b>Birds</b>	
Kingfisher	<i>Alcedo atthis</i>
<b>Mammals</b>	
Badger	<i>Meles meles</i>
Eurasian Otter	<i>Lutra lutra</i>
<b>Reptiles</b>	
Common Lizard	<i>Zootoca vivipara</i>
Adder	<i>Vipera berus</i>
Grass Snake	<i>Natrix helvetica</i>
Slow-worm	<i>Anguis fragilis</i>
<b>Amphibians</b>	
Smooth Newt	<i>Lissotriton vulgaris</i>
Common Frog	<i>Rana temporaria</i>
Common Toad	<i>Bufo bufo</i>

## 3.2 Habitats

### 3.2.1 Habitats Summary

The ERCCIS data search did not record any priority habitats within the site. However, four priority habitats were recorded within the 1km search radius. Coastal saltmarsh, Wet woodland, Upland oakwood and Upland mixed ashwoods were recorded to the west and north of the site.

Within the site, the ERCCIS search identified two broad Phase 1 habitat types:

- A1.1 – Broadleaved woodland
- B2 – Unimproved grassland/bracken (possibly)

This was further refined in the ERCCIS search to identify the landcover habitat types:

- Broadleaved, mixed and yew woodland
- Neutral grassland

The survey confirmed the presence of broadleaved woodland, mainly in the western portion of the site and the presence of neutral grassland across the site. The grassland was unimproved in the eastern portion of the site but was evidently improved across much of the western portion. The habitat types and relative extent within the site are mapped in the ERCCIS report appended to this document.

A more detailed description of the habitats recorded on site is provided below.



### 3.2.2 Broadleaved, Mixed and Yew Woodland

This habitat type occupied most of the western portion of the site with a scattered occurrence in the eastern portion, mainly associated with the northern and eastern boundaries. The scattered nature of the tree cover provided an open canopy beneath which a well-established vegetation ground layer was present and an understorey of native and introduced shrubs was noted. A stand of grey willow trees in the eastern portion of the site presented a denser canopy to ground level with a denuded ground layer. The trees exhibited some variation of age structure with occasional mature trees interspersed with younger trees and saplings.

Native tree and shrub species noted in the western part of the site included hawthorn, ash, grey willow and crack willow. Non-native species included eucalyptus, bay, stag's horn sumach, Japanese rose and bamboo. Native tree species noted in the eastern area of the site included Norway maple, hazel and grey willow. An area of dense bramble scrub was also noted adjoining the northern boundary at the eastern end of the site. No non-native tree species were observed in this part of the site.

The woodland and scrub provide potential nesting and roosting habitat for birds. Generally, the trees, bramble scrub and shrubs provide substantial foraging opportunities for birds, small mammals and invertebrates. The native trees, especially the mature willow and Norway maple trees, within the site are considered to provide moderate ecological value at the Local level.

Constraints associated with this habitat type include the presence of ash dieback, low species diversity, limited variation in age structure and the substantial number of non-native species present, many of which are difficult to control, e.g. bamboo and Japanese rose.



Photo 3: Broadleaved, Mixed and Yew Woodland in the centre of the site looking east

### 3.2.3 Neutral Grassland

This habitat type extended across the entire site although the species composition, habitat structure and management regime varied considerably, notably between the western and eastern portions of the site.

The neutral grassland within the woodland had been regularly closely mown along the northern boundary with the road until it reached the area of scrub in the eastern part of the site. This habitat was consequently more akin to amenity grassland and displayed a reduced floral diversity. A number of mature non-native pampas grass tussocks (*Cortaderia* sp.) and an area of bamboo (*Sasa* sp.) were set within this “amenity” grassland regime which dominated a portion of the western area. The neutral grassland graduated to a less managed regime with a more complex structure towards the eastern part of the site and towards the Ruan River bank on the southern boundary. A distinctive change in species composition was observed near the middle of the site where the conditions became wetter and species associated with damp/aquatic habitats became prevalent. A smaller cluster of pampas grass was noted in this eastern portion and a non-native species of aster was frequent in its occurrence.

