PRELIMINARY ECOLOGICAL APPRAISAL

FOR WESTON TURVILLE PARISH COUNCIL

THE GLEBE, WESTON TURVILLE

AUGUST 2022 | VERSION 1

FUTURE NATURE WTC LTD | Meadow Farm, Thame Road, Blackthorn, Oxfordshire, OX25 1TW

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EXECUTIVE SUMMARY

Future Nature WTC was commissioned in December 2021 to undertake a Preliminary Ecological Appraisal, including a data search, for The Glebe, Weston Turville, Buckinghamshire. The site is the location of a proposed Community Orchard.

The habitats on the site were classified using the UK Hab Classification System. The site was found to be dense scrub with more mature, healthy, species rich edges but collapsing blackthorn scrub and bramble and nettle patches dominated the centre of the site.

There was no evidence of protected species apart from birds found during the survey. The site was evaluated as having the potential to support badgers, birds, reptiles, bats and hedgehogs.

Recommendations have been made in the report to ensure that the proposed works will be of maximum benefit to local wildlife.

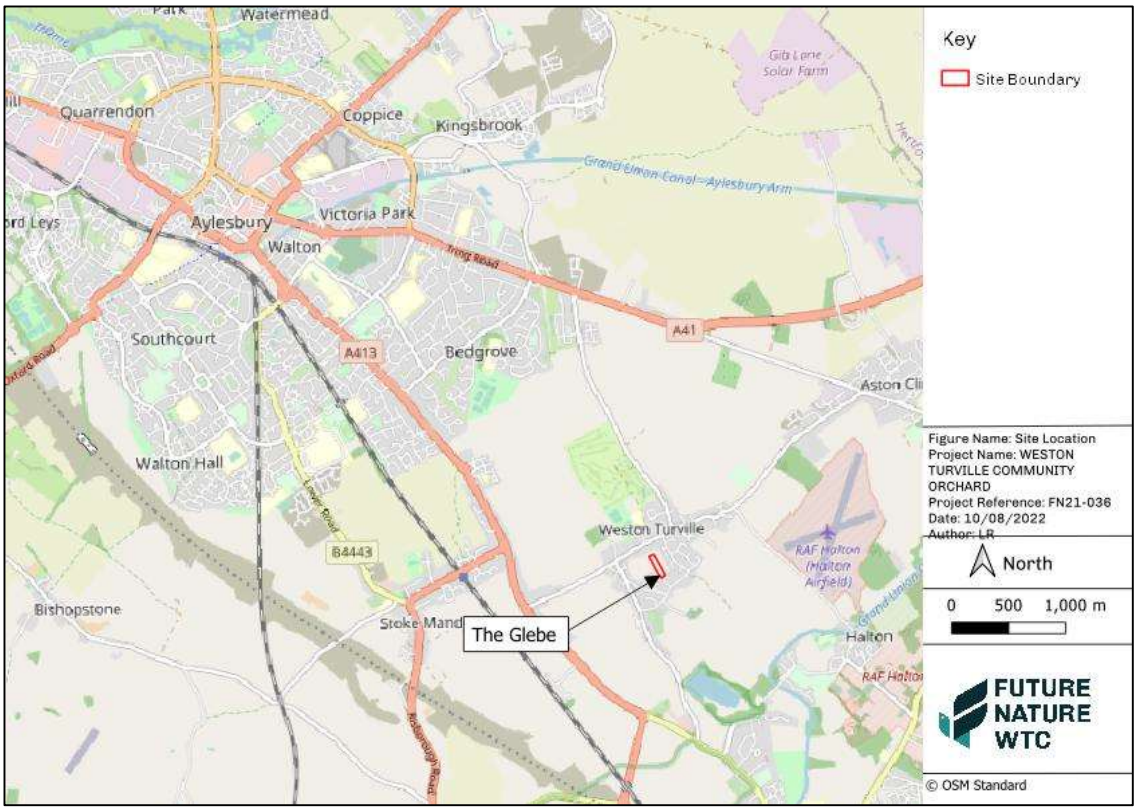
CONTENTS

1 INTRODUCTION

1.1 SITE LOCATION & DESCRIPTION

The site is located in the village of Weston Turville, 5km south east of central Aylesbury, Buckinghamshire with an approximate central grid reference of SP 8564 1071, as illustrated in Figure 1. The survey area is in the centre of Western Turville with an area of approximately 1.02 ha. The site is surrounded by the village and beyond which is a mosaic of smaller villages and farmland and a golf course to the north before hitting the built up area of Aylesbury.

Figure 1. Site Location[1]



1.2 REPORT OBJECTIVES

The objectives of this report are to:

- Identify statutory and non-statutory designated sites within 1 km of The Glebe;
- Identify records of protected and notable species within 1 km of The Glebe;

[1] QGIS baselayer – OSM Standard

- Identify the habitats present on the site and their potential to support protected and notable species;
- Assess any potential impacts to designated sites and protected and notable habitats and species; and
- Make recommendations for measures to protect the existing wildlife value of the site and that can be used to further enhance the value of the site for wildlife.

1.3 SITE PROPOSALS

Weston Turville Parish Council is planning to create a community orchard in the village to benefit the residents with a managed green space for everyone to enjoy. The Glebe is being considered as a site due to its central location and accessibility. The site is currently largely inaccessible to residents due to thick blackthorn scrub that is collapsing in places and the overgrown centre of the site.

Any changes to the proposed plans for the site may require the recommendations, proposed mitigation and/or enhancement measures provided in this report to be updated accordingly. A redline boundary of the site is shown on Figure 2.

Figure 2: Proposed Location of Chalfont St Giles Community Orchard[2]

[2] Aerial Image: QGIS Google Satellite

2 METHODOLOGY

2.1 DESK STUDY

A desk study was undertaken to assess the nature of the surrounding habitats and included:

- An assessment of aerial imagery and Ordnance Survey mapping;
- A search of the Multi Agency Geographic Information for the Countryside (MAGIC) website[3] for statutory designated sites and records of European protected species within 1 km of the survey area; and
- A data search submitted to Buckinghamshire and Milton Keynes Environmental Records Centre for Notable Species, Invasive Non-Native Species (INNS), Statutory Sites, Local Non-statutory Sites & Priority Habitats within 1km of the site.

2.2 FIELD SURVEY

2.2.1 Habitats/Protected Species

The site was subject to a preliminary walk over survey, during which habitat types were identified and their boundaries mapped. Habitat types were defined as per the UK Habitat Classification criteria[4] and a habitat map was produced (Figure 3). The habitats were separated into those measured by area and those measured as linear features, as required by the UK Habitat Classification criteria.

During the preliminary survey the site was also checked for evidence of protected and priority species, and habitats were assessed for their potential to support them. The survey visit was undertaken on 6th June 2022 in suitable weather conditions, as reported in Table 3.3.

2.3 LIMITATIONS TO SURVEY

The field survey and associated habitat condition assessment was undertaken within the optimal growing season and in good conditions. The results presented here are therefore not considered to be significantly constrained. Habitats are not static and can change over time therefore these results are only accurate for 12 months regarding bats and badgers (*Meles meles)* and 18 months for the remaining species and habitats. After this time results may require updating[5].

[3] Multi Agency Geographic Information for the Countryside (www.magic.gov.uk)
[4] The UK Habitat Classification, Habitat Definitions Version 1.1 (2020)
[5] Advice Note – On the Lifespan of Ecological Reports and Surveys, CIEEM (April 2019)

3 RESULTS

3.1 DESK STUDY

3.1.1 Designated Sites

A search of the MAGIC Website[6] and local records centre indicated that there is one statutory designated site within the 1 km search area:

- **Weston Turville Reservoir SSSI-** This site is 928m away from the Glebe and consists of an unpolluted fresh water reservoir, fringed with extensive reed beds, tall fen and willow carr. These habitats, with the exception of the open water, are both rare and declining in Britain following widespread land drainage and agricultural intensification and improvement, and their rich flora includes species which are now locally and nationally rare. The reservoir is also of particular importance for overwintering wildfowl.[7]

3.1.2 Priority Habitats

A search of the MAGIC website and the Buckinghamshire and Milton Keynes Environmental Record Centre data identified the following priority habitats within the 1 km search area:

- **Traditional Orchard:** There are five small patches of traditional orchard within 1km of the site, scattered around the village. The nearest is 150m north of the site with a larger area 215m west of the village which is connected to the site by open grassland and hedgerows rather than the built up area of the village.
- **Deciduous Woodland:** There is a 1.5ha area of deciduous woodland 420m north east of the site. Connectivity to this woodland is limited because of the surrounding village. To the south, approximately 800m away is the deciduous woodland surrounding Weston Turville SSSI. Connectivity here is also limited due to the surrounding village.
- **B-Lines:** The site is within the Buglife 'B-Lines', insect pathways along which Buglife is aiming to restore and create a series of wildflower-rich habitat stepping stones linking existing wildlife areas together.

[6] Multi Agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk
[7] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1002408.pdf

3.1.3 European Protected Species Licencing

The MAGIC website identified one granted European Protected Species (EPS) license within 1 km for bat species. See Table 3.2 for more details.

Table 3.2: Granted EPS licenses within 2km

Reference	Species	Start and End Date	Type	Distance from Survey Area (Closest Point)
2017-31512-EPS-MIT	Common pipistrelle	28/09/2017-31/07/2019	Destruction of a resting site.	483 m

3.1.4 General Land Use

A review of aerial imagery and Ordnance Survey mapping indicates land use in the area to be a mosaic of villages and farmland before reaching the built-up areas of Wendover and Aylesbury.

3.2 DATA SEARCH

3.2.1 Local Records Centre

A total of 115 notable species were found within a 1km radius of the site including 65 birds, 2 amphibians, 4 bats, 8 plants, 30 insects and 4 non-flying mammals. No records were provided from within the site boundary. The closest notable animal species was a common toad *Bufo bufo* recorded 35m away from the site and the most recent record was a harvest mouse *Micromys minutus* in 2020. A summary of the records of protected or otherwise notable species provided by Buckinghamshire and Milton Keynes Environmental Records Centre is available in Appendix C.

3.2.2 Invasive Species

Seven invasive species were found within a 1km radius of the site including American mink *Neovison vison*, orange balsam *Impatiens capensis* and fat dormouse *Glis glis.*

3.3 FIELD SURVEY

3.3.1 Habitat Assessment

A summary of the survey conditions are provided in Table 3.3.

Table 3.3: Survey Conditions

Date	Average Temperature	Cloud Cover	Precipitation	Wind Conditions (Beaufort scale)
06/06/2022	15°C	75%	None	1

A total of one habitat feature was recorded during the UK Habitat Classification survey. This is presented in Figure 3. A summary of the habitat is provided below in Table 3.4.

Table 3.4: UK Habitat Classifications

Habitat	Description
Dense Scrub h3	The site was comprised of thick scrub. The outside had well defined edges with some species diversity including elder *Sambucus nigra,* hawthorn *Crataegus monogyna* and field maple *Acer campestre.* The interior was dominated by overmature blackthorn *Prunus spinosa* scrub forming a thick canopy preventing much light reaching the floor. In places the canopy was collapsing as trees have died and are rotting away. This has resulted in a very sparse ground flora including cow parsley *Anthriscus sylvestris* and garlic mustard *Alliaria petiolata* with large patches of bare ground. A footpath runs through the blackthorn scrub at the north of the site which is badly maintained with a muddy uneven surface and low overhanging blackthorn. The centre of the site has some clearings from the blackthorn scrub but they are dominated by brambles *Rubus fruticosus*, nettles *Urtica dioica* and cleavers *Galium aparine* and are largely inaccessible. Towards the south of the site and along the western boundary a few scattered mature trees are present including hazel *Corylus avellana* and field maple.

Figure 3 : Habitat Map[8]

3.3.2 Schedule 9 Plant Species

No non-native invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were identified during the field survey.

3.3.3 Protected Species

The results of the field survey and data search in relation to protected species are summarised in Table 3.5 below.

[8] Aerial Image: QGIS Google Satellite

Table 3.5: Protected and Notable Species		
Species	**Evidence during survey**	**Habitats**
Bats	No	The data search returned 4 bat species recorded within 1km of the site: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctulaand* and brown long-eared *Plecotus auritus*. The most recent record was from 2012. The site provides suitable foraging and commuting habitat for bats. The mature trees along the western boundary and to the south of the site contain a number of potential roost features in the form of cracks and rot holes.
Birds	Yes	The data search returned 65 protected or notable bird species within 1km of the site including kingfisher *Alcedo atthis*, house martin *Delichon urbicum* and lapwing *Vanellus vanellus*. Eight species of bird were recorded during the survey including, woodpigeon *Columba palumbus,* blackcap *Sylvia atricapilla* and song thrush *Turdus philomelos.* The scrub throughout the site provides nesting opportunities for birds including amber listed species like the woodpigeon and dunnock *Prunella modularis* that were recorded during the survey visit. The species composition of the site also provides excellent foraging opportunities with fruit producing plants like hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and wild plum.
Great Crested Newts (GCN) *(Triturus cristatus)*	No	The data search returned no records of GCN within 1km of the site and no ponds are present within the site or within 250m of the site. A small brook runs to the south of Weston Turville, 169m from the site. There are terrestrial opportunities on the site for GCN with the dense scrub potentially providing resting habitat and hibernacula however the lack of ponds near the site make their presence unlikely.
Reptiles	No	The data search returned no records of reptiles within 1km of the site. The dense scrub has the potential to provide shelter and foraging opportunities for reptiles as well as hibernation potential. Although there are no basking opportunities on the site itself the surrounding meadow areas has shorter grass and patches of bare ground which are suitable.
Badger *(Meles meles)*	No	The data search returned one record of badgers from within 1km of the site but this was from 1966.

		The site is suitable for foraging and there is the potential for sett creation although no setts or signs of badger activity were observed during the survey.
Dormouse *(Muscardinus avellanarius)*	No	The data search returned no records of dormice within 1km of the site. Dormice are likely absent from the site as the site is an isolated patch of scrub with no connectivity to other woodlands or hedges. They will not be considered further in this report.
Hedgehog	No	The data search returned four records of hedgehogs within 1km of the site. The site provides good foraging, resting and hibernating opportunities for hedgehogs.
Brown Hare *(Lepus europaeus)*	No	The data search returned no records of brown hare within 1km of the site. The site does not contain suitable habitat for brown hares.
Water vole (*Arvicola amphibius)* **and otter** *(Lutra lutra)*	No	There are no water courses on site so it is considered of no value to these species so they will not be considered further in this report.

4 POTENTIAL IMPACTS AND MITIGATION

4.1 FURTHER SURVEY

No further surveys for protected or notable habitats or species are recommended. However, the site does provide areas of suitable habitat for bats, breeding birds, reptiles, badgers and hedgehog and suitable mitigation measures to ensure these species are protected is provided in Section 4.2.

4.2 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Glebe is being considered as the site of a new community orchard in Weston Turville. If this site is selected for the orchard the mitigation measures described in Table 4.1 should be taken into consideration during its design.

Table 4.1: Potential Impacts on habitats and protected and notable species

Habitat/ Species	Potential Impacts	Mitigation
Habitats		
Scrub	The creation of an orchard would require the clearance of the dense scrub that currently occupies the site	The higher value areas of scrub habitat should be retained as much as possible to ensure that protected species are not displaced and that the overall biodiversity of the site is maintained or increased. The less dense, bramble and nettle dominated areas along the centre of The Glebe and some of the collapsing blackthorn scrub could be cleared with the orchard created in these areas along a series of sinuous clearings within the more dense scrub (Figure 4). This would retain the healthy scrub habitat along the edge of The Glebe while creating a new grassland and orchard habitat within. This would also open up the area, making it accessible to local people.
Protected and notable species		
Bats	Positive – the foraging opportunities for bats will potentially improve after the orchard has been planted if the existing areas of greatest wildlife value are also retained. Fruit trees will attract more insects for bats to forage on.	The orchard should be designed to retain the more diverse areas of scrub and the mature trees so that the habitats of greatest value to foraging bats are retained. Replacing the lower value areas of scrub with a variety of fruit trees and allowing grassland to develop below the trees will provide

		additional habitats that will support a variety of invertebrates for bats to forage on.
Birds	The new orchard has the potential to increase foraging opportunities and create new nesting sites for a variety of bird species.	The more mature, diverse hedgerow species providing foraging and nesting opportunities for birds should be retained. The removal of the lower bramble and nettle scrub may remove some nesting opportunities but significant areas would remain and the new fruit trees would provide new nesting and foraging opportunities. Scrub clearance should take place outside the bird nesting season (March-September) to ensure that any active nests in the low brambles are not affected.
GCN	GCN are unlikely to be present on the site despite the presence of suitable terrestrial habitat as there are no ponds nearby to provide the suitable aquatic habitat they also need.	None
Reptiles	The initial stages of orchard creation will involve clearing scrub and replacing it with a shorter grassland sward and scattered fruit trees. This has the potential to injure or kill reptiles and significant changes to the habitats on site could result in an overall loss of habitat for reptiles.	A precautionary approach should be taken during scrub clearance due to the potential for reptiles being present. The scrub should initially be cut to a height of c.250mm with all arising's removed. After 48hrs the remaining vegetation can be cut to 150mm. This second cut should be undertaken in a directional manner, moving from the centre of the site towards the retained scrub to allow any animals present to escape. If the soil needs to be striped this should occur after another 48hrs. The retention of much of the higher value areas of scrub and the creation of fruit trees with areas of rough grassland would enhance the habitat on the site for reptiles.
Badgers	Badgers were not seen on the site but there is potential for them to be using the site. The creation of the orchard will increase foraging opportunities for badgers but care should be taken when the orchard is initially planted.	There are currently no badger setts in The Glebe but badgers can create setts in short periods of time. The site should be walked before scrub clearance begins to ensure that a new sett has not been created. Badger setts can extend approximately 30m from the sett entrance and therefore there is potential for tunnels and chambers to be present below the orchard area if a sett is found in the surrounding mature scrub. It is unlikely that a tree pit would be sufficiently deep to excavate the sett but should one be

		accidentally disturbed during the planting, work should stop immediately and the advice of an ecologist sought.
Hedgehog	The scrub to be cleared has the potential to provide foraging, hibernating and resting habitats for hedgehogs. Although the orchard will provide some foraging opportunities for hedgehogs there will be some potential resting and hibernating habitats lost.	The area to be cleared for the orchard creation should be checked before work begins to ensure no hedgehogs are present, especially if work takes place when they could be hibernating. Hibernating hedgehogs should not be disturbed and works around it should cease until hedgehogs are out of hibernation.
Brown Hare	None	None

Figure 4: Recommended location of community orchard

4.3 ENHANCEMENTS AND RECOMMENDATIONS

The following recommendations will ensure that the benefits to local wildlife and biodiversity are maximised.

4.3.1 Scrub Ecotone

In the centre of The Glebe there is currently a graded edge or ecotone down from the mature scrub with younger plants and blackthorn sucker growth forming a gradually lower margin down towards the bramble, nettle and cleavers scrub (photo 6, Appendix A). These transitional or edge areas are often the most biodiverse habitats in a landscape. With this in mind this graded edge should be retained in some areas when the interior low level scrub is removed rather than clearing right up to the taller more mature scrub.

4.3.2 Access

The proposed orchard includes the area around the current footpath to the north of the site. This would allow pedestrian access into the site. The current gate onto the site from The Glebe is overgrown and inaccessible due to brambles. In order to allow vehicular access to the site for orchard creation and maintenance of the site this area of brambles could be cut back and the gate reinstated.

4.3.3 Orchard Trees

Native species should be used as much as possible in the orchard. Buckinghamshire has a number of fruit tree varieties of historical and local significance which should be prioritised. Examples include:

- Dessert Apples (Ball's Pippin, Cox's Orange Pippin, Feltham Beauty, Langley Pippin)
- Cooking Apples (Arthur Turner, Small's Admirable)
- Dual Purpose Apples (Cox's Pomona)
- Damsons (The Aylesbury Prune)
- Plums (Allgrove's Superb, Bullace Langley and Stewkley Red)
- Cherries (Prestwood Black).

Species that are present in the nearby orchards should also be considered as this will increase the habitat available for species that are currently reliant on these trees.

4.3.4 Buglife B-Lines

Buglife's B-Lines project aims to create a series of series of 'insect pathways' running through the countryside and towns by creating a series of wildflower-rich habitat stepping stones. 'They will link existing wildlife areas together, creating a network, like a railway, that will weave across the British

landscape. This will provide large areas of brand new habitat benefiting bees and butterflies– but also a host of other wildlife.'[9]

Weston Turville is located within one of Buglife's B-Lines so the project could be registered with the organisation to help map the habitat available for pollinators.

[9] https://www.buglife.org.uk/our-work/b-lines/

5 CONCLUSIONS

Future Nature carried out a Preliminary Ecological Appraisal on The Glebe, Weston Turville, to assess the impact of a community orchard.

The majority of the site is comprised of dense scrub mainly comprising blackthorn but with more diversity on the edges and with some shorter scrub in the centre dominated by brambles, nettles and cleavers. There were some mature trees along the edges of the site and towards the south of the site.

The survey identified the potential of the site to support protected species and assessed the impacts of the proposed orchard creation on them. This report recommends removing the bramble and nettle scrub in the centre of The Glebe to create the proposed community orchard. The higher value, more diverse, scrub along the edge of the site and the mature trees should be retained. Mitigation for habitat loss and to protect any animals on site include phased removal of the central scrub, carried out outside of bird nesting season. It is also recommended that some graded scrub edges are retained to maintain diverse habitats within the orchard and it is recommended to source local provenance fruit trees for the orchard. Overall, the creation of the orchard would enhance the biodiversity value of the site.

APPENDICES

APPENDIX A – SITE PHOTOS

Photo 1: Eastern edge of The Glebe – healthy species rich scrub

Photo 2: Western edge of The Glebe, scrub with some mature trees.

Photo 3 and 4: Dense blackthorn scrub, collapsing in some places, with sparse ground flora

Photo 5 and 6: Footpath through north of site.

Photo 5: More open area in north of site dominated by bramble scrub

Photo 6: Open are in south of site dominated by nettles and cleavers

APPENDIX B – LOCAL RECORDS SEARCH

Species Group	Scientific Name	English Name	Latest Year	Total Records
Invasive Non-native Species				
Birds	Aix galericulata	Mandarin Duck	2020	4
	Chrysolophus pictus	Golden Pheasant	2012	1
	Psittacula krameri	Ring-necked Parakeet	2017	3
Flowering Plants	Impatiens capensis	Orange Balsam	2011	3
Terrestrial Mammals	Glis glis	Fat Dormouse	1985	3
	Hydropotes inermis	Chinese Water Deer	2012	1
	Neovison vison	American Mink	2018	2
Notable Species				
Amphibians	Bufo bufo	Common Toad	1990	1
	Rana temporaria	Common Frog	2002	3
Birds	Acanthis cabaret	Lesser Redpoll	2017	3
	Accipiter nisus	Sparrowhawk	2020	12
	Acrocephalus schoenobaenus	Sedge Warbler	2013	2
	Actitis hypoleucos	Common Sandpiper	2007	1
	Alauda arvensis	Skylark	2019	1
	Alcedo atthis	Kingfisher	2017	3
	Anas crecca	Teal	1974	3
	Anas platyrhynchos	Mallard	1977	5
	Anthus pratensis	Meadow Pipit	2015	1
	Apus apus	Swift	2019	5
	Aythya ferina	Pochard	2013	5
	Botaurus stellaris	Bittern	2015	4
	Cettia cetti	Cetti's Warbler	2010	1
	Chloris chloris	Greenfinch	2020	23
	Chroicocephalus ridibundus	Black-headed Gull	2017	4
	Columba oenas	Stock Dove	2019	12
	Columba palumbus	Woodpigeon	2019	3
	Corvus frugilegus	Rook	2018	2
	Cuculus canorus	Cuckoo	2010	3
	Curruca communis	Whitethroat	2017	4
	Cygnus olor	Mute Swan	2017	4
	Delichon urbicum	House Martin	2017	5
	Emberiza calandra	Corn Bunting	2010	2
	Emberiza citrinella	Yellowhammer	2020	7
	Emberiza schoeniclus	Reed Bunting	2020	12
	Falco peregrinus	Peregrine	2019	5
	Falco subbuteo	Hobby	2017	3
	Falco tinnunculus	Kestrel	2011	1
	Fringilla montifringilla	Brambling	2019	3
	Gallinago gallinago	Snipe	2017	3
	Gallinula chloropus	Moorhen	1974	1

	Larus fuscus	Lesser Black-backed Gull	2017	3
	Linaria cannabina	Linnet	2020	8
	Locustella naevia	Grasshopper Warbler	2013	3
	Mareca penelope	Wigeon	2017	4
	Mareca strepera	Gadwall	2017	4
	Milvus milvus	Red Kite	2018	5
	Motacilla cinerea	Grey Wagtail	2015	4
	Motacilla flava	Yellow Wagtail	2020	1
	Muscicapa striata	Spotted Flycatcher	2017	34
	Numenius arquata	Curlew	2003	1
	Oenanthe oenanthe	Wheatear	2017	2
	Pandion haliaetus	Osprey	2015	3
	Panurus biarmicus	Bearded Tit	2017	2
	Passer domesticus	House Sparrow	2020	10
	Perdix perdix	Grey Partridge	2015	1
	Phylloscopus trochilus	Willow Warbler	2017	4
	Poecile montanus	Willow Tit	1974	2
	Poecile palustris	Marsh Tit	2003	2
	Prunella modularis	Dunnock	2015	1
	Pyrrhula pyrrhula	Bullfinch	2020	17
	Regulus ignicapilla	Firecrest	2013	5
	Scolopax rusticola	Woodcock	2018	5
	Spatula clypeata	Shoveler	2017	8
	Sterna hirundo	Common Tern	2017	2
	Streptopelia turtur	Turtle Dove	2009	1
	Strix aluco	Tawny Owl	2020	9
	Sturnus vulgaris	Starling	1976	1
	Troglodytes troglodytes	Wren	2020	6
	Turdus iliacus	Redwing	2018	5
	Turdus philomelos	Song Thrush	2020	23
	Turdus pilaris	Fieldfare	2018	9
	Turdus viscivorus	Mistle Thrush	2020	2
	Tyto alba	Barn Owl	2020	26
	Vanellus vanellus	Lapwing	2020	12
Plants	Pinus sylvestris	Scots Pine	1984	2
	Buxus sempervirens	Box	2002	3
	Hyacinthoides non-scripta	Bluebell	1984	2
	Linum perenne	Perennial Flax	2002	1
	Onobrychis viciifolia	Sainfoin	1999	1
	Papaver argemone	Prickly Poppy	1984	1
	Plantago media	Hoary Plantain	1984	2
	Populus nigra subsp. betulifolia	Black-poplar	1998	63
Insects	Acrotrichis lucidula		1978	1
	Lasiommata megera	Wall	2001	2
	Pseudomalus violaceus		2002	1
	Acronicta psi	Grey Dagger	2003	2

	Acronicta rumicis	Knot Grass	1984	3
	Amphipyra tragopoginis	Mouse Moth	1984	4
	Apamea anceps	Large Nutmeg	1983	1
	Apamea remissa	Dusky Brocade	1983	1
	Caradrina morpheus	Mottled Rustic	1983	1
	Diarsia rubi	Small Square-spot	1981	2
	Ecliptopera silaceata	Small Phoenix	1981	1
	Ennomos fuscantaria	Dusky Thorn	1981	1
	Hepialus humuli	Ghost Moth	1983	1
	Melanchra persicariae	Dot Moth	1983	1
	Scotopteryx chenopodiata	Shaded Broad-bar	1984	1
	Spilosoma lubricipeda	White Ermine	1983	1
	Spilosoma lutea	Buff Ermine	1983	1
	Tholera decimalis	Feathered Gothic	1981	1
	Timandra comae	Blood-vein	1984	1
	Xanthorhoe ferrugata	Dark-barred Twin-spot Carpet	1984	1
	Dicranomyia chorea		2002	1
	Dicranomyia lucida		2002	1
	Eloeophila mundata		2003	1
	Gnophomyia viridipennis		2002	1
	Leopoldius signatus		2002	1
	Lonchaea iona		1988	1
	Macrorrhyncha flava		2002	1
	Mycomya occultans		2002	1
	Psacadina verbekei		2003	1
	Thaumastoptera calceata		2002	1
Mammals	Arvicola amphibius	Water Vole	1932	1
	Chiroptera	Bat	1986	2
	Erinaceus europaeus	Hedgehog	2018	4
	Meles meles	Badger	1966	1
	Micromys minutus	Harvest Mouse	2020	1
	Nyctalus noctula	Noctule Bat	1973	1
	Pipistrellus	Pipistrelle Bat species	2001	2
	Pipistrellus pipistrellus	Pipistrelle	2012	18
	Pipistrellus pygmaeus	Soprano Pipistrelle	2012	2
	Plecotus auritus	Brown Long-eared Bat	2001	2

APPENDIX C - POLICY AND LEGISLATION

National Planning Policy Framework (NPPF)[10]

The revised National Planning Policy Framework sets out the government's planning policies for England and how these are expected to be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. Planning law requires that applications for planning permission be determined in accordance with the development plan. The key paragraphs from the relating to the natural environment are detailed below:

Ecologically Relevant Paragraphs of the NPPF	
Paragraph	**Statement**
174	Planning policies and decisions should contribute to and enhance the natural and local environment by: protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; maintaining the character of the undeveloped coast, while improving public access to it where appropriate; minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
175	Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework[11]; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

[10] NPPF July 2021 (https://www.gov.uk/government/publications/national-planning-policy-framework--2)
[11] Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.

176	Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads[12]. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.
177	When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development[13] other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of: the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.
178	Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 176), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.
179	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[14]; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation[15]; 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.
180	When determining planning applications, local planning authorities should apply the following principles: if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts),

[12] English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management and other matters.
13 For the purposes of paragraphs 176 and 177, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.
[14] Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.
[15] Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.

	adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons[16] and a suitable compensation strategy exists; and development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
181	The following should be given the same protection as habitats sites: potential Special Protection Areas and possible Special Areas of Conservation; listed or proposed Ramsar sites[17]; and sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.
182	The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

Natural Environment and Rural Communities (NERC) Act 2006[18] [19]

Section 40 – To conserve biodiversity

Section 40 puts a duty on public authorities to conserve biodiversity when undertaking its duties and functions,

Section 41 – Biodiversity list and Action

Section 41 – Section 41 – Requires the Secretary of State *to publish a list of the living organisms and types of habitat considered to be of principal importance for the purpose of conserving biodiversity*. They must also *take such steps as appear to the Secretary of State to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section or promote the taking by others of such steps*.

The 2007 lists were superseded by the UK Post-2010 Biodiversity Framework.

[16] For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.
[17] Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.
[18] https://www.legislation.gov.uk/ukpga/2006/16/section/40
[19] https://www.legislation.gov.uk/ukpga/2006/16/section/41

UK Priority Habitats (excl. marine habitats)[20]	
UK BAP broad habitat	**UK BAP priority habitat**
Rivers and Streams	Rivers
Standing Open Waters and Canals	Oligotrophic and Dystrophic Lakes
	Ponds
	Mesotrophic Lakes
	Eutrophic Standing Waters
	Aquifer Fed Naturally Fluctuating Water Bodies
Arable and Horticultural	Arable Field Margins
Boundary and Linear Features	Hedgerows
Broadleaved, Mixed and Yew Woodland	Traditional Orchards
	Wood-Pasture and Parkland
	Upland Oakwood
	Lowland Beech and Yew Woodland
	Upland Mixed Ash woods
	Wet Woodland
	Lowland Mixed Deciduous Woodland
	Upland Birch woods
Coniferous Woodland	Native Pine Woodlands
Acid Grassland	Lowland Dry Acid Grassland
Calcareous Grassland	Lowland Calcareous Grassland
	Upland Calcareous Grassland
Neutral Grassland	Lowland Meadows
	Upland Hay Meadows
Improved Grassland	Coastal and Floodplain Grazing Marsh
Dwarf Shrub Heath	Lowland Heathland
	Upland Heathland
Fen, Marsh and Swamp	Upland Flushes, Fens and Swamps
	Purple Moor Grass and Rush Pastures
	Lowland Fens
	Reedbeds
Bogs	Lowland Raised Bog
	Blanket Bog
Montane Habitats	Mountain Heaths and Willow Scrub
Inland Rock	Inland Rock Outcrop and Scree Habitats
	Calaminarian Grasslands
	Open Mosaic Habitats on Previously Developed Land
	Limestone Pavements
Supralittoral Rock	Maritime Cliff and Slopes
Supralittoral Sediment	Coastal Vegetated Shingle
	Machair
	Coastal Sand Dunes

Protected Species Legislation

European Protected Species

European Protected Species (EPS) are species of plants and animals (other than birds) protected by law throughout the European Union. They are listed in Annexes II and IV of the European Habitats Directive and

[20] http://jncc.defra.gov.uk/page-5706

receive full protection under The Conservation of Species and Habitats Regulations (as amended) 2019. This make it an offence to:

- deliberately capture, injure or kill any European Protected Species (EPS)
- to deliberately disturb any European Protected Species (EPS);
- to damage or destroy a breeding site or place of rest or shelter used by any European Protected Species (EPS).

The Wildlife and Countryside Act 1981 (as amended) adds further protection by making it an offence to intentionally or recklessly[21] disturb an EPS while it is occupying a structure or place which it uses for shelter or protection, or to obstruct access to any structure or place the species uses for shelter or protection.

European Protected Species relevant to the UK			
Animals		**Plants**	
All bat species	Great Crested Newt	Yellow marsh saxifrage	Creeping marshwort
Large blue butterfly	Otter	Shore dock	Slender naiad
Wild cat	Smooth snake	Killarney fern	Fen Orchid
Marine turtles, dolphins, porpoises and whales (all species)	Sturgeon fish	Early gentian	Floating-leaved water plantain
Dormouse	Natterjack toad	Lady's slipper	
Sand lizard	Pool Frog		
Fisher's Estuarine Moth	Snail, Lesser Whirlpool Ram's-horn		

Other Protected Species		
Species	**Legislation**	**Level of Protection**
Red Squirrel	Wildlife and Countryside Act 1981 (as amended) Wild Mammals (Protection) Act 1996	The species is listed on Schedule 5 of the Wildlife and Countryside Act (1981) makes the following actions offences: • intentionally killing, injuring, or taking red squirrels • intentionally or recklessly damaging, destroying or obstructing access to any structure or place used for shelter or protection • disturbing red squirrels whilst they are using any structure or place used for shelter or protection Under the Wild Mammals (Protection) Act, squirrels are protected from unnecessary suffering by a number of methods.
Birds	Wildlife and Countryside Act 1981 (as amended)	Under the Wildlife and Countryside Act (1981) it is an offence if any person: • intentionally kills, injures or takes any wild bird • intentionally takes, damages or destroys the nest of any wild bird whilst that nest is in use of being built; • intentionally takes, damages or destroys eggs of any wild bird; Wild birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are protected from:

[21] *Under the Countryside and Rights of Way Act 2000 (CROW Act) extended the protection to cover reckless damage or disturbance*

		• intentional or reckless disturbance whilst it is building a nest or is in, on or near a nest containing eggs or young; • disturbance of dependent young
White-clawed Crayfish	Wildlife and Countryside Act 1981 (as amended)	Under the Wildlife and Countryside Act (1981) it is an offence if any person: • intentionally takes a white-clawed crayfish • sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead white clawed crayfish or any part of, or anything derived from, such an animal