



Wisloe Green, Gossington, Gloucestershire.

## Ecological Constraints and Opportunities



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Every endeavour has been made to identify the presence of protected species on site, where this falls within the agreed scope of works.

The flora and fauna detailed within this report are those noted during the field survey and from anecdotal evidence. It should not be viewed as a complete list of flora and fauna species that may frequent or exist on site at other times of the year.

Up to date standard methodologies have been used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on-site.

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Reference to sections or particular paragraphs of this document taken out of context may lead to misrepresentation.

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# 1.0 Introduction

## Background

1.1 In August 2019, All Ecology Ltd was commissioned to produce an Ecological Constraints and Opportunities Report for a site known as Wisloe Green, Gossington, Gloucestershire. The site is approximately 80 ha in size and is the subject of a scoping survey to determine the feasibility of a new settlement consisting of 1500 houses and 5 ha of commercial land.

## Objectives and Aim

1.2 This report assesses the ecological suitability of the site for the development, based on the following:

- Ecological Appraisal for a baseline survey of the site.
- Potential ecological constraints and opportunities identified within the Ecological Appraisal.
- Review of national and local policies which include the National Planning Policy Framework (NPPF, 2019) and Stroud District Local Plan (SDLP, 2015).
- Biodiversity net gain.

## Site Location

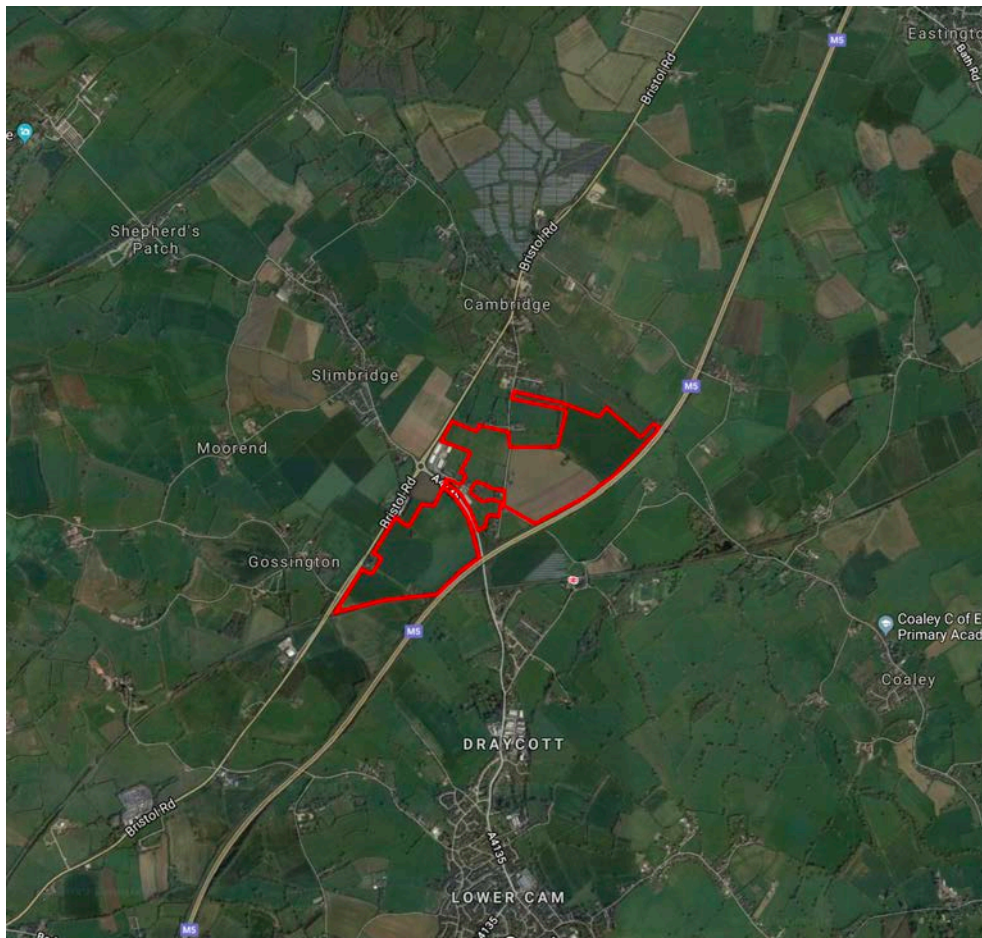


Figure 1: Site location plan.

## 2.0 Methodology

### Personnel

- 2.1 The survey was carried out by Laura Cuming BSc Hons Grad CIEEM, an ecologist with over four years' experience working as a consultant who holds a Class 2 Bat Licence (all species, all counties, Class Licence Registration No. 2017-32855-CLS-CLS) and James Godbeer BSc Hons MCIEEM, an ecologist with over 12 years' experience working as a consultant. James has extensive experience of managing environmental contracts, and particular experience in surveying, assessment and mitigation for rare and protected species. He has considerable knowledge of the development and planning process including Ecological Impact Assessments, sustainable ecological design and he has completed ecology chapters of Environmental Statements. James holds a number of protected species licences including bats (all species, all counties, Class Licence Registration No. 2015-12313-CLS-CLS), and Great Crested Newts (Class Licence Registration No. 2016-20363-CLS-CLS). He has successfully obtained European Protected Species mitigation licences for a number of bat species including Lesser Horseshoe, Greater Horseshoe, Serotine, Brown Long-eared, Common Pipistrelle and Natterer's bats, for a number of roost types including maternity and hibernation sites.

### Ecological Appraisal

- 2.2 The site was visited on the 28<sup>th</sup> – 30<sup>th</sup> August 2019 and surveyed in accordance with the Joint Nature Conservation Committee (JNCC) Phase I Habitat Survey methodology (JNCC, 2010). This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential that might warrant further study.
- 2.3 The valuation process used in the Ecological Appraisal follows the Guidelines for Ecological Impact Assessment in the UK and Ireland from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).
- 2.4 In order to compile background information on the site and immediate surroundings, Gloucestershire Centre for Environmental Records (GCER) was contacted.
- 2.5 Full methodology details can be found within the Ecological Appraisal.

### Legislation and Planning Policy

#### Wildlife Legislation

- 2.6 The following wildlife legislation is relevant to the proposed development:
- Conservation of Habitats and Species Regulations 2010 (as amended)
  - Wildlife and Countryside Act 1981 (as amended)
  - Countryside and Rights of Way Act 2000
  - Natural Environment and Rural Communities Act 2006
  - Protection of Badgers Act 1992
  - Hedgerow Regulations 1997 (as amended)

## National Planning Policy Framework (NPPF)

- 2.7 The NPPF aims to contribute to the achievement of sustainable development. One of the overarching objectives for achieving sustainable development is:
- *“An environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”*
- 2.8 To protect and enhance biodiversity, plans should:
- *“Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
  - *Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”*
- 2.9 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), 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 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.”*

## Local Planning Policy

- 2.10 A review of the local planning policies relating to biodiversity which are of relevance to this assessment are outlined below.

### Stroud District Local Plan (SDLP) (2015)

- 2.11 The following core policies of the SDLP are relevant to the ecological assessment of the proposed development:

- CP14: High Quality Sustainable Development
- CP15: A Quality Living and Working Countryside

2.12 The following delivery policies of the SDLP are relevant to the ecological assessment of the proposed development:

- ES6: Providing for biodiversity and geodiversity
- ES8: Trees, hedgerows and woodlands

Stroud District Local Plan Review – Emerging Strategy Paper (2018)

2.13 This consultation paper sets out the councils emerging strategy for meeting development needs over the next 20 years and reviews the current local plan. This identified the following key issue:

- Issue 4: Developing strategies to avoid, reduce and mitigate the indirect impacts of development on the natural environment – *“safeguarding local wildlife-rich habitats and wider ecological networks/areas identified for habitat management, enhancement, restoration or creation; promoting the conservation, restoration and enhancement of priority habitats and ecological networks, and the protection and recovery of priority species; managing growth to secure mitigation and measurable net gains for biodiversity.”*

Habitats Regulation Assessment (HRA) of the Stroud Local Plan at Emerging Strategy Stage (2018)

2.14 The purpose of the Habitat Regulations Assessment (HRA) is to identify any aspects of the emerging Local Plan that would have the potential to cause a likely significant effect on Natura 2000 or European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites), (either in isolation or in combination with other plans and projects), and to identify appropriate avoidance and mitigation strategies where such effects are identified.



## 3.0 Results

- 3.1 Full details of the results for designated sites, habitats and species are detailed within the Ecological Appraisal.

### Designated Sites

- 3.2 There are no statutory designated sites within 2 km of the site.
- 3.3 The site falls within 7.7 km of the Severn European Marine Site (EMS) and is therefore within the zone where Stroud District Council's 2016 Visitor Survey concluded that any new residential development is likely to contribute to a significant effect on the EMS.
- 3.4 The site is also approximately 5.1 km west of Woodchester Park SSSI for which bats are a primary or significant factor in its selection as a SSSI. These habitats are exploited by a nationally important breeding colony of Greater Horseshoe bats centred on the mansion near the western end of the site. A breeding colony of Lesser Horseshoe bats is also present. The site falls 300 m outside of the impact risk zone of the SSSI but may be utilised by bats moving between their summer and winter roosts east of the site and in the Forest of Dean.
- 3.5 There are 11 non-statutory designated sites within 1 km of the site. The majority of these are Unconfirmed Sites (U) which have potential Local Wildlife Site (LWS) quality and toad patrol locations:
- Cambridge Old Canal LWS (667 m N)
  - Gossington Hall U (252 m W)
  - Cam (Co-op field) U (1632 m S)
  - George Inn Fields Cambridge U (522 m N)
  - River Cam (part of unite 5) U (677 m N)
  - Wickster Brook Meadow U (1727 m NW)
  - Wicksters' Brook, Capehall Farm U (1605 m N)
  - Coaley – Coaley Mill U (519 m E)
  - Cam – Woodend Lane U (924 m S)
  - Cam – Field Lane U (1196 m S)
  - Peter's Street, Frocester Conservation Road Verge (CRV) (1786 m NE)

### Habitats

- 3.6 The principle habitats on site and their characteristic species were identified during the Ecological Appraisal. The distribution of these habitats and illustrative photographs are provided within the Ecological Appraisal.
- 3.7 The site is approximately 80 ha in size and consists of a number of arable and grassland fields with some areas of hard standing, woodland and buildings. The fields are connected and bound by a number of hedgerows, some with trees; ditches and running water are also present and a small part of the site meets the River Cam. The site is situated alongside the M5 and railway line

to the north of Cam, and east round to the south of Slimbridge. The general landscape is one of intensive agriculture, solar farms and small to medium size settlements. The nearest extensive areas of woodland are along the Cotswold escarpment approximately 4 km to the east; the Severn Estuary is almost 4 km to the northwest.

## Species

3.8 The survey area includes habitat with the potential to support the following species/species groups and this potential is considered in further detail below:

- Bats (roosting and foraging)
- Badger
- Hazel Dormouse
- Water Voles
- Otters
- Birds
- Reptiles
- Amphibians including Great Crested Newt
- Invertebrates

## 4.0 Ecological Constraints and Opportunities

4.1 The results of the Ecological Appraisal are presented in the tables below. These are then considered in the context of the sites suitability and capacity to accommodate commercial and residential development in relation to ecology. Potential constraints and opportunities are identified and discussed and a likely ecological value at a local, national or international level are assigned to each factor.

### Designated Sites

Designation	Details	Likely to Significantly Effect Development Capacity of the Site?	Constraints and Opportunities	Likely Ecological Value
Severn Estuary European Marine Site (EMS)	This proposed development site falls within 7.7 km of the Severn European Marine Site (EMS) which contains SAC, SPA, Ramsar and SSSI designations.	Yes	<p>The proposed site is within 7.7 km of the EMS so is within the zone where Stroud District Council's 2016 Visitor Survey concluded that any new residential development is likely to contribute to a significant effect on the EMS through an increase in recreational use. The farmland on site may also be used by wintering birds that are associated with the EMS so loss of this habitat may indirectly impact the EMS.</p> <p>Any recreational impacts to the EMS can now be addressed through Stroud District Council's Severn Estuary Recreation &amp; Mitigation Strategy (SE RAM) for Avoidance of Likely Significant diverse Effects on Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site. This gives an opportunity to make a financial contribution on a per</p>	International

			<p>dwelling basis in order to fund the strategy. The provision of green open space within the development would reduce the likelihood of recreational pressure from the residential areas of development on the EMS.</p> <p>Opportunities with regards to wintering birds are discussed below.</p>	
<p>Woodchester Park SSSI and Forest of Dean Bats SAC</p>	<p>This statutory designated site is approximately 5.1 km east of the site. Roosting bats are a primary or significant factor in its selection as a SSSI. These habitats are exploited by a nationally important breeding colony of Greater Horseshoe bats centered on the mansion near the western end of the site. A breeding colony of Lesser Horseshoe bats is also present. The site falls 300 m outside of the impact risk zone of the SSSI but may be utilised by bats moving between the their summer and winter roosts at Woodchester Park and the Forest of Dean Bats SAC.</p>	Yes	<p>The proposed development site falls 300 m outside of the impact risk zone of the SSSI so any proposed development is unlikely to affect foraging opportunities for bats roosting in the SSSI. However, the development site sits between the SSSI and the Forest of Dean Bats SAC which is known to be an important area for hibernation roosts, in particular for Greater and Lesser Horseshoe bats. Therefore, development of the site, increase lighting and loss of commuting habitat such as hedgerows, woodland, trees and may impact these migrating bats and in turn the SSSI and SAC</p> <p><b>In order to avoid and mitigate potential detrimental impacts on the SSSI and SAC, the site design should include retention and enhancement of commuting bat habitat such as unlit green corridors.</b></p> <p><b>Further constraints and opportunities in relation to bats are discussed below.</b></p>	<p>National and International</p>
<p>River Cam (part of unite 5) U</p>	<p>This non-statutory designated site is approximately 677 m north of the site however, is downstream of the section of River Cam that runs along part of the northeast site boundary. This is designated for the water course but no further details</p>	No	<p>Works on site may lead to pollution and increased sedimentation of the adjacent river through run-off during construction and also the long-term change in the hydrology of the site could result in reduced water quality and pollution. This is turn may affect the designated site as this is downstream.</p>	<p>District</p>

	are provided as to what leads to this designation. It can be assumed this is for the flora and fauna within and surrounding the designated area of the river.		<p>Assurances and provision will need to be made to address the long-term potential impacts to this river by providing sufficient measures to ensure that the hydrology of the site is not changed to the detriment of the river and that potential pollutants from new residents (detergents, nutrient enrichment etc.) can be avoided.</p> <p>During the construction phase of the project on no account should any chemicals, including vehicle fuels or lubricants be left on site at night where they might be accessed by accident or deliberately (e.g. vandals) resulting in spillage to the river. Any contractors engaged in works on the site should have in place secure storage facilities and an agreed pollution prevention plan. Appropriate pollution control equipment should be available at the site to control spillages if they do occur. This equipment could include the installation of a surface run off drainage gully and a petrol interceptor to prevent spillages entering the river as well emergency oil absorbent booms to contain and absorb hydrocarbon spills into the river should this occur.</p> <p>A 15 m buffer of vegetation to the river would help ensure the protection of the river.</p>	
Non—statutory designated sites	The data search returned results for 10 other non-statutory designated sites within 2 km of the site.	No	<p>The proximity of these sites to the subject site is not expected to result in and constraints to the development. The provision of green open space within the development would reduce the likelihood of recreational pressure from the residential areas of development on non-statutory designated sites within 2km of the site.</p>	District

## Habitats

Habitat	Details	Likely to Significantly Effect Development Capacity of the Site?	Constraints and Opportunities	Likely Ecological Value
Arable	The site includes six arable fields which equate to approximately 53.8 ha. These had been planted with Sweetcorn/Maize, Winter Barley and wheat, with two of the fields having been harvested, leaving stubble remaining. The different fields had areas of narrow and wider field margins which generally consisted of improved grassland, tall ruderal and scrub habitats with some fields having dry ditches.	No	<p>No rare arable weeds were noted during the survey. Given that monoculture crops are normally subject to herbicides and pesticides the presence of rare arable weeds is considered unlikely.</p> <p><b>Loss of the arable habitat is not considered a constraint to the development as is unlikely to be of ecological significance with regards to flora. The arable fields offer potential opportunities for ecological gain through creation of botanical interest in green open space and new buffer vegetation.</b></p>	Site
Improved grassland	Improved grassland was present along the field margins and there was also an improved grassland field which appeared to be grown as a crop for silage or hay, and three fields of grazed paddocks which included three paddocks of tall grassland. These main areas of improved grassland equate to approximately 20.6 ha in size.	No	<p>The areas of improved grassland did not support a high floristic diversity but the field margins and areas of longer grassland in the paddocks did provide some habitat structure.</p> <p><b>Loss of this habitat is not considered to be of ecological significance and the proposed development provides an opportunity for the creation of green open space and meadow planting. Areas of open space that are not required solely for amenity landscaping could be seeded</b></p>	Site

			with an appropriate wildflower mix and managed with annual summer cuts to provide floristically interesting and diverse meadow habitat. This will enhance the site for a range of fauna species and the amenity value of the site.	
Broad-leaved plantation woodland  and  Semi-natural broad-leaved woodland	<p>The site contained four small woodland pockets and two longer stretches of woodland along the road.</p> <p>A band of woodland was present between the northeast field boundary and the River Cam.</p> <p>In total the area of woodland on site is approximately 1.63 ha in size.</p>	No	<p>The woodlands were formed by a range of trees but the survey was not carried out at the right time of year to assess the ground flora.</p> <p>Woodland should be retained where possible and consideration should be given to enhance the site with new buffer vegetation in the form of broad-leaved plantation woodland. The southeast boundary of Field C and south boundary of Field A are positioned next to the linear vegetation of the M5 and railway line. These boundaries could be planted with woodland to provide connecting habitat to two of the current wooded areas and would link to existing off-site trees and vegetation. This new woodland would also contribute to the visual and sound screening of the M5. Similarly, new woodland buffer vegetation could be planted along the southeast boundaries of Field F and G which are also adjacent to the M5. This would help link the River Cam linear vegetation to the off-site areas of woodland adjacent to Field E.</p> <p>The scheme also provides an opportunity to enhance the woodland on site and could include a Woodland Management Plan which would detail good management practices to increase ground and canopy flora diversity, the woodland planting to provide connectivity to the</p>	Local

			<b>wider landscape and sensitive access design to reduce potential recreational pressures.</b>	
Dense and scattered scrub	There were a number areas of scrub on site which were largely dominated by Bramble.	No	This habitat is not considered to be of ecological significance as it is small in extent and supports a limited diversity of commonly occurring botanical species.  <b>Loss of this habitat is therefore not considered to be of ecological significance and losses can be offset by creation of new high quality habitats within retained green open space.</b>	Site
Tall ruderal	There were a number areas of scrub on site which were largely dominated by Common Nettle.	No	This habitat is not considered to be of ecological significance as it is small in extent and supports a limited diversity of commonly occurring botanical species.  <b>Loss of this habitat is therefore not considered to be of ecological significance and losses can be offset by creation of new high quality habitats within retained green open space.</b>	Site
Standard trees	The site contained a number of standard trees which included mature trees.	No	The species situated on site consisted of common species but contributed to the habitat structure and habitat diversity to the site and wider landscape.  <b>Trees should be retained where possible in the site design, with mature trees favoured over young standard trees. Retained trees should have tree root protection measures in place during construction works. The site should be enhanced with new native tree planting.</b>	Site



Hedgerows	These consisted of species-rich hedge, species-rich hedge and trees, species-poor hedge and species-poor hedge and trees.	No	<p>The hedgerows on site consisted of species-poor and species-rich hedges with some containing trees. The species-rich hedges and hedgerows with trees have a higher ecological value than the species-poor hedgerows and so are regarded as a higher priority.</p> <p><b>The scheme provides an opportunity to retain and enhance the hedgerows on site and also new hedgerow planting to increase habitat connectivity and provide high quality habitat corridors. Management of retained, enhanced and new hedgerows should encourage bushy, tall growth. Retention and enhancement of hedgerows contribute to local planning policies.</b></p>	Site
Dry ditch	The site contained eight stretches of dry ditch along the field margins.	No	<p>The dry ditches consisted of common flora species consisting of improved grassland, scrub and tall ruderal species but provide connecting terrestrial habitat for species and may provide aquatic connecting habitat for species such as amphibians in times of wet weather. The ditches provide drainage for arable fields.</p> <p><b>The proposed scheme would result in a change to the nature of the site and the ditches may be lost. There is an opportunity to retain the ditches as part of green open spaces created and retained on site and may be incorporated in sustainable urban drainage (SUDs) if suitable.</b></p>	Site
Running water	The River Cam runs along the northeast boundary of Field G and a small brook/stream runs through the centre of the south area of the site.	No	The River Cam adjacent to the site is upstream of a non-statutory designated site and provides a wildlife corridor and suitable habitat for a range of flora and fauna species, including protected species. The stretch of running water in the south area of the site did not appear	Site/Local

			<p>to connect to other watercourses but may still provide a service as habitat corridor.</p> <p>The River Cam is off-site but is within the zone of potential influence. Constraints and enhancements are described above and below. The proposed scheme would result in a change to the nature of the site and the running water within the south area of the site may be lost. There is an opportunity to retain the running water as part of green open spaces created and retained on site and may be incorporated in sustainable urban drainage (SUDs) if suitable.</p>	
Buildings, Hard standing, Fencing	<p>Nine building were on site which consisted of metal agricultural buildings, stable and brick buildings and outbuildings. There were limited areas of hard standing on site. Timber post and rail fencing and timber post and wire fencing defined sections of the site boundaries and also divided horse grazed paddocks within the areas of improved grassland.</p>	No	<p>These habitats are not considered to be of ecological significance.</p> <p>Loss of the buildings on site may require consideration in terms of their potential to support protected species which is discussed below, but do not hold ecological significance in their own right.</p> <p>Loss of this habitat is therefore not considered to be of ecological significance and losses can be offset by creation of new high quality habitats within new and retained enhanced green open space.</p>	Site

## Species

Species	Details	Likely to Significantly Effect Development Capacity of the Site?	Constraints and Opportunities	Likely Ecological Value
Bats	<p>GCER provided 15 bat records within 2 km of the site which consisted of five known species and two unidentified species. The site provides good quality foraging and commuting habitat with a network of hedgerows, trees, woodland and grazed pasture. The site also has a number of standard trees with Potential Roosting Features (PRF) and more may be present within the areas of woodland. There were also a number of buildings on site which may provide day or night roosting potential for bats.</p> <p>Further bat activity surveys and bat inspections of the buildings and trees have been recommended within the Ecological Appraisal.</p>	Yes	<p>The suitable potential bat foraging and commuting habitats identified on site is likely to be affected by the development as the nature of the site will change resulting in the loss of some of these habitats. The proposed development may also result in increased lighting both during construction works and new permanent lighting. The site may also be used by migrating Greater and Lesser Horseshoe bats from Woodchester Park SSSI, as well as other bats, to the Forest of Dean Bats SAC (as described above). Therefore, the loss or impacts to the suitable commuting habitats on site may affect these migration routes, if present.</p> <p><b>Further bat activity surveys are required to determine the use of the site by bats.</b></p> <p>The site also contains a number of buildings which may provide roosting potential and these roosting sites, if present, would be permanently lost if buildings are demolished. Building demolition may also result in the disturbance, injury or death of roosting bats without suitable mitigation in place.</p>	National

			<p><b>Further bat inspection surveys are required to determine the use of the buildings by bats.</b></p> <p>The site also contains a number of trees which provide PRF and trees within the woodland may also provide PRF. These roosting features, and potential bat roosts if present, would be permanently lost if the trees or tree limbs are felled. Tree felling may also result in the disturbance, injury or death of roosting bats without suitable mitigation in place.</p> <p><b>Further detailed inspections of the trees are required.</b></p> <p>Significant impacts to foraging and commuting bats could be mitigated and the site enhanced through the scheme design by providing new buffer vegetation, retention of hedgerows and green open space and through implementation of a sensitive lighting strategy.</p> <p>Loss of bat roosts on site, if present, could be mitigated by providing alternative roosting sites either as stand alone features, bat boxes on retained mature trees or within woodland or within new buildings. Appropriate licences may be required through Natural England. If no bat roosts are found within the site during further surveys, new roosting opportunities should be incorporated within the proposed site design to enhance the site for bats in the area.</p> <p>Results from further bat surveys will inform the required bat mitigation.</p>	
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<p>Hazel Dormouse</p>	<p>The site provides a network of hedgerows and woodland pockets which provide potential Dormouse habitat. Further Dormouse surveys have been recommended within the Ecological Appraisal.</p>	<p>Yes</p>	<p>It is likely some of the hedgerows will be removed or new entrances created through these or areas of woodland which would result in the permanent loss of potential Dormouse habitat and may result in the disturbance, death or injury of Dormice. The overall nature of the site will change which may increase the likelihood of disturbance of Dormice through increased activity or lighting.</p> <p>Development effects and significant impacts to Dormice could be mitigated and enhanced through sensitive scheme design such as retention and planting of new hedgerows of a native species-rich mix to provide good foraging habitat and new linear and buffer vegetation such as woodland. New woodland planting along the south and southeast boundaries, along the railway line and M5, would provide good connecting habitat for this species. The installation of deer-proof fencing around retained woodland on site would improve the lower canopy cover for this species and implementation of a sensitive lighting strategy would be required for retained suitable habitats. Appropriate licences may be required through Natural England if present here.</p> <p>Results from the further Dormouse surveys will inform required Dormouse mitigation.</p>	<p>Local</p>
<p>Water Voles and Otters</p>	<p>GCER provided 24 Water Vole records and 47 Otter records within 2 km of the site. Whilst there is no suitable habitat on site, the River Cam runs along the northeast</p>	<p>No</p>	<p>The River Cam along the northern edge of Field G is offsite and will be excluded from proposed development but is within the potential zone of influence of the site.</p>	<p>Local</p>

	boundary of Field G, which provides suitable habitat for these species with records of both present here.		Development effects to these species could be easily mitigated for by a sensitive design scheme that incorporates a minimum 15 m buffer of vegetation along the River Cam boundary and implementation of a sensitive lighting strategy. Recommendations with regard to the protection of the River Cam from pollution etc should be followed to ensure the future use of the river by these species is not affected, as described above.	
Badgers	GCER provided 13 Badger records within 2 km of the site. The grassland on site provides good foraging habitat for Badgers and the site provides the potential for construction of Badger setts within the woodland, areas of dense scrub and boundary hedgerows. Evidence of Badgers was found in the form of a footprint but no setts were found.	No	The proposed development will likely result in the loss of potential foraging habitat in the form of short improved grassland and potential habitat for the construction of setts in the form of hedgerow loss.  <b>Loss of Badger foraging habitat can be readily mitigated through sensitive scheme design to incorporate green open space such as amenity grassland that will continue to provide potential foraging opportunities on site. New on site buffer vegetation such as woodland, will provide habitat connectivity for this species and may increase the potential for construction of setts.</b>	Site
Birds	GCER provided a number of bird records within 2 km of the site. The site provides a range of habitat types for birds with the trees, hedgerows, dense scrub and woodland providing nesting habitat, with these and the remaining habitats on site providing potential foraging opportunities. The arable fields may be used by over wintering birds or farmland bird species and the buildings may also provide nesting	Yes	The arable farmland on site may be used by wintering birds that are associated with Slimbridge Wetland Centre or the Severn Estuary EMS so loss of this habitat may impact the EMS.  <b>Impacts to nesting birds can be mitigated through sensitive timing of works. There is potential for the development scheme to demonstrate delivery of biodiversity gain, by retention of boundary features of value to bird species and by informed scheme design,</b>	Local/National

	<p>opportunities for birds. The site provides limited optimal Barn Owl foraging habitat within the tall grassland. Further farmland and wintering bird surveys are required.</p>		<p>including incorporation of new areas of green space and buffer vegetation.</p> <p>Longer term measures to compensate for the permanent loss of potential nesting habitat for farmland species and wintering birds utilising the site may entail the provision appropriate compensatory habitat, which may be off site.</p> <p>Results from the farmland and wintering bird surveys would inform required mitigation.</p>	
Reptiles	<p>GCER provided 19 reptile records within 2 km of the site. The site provides potential reptile habitat along the arable field margins and tall grassland, and within the tall ruderal and scrub habitats. The hedgerows and woodland also provide areas of cover for reptiles. Further reptile surveys are required.</p>	No	<p>The site provides a network of habitats along the field edges and boundaries. These cover a wide area and although on a field by field basis provide limited reptile habitat, reptiles are likely to be present due to the size of the site and its connectivity to the wider area..</p> <p>Mitigation through informed scheme design should include provision of open green space and wildlife corridors that provide suitable habitat for reptiles species. Wildflower meadow planting in conjunction with providing new areas of refugia and hibernacula around suitable habitat will likely enhance the site for reptiles.</p> <p>Results from the further reptiles surveys would inform the required mitigation.</p>	Site
Amphibians	<p>GCER provided 32 amphibian records within 2 km of the site which included six Great Crested Newt records. The site provides terrestrial Great Crested Newt habitat in the form of tall grassland, scrub,</p>	Yes	<p>There is no suitable amphibian breeding habitat on site as ponds were found to be dry. However, there are suitable ponds within 500 m and a number of ponds in the area could not be initially inspected, so may also provide suitable habitat and breeding habitat. The site</p>	Local

	<p>tall ruderal, hedgerows, woodland and dry ditches. There were also three dry ponds on site and a number of other ponds within 500 m of the site. A number of the ponds were dry on inspection and some were inaccessible at the time of survey. Pond 2 was rated as 'below average' for its suitability for this species which is above the 0.5 threshold at which further surveys are required. The remaining ponds that were inaccessible at the time of survey will need to be accessed at a later date to determine whether they also score above 0.5.                  Further Great Crested Newt surveys are required.</p>		<p>provides limited terrestrial habitat but due to the size of the site, these habitats are likely to be used by Great Crested Newts, if present in the area.</p> <p><b>Development effects and significant impacts to Great Crested Newts could be mitigated and enhanced through sensitive scheme design such as sustainable urban drainage (SUDs), creation of new ponds and retention and enhancement of ponds on site to provide suitable breeding ponds. Also through retention and planting of new hedgerows and connecting terrestrial habitat.</b>                  Appropriate licences may be required through Natural England if present here. Results from the further Great Crested Newt surveys would then inform required mitigation.</p>	
Fish	<p>GCER provided five European Eel records within 2 km of the site, some of which are associated with the River Cam.</p>	No	<p>The River Cam along the northeastern edge of Field G is off-site but is within the potential zone of influence of the site.</p> <p><b>Development effects to this species could be easily mitigated for by a sensitive design scheme that incorporates a minimum 15 m buffer of vegetation along the River Cam boundary and implementation of a sensitive lighting strategy. Recommendations with regard to the protection of the River Cam from pollution etc should be followed to ensure future use of the river by these species, as described above.</b></p>	Local



Invertebrates	GCER provided a number of Lepidoptera records within 2 km of the site. The woodland, trees and hedgerows provide good potential habitat for a range of invertebrate species but the arable fields and grazed pasture fields provide poor habitat.	No	Significant impacts to this species group could be readily mitigated through the retention of trees, hedgerows and woodland habitat. The potential for biodiversity gain for the wider invertebrate assemblage can be delivered via informed design incorporating habitat creation and implementation of a sensitive regime of habitat management. Invertebrate towers and homes for pollinators could also be provided.	Site
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## Biodiversity Net Gain

- 4.2 The proposed site scheme should incorporate proposals for offsetting the losses of habitats on site and enhancing the site to result in a biodiversity net gain.
- 4.3 Biodiversity net gain can be estimated through quantifying the baseline features identified within the Ecological Appraisal and quantifying impacts and clarify outcomes from avoidance, mitigation and compensation to communicate biodiversity net gain. The quantification of habitats on site must be incorporated with the qualitative assessment of the site.
- 4.4 Biodiversity net gain is founded on the appropriate application of the mitigation hierarchy:
  - Stage 1: Avoidance – Measures taken to avoid creating impacts from the start. For example, changing the location of the development.
  - Stage 2: Minimisation - Measures taken to reduce the duration, intensity, extent and/or likelihood of impacts that cannot be avoided.
  - Stage 3: Compensation - Addressing residual adverse effects is the final stage, only considered after all possibilities for avoiding and minimising the effects have been implemented. Compensation does not prevent the effects, rather it involves measures to make up for residual effects that cannot be prevented. Measures taken to improve degraded ecosystems following exposure to impacts which cannot be completely avoided or minimised. Measures taken to compensate for any residual, adverse impacts after full implementation of the previous three steps of the Mitigation Hierarchy.
- 4.5 Biodiversity net gain using DEFRA's Biodiversity Metric fulfils the requirement of the NPPF to '...secure measurable net gains for biodiversity.'
- 4.6 It is recommended a Biodiversity Impact Assessment using DEFRA's Biodiversity Metric is undertaken at the early stages of the proposed development scheme to ensure net gain can be achieved on site. In line with DEFRA's consultation response on Biodiversity Net Gain, sites should aim for a 10% net gain with an outlook for 30 years future management.

## 5.0 Conclusion

- 5.1 The site provides a variety of habitats on site that provide suitable habitat for a range of fauna including a number of protected species. Any development of the site will require further surveys to determine specific mitigation for these protected species which will need to be incorporated with retaining, enhancing and creating good quality habitats on site to provide a measurable biodiversity net gain for wildlife more generally.
- 5.2 The proposed development could impact nearby designated sites if not mitigated for and impacts to these should be considered when undertaking further surveys and planning mitigation at a landscape wide level.

## 6.0 Plans

### Hedgerow locations



### Habitat Survey Results