Species present in the western portion of the site included, common ivy, black medick, common hogweed, creeping buttercup, common daisy, bramble, red campion, Yorkshire fog, cocksfoot and

common nettle. The relatively low species diversity in this area reflected the higher level of management. Species recorded in the eastern portion of the site included, water mint, fool's watercress, yellow iris, reed canary grass (which was dominant in some areas), meadow sweet, common fleabane and false-fox sedge. These species are representative of a wetland habitat type and the lower level (if any) of management has promoted a greater species diversity in this part of the site.



**Photo 4:** Highly managed neutral grassland at the west of the site

The condition of the grassland in the western part of the site is unfavourable due to the mowing regime and the presence of non-native species, notably bamboo and pampas grass. However, the pampas grass is likely to provide refuge and foraging opportunities for amphibians, reptiles, small mammals and some invertebrates. It may also provide nesting opportunities for some species of bird. The grassland in this part of the site is assessed to have low ecological value at a local level.

The grassland in the eastern part of the site is in a more favourable condition with minimal management, fewer non-native species and a more diverse range of floral species. This area of grassland is assessed as having moderate ecological value at the local level by providing a greater range of resource opportunities for fauna, especially those species associated with wet habitats.





Photo 5: Wet, Neutral Grassland at the eastern half of the site



Photo 6: Non-native pampas grass at the eastern part of the site



### 3.2.4 Connected Habitats

The site has good connectivity with the wider landscape and other habitat types nearby. The Ruan River adjoins the southern boundary of the site and this provides a commuting corridor for wildlife connecting the site with terrestrial habitats to the east and the coastal and estuarine habitats associated with the Fal Estuary to the west. Residential areas located to the north of the site provide limited habitat and connectivity between the site and the wider landscape in this direction except for highly mobile species.

The site has good connectivity with a large pond located approximately 200m to the west which is sympathetically managed for wildlife. A number of species frequenting the pond may also be attracted to the habitats within the site.

## 3.3 Protected and Notable Species

### 3.3.2 Amphibians

The nearby pond and the tall ruderal vegetation associated with the riparian corridor provide connected habitats suitable for species recorded in the data search, i.e. palmate newts (*Lissotriton helveticus*), common toad (*Bufo bufo*) and common frog (*Rana temporaria*). Commuting, foraging or dispersing individuals of these species may use the habitats within the site for foraging and refuge.

The site currently provides a low to moderate value for amphibians in their terrestrial life phases.

Common amphibian species (common frog, common toad, smooth newt (*Lissotriton vulgaris*) and palmate newt are afforded limited legal protection under the Wildlife and Countryside Act 1981 (as amended). Common toad is also listed as a species of principal importance under Section 41 of the NERC Act 2006 (as amended) (Appendix A).

### 3.3.2 Badgers

There was no evidence of current badger (*Meles meles*) activity within the site. However, the grassland, tall ruderal herbs and scattered trees and shrubs constitute suitable foraging habitat for badger and the site has good connectivity with other suitable habitats within the normal foraging range of the species. The species was also recorded in the ERCCIS data search. It is very likely that the site is utilized by foraging badgers.

Badgers are afforded legal protection under the Badgers Act 1992 and are afforded limited protection under the Wildlife and Countryside Act 1981, Section 11, Schedule 6 (as amended) (Appendix A).



### 3.3.3 Bats

The site is considered to provide moderate to high quality foraging opportunities for bats. The presence of the river, nearby pond and saltmarsh, the trees and shrubs with diverse structure in conjunction with areas of tall ruderal herb vegetation and extensive unlit woodland edge, combine to provide favourable foraging habitats for numerous species of bat and notably Daubenton's bat (*Myotis daubentonii*), serotine (*Eptesicus serotinus*) and noctule (*Nyctalus noctula*). The few mature trees within the site may also offer some limited roosting potential which may be exploited by some species of bat.

The site provides a high level of connectivity with the wider landscape via linear features including the tree and shrub lined site boundaries and the river habitat providing dark corridors in the landscape favourable for use by commuting bats.

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended) (Section 9 (4)(b), (1) and (5)), the Conservation of Habitats and Species Regulations 2010 (listed in Schedule 2 as European Protected Species (EPS)), the Countryside and Rights of Way (CROW) Act 2000 and the Wild Mammals Protection Act 1996.

In addition, seven species of bat are cited as priority species, within the 'UK Post-2010 Biodiversity Framework', these comprise: barbastelle (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), noctule, soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*) (Appendix A).

### 3.3.4 Birds

No birds were observed on the site during the survey and no active or inactive bird nests were recorded.

The habitats occurring within the site provide numerous potential nest site locations and a range of foraging opportunities for many species of bird. Kingfisher (*Alcedo atthis*) has been recorded within 1km of the site. However, there is no suitable habitat within the site for nesting. The data search indicates there are a number of other protected species recorded within the 1km search area some of which may utilise the site for foraging.

All species of bird whilst actively nesting, are afforded legal protection under the Wildlife and Countryside Act 1981 (as amended) and additional penalties are incurred for offences relating to birds listed on Schedule 1 (Appendix A).



### 3.3.5 Reptiles

The tall ruderal vegetation, scrub, pampas grass tussocks and rough grassland within the site provide potentially suitable habitat for common lizard (*Zootoca vivipara*), and slow-worm (*Anguis fragilis*). The wetter grassland area in the eastern portion of the site is also suitable foraging habitat for grass snake (*Natrix helvetica*). The data search shows these species as well as adder (*Vipera berus*) have been recorded within the search radius. Habitat features within the site of potential value for reptiles are as follows:

- Open areas for basking in close proximity to sheltered, dense vegetation, e.g. tall ruderal herb and pampas grass vegetated areas for daytime refuge. Suitable habitats were noted across the site including the bramble scrub area along the northern boundary.
- Night-time refuges provided by the tall ruderal vegetation, scrub, pampas grass tussocks and rough grassland..
- Vertebrate and invertebrate prey items associated with dense tall ruderal herb and rough grassland vegetation were likely to provide suitable foraging opportunities.

The periodic flooding of the site is likely to preclude its use as a hibernation resource for reptiles.

Common reptiles are afforded limited legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are also listed as species of principal importance under section 41 of the NERC Act 2006 (as amended) (Appendix A).

### 3.3.6 Otter

The proximity of the site to river habitat and the connectivity with the pond and saltmarsh located to the west makes the site suitable for commuting and foraging otter (*Lutra lutra*). A wide range of prey items are present in these habitats, including fish and invertebrates. Otters have been recorded in the ERCCIS data search area and are likely to be transient visitors to the site. No habitat features exist within the site which would accommodate permanent residence of the species. Consequently, the site is assessed as being of low value for the species.

The otter is afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981, (as amended). It is also listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 and is therefore a European Protected Species (EPS) (Appendix A).



### 3.3.7 Water voles

According to the data search no water vole (*Arvicola amphibius*) have been recorded within the search radius. The river habitat and network of watercourses within the saltmarshes to the west may provide commuting and foraging opportunities for the species. The habitat within the site is sub-optimal for water vole but transient use of the site by the species is possible.

Water voles are afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are also listed as species of principal importance under section 41 of the NERC Act 2006 (as amended) (Appendix A).

### 3.3.8 Invasive Non-native Species (INNS)

Japanese Rose (*Rosa rugosa*), pampas grass (*Cortaderia* sp) and bamboo (*Sasa* sp) and Stag's-horn Sumach (*Rhus typhina*) were observed within the site.

Japanese rose is listed in Schedule 9 of the Wildlife and Countryside Act in England and Wales therefore, it is also an offence to plant or otherwise cause to grow these species in the wild. It suckers freely and can require careful management in order to prevent local domination occurring.

### 3.3.9 Other protected species

There were no signs of any hedgehog (*Erinaceus europaeus*) presence within the site. However, hedgehogs are abundant in areas where grassland is in close proximity to woodland, scrub and hedgerows. The site and adjoining residential areas offer abundant opportunities for hedgehogs to nest, forage and commute. They frequently forage around amenity grassland and cover considerable distances in order to forage. Consequently, the site is considered to provide low to moderate potential for the species.

No other protected species were identified and the habitats within the site were not deemed to provide critical resources for any other protected or notable species of animal. In particular, species which are considered likely to be absent from the site are as follows:

- Dormice (*Muscardinus avellanarius*)
- White-clawed Crayfish (*Austropotamobius pallipes*)



## 4.0 Constraints and Opportunities

### 4.1 Constraints

The current status, management and general constraints relevant to the site are summarised in Table 3 and the specific threats and disturbances are detailed in Table 4.

**Table 3:** Summary of site status and constraints (table continues).

Aspect	Site Status	Constraints
Land Use	Public Green Space for amenity and conservation	PC maintenance requirements for multiple use and public perception of what qualifies as acceptable management
Land Status	Public open space	Disturbance arising from public access
Ownership	Parish Council	Funding limitations
Public Access	Free	Disturbance arising from public access
Entry Points	No defined entry points	None
Predominant recreational use	Passive currently under utilised	Stakeholder expectations relating to flood mitigation and management as a wildlife /amenity area
Maintenance	Ad Hoc	No defined management plan
Level of Use	Minimal	No infrastructure within the site inhibits community use
Facilities	None	No facilities limits access and amenity use
Current Management	Amenity Grassland – regularly close mown in part of the site and bamboo cut back by community stakeholder. No obvious management in eastern part of the site.	Unknown overall management for the green space, resource limitations, no baseline data on current site condition and wildlife interest



**Table 4:** Summary of site threats and disturbances (table continues).

Threat/Disturbance	Current Site Impact	Future Site Impact
Invasive and Non-Native Species	Seven invasive and non-native species noted during the assessment	The site is potentially vulnerable to impacts from further invasive species in the future and inadequate management of the species already present
Pollution	Air pollution – low impacts due to rural nature of the landscape Water pollution – diffuse pollution from agricultural run-off (nutrients, pesticides/herbicides/fungicides) within the catchment	Limited deposition of pollutants from the air pollution Water pollution – site will continue to experience diffuse pollution from run-off and periodic flooding
Litter/Tipping	Some tipping of garden waste noted generates nutrient leaching into grassland and reducing species diversity	On-going potential for littering and tipping of gross pollution/garden arisings from neighbouring residential properties and visitors to the site
Unsympathetic management	Impacts noted during the assessment related to the historic management of the western portion of the site, i.e. regular mowing of the grass and introduction of non-native/cultivated plant species. This has modified the neutral grassland habitat significantly and reduced the habitat condition	High impact where there is unsympathetic management or an absence of management applied according to habitat type, e.g. not adequately controlling non-native species, inappropriate grassland management
Other – Flooding	The site is prone to periodic flooding during Spring tides, especially the lower lying area in the eastern portion	This will continue and potentially increase as sea levels rise and weather patterns intensify
Other - Climate change	The site is subject to impacts arising from climate change, e.g. changes in species	The site will continue to be impacted by climate change



	composition, conditions developing conducive to invasive species and transmission of tree pathogens, etc. The trees and shrubs within the site have limited species diversity and variation in age structure which offers poor resilience to the effects of climate change.	
Other – tree pathogens	Ash dieback was noted during the assessment.	Failures in biosecurity, climate change, natural transmission or deliberate introduction of infected plants may help introduce a range of pathogens to the site. Where one species is dominant in parts of the site, these areas may be highly impacted if the species becomes infected.
Other – domestic pets	Cats can have high impacts on wildlife, especially small mammals, amphibians and birds and with the proximity to residential areas of the site, it is assumed this impact exists	The impact from domestic pets will be on-going

## 4.2 Opportunities

### 4.2.1 Nature Conservation Value and Potential for Enhancement

The overall ecological value of the site is considered to be low. The broad-leaved, mixed and yew woodland and the less modified neutral grassland in the eastern portion of the site provide the greatest habitat and resource potential for a wide range of wildlife and notably for birds, amphibians, reptiles, bats, small mammals and invertebrates.

Good connectivity exists between the site and the wider landscape via natural corridors. Birds, bats and many species of invertebrate can readily access the site but reptiles, amphibians and small mammals are heavily reliant on such green corridors providing suitable foraging and commuting habitats in order to disperse. This connectivity can be enhanced to improve commuting opportunities





for wildlife to existing and new habitats around the site and notably to the west along the Ruan River riparian corridor.

The site has high potential for enhancement. The opportunities for enhancement and associated recommendations are detailed in Table 5.

**Table 5:** Site opportunities and recommendations (table continues).

Opportunity	Habitat(s)	Recommendations
Enhance the biodiversity and management of the site	All of the site	Prepare a detailed Biodiversity and Habitat Management Plan for the site which includes ecological prescriptions and a monitoring programme. Regular site monitoring will detect the presence of new invasive species, tree pathogens and other threats and disturbances at an early stage. A detailed management plan will also minimise the potential for unsympathetic management, ensure timely control of problem species and enable rapid responses to negative impacts on species known to be present on or using the site. Include prohibiting the tipping of garden waste.
Improve access and infrastructure on the site	All habitats	Provide defined entry and exit points. Establish a low impact path through the site, e.g. a close mown pathway through the drier western portion of the site and a slightly elevated walkway across the wetter eastern portion of the site. Benches could be installed, e.g. the drier western part is one suitable location.
Tree and shrub management	Woodland in western portion and northern boundary of the eastern portion of the site	Control the spread of Japanese rose. Strictly control or eradicate the bamboo present on the site. Replace ash trees

		<p>that have died from dieback with alternative species, e.g. alder, silver birch, field maple or rowan.</p> <p>Maintaining tree health and promoting regeneration will improve air quality and develop resilience to climate change. Species which are new to the site should be considered to replace any tree lost to storms and where some of the pampas grass tussocks have been removed to increase diversity.</p>
<p>Rehabilitate the neutral grassland in the western part of the site</p>	<p>Neutral grassland</p>	<p>Reduce the number of grass cuts within the year and change the cutting method, e.g. scything or light grazing if possible. Remove up to 50% of the pampas grass and replace with native plant/shrub species. Tussock sedge (if conditions are suitable) is especially valuable as it provides new habitat for fauna and has a high water demand. Avoid Pendulous Sedge. The current close-cut sward can be scarified and sown with native wildflower seed mix (with species native to Cornwall) to provide enhanced species diversity as well as new pollen and nectar resources for invertebrates, foraging opportunities for birds and mammals and habitat for amphibians and reptiles. This will create a species rich verge. Vegetation height can be graded from tall to short towards the road. A highly managed sward can be</p>

		<p>maintained in a strip by the road.</p> <p>Pampas grass tussock removal should be undertaken with care and over a phased period of up to 24 months. Effort should be made to inspect tussocks immediately before removal to ensure that fauna are not using the habitat as a refuge. Do not remove if fauna are present and cannot be safely relocated. Stop immediately and seek advice from a qualified ecologist if protected species are identified. Avoid removal during the main nesting bird season from 1<sup>st</sup> April to 31<sup>st</sup> August.</p> <p>Removed pampas grass should not be retained on-site. Some of the depressions arising from tussock removal can be left to form seasonal ponds/scrapes/wetland areas and can be suitably planted with native wetland/marginal/emergent species (as plug plants and/or seed mixes). Undertake sowing planting in Autumn or Spring.</p>
<p>Create scrapes to provide new aquatic/wet habitats</p>	<p>In the neutral grassland in the eastern portion of the site</p>	<p>A series of small, shallow scrapes, designed to retain water for protracted periods will help to establish new habitats for a range of animals and plants and help to consolidate the wetland flora species already present. Increase floral species diversity with new aquatic/wetland species across the eastern portion of the site to maximise habitat value of the</p>



		wetland and develop ecological resilience.
Interpretation and education	All of the site and the connectivity with the extended network.	Install an interpretation board(s) to explain the ecology within the site and place the site in the wider context. Species present could be included (like the board at the pond). A leaflet could be produced to provide a little more detail for stakeholders and articles in the parish magazine would inform and engage the wider community.

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- 5.2.3 <https://www.bgs.ac.uk>

## 6.0 Appendices

### Appendix A Species List

Category	Common Name	Binomial (Scientific name)
Plants		
	Hazel	<i>Corylus avellana</i>
	Hawthorn	<i>Crataegus monogyna</i>
	Spindle	<i>Euonymus europaeus</i>
	Ash	<i>Fraxinus excelsior</i>
	Grey Willow	<i>Salix cinerea</i>
	Crack Willow	<i>Salix fragilis</i>
	Bramble	<i>Rubus fruticosus agg.</i>
	Stag's-Horn Sumach	<i>Rhus typhina</i>
	Norway Maple	<i>Acer platanoides</i>
	Field Rose	<i>Rosa arvensis</i>
	Japanese Rose	<i>Rosa rugosa</i>
	Common Nettle	<i>Urtica dioica</i>
	Common Ivy	<i>Hedera helix</i>
	Hemp Agrimony	<i>Eupatorium cannabinum</i>
	Cleavers	<i>Galium aparine</i>
	Broad-leaved dock	<i>Rumex obtusifolius</i>
	Reed Canary Grass	<i>Phalaris arundinacea</i>



	Common Marsh Bedstraw	<i>Galium palustre</i>
	Meadowsweet	<i>Fillipendula ulmaria</i>
	Gipsywort	<i>Lycopus europaeus</i>
	Soft Rush	<i>Juncus effusus</i>
	Greater Plantain	<i>Plantago major</i>
	Giant Rhubarb	<i>Gunnera tinctoria</i>
	False Fox Sedge	<i>Carex otrubae</i>
	Great Willowherb	<i>Epilobium hirsutum</i>
	Daisy	<i>Bellis perennis</i>
	Dandelion	<i>Taraxacum agg.</i>
	Ribwort Plantain	<i>Plantago lanceolata</i>
	Common Hogweed	<i>Heraclium sphondylium</i>
	Pendulous Sedge	<i>Carex pendula</i>
	Hairy Bittercress	<i>Cardamine hirsuta</i>
	Fool's Watercress	<i>Apium nodiflorum</i>
	Yellow Iris	<i>Iris Pseudoacorus</i>
	Tufted Vetch	<i>Vicia cracca</i>
	Redshank	<i>Persicaria maculosa</i>
	Cocksfoot	<i>Dactylis glomerata</i>
	Yorkshire Fog	<i>Holcus lanatus</i>
	Perennial Rye-Grass	<i>Lolium perenne</i>
	Annual Meadow Grass	<i>Poa annua</i>
	Creeping Bent	<i>Agrostis Stolonifera</i>
	Common Fleabane	<i>Pulicaria dysenterica</i>
	Scarlet Pimpernel	<i>Anagallis arvensis</i>



	Yellow Archangel	<i>Lamium galeobdolon ssp argentatum</i>
	Red Campion	<i>Silene dioica</i>
	Common Ragwort	<i>Senecio jacobea</i>
	Herb Robert	<i>Geranium robertianum</i>
	Water Mint	<i>Mentha aquatica</i>
	Black Medick	<i>Medicago lupulina</i>
	Prickly Sow-thistle	<i>Sonchus asper</i>
	Common Sorrel	<i>Rumex acetosa</i>
	Creeping Buttercup	<i>Ranunculus repens</i>
	Eucalyptus sp	<i>Eucalyptus</i>
	Fuchsia sp	<i>Fuchsia</i>
	Pampas Grass	<i>Cortaderia sp</i>





## Appendix B Wildlife legislation and planning policy

The following is a summary of wildlife legislation and planning policy which affords protection to plants and animals and seeks to conserve, enhance and restore biodiversity:

### Conservation of Habitats and Species Regulations 2010

The Conservation of Habitats and Species Regulations 2010 (SI No. 2010/490) update and supersede The Conservation Regulations 1994 (as amended). The 2010 Regulations are the principal means by which the European Habitats Directive is transposed in England and Wales.

The Regulations provide for the designation and protection of a network of 'European Sites' termed Natura 2000, the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

The Conservation of Habitats and Species Regulations 2010 apply in the terrestrial environment and in territorial waters out to 12 nautical miles. The EU Habitats and Wild Birds Directives are transposed in UK offshore waters by separate regulations – The Offshore Marine Conservation (Natural Habitats andc.) Regulations 2007 (as amended).

Regulation 41 relates to the protection of European protected species listed under Schedule 2 of the Regulations. Taken together it is an offence to undertake the following acts with regard to European Protected Species:

- deliberately capture, injure or kill any wild animal of a European Protected Species;
- deliberately disturb animals of any such species in such a way as to be likely to:
  - impair their ability to survive, breed, rear or nurture their young, hibernate or migrate, or
  - affect significantly the local distribution or abundance of the species to which they belong;
- deliberately take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.

The disturbance offence is generally taken to refer to a discernable effect at population level and biogeographic level, rather than simply to an individual animal. However, in certain circumstances the disturbance of one individual animal may have population level effects.

The Regulations also make it an offence (subject to exceptions) to deliberately pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5.



However, the actions listed above can be made lawful through the granting of licences (European Protected Species Licence) by the appropriate authorities (Natural England in England). Licences may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority has determined that the following regulations are satisfied:

- the works under the licence are being carried out for the purposes of 'preserving public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- there is 'no satisfactory alternative'; and
- the action 'will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in their natural range'.

To apply for a licence, the following information is required:

- the species concerned;
- the size of the population at the site (note this may require a survey to be carried out at a particular time of the year);
- the impact(s) (if any) that the development is likely to have upon the populations; and
- what measures can be conducted to mitigate for the impact(s).

### **The Wildlife and Countryside Act 1981**

The Wildlife and Countryside Act 1981 (as amended) is the principal piece of UK legislation relating to the protection of wildlife. It consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain.

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally kill, injure, or take any wild bird or their eggs or nests. Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Special Protection Areas (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

The Act makes it an offence (subject to exceptions) to intentionally kill, injure, or take, possess, or trade in any wild animal listed in Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals listed in Schedule 6.



The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

### **The Countryside and Rights of Way Act 2000**

The Countryside and Rights of Way Act 2000 (CRoW) was passed to provide additional levels of protection for wildlife whilst also strengthening the protection afforded to Sites of Special Scientific Interest.

Schedule 12 of the Act amends the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', create a new offence of 'reckless' disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

### **Natural Environment and Rural Communities Act 2006**

The Natural Environment and Rural Communities Act 2006 (NERC) is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government policy.

It was created to make provision in connection with wildlife, Sites of Special Scientific Interest, National Parks and the Broads; to amend the law relating to rights of way; to make provision as to the Inland Waterways Amenity Advisory Council; to provide for flexible administrative arrangements in connection with functions relating to the environment and rural affairs and certain other functions; and for connected purposes.

Section 40 of NERC carries an extension of the earlier CRoW Act biodiversity duty to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity. Section 41 requires the Secretary of State, as respects England, to publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. The updated S41 list, published in August 2010, identified 56 habitats and 943 species of principal importance.

### **The Protection of Badgers Act 1992**

In the UK badgers are primarily afforded protection under the Protection of Badgers Act 1992. This makes it illegal to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so and to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.

Badgers also receive limited protection under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended). This outlaws certain methods of taking or killing animals.



Under Section 10 (1)(d) of the Protection of Badgers Act 1992, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the Town and Country Planning Act 1990.

Section 3 of the Protection of Badgers Act 1992 defines interference as:

- damaging a badger sett;
- destroying a badger sett;
- obstructing access to, or any entrance of, a badger sett;
- causing a dog to enter a sett; or
- disturbing a badger when it is occupying a badger sett.

Natural England guidance has suggested that the following operations may disturb badgers in their setts, and therefore unless these can be avoided a licence may be required for:

- excavation within 20m of any entrance to an active sett;
- excavation or other ground disturbance using heavy machinery within 30m of a sett;
- fire or chemicals within 20m of a sett;
- tree felling in the area of a sett – trees should be felled away from setts and cleared away from badger paths; and
- other disturbances such as loud noises or vibrations; some activities such as pile driving and the use of explosives that may result in a disturbance over a much greater distance will require individual consideration.

### **The Wild Mammals (Protection) Act 1996**

The Wild Mammals (Protection) Act 1996 makes it an offence for any person to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

### **The Animal Welfare Act 2006**

Prior to the Animal Welfare Act 2006, people only had a duty to ensure that an animal didn't suffer unnecessarily. The new Act keeps this duty but also imposes a broader duty of care on anyone responsible for an animal to take reasonable steps to ensure that the animal's needs are met. This means that a person has to look after the animal's welfare as well as ensure that it does not suffer. The Act says that an animal's welfare needs include:

- a suitable environment (how it is housed);



- a suitable diet (what it eats and drinks);
- the ability to exhibit normal behaviour patterns;
- any need it has to be housed with, or apart from, other animals; and
- protection from pain, suffering, injury and disease.

With regards to development, this may have implications when translocations of animals are proposed. As such, care must be taken to ensure that any receptor sites are suitable for the species in terms of habitat and carrying capacity.

### **The Hedgerows Regulations 1997**

The Hedgerows Regulations 1997 were introduced to protect hedgerows of importance from destruction. However the legislation does not apply to any hedgerow which is within or marking the boundary of the curtilage of a dwelling house.

For the Regulations to be applicable, the hedgerow must be at least 20m in length or, if less than 20m, it must meet another hedgerow at each end. A hedgerow is deemed to be important if it is more than thirty years old and meets at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

If a hedgerow which qualifies under the Regulations is to be removed, the landowner must contact the local planning authority in writing by submitting a hedgerow removal notice. The local planning authority then has a period of 42 days to decide whether or not the hedgerow meets the importance criteria of the regulations.

### **Biodiversity Action Plans**

Biodiversity Action Plans (BAPs) set out actions for the conservation and enhancement of biological diversity at various spatial scales. They consist of both Habitat Action Plans (HAPs) and Species Action Plans (SAPs).

The UK BAP was the UK's response to the 1992 Convention on Biological Diversity in Rio de Janeiro. Following a review in 2007 a list of 1150 priority species and 65 priority habitats has been adopted, which are given a statutory basis for planning consideration under Section 40 of the NERC Act 2006.

### **Red Data Books**

British Red Data Books (RDB) are an additional method for classifying the rarity of species, and are often seen as a natural progression from Biodiversity Action Plans.

RDB species have no automatic legal protection (unless they are protected under any of the legislation previously mentioned). Instead they provide a means of assessing rarity and highlight areas where resources may be targeted. Various categories of RDB species are recorded based on the IUCN criteria and the UK national criteria based on presence within certain numbers of 10x10km grid-squares (<http://www.jncc.gov.uk/page-3425>). As with Biodiversity Action Plans, where possible, steps should be taken to conserve RDB species which are to be affected by development.