



Preliminary Ecological Assessment (PEA)

Land off Jubilee Lane

Forest Road

Bream

October 2021



Document title PEA – Land of Jubilee Lane, Bream
Revision number 0.1

Table of Contents

1	Executive summary	1
2	Introduction	2
2.1	Background.....	2
2.2	Purpose of this document	2
3	Legislation, planning policy and guidance.....	3
3.1	The Conservation of Habitats and Species Regulations 2017	3
3.2	Wildlife and Countryside Act 1981 (as amended).....	3
3.3	The Countryside and Rights of Way Act 2000	3
3.4	National Planning Policy Framework (NPPF) (2021)	4
3.5	Forest of Dean Adopted Local Plan	5
4	Methodology.....	7
4.1	Desk study.....	7
4.2	Extended phase 1 habitat survey.....	7
4.3	Daytime building inspection for bats.....	7
4.4	Surveyor	7
4.5	Survey limitations	7
5	Baseline Conditions	8
5.1	Statutory Designated Sites.....	8
5.2	Local Wildlife Sites.....	8
5.3	Habitats	9
5.4	Desk study.....	14
5.5	Protected, rare or notable plant species	14
5.6	Amphibians.....	14
5.7	Reptiles	14
5.8	Invertebrates.....	14
5.9	Breeding birds.....	15
5.10	Bats.....	15
5.11	Badgers.....	15
5.12	Other mammals of conservation concern	15
6	Assessment	16
6.1	Proposed development plan.....	16
6.2	Important ecological features	16



6.3	Biodiversity enhancement	17
7	Conclusion.....	17
8	References	18
9	Appendices.....	19
	Appendix 1: Plant species list.....	19

1 Executive summary

- 1.1.1 In September 2021, MPEcology were commissioned by Mr B Jones to undertake a Preliminary Ecological Assessment of land off Jubilee Lane in Bream (hereafter also referred to as 'the site'). The site is located within the administrative boundary of the Forest of Dean District Council (National Grid Reference SO 6098 0573).
- 1.1.2 A Phase 1 habitat survey of the site following standard methodology (IEA, 1995) was carried out by MPEcology on the 16th September 2021. During the site visit, each distinct habitat type was mapped and target noted according to categories set out by the Joint Nature Conservation Committee (JNCC, 2010). A search for Potential Roost Features (PRFs) for bats was also undertaken during the site visit.
- 1.1.3 Devil's Chapel Scowles Site of Special Scientific Interest (SSSI) is the nearest statutory designated site to Jubilee Lane, located approximately 0.86km to the south-west. The next closest site identified was Nagshead SSSI (a woodland site noted for its bird interest, 2.62km to the north). Devil's Chapel Scowles forms part of the Wye Valley and Forest of Dean Bat Sites Special Area of Conservation (SAC). The sites are considered important for supporting breeding populations of Greater Horseshoe bats (*Rhinolophus ferrumequinum*) and Lesser Horseshoe bats (*Rhinolophus hipposideros*).
- 1.1.4 A GCER data search identified Local Wildlife Sites (LWS) close to Jubilee Lane including Bream (FC Forest Waste), an unconfirmed calcareous grassland site immediately adjacent to it.
- 1.1.5 The site at Jubilee Lane comprised a rectangular-shaped plot currently used as an allotment. No protected plant species were found during the survey or would be expected from the proposed development area. However, two non-native invasive plant species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the site: Virginia-creeper (*Parthenocissus quinquefolia*) and Montbretia (*Crocsmia x crocosmiiflora*). It is illegal to cause of these species into the wild.
- 1.1.6 The nearest waterbody to the site identified using Ordnance Survey mapping was 600m to the east and the presence of Great Crested Newts (*Triturus cristatus*) within the site was considered unlikely. Slow-worms (*Anguis fragilis*) are known to be present. Commonly occurring reptiles including Slow-worms are afforded protection against intentional killing, injury and sale under the Wildlife and Countryside Act 1981 (as amended). If planning permission is granted for redevelopment of the site, measures will be needed to ensure reptiles are not harmed during building works.
- 1.1.7 Paragraph 174 of the National Planning Policy Framework introduces a duty to conserve and enhance biodiversity in the planning process. The following biodiversity measures are proposed: retention and refurbishment of the dry-stone wall at the western boundary; treatment or removal of invasive plant species (Virginia-creeper and Montbretia); and installation of a green roof.
- 1.1.8 The development site comprised an informal allotment. The focus of biodiversity interest was a dry-stone wall at the western boundary and flowering plants within the site used as nectar/pollen sources by invertebrates. The proposed construction of a new residential dwelling is unlikely to significantly alter the status of the site for wildlife if the boundary wall is retained and a garden replaces the vegetable beds.

2 Introduction

2.1 Background

- 2.1.1 In September 2021, MPEcology were commissioned by Mr B Jones to undertake a Preliminary Ecological Assessment of land off Jubilee Lane in Bream (hereafter also referred to as 'the site'). The site is located within the administrative boundary of the Forest of Dean District Council (National Grid Reference SO 6098 0573).

Figure 1: Location of the site.



© Crown copyright and database rights. Ordnance Survey [2021].

2.2 Purpose of this document

- 2.2.1 The report provides an overview of potential ecological constraints to development at the site and updates an earlier survey carried out in July 2013¹.

¹ Collins, R.J. (2013). *Protected Species Report (Ecological Survey). Site of Forest Road, Bream, Gloucestershire. November 2013.* An unpublished report prepared for Mr Martin Horne in support of planning. Collins Environmental Consultancy Ltd, Newent.

3 Legislation, planning policy and guidance

3.1 The Conservation of Habitats and Species Regulations 2017

- 3.1.1 Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the ‘Habitats Directive’ and the Birds Directive (Council Directive 2009/147/EC (which codifies Directive 79/409/EEC) for rare, vulnerable and regularly occurring migratory bird species and internationally important wetlands. The requirements of the Habitats Directive and the Birds Directive are transposed into UK legislation by ‘The Conservation of Habitats and Species Regulations 2017, commonly known as the ‘Habitats Regulations’.
- 3.1.2 The Habitats Regulations allow for the designation of both Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs) for the protection of other species and habitats. These protected areas are collectively known as the Natura 2000 network of sites. Species listed under the Habitats Regulations are known as European Protected Species (EPS) and are afforded a higher level of protection. EPS including Great Crested Newts, Otter and all species of bat are fully protected under UK law making it an offence to kill, injure or disturb EPS and to destroy any place used for rest or shelter.

3.2 Wildlife and Countryside Act 1981 (as amended)

- 3.2.1 The Wildlife and Countryside Act 1981 (as amended) (WCA) is the principal legislation relating to wildlife protection in the United Kingdom. The Act provides for the designation of Sites of Special Scientific Interest (SSSI), which are selected as the best national examples of habitat types, sites with notable species and sites of geological importance.
- 3.2.2 Schedules 1-4 of the Act deal with the protection of wild birds. Schedule 5 of the Act details with the protection of other animal species. Full protection is given under Section 9 of the Act to certain animals listed on Schedule 5, including all species of bats. Partial protection under Section 9 is given to certain other species, including all common species of reptile. Schedule 8 of the Wildlife and Countryside Act details protection for plants and fungi. It is an offence to knowingly cause the spread, into the wild, of plants listed on Schedule 9 of the Act.
- 3.2.3 Special penalties are available for offences related to birds listed on Schedule 1 of the Act and there are additional offences of disturbing these birds at their nests, or their dependent young, as well as the strict protection afforded to birds, their nests and eggs.

3.3 The Countryside and Rights of Way Act 2000

- 3.3.1 The Countryside and Rights of Way Act 2000 (CRoW Act) primarily deals with the rights of members of the public to access the countryside. The CRoW Act updated and strengthened the legal protection for designated sites (such as SSSIs) as well as certain species. In particular, the CRoW Act strengthened legislation by introducing the offence of ‘reckless disturbance’. Section 74 of CRoW Act placed a statutory duty on government departments to have regard to biodiversity conservation and requires the preparation and maintenance of lists of priority species and habitats. Some of the provisions set out in CRoW Act have

been incorporated into amendments to the WCA or have been superseded by the Natural Environment and Rural Communities Act 2006 (NERC 2006).

3.4 National Planning Policy Framework (NPPF) (2021)

3.4.1 The revised National Planning Policy Framework (NPPF) published in 2021 and sets out the framework by which government intends growth to be achieved, whilst protecting the natural and historic environment for future generations. In particular, paragraph 174 relates to conservation and enhancement of the natural environment.

3.4.2 When determining planning applications, the policies and decisions of local planning authorities should contribute to and enhance the natural and local environment by:

- a) *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);*
- b) *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;*
- c) *maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
- d) *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- e) *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*
- f) *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

3.4.3 In addition paragraph 180 of the NPPF sets out that when determining planning applications, local planning authorities should apply the following principles:

- a) *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.*

3.5 Forest of Dean Adopted Local Plan

3.5.1 The Local Plan was adopted and published in February 2012 and is intended to provide a planning framework which guides development until 2026². The plan establishes broad principles about acceptable levels of development in both the towns and the countryside and creates a policy framework that sets the scene for future planning decisions. In particular, it determines how, where and when various kinds of development will be distributed around the District. The Development Strategy is articulated through a number of “Core Policies”.

3.5.2 The following policy was considered relevant to the project:

Core Policy CSP.1: Design, environmental protection and enhancement (strategic objective: providing quality environments).

3.5.3 *The design and construction of new development must take into account important characteristics of the environment and conserve, preserve or otherwise respect them in a manner that maintains or enhances their contribution to the environment, including their wider context. New development should demonstrate an efficient use of resources. It should respect wider natural corridors and other natural areas, providing green infrastructure where necessary.*

3.5.4 *In achieving the above, the following will be considered:*

- *The effect of the proposal on the landscape including AONBs and any mitigation/enhancement that is necessary or desirable;*
- *The impact on any protected sites (natural and historic sites and heritage assets and potential for avoiding and/ or mitigating any impacts, or providing enhancement, should the development be acceptable;*
- *The requirements of the management plans of the AONBs;*
- *Whether the existing infrastructure is adequate- additional provision will be required where it is not;*
- *Whether the development is at risk from flooding, whether it can be permitted taking into account any risks, and the sequential approach and any mitigation that may be necessary to ensure the development is safe and flood risk is not increased elsewhere;*
- *The impact of the development on any land contamination or risk to the development from ground instability including the mining legacy- Proposals must undertake appropriate remediation measures and verification works where contamination and /or stability issues are identified;*
- *The potential for the development to cause pollution and any mitigation measures to avoid pollution or make environmental improvements where existing problems occur;*
- *The provision of water supply and the development's impact on groundwater, watercourses and any protected abstractions;*

² <https://www.fdean.gov.uk/planning-and-building/planning-policy/>

- *Any potential impact on the sterilisation of mineral resources and consideration of the potential for the prior extraction of those mineral resources ahead of development Proposals for waste minimisation and management.*

Development that is not able to be satisfactorily accommodated in respect of the above will not be permitted.

Core Policy CSP.2 - Climate Change Adaptation (Strategic objective: thriving sustainable communities)

3.5.5 *Proposals for development will be required to demonstrate that their design and layout will reduce the impacts of climatic change as identified in national, regional and local predictions over the lifetime of the development concerned. The following should be addressed in an integrated way, demonstrating that one element benefits another:*

Water management

- *Improving water efficiency - proposals should demonstrate high levels of water efficiency. Rain water harvesting and grey water recycling systems should be incorporated unless it can be demonstrated that it is not appropriate in a specific location.*
- *Managing surface run off- Sustainable Drainage Systems (SUDS) and measures to reduce or avoid water contamination and safeguard ground water supply should be incorporated into all development unless it can be demonstrated that this is not appropriate in a specific location.*
- *Flood risk- ensuring that risks (including changing risks due to climate change) are taken account of in new development, including improving resistance, resilience and safety of the areas concerned.*

Heating and cooling

- *Proposals will be required to demonstrate how the development comprehensively utilises passive solar gain and provides cooling for buildings, gardens and communal areas at the appropriate times of the year.*

Biodiversity

- *Developments must support green infrastructure corridors that link to existing habitat features and networks. They must show that the integrity of any affected nature conservation sites is not compromised by the development proposed. Proposals that prevent or restrict network connections will not be supported.*
- *Developments will be required to make long lasting biodiversity enhancements which could include the creation of new habitats where these would be appropriate. They should support existing features (trees, ponds, hedgerows etc), provide and manage public open space and should also provide additional features for a wide variety of species and habitats in appropriate locations throughout the development. Additional features provided should be consistent with the characteristics of the surrounding area.*

4 Methodology

4.1 Desk study

- 4.1.1 A search for existing records of protected or otherwise notable species within 1km of the site was commissioned from the Gloucestershire Centre for Environmental Records (GCER) and GIS resources of Natural England (NE) were used to identify nearby statutory designated sites.

4.2 Extended phase 1 habitat survey

- 4.2.1 A Phase 1 habitat survey of the site following standard methodology (IEA, 1995) was carried out by MPEcology on the 16th September 2021. During the site visit, each distinct habitat type was mapped and target noted according to categories set out by the Joint Nature Conservation Committee (JNCC, 2010). Incidental observations of plant and animal species were also made.

4.3 Daytime building inspection for bats

- 4.3.2 A timber shed at the north-western end of the site was subject to a daytime inspection. During the visit the building was searched by an experienced, licensed bat worker in order to locate evidence of current or past bat roosts, in the form of bats, droppings, staining, feeding signs, and/or remains of bats.

4.4 Surveyor

- 4.4.1 The surveyor and author of this report was Matthew Pickard (BSc., MSc.), an ecologist with over 20 years environmental consultancy experience, a Chartered Environmentalist (CEnv), full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and a licensed bat and great crested newt surveyor.

4.5 Survey limitations

- 4.5.1 Seasonal timing was not considered to be a constraint to preliminary ecological assessment of the site.

5 Baseline Conditions

5.1 Statutory Designated Sites

- 5.1.1 Devil's Chapel Scowles Site of Special Scientific Interest (SSSI) is the nearest statutory designated site to Jubilee Lane, located approximately 0.86km to the south-west. The next closest site identified was Nagshead SSSI (a woodland site noted for its bird interest, 2.62km to the north).
- 5.1.2 Devil's Chapel Scowles forms part of the Wye Valley and Forest of Dean Bat Sites Special Area of Conservation (SAC). The sites are considered important for supporting breeding populations of Greater Horseshoe bats (*Rhinolophus ferrumequinum*) and Lesser Horseshoe bats (*Rhinolophus hipposideros*).
- 5.1.3 No direct or indirect impact to any of the statutory designated sites is envisaged by the proposed development. The potential for indirect impact to other sites of European significance including the Severn Estuary SPA, SAC and Ramsar site due to increased recreational visits or habitat loss through development at Woodlands Farm is considered de minimis.

5.2 Local Wildlife Sites

- 5.2.1 The GCER data search also identified the presence of Local Wildlife Sites (LWS) within 1km:
- **Brockhollands LWS** – a site with semi-natural grassland, marsh, bog, swamp, mire and tall herb fen (<149m);
 - **Old Park and Old Bargains Woods LWS** – ancient semi-natural and replanted woodland with plant and geological interest (<245m);
 - **Bream's Eaves (Princess Royal Tip South) LWS** – a site with semi-natural grassland interest (<550m);
 - **Princess Royal Tip LWS** – a site with plant interest (<645m); and
 - **Bream (FC Forest Waste)** – an unconfirmed LWS with species-rich calcareous grassland immediately adjacent to the site (<9m).
- 5.2.2 An area of planted ancient woodland known as Breams Eaves Wood (now largely coniferous woodland) lies immediately to the south of the site.
- 5.2.3 No direct or indirect impact to the LWS is envisaged through development at Jubilee Lane. However, construction material storage outside of the site should be avoided to ensure habitat associated with the Bream (FC Forest Waste) site is protected.

5.3 Habitats

5.3.1 The site at Jubilee Lane comprised a rectangular-shaped plot currently used as an allotment.

Trees

5.3.2 Two Hawthorn (*Crataegus monogyna*) trees were noted at the south-western boundary.



Photo 1: Hawthorns (visible in background) at the south-western boundary of the site.

Polytunnels and sheds

5.3.3 A collection of polytunnels and small sheds were noted within the site.



Photo 2: A larger potting shed (TN17) at the northern boundary was not considered suitable for roosting bats.

Cultivated ground

5.3.4 Much of the site has been cultivated and is used to grow vegetables.



Photo 3: Cultivated ground.

Disturbed ground

- 5.3.5 A few areas of disturbed ground largely devoid of vegetation were noted within the site and included a small play area as well as a chicken run.



Photo 4: Disturbed ground associated with a play area at the southern end of the site (TN6).

Tall herbs and rough grassland

- 5.3.6 Uncut vegetation supported a mix of tall herbs and rough grassland often dominated by a mix of Nettle, Hedge Bindweed and docks.



Photo 5: Tall herbs and rough grassland at the south-eastern end of the site.

Stone piles

- 5.3.7 The removal of larger stones from cultivated plots has created two stone piles. The piles were generally of a low height but may provide potential refuge for reptiles during the warmer summer months.



Photo 6: A stone pile at the northern end of the site.

Walls

- 5.3.8 Walls were present at the western and eastern boundaries. The eastern boundary largely comprised mortared blockwork or stone. A less substantial dry-stone wall was present at the western boundary.



Photo 7: A (largely) dry-stone wall at the western boundary is likely to provide refuge for reptiles.

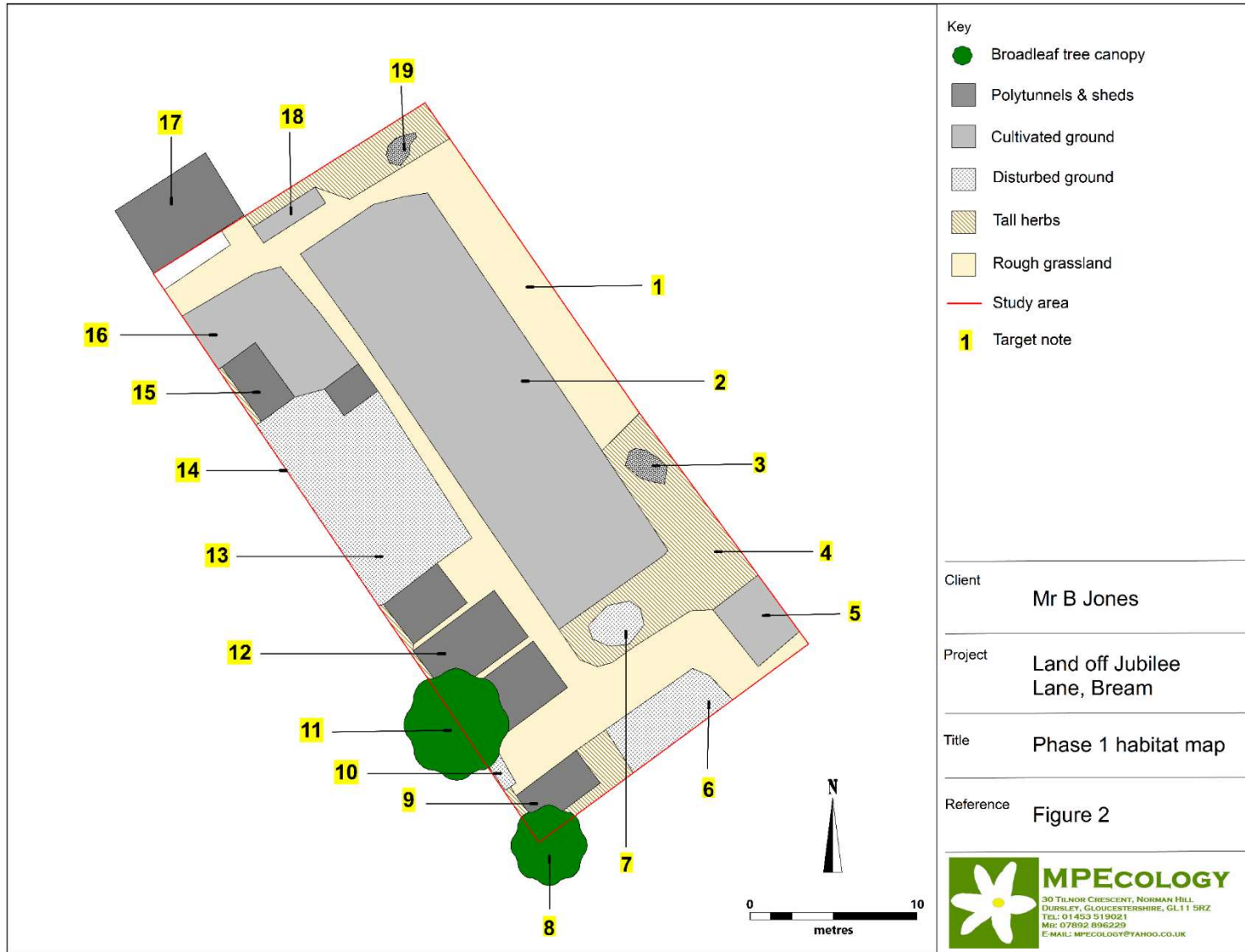


Table 5.1 Phase 1 habitat survey target notes

Target note (TN)	Description
1	Rough grassland. Pathways between cultivated plots supporting disturbed grassland. Species included Annual Meadow-grass (<i>Poa annua</i>), Creeping Bent (<i>Agrostis stolonifera</i>), Perennial Ryegrass (<i>Lolium perenne</i>), Dandelion (<i>Taraxacum officinale</i> agg), Broadleaved Plantain (<i>Plantago major</i>) and Curled Dock (<i>Rumex crispus</i>).
2	Cultivated ground. Allotment bed supporting a variety of planted vegetables.
3	Stone pile. A collection of stones removed from the planting beds. The feature offers potential as a reptile refugia.
4	Tall herbs / rough grassland. Uncut vegetation dominated by tall herbs and rank grasses. The vegetation included Nettle (<i>Urtica dioica</i>), Hemp-agrimony (<i>Eupatorium cannabinum</i>), Spear Thistle (<i>Cirsium vulgare</i>), Creeping Bent, Creeping Buttercup (<i>Ranunculus repens</i>) and Hedge Bindweed (<i>Calystegia sepium</i>).
5	Cultivated ground. Prepared but largely unplanted bed with Gypsophila (a cultivated plant used in flower arranging).
6	Disturbed ground. Bare trampled earth with play equipment (plastic swing and slide).
7	Disturbed ground. Disposal area (fire pit) used to burn dry vegetation waste.
8	Boundary shrub. Hawthorn (<i>Crataegus monogyna</i>) at boundary.
9	Caravan. A small caravan is currently being stored at the south-western corner of the plot.
10	Compost heap. A Slow-worm (<i>Anguis fragilis</i>) was found under a plastic sheet (damp proof membrane) used to cover the compost heap.
11	Boundary shrub. Hawthorn (<i>Crataegus monogyna</i>) at boundary.
12	Polytunnels. A collection of three small polytunnels used to grow vegetables.
13	Disturbed ground. A chicken run and small wooden hutch enclosed by wire fencing.
14	Wall. A dry-stone wall boundary was noted at the western boundary. The feature offers potential as a refuge for reptiles. A stand of Nettle and Bramble (<i>Rubus fruticosus</i>) was noted outside of the site boundary.
15	Polytunnel. A small polytunnel and nearby (insubstantial wooden garden) shed formed the northern boundary to a chicken run.
16	Cultivated ground. A planting bed used to grow vegetables.
17	Shed. Open-fronted potting shed at the northern boundary of the site with cover of Virginia-creeper (<i>Parthenocissus quinquefolia</i>). The structure was considered to offer negligible potential for roosting bats.

18	Cultivated ground. A small area supporting runner beans.
19	Stone pile. A collection of stones removed from the planting beds. The feature offers potential as a reptile refugia.

5.4 Desk study

5.4.1 A GCER data search based on a 1km buffer of the site returned over 103 records of rare or protected species. These included 1 record of amphibians, 76 records of birds, 5 of flowering plants, 5 reptile records and 16 records of terrestrial mammal (including 7 of bats). Analysis of the GCER records is included in the categories below:

5.5 Protected, rare or notable plant species

5.5.1 No protected plant species were found during the survey or would be expected from the proposed development area. GCER returned notable plant records of Bluebell (*Hyacinthoides non-scripta*) and Common Cudweed (*Filago vulgaris*).

5.5.2 Two non-native invasive plant species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the site: Virginia-creeper (*Parthenocissus quinquefolia*) and Montbretia (*Crocsmia x crocosmiiflora*). It is illegal to cause of these species into the wild.

5.6 Amphibians

5.6.1 The study area falls within an area of moderate suitability (Nature Space green zone³) for Great Crested Newts (*Triturus cristatus*). However, GCER data within 1km of the site only returned a record for Common Frog (*Rana temporaria*). Wide-ranging species such as Common Toad (*Bufo bufo*) may also be expected to occur.

The nearest waterbody to the site identified using Ordnance Survey mapping was located over 600m to the east.

5.7 Reptiles

5.7.1 A Slow-worm was noted from the site during the site visit and GCER returned records of Common Lizard locally. Other wide-ranging species such as Grass Snake (*Natrix helvetica*) may also occur in boundary features (stone wall of western boundary).

5.8 Invertebrates

5.8.1 Flowering vegetables as well as ornamental plants within the site were being used for nectaring during the site visit. Common Carder-bee (*Bombus pascuorum*) and Buff-tailed Bumblebee (*Bombus terrestris*) were noted as well as hoverflies. A range of butterflies would also be expected to occur.

³ <https://naturespaceuk.com/gismaps/impact-risk-map/>

5.9 Breeding birds

- 5.9.1 No evidence to suggest use by nesting birds was found during the survey. GCER returned records of 76 species of bird, most associated with buildings and woodland.

5.10 Bats

- 5.10.2 Gloucestershire supports a diverse bat fauna and a range of bat species would be expected to occur locally. GCER data included records for Noctule (*Nyctalus noctula*), Brandt's (*Myotis brandtii*), Whiskered (*Myotis mystacinus*), Daubenton's (*Myotis daubentonii*), Brown Long-eared (*Plecotus auritus*) and Lesser Horseshoe (*Rhinolophus hipposideros*). Others including Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*) almost certainly also occur.
- 5.10.3 No potential for roosting bats was found within the site although bats will forage in proximity to it (such as woodland edges south of the site).

5.11 Badgers

- 5.11.1 No evidence to suggest use by Badgers (*Meles meles*) was found during the field visit. GCER return records within the search area.

5.12 Other mammals of conservation concern

- 5.12.1 GCER returned records for Hedgehog (*Erinaceus europaeus*), Otter (*Lutra lutra*) and Dormouse (*Muscardinus avellanarius*). Habitat associated with the site was considered likely to offer negligible opportunities for these species.

6 Assessment

6.1 Proposed development plan

6.1.1 The proposals involve the construction of a residential dwelling within the plot.

6.2 Important ecological features

Habitats

6.2.1 Habitats within the site are common and widespread. The range of flowering plants offer a nectar source likely to be exploited by invertebrates. The stone wall at the western boundary is likely to provide a valuable refuge for reptiles and a compost heap is known to be used by Slow-worms.

Protected species

Birds

6.2.2 All nesting birds are afforded protection under the Wildlife and Countryside Act 1981 (as amended). It is an offence to disturb nesting birds. Timing of site clearance to avoid the breeding season (March to August) is recommended.

Bats

6.2.3 The introduction of lighting has the potential to indirectly affect bats by displacing them from foraging habitat. The provision of lighting in the future development should be designed to reduce potential light spill to adjacent habitats. Any external security lighting should be limited to directional, low lux lighting units triggered by motion or PIR (Passive Infrared) sensors which do not cast light within a wide area.

Great Crested Newts

6.2.4 The presence of Great Crested Newts within the site is considered unlikely given the lack of potential breeding sites locally.

Reptiles

6.2.5 Commonly occurring reptiles including Slow-worms are afforded protection against intentional killing, injury and sale under the Wildlife and Countryside Act 1981 (as amended). If planning permission is granted for redevelopment of the site, measures will be needed to ensure reptiles are not harmed during building works.

6.2.6 The likelihood of harming reptiles during the works would be minimised by:

- Manipulation of vegetation to encourage reptiles to move to the periphery of the site (vegetation should be kept short (5cm) to remove cover). Suitability of habitat adjacent to the site negates the need for translocation to distant sites;
- Stone piles and any other potential refugia likely to be impacted by works should be removed by hand prior to the commencement (avoiding the cold winter months);

- Retention of features likely to offer valuable refuge sites. In particular, the western boundary wall should be retained although it is likely to require refurbishment. Any rebuilding should avoid using mortar to ensure voids of use to reptiles (as well as amphibians and invertebrates) are kept;
- Any open excavations should be short-lived and checked prior to infilling. Earth ramps should be used to ensure wildlife has a means of escape; and
- Site clearance should be supervised.

6.3 Biodiversity enhancement

6.3.1 Paragraph 174 of the National Planning Policy Framework introduces a duty to conserve and enhance biodiversity in the planning process. The following enhancement measures are considered appropriate to the scale of the proposed development:

- Retention and refurbishment of the dry-stone wall at the western boundary;
- Herbicide treatment (removal) of the invasive plant species, Virginia-creeper and Montbretia;
- Installation of a green roof on the new property;

6.3.2 Given the low profile of the proposed new-build, the deployment of bat / bird boxes at suitable locations is likely to be difficult.

7 Conclusion

7.1.1 The development site comprised an area currently managed as an informal allotment. The focus of biodiversity interest was a dry-stone wall at the western boundary of the site and flowering plants within the site used as nectar/pollen sources by invertebrates.

7.1.2 The proposed construction of a new residential dwelling is unlikely to significantly alter the status of the site for wildlife if the boundary wall is retained and a garden replaces the vegetable beds.

8 References

Collins, J. (ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

Defra (2007) *Hedgerow Survey Handbook*. A standard procedure for local surveys in the UK. Defra, London

Eaton MA, Aebischer N.J., Brown A.F., Hearn, R., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D., Gregory, R.D. (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man. *British Birds* 108: 708-746.

Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall, London.

Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey: a technique for environmental audit*. JNCC, Peterborough.

9 Appendices

Appendix 1: Plant species list

Taxon	Vernacular
<i>Achillea millefolium</i>	Yarrow
<i>Agrostis stolonifera</i>	Creeping Bent
<i>Anagallis arvensis</i>	Scarlet Pimpernel
<i>Arabidopsis thaliana</i>	Thale Cress
<i>Arctium minus</i>	Lesser Burdock
<i>Arrhenatherum elatius</i>	False Oat-Grass
<i>Bellis perennis</i>	Daisy
<i>Buddleja davidii</i>	Butterfly-bush
<i>Capsella bursa-pastoris</i>	Shepherd's-purse
<i>Cardamine flexuosa</i>	Wavy Bitter-cress
<i>Cerastium fontanum</i>	Common Mouse-ear
<i>Chenopodium polyspermum</i>	Many-seeded Goosefoot
<i>Cirsium arvense</i>	Creeping Thistle
<i>Cirsium vulgare</i>	Spear Thistle
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Digitalis purpurea</i>	Foxglove
<i>Dipsacus fullonum</i>	Wild Teasel
<i>Epilobium montanum</i>	Broad-leaved Willowherb
<i>Epilobium parviflorum</i>	Hoary Willowherb
<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Euphorbia helioscopia</i>	Sun Spurge
<i>Festuca rubra</i>	Red Fescue
<i>Galium aparine</i>	Cleavers
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill
<i>Geranium molle</i>	Dove's-foot Crane's-bill
<i>Glechoma hederacea</i>	Ground-ivy
<i>Hedera helix</i>	Common Ivy
<i>Helianthus annuus</i>	Sunflower
<i>Heracleum sphondylium</i>	Hogweed
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Hypericum perforatum</i>	Perforate St John's-wort
<i>Hypochaeris radicata</i>	Cat's-ear
<i>Lamium album</i>	White Dead-nettle
<i>Lamium purpureum</i>	Red Dead-nettle
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Lonicera nitida</i>	Wilson's Honeysuckle
<i>Matricaria discoidea</i>	Pineappleweed
<i>Medicago lupulina</i>	Black Medick
<i>Oenothera x fallax</i>	O. glazioviana x biennis
<i>Origanum vulgare</i>	Wild Marjoram
<i>Persicaria maculosa</i>	Redshank

<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Plantago major</i>	Greater Plantain
<i>Poa annua</i>	Annual Meadow-grass
<i>Polygonum aviculare</i> agg.	Knotgrass
<i>Potentilla anserina</i>	Silverweed
<i>Prunella vulgaris</i>	Selfheal
<i>Pteridium aquilinum</i>	Bracken
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Rubus fruticosus</i> agg.	Bramble
<i>Rumex conglomeratus</i>	Clustered Dock
<i>Rumex crispus</i>	Curled Dock
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Sagina procumbens</i>	Procumbent Pearlwort
<i>Senecio vulgaris</i>	Groundsel
<i>Solanum nigrum</i>	Black Nightshade
<i>Sonchus asper</i>	Prickly Sow-thistle
<i>Stellaria media</i>	Common Chickweed
<i>Tanacetum parthenium</i>	Feverfew
<i>Taraxacum</i> agg.	Dandelion
<i>Torilis japonica</i>	Upright Hedge-parsley
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Urtica dioica</i>	Common Nettle
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell
<i>Vicia tetrasperma</i>	Smooth Tare
<i>Viola arvensis</i>	Field Pansy