PROPOSED DEVELOPMENT:

BOLSTON HOUSE,

BONVILSTON

ECOLOGICAL ASSESSMENT

MARCH 2020

Portabella Ltd

Version number:
Revision:

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Proposed Development: Bolston House, Bonvilston

Ecological Assessment

Document control

Issue	Stage	Author	Checked	Approved	Date
1	ISSUE	HD	BE	HD	17.03.2021

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Approved by	Date

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Drawings

Drawing number	Title
SP612 LRP100	Site location Plan
-	Tree retention plan (over proposed site layout)

NON-TECHNICAL SUMMARY

An ecological assessment was undertaken a domestic property called Bolston House in Bonvilston in the Vale of Glamorgan to the west of Cardiff in south Wales in support of an application to demolish the existing domestic house and replace it with a new domestic building.

The work involved a phase 1 habitat survey to categorise the habitats present, an assessment of the site's ability to provide suitable habitats for protected species, in particular bats, and recommendations for further survey and actions as necessary.

There are no statutorily designated sites on the development site. There is one Site of Special Scientific Interest (SSSI) within 2km of the site notified for its ash and oak woodland and rare herbs.

There are twenty Sites of Importance for Nature Conservation (SINCs) within 2km of the site.

The habitats on the site are all within the garden of the property and have therefore been subject of intensive management:

- there is an area of woodland to the north of the house dominated by mature non-native species and individual conifers over laurel, bramble, cotoneaster and ivy;
- mature standard trees;
- borders are dominated by ornamental shrubs;
- areas of lawn; and

With the exception of cotoneaster, no invasive non-native species were observed.

The house and outbuilding do provide bats with potential access points. The presence of bats was confirmed by the presence of droppings within the roof spaces of the house and garage.

A number of the mature trees on the site appear to provide potential roosting features for bats.

There are no waterbodies within the red line boundary of the site which could provide breeding habitat for great crested newt or other amphibians.

The site provides suitable habitat for reptiles.

It should be assumed that the trees / woodland and shrubs on the site are used by birds during the breeding season.

No evidence of any other protected species was recorded within the site boundary.

It is considered that further ecological surveys will be required:

- Bat emergence / return to roost surveys of Bolston House;
- Tree climb and inspect surveys (followed if necessary by activity surveys) of those mature trees which provide potential roost features for bats.

1 INTRODUCTION

1.1 OBJECTIVE

The objectives of this report are to:

- identify the habitats present on the site;
- identify the potential for protected species to be present on site;
- determine the presence of protected sites on or adjacent to the site;
- using the information gathered to determine whether there may be any impacts (both positive and negative) on protected species present;
- provide recommendations for further survey as necessary; and
- suggest outline mitigation and enhancement ideas and principles

1.2 METHODOLOGY

To achieve the objectives set out above, the following actions were taken:

- Field based assessments in respect of
    1. Habitats; and
    2. Protected species, in particular
        - bats
        - great crested newts; and
        - reptiles.

The impact assessment has been undertaken by ecological feature rather than by section i.e. each subject is discussed and assessed separately and summarised in conjunction with the others.

1.3 SITE DESCRIPTION

Photos are at **Appendix A**.

The site is approximately 0.9ha in extent and is located in the centre of Bonvilston to the west of Cardiff in the Vale of Glamorgan in south Wales (centred on NGR ST 06607410) (**Figures 1 & 2**). The site is approximately rectangular in shape, with its longest axis oriented north-south. This ecologically small site is comprised of a domestic property (Plates 1 – 8) surrounded by gardens (Plates 9 – 17) containing mature trees, shrubs, lawns and bare ground.

The site is bounded by vegetated fences and walls with houses, gardens and roads beyond .

Figure 1 – location of the proposed Bolston House development site (outlined red)

(Image courtesy of Google Earth)

Figure 2 – detailed view of the proposed Bolston House development site

(Image courtesy of Google Earth)

1.4 PROPOSED DEVELOPMENT

It is understood that the development proposal for the site is to demolish the existing property, clear the site and develop it with six modern domestic dwellings and associated infrastructure.

1.5 STUDY AREA

The field survey looked at the red line development area itself and up to 20m from the site boundaries where possible.

The biological records data search used a 2km search buffer around the central point of the site; parameters included statutorily and non-statutorily designated sites, European protected species, UK protected species and species of local conservation concern.

1.6 PREVIOUS SURVEYS

None known.

1.7 CONSTRAINTS

The field work was undertaken at a time when the full botanical diversity of the site may not have been apparent; however, given that the site is a garden dominated by woodland and non-native ornamental shrub species, this is not considered to be a constraint on this report.

There may be records that remain either undigitised or unsubmitted to the local records centre.

There were no other constraints to the survey.

2 REGULATORY FRAMEWORK

2.1 INTERNATIONAL

European Union legislation requires that member states designate sites for the protection of habitats and species included in the annexes of both Council Directive 92/43/EC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive) and Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). This legislation is implemented in the UK by the Conservation of Habitats and Species Regulations 2017 (as amended) ("the Habitat Regulations"). This results in sites being designated as Special Areas of Conservation (SACs) and Special Protection Areas respectively (SPAs).

Following the UK's exit from the European Union on 31st January 2020, the law responsible for continuing to implement this legislation through the transition period is The Conservation of Habitats and Species (Amendment) (EU EXIT) Regulations 2019. All legislation within the Conservation of Habitats and Species Regulation 2017 still apply within the UK under the amendment to the 2017 regulations until otherwise notified.

2.2 NATIONAL (UK)

The Wildlife and Countryside Act 1981 (as amended) allows sites to be designated as Sites of Special Scientific Interest (SSSI) for one or all of the following categories:

- Flora;
- Fauna;
- Habitat; and
- Geological importance.

European designated sites are automatically designated as SSSIs prior to their designation.

The relevant legislation includes:

- The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended);
- The Conservation of Habitats and Species Regulations 2017;
- The Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way Act 2000;
- Environment (Wales) Act 2016
- Wild Mammals (Protection) Act 1996;
- The Protection of Badgers Act 1992; and
- The Hedgerow Regulations 1997.

Section 40 of the Natural Environment and Rural Communities Act 2006 (as amended) requires all public bodies to have regard wherever possible to conserving biodiversity. Section 42 of the Act requires that a list of habitats and species of Principle Importance for the Conservation of Biological Diversity in Wales be produced; however, this has been replaced by Section 7 of the Environment (Wales) Act 2016 Priority Habitats and Species lists.

The Environment (Wales) Act 2016 requires that all public authorities, when carrying out their functions in Wales, seek to "maintain and enhance biodiversity" where it is within the proper exercise of their functions. In doing so, public authorities must also seek to "promote the resilience of ecosystems".

This ensures that biodiversity is an integral part of the decisions that public authorities take in relation to Wales. It also links biodiversity with the long-term health and functioning of our ecosystems,

therefore helping to align the biodiversity duty with the framework for sustainable natural resource management provided in the Act.

In Wales, this legislation has been replaced and enhanced by the Environment (Wales) Act 2016. See below.

Biodiversity Action Plans (BAPs) are tools which are used to monitor, manage and enhance those habitats and species which are of significance to an area or organisation, The United Kingdom BAP lists a number of priority habitats and species which are of conservation concern.

2.3 NATIONAL (WALES)

2.3.1 The Environment (Wales) Act 2016

This sets out the requirement for the 'sustainable management of natural resources' together with new ways of working to achieve this. Part 1 of the Environment Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

Section 6 – Biodiversity and resilience of ecosystems duty

Section 6 under Part 1 of the Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (the S6 duty) for public authorities in the exercise of functions in relation to Wales.

The S6 duty requires that public authorities must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems.

Section 7 - Biodiversity lists and duty to take steps to maintain and enhance biodiversity

This section replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.
The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

Part 1 of the Act, including Sections 6 and 7, came into force on May 21, 2016.

Other elements of NERC 2006 may still apply.

2.3.2 The Well-being of Future Generations Act 2015

This is concerned with improving the social, economic, environmental and cultural well-being of Wales. It will make the public bodies in Wales listed in the Act think more about the long-term, work better with people and communities and each other, look to prevent problems and take a more joined-up approach.
To help public bodies achieve the same vision, the Act puts in place seven well-being goals. Linked to the goals a set of National Indicators are currently under development to help measure whether we are achieving the goals including the Resilient Wales goal.

Resilient Wales' goal

'A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).'

The Well-being of Future Generations Act recognises the importance of nature and its biodiversity The resilient Wales' goal will help with nature recovery objectives in Wales.

The Act establishes a statutory Future Generations Commissioner for Wales to support the public bodies listed in the Act to work towards achieving the well-being goals.

The Act also establishes Public Services Boards (PSBs) for each local authority area in Wales. PSBs are tasked with improving the economic, social, environmental and cultural well-being of its area by working to achieve the well-being goals.

2.3.3 Planning Policy Wales (Welsh Government, 2018) and Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning (Welsh Assembly Government, September 2009)

These set out the protection given to wildlife (sites, habitats and species) by the planning system operational in Wales.

2.4 LOCAL AND REGIONAL

The proposed development is wholly within Vale of Glamorgan County Council (VoG) area of responsibility. Therefore, all policies adopted by that Planning Authority will apply, including policies which may not be specific to nature conservation or the natural environment but that may apply or be relevant and should be considered during the planning process.

The Biodiversity Action Reporting System (BARS) shows that there are a number of habitats and species which are of a high priority to VoG. These have been determined following examination of the UK BAP and the Environment (Wales) Act Section 7 list of Priority Species and Habitats and those habitats and species determined to be locally important by the Local Biodiversity Partnership.

2.5 PLANNING FRAMEWORK

The proposed development will be undertaken wholly under the auspices of the Town and Country Planning Act 1990 (as amended).

3 DESK STUDY

3.1 SUMMARY

There is one statutorily designated site within 2km of the proposed development site.

There are twenty non-statutorily designated Sites of Importance for Nature Conservation (SINCs) within 2km of the site; however, none is within 1km.

There are no species records from the site.

3.2 BACKGROUND

A desk study provides background information on historical and current biological data which can identify ecological constraints, mitigation, and biodiversity enhancement opportunities.

3.3 METHODOLOGY

The South East Wales Biodiversity Records Centre (SEWBReC) was consulted in order to provide biological information on the presence of species and sites on or adjacent to the site.

The biological records search covered a search radius of 2000m from the centre of the development site for internationally protected sites, UK protected sites, locally notified sites, protected and priority species, other species of conservation concern and locally important species.

The Multi-Agency Geographical Information System (MAGIC) website (www.magic.gov.uk) and the Local Biodiversity Action Plan (LBAP) for VoG were also consulted.

3.4 CONSTRAINTS

There were no constraints to the data search.

3.5 RESULTS

3.5.1 Statutorily protected sites

3.5.1.1 Internationally designated sites

None.

3.5.1.2 European designated sites

None.

3.5.1.3 United Kingdom designated sites

There is one SSSI within 2km of the proposed development site - the Nant Whitton Bolston SSSI, an ash and oak woodland on a base rich soil which supports a rich ground flora including herb-Paris and adderstongue.

Due to the differences between the features included in the citation and those present on the site and the distance between the development site and this classification will not be considered further in this report.

3.5.2 Non-statutory designations

There are twenty Sites of Importance for Nature Conservation (SINCs) within 2km of the proposed development site, however, none is within 1km and therefore this classification will not be considered further in this report.

3.5.3 Species: SEWBReC data search

There are 9, possibly 10, biological records from the development site.

The records from the site are of foraging bats, including lesser horseshoe, serotine, brown long eared, soprano and common pipistrelle and (probable) whiskered bats. There are identified day roosting sites for soprano and common pipistrelle in Bolston House and the garage.

There is a single record of a dunnock from the garden of Bolston House.

There is a single record of bluebell from the grid square covering Bolston House

There are also records of:

- Multiple further records of bats within 500m;
- amphibians, including great crested newt, within 140m of the Bolston House site;
- multiple bird species within 150m;
- reptiles (grass snake) within 150m;
- hedgehog; and
- multiple records of invertebrates.

There are multiple records for other protected and conservation concern species within 2000m of the site.

A summary of the species found in the data search buffer and their legislative status is at **Appendix B**.

3.6 PREVIOUS SURVEYS

None known.

4 PROTECTED SITES

Not applicable.

5 PHASE 1 HABITAT SURVEY

5.1 SUMMARY

A number of habitats were recorded within the survey area. These included:

- Scattered trees (broadleaved and conifer);
- Introduced shrubs;
- Amenity grassland (lawns);
- Bare ground; and
- Buildings

The potential for a number of protected species was recorded, including habitats suitable for:

- Bats;
- Dormouse;
- Great crested newt;
- Badger;
- Reptiles; and
- Breeding birds.

A number of features of interest were recorded for which there is no appropriate categorisation. These have been identified as Target Notes (TN) and noted and numbered below.

The habitats are shown on **Figure 3** below.

5.2 BACKGROUND

The Phase 1 habitat survey was carried out to assess the existing habitats, identify any protected habitats or species that may be present, determine the impact of the proposed works on them, and identify any mitigation measures that may be necessary. This was done by undertaking both a desk study and field survey.

The survey was undertaken on the 5th February 2021.

Phase 1 habitat survey is a way of recording the basic habitat data to form a baseline level of knowledge of the ecology of a site and provide recommendations for future surveys if considered necessary.

5.3 METHODOLOGY

5.3.1 Desk study:

Refer to section 3 above.

5.3.2 Field survey:

Experienced surveyors from Celtic Ecology and Conservation Ltd carried out a habitat assessment and mapping exercise in February 2021 using the Phase 1 habitat survey technique. Features of note are assigned Target Notes and referenced accordingly. Nomenclature follows Stace (1997)[1].

5.4 CONSTRAINTS

None.

5.5 RESULTS

5.5.1 Habitats

The following habitats were found on the site and are mapped at **Figure 3** below:

- Scattered trees (broadleaved and conifer);
- Introduced shrubs;
- Amenity grassland (lawns);
- Bare ground; and
- Buildings

The following target notes were made:

TN1 - 6 – Tree with potential bat roosting features;
TN7 – Bat droppings;

Photos are at **Appendix A**. Target Note summaries are at **Appendix C**.

[1] Stace, C (1997). *New Flora of the British Isles* (2nd Ed.). Cambridge University Press

Figure 3 – habitat survey results.

5.5.1.1 Scattered trees

There are multiple mature trees around the property including oak (*Quercus robur*), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), Lawsons cypress (*Chamae-cyparis lawsoniana*),cherry (*Prunus avium*) with occasional willow (*Salix* spp.) over a thin shrub layer of hazel (*Corylus avellana*), holly (*Ilex aquifolium*) and bramble (*Rubus fruticosus* agg.). The trees have all been subject of a separate tree survey. The mature trees reach a maximum height of 30m and have varying diameters depending on species.

The ground flora was dominated by ivy (*Hedera helix*), with occasional common nettle (*Urtica dioica*), wood avens (*Geum urbanum*) and hard shield fern (*Polystichum aculeatum*).

This habitat is of benefit to breeding birds and will be considered further in this report.

5.5.1.2 Introduced shrub

This habitat is dominated by a variety of planted ornamental species, some of which are evergreen, and bramble (*Rubus fruticosus* agg.) which provide a range of heights and densities.

This habitat is of benefit to breeding birds and will be considered further in this report within the section on breeding birds (**section 7.3** below).

5.5.1.3 Amenity grassland

This habitat is comprised entirely of lawn with a very low species diversity typical of (previously) highly managed (regularly cut, fertilised etc.) lawns. It has only a very low ecological value and will not be considered further in this report.

5.5.1.1 Bare ground

This habitat is comprised entirely of mud and concrete. It has no ecological value and will not be considered further in this report.

5.5.1.2 Non-native invasive plants

The garden, like most, is dominated by non-native species, some of which may be invasive if allowed to escape into the wild; however, there were no examples of giant hogweed (*Heracleum mantegazzianum*), Himalayan balsam (*Impatiens glandulifera*) or Japanese knotweed (*Fallopia japonica*) or other such invasive species.

5.5.2 Protected species assessment

5.5.2.1 Bats

The data search revealed the presence of bat day roosting sites for common and soprano pipistrelle bats in Bolston House. Foraging species included lesser horseshoe, brown long-eared, noctule and *Myotis* bats. There are other records of day roosting and (probable) maternity sites within 2km of Bolston House.

The building and a number of the trees on the site provide potential suitable roosting habitat for this group; a detailed inspection was therefore undertaken with the presence of bats being confirmed. As a result, this group will be considered separately in this ecological assessment.

5.5.2.2 Dormouse

The desk study included records of this species, all of which were from over 1km in woodland away from the development site. This lack of records in combination with the site's location in a garden in a village centre location, despite the sometimes dense shrub planting, would indicate that the potential of the site to have dormice on it is so low as to be negligible.

This species will not be considered further in this report.

5.5.2.3 Great crested newt

There are recent records of this species from terrestrial habitat approximately 140m to the north of the site. The closest aquatic record is from approximately 230m to the north.

There is no suitable aquatic (breeding) habitat on the site. However, the terrestrial habitats on the site could be used by this species.

A refugia survey is not considered to be suitable for this species given the low densities it is found in outwith its breeding sites (ponds); the density goes down with distance from the pond, with most animals remaining within 50m of the pond during the terrestrial phase of their lifecycle.

Therefore, it is considered that as the results of any survey, both negative (absence) or positive (presence) are likely to have only a low confidence value, a more appropriate course of action would be to undertake any site clearance under ecological supervision in accordance with a suitable method statement to ensure that in the unlikely event that any animals are found, they can be kept safe from harm.

This group will be considered further in this report.

A suitable method statement is at **Appendix D**.

5.5.2.4 Badger

There are records of this species within the data search results; however, no evidence was recorded from the site.

Given the distance of the records from the development site, the site's location in a village centre being surrounded by houses and the lack of evidence from the site, it is anticipated that this species is not present on the site and therefore will not be considered further in this report.

5.5.2.5 Breeding birds

There are multiple records for members of this group within the data search with the closest being 50m from the centre of the development site. There is abundant suitable habitat for this group on the site in the areas of scrub and the mature trees.

The trees and scrub on the site boundaries should be assumed to be used by birds for breeding purposes. The bare ground habitat on the site is not considered to be suitable for ground nesting birds given the small size of the site, the likely high levels of disturbance (informal access) and the availability of avian predator perches.

This group will be considered further in this report.

5.5.2.6 Reptiles

No records of slow worm were identified by the desk study, but there are records of grass snake (*Natrix helvetica*) and common lizard (*Lacerta vivipara*) in the data search results.

The gardens around Bolston House provide a range of habitats suitable for reptiles (particularly grass snake, slow worm (*Anguis fragilis*) and possibly common lizard) including foraging, basking, sheltering and hibernation. Because of this, it is considered that a full refugia survey is not required as long as it is assumed that these species are present.

Therefore, it will be a requirement that any site clearance is undertaken under ecological supervision in accordance with a suitable method statement.

This group will be considered further in this report. A suitable method statement is attached at **Appendix D**.

5.5.3 Other features

No evidence of any other protected species was observed on the site.

6 HABITATS - EVALUATION, IMPACT CHARACTERISATION AND ASSESSMENT

6.1 SCATTERED TREES

6.1.1 Scattered trees – evaluation

The trees in this habitat are all mature standards, predominantly broadleaved species with occasional conifers. A number of the larger trees provided roosting features suitable for use by roosting bats. It is likely that they will be used by breeding birds.

It is considered that with the exception of the potential bat roost trees, that the trees are generally of a **low** ecological importance at a **local (site)** level.

Until determined otherwise by further surveys, the trees with potential bat roost features should be considered as being of **high** ecological importance at a **local (site)** level.

6.1.2 Scattered trees - impact characterisation

It is anticipated that all the mature trees with potential bat roosting features within the red line boundary will be retained. The majority of the trees to the south of the line of conifers across the centre of the site will be lost.

6.1.3 Scattered trees - impact assessment without mitigation

It is considered that as the mature trees within the boundary will be retained there will be a **potential very minor short term adverse** impact on a small proportion of the habitat at a **local (site)** level.

6.1.4 Scattered trees - mitigation measures

Mitigation will be required to prevent any damage to retained trees; therefore, the following measures will be implemented:

- all retained trees will be protected from the development by the implementation of root protection areas and other measures as necessary in accordance with BS 5837:2012 Trees in relation to design, demolition and construction.

Any tree removal shall be undertaken in accordance with the mitigation measures as applied to breeding birds (**section 7.3** below). Wherever possible, trees will be planted to replace those lost. There will be a preference for planting native tree species of as local a provenance as possible.

6.1.5 Scattered trees - impact assessment with mitigation

It is considered that there will be a **certain minor long term adverse** impact at a **local (site)** level with a **possible significant long term adverse** impact at a **local (site)** level as a result of the loss of bat roosts.

6.1.6 Scattered trees – significance of the impact

Without mitigation:

It is anticipated that the significance of the impacts due to the development will be **major**.

With mitigation:

It is anticipated that the significance of the impacts due to the development will be **slight**.

6.2 INTRODUCED SHRUBS

6.2.1 Introduced shrubs - evaluation

This habitat is comprised of a range of generally non-native shrub species planted for ornamental purposes in the garden. While the species are not native, they are commonly found in domestic gardens and can therefore be considered to be common, widespread and representative of the habitat. Denser areas can provide a valuable source of food and shelter to birds, reptiles and mammals; this shelter and habitat is longer lasting in some areas as the species are evergreen. As the species are not native, it is possible that some species will provide fruits at a later or earlier date than native species.

It is considered that the scrub habitats on the site are of a **low local (site)** importance.

6.2.2 Introduced shrubs - impact characterisation

It is anticipated that the majority of the introduced shrubs will be retained as part of the development with the exception if those within close proximity to the house; however, as the habitat is a garden, it is possible that future domestic gardening activities will result in changes to the site.

6.2.3 Introduced shrubs - impact assessment without mitigation

It is considered that there will be a **potential minor short term adverse** impact on this habitat at a **local (site)** level.

6.2.4 Introduced shrubs - mitigation measures

Specific mitigation is not required; however, any shrub removal shall be undertaken in accordance with the mitigation measures as applied to breeding birds (**section 7.3** below).

It is recommended that replacement planting is undertaken wherever possible.

6.2.5 Introduced shrubs - impact assessment with mitigation

It is considered that there will be a **no adverse** impacts at a **local (site) level**.

6.2.6 Introduced shrubs – significance of the impact

Without mitigation:

It is anticipated that the significance of the impacts due to the development will be **neutral**.

With mitigation:

It is anticipated that the significance of the impacts due to the development will be **neutral**.

7 SPECIES - EVALUATION, IMPACT CHARACTERISATION AND ASSESSMENT

7.1 BATS

7.1.1 Summary

Bolston House has been confirmed as providing bats with roosting habitat during a previous survey (Wildwood Ecology, 2016). This has been reconfirmed by the presence of droppings in the roof spaces of the house and garage identified during a detailed building inspection.

A number of the trees on the site appear to offer bats potential roost features.

Further surveys in respect of bats will be required and will include emergence / return to roost surveys of Bolston House and climb and insect surveys of the trees. Mitigation and a protected species development licence will likely be required.

There will likely be restrictions on the timing of demolition, site clearance and on site lighting.

7.1.2 Ecology

British bats are small flying nocturnal mammals that feed exclusively upon insects. There are 17 species resident in Britain, ranging in size from the smallest, soprano pipistrelle (*Pipistrellus pygmaeus*) up to the largest noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*) and greater horseshoe bat (*Rhinolophus ferrumequinum*). Bats are active from April through to October and hibernate when insects are in short supply in the winter months. Bats emerge from hibernation in late March - early April and move into their transition / intermediary roosts. Female bats will move to maternity sites by the beginning of May and will give birth to a single baby between June and early July. The baby is reared solely by the mother and is weaned and independent by end of August. After breeding, bats move to transition / intermediary roosts and females will visit males at mating roosts. During the autumn, bats feed voraciously to gain weight for the hibernation ahead.

Although traditionally trees, caves and rock faces were used by roosting bats and are still used, many different structures are used nowadays by bats, which take advantage of readymade (man-made) roosts. Structures used frequently include bridges, ice-houses, pill-boxes, disused railway tunnels, houses and barns etc. Bats have home ranges which vary from species to species; from just 3-4km from the roost for the smaller bats while the larger noctule may fly 20km or more. Threats to bats include habitat destruction and the severance of commuting routes, use of agricultural pesticides, intensification of farming methods and deliberate persecution by man. Bats have few natural predators; however, the domestic cat is probably the most efficient predator.

7.1.3 Legislation

7.1.3.1 Conservation of Habitats & Species Regulations 2019

European Union legislation required that member states designate sites for the protection of habitats and species included in the annexes of both Council Directive 92/43/EC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive) and Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). This legislation is implemented in the UK by the Conservation of Habitats and Species Regulations 2017 (as amended) ("the Habitat Regulations").

The Habitat Regulations (2017) provided safeguards for European Protected Species (those listed under Annex IV Habitats Directive). With regards to bats, this made it an offence to:

- Deliberately (or recklessly in Scotland) capture, injure or kill a bat
- Deliberately (or recklessly in Scotland) disturb a bat in a way that would (significantly in Scotland) affect its ability to survive, breed or rear young (or hibernate or migrate in England,

Wales and Northern Ireland) or (significantly in England, Wales and Scotland) affect the local distribution or abundance of the species.
- Damage or destroy a roost (this is an 'absolute' offence)
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat

It should be noted that although from 31st January 2021 the UK is no longer a member state, protection enacted under the Conservation of Habitats and Species Regulations 2017 (as amended) will continue to apply in UK law through the Conservation of Habitat and Species (amendment) (EU Exit) Regulations 2019 and the European Withdrawal Act 2018 following the implementation of Brexit until notified otherwise.

Working in protected sites or disturbing protected species is possible as long as consent has been issued by Natural Resources Wales (NRW).

It is possible to undertake damaging activities under the auspices of a Protected Species Licence issued by NRW which provides a derogation from the Regulations, meaning that an otherwise illegal operation carried out under licence is lawful.

7.1.3.2 Wildlife & Countryside Act 1981

The Wildlife & Countryside Act 1981 (as amended) is the legislation for England and Wales for nature conservation, making it an offence to:

- Intentionally or recklessly disturb a bat in or at a roost;
- Intentionally or recklessly obstruct access to a roost;
- Intentionally destroy, damage or otherwise disturb a roost (whether bats are present or not); and
- Intentionally or recklessly kill, injure or take (capture) a bat.

7.1.4 Methodology

The assessment consisted of two parts:

- Biological records data search; and
- Building assessment.

The assessment was undertaken in accordance with the latest guidance on bat surveys and current best practice.

The survey was undertaken by Hugh Dixon (NRW license number: S085813-1). Hugh has held an all counties bat survey licence in Wales since 2008. He also holds a level 2 survey licence for all counties in England (licence number: 2015-15256-CLS-CLS)), undertaking numerous bats surveys for commercial and voluntary purposes, dealing with a wide range of species and situations. Hugh has held CCW / NRW and Natural England development licences for a range of species and designed and implemented mitigation and monitoring.

7.1.4.1 Desk study

Please refer to section 3 above.

7.1.4.2 Scoping survey

There are three man-made structures on the site:

Bolston House

This is a rendered domestic two storey property under a simple pitched slate roof, the main ridge of which is oriented generally east – west with a subsidiary ridge oriented north south. The building appears to be older than 1850, the north south section being an extension built after 1870. External timberwork where present is in a poor condition with gaps between them and the walls.

The roof is in a reasonable condition, with very few missing, raised or slipped tiles. All ridge tiles appear to be well seated with no obvious gaps. All lead flashing is in a good condition with no lifted sections.

All brickwork and stone facings are in a good condition with no missing mortar or obvious crevices / gaps.

Internally, the roof is divided into a number of sections. All are lined with bitumen felt.

The main east – west roof has a joist to ridge height of approximately 2m and is of an open purlin and rafter construction. one continuous space lined with bitumen felt.

The north – south extension has a joist to ridge height of approximately 1.5m and is also lined with bitumen felt. The roof is of open trussed construction.

All roof spaces are insulated at joist level. There are gaps visible (i.e. daylight showing) at eaves level and at gable ends. The roof space is currently used for general storage.

Boiler room / garden store

This is a very small single storey brick built structure under a flat roof at the northern end of the house. There is no roof space in this structure.

Garage / store

This is a single storey brick built structure under a pitched slate roof the ridge of which is oriented east – west. The roof is open but lined with bitumen felt.

7.1.4.3 Ground based tree assessment

The trees on the site were subject of an assessment by a bat licensed ecologist on 5th February 2021 to assess their potential to support bats. The assessment also aimed to identify any features that may be used by bats for roosting purposes.

Tree inspections were undertaken in accordance with current best practice[2]. Each tree or discrete group of trees was assessed from ground level to the canopy using close focusing binoculars and a high-powered torch. Potential roost features (PRFs) likely to be used by bats (see list below of features of interest) were noted and, where possible, were inspected using a torch and endoscope. Evidence of bat usage was also recorded where present. Each tree was recorded on a plan and scored, as detailed below.

Features include:

- Knot holes;
- Rot holes;

[2] *Bat Surveys for Professional Ecologists - Good Practice Guidelines (Collins, J (Ed). BCT, 2016*

- Woodpecker holes;
- Hazard beams (cracks/splits in major limbs);
- Other vertical or horizontal cracks and splits (e.g. frost cracks)
- Loose and partially detached bark;
- Tear outs
- Man-made holes;
- Cankers with cavities;
- Other hollows e.g. butt rots;
- Double leaders forming compression joints;
- Gaps between overlapping branches / stems;
- Gaps behind partially detached ivy with stem diameters in excess of 50mm; and
- Bat, bird and dormouse boxes.

In addition to features of interest, evidence of bats was searched for including:

- Live and dead bats;
- Bat droppings;
- Staining below PRFs;
- Characteristic scratches;
- Smell of bats and/or droppings; and
- Noise (squeaking) made by bats.

The trees inspected were graded according to Table 1 below and, where appropriate, identified on a plan.

Table 1 - tree classification (BCT 2016)

Tree grade	Category description
Negligible	Negligible habitat features likely to be used by bats
Low	A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only some very limited roosting potential
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status
High	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

7.1.5 Constraints

There were no constraints to the survey.

7.1.6 Results

7.1.6.1 Desk study

Records from 2016 identify the house as providing day roosts for common and soprano pipistrelle. The numbers of animals of each species are not known; this means it is not possible to classify the nature of the roosts (e.g. maternity, transitional etc). There were also records of a number of species foraging over the house and garden.

The bat species included within the data search are listed at Table 2.

Table 2 – bat species listed in the biological records data search results

Common name	Scientific name
Unknown Bat	*Chiroptera*
Serotine	*Eptesicus serotinus*
Myotis sp	*Myotis sp*
Noctule	*Nyctalus noctula*
Pipistrellus Bat Species	*Pipistrellus*
Common Pipistrelle	*Pipistrellus pipistrellus*
Pipistrelle agg.	*Pipistrellus pipistrellus agg.*
Soprano Pipistrelle	*Pipistrellus pygmaeus*
Long-eared Bat Species	*Plecotus*
Brown Long-eared Bat	*Plecotus auritus*
Lesser Horseshoe Bat	Rhinolophus hipposideros

7.1.6.2 Scoping survey

There are numerous potential access points for bats on Bolston House via gaps under external timberwork and slates.

The garden shed has open doors and gaps under external timberwork.

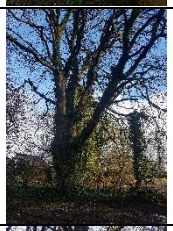
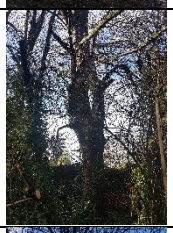
Evidence of bats in the form of droppings were observed all the roof spaces of the house and garage. No evidence was observed in the flat roofed boiler room.

7.1.6.3 Ground based tree assessment

A number of the mature trees on the site appeared to provide potential roost features; these are detailed at **Table 3** below. All other trees were classified as being of low potential and will not be considered further in this report.

Table 3 – results of visual assessment

Tree number	Species	Initial classification	Photos	Revised classification	Notes / recommendations
T32	Sycamore	Moderate			Dense ivy obscuring PRFs. **CLIMB & INSPECT**
T33	Sycamore	Low			

Tree number	Species	Initial classification	Photos	Revised classification	Notes / recommendations
T43	Sycamore	Moderate			Rot holes and limb loss scars. **CLIMB & INSPECT**
T53	Horse chestnut	Moderate			Dense ivy obscuring PRFs; limb loss holes and scars. **CLIMB & INSPECT**
T54	Sycamore	Moderate			Rot holes and limb loss scars. **CLIMB & INSPECT**
T65	Sycamore	Moderate			Rot holes and limb loss scars. **CLIMB & INSPECT**

7.1.7 Bats – evaluation

7.1.7.1 Buildings

Bolston House is considered to be of high potential for bats which has been confirmed by the presence of biological records and evidence of bats n the roof spaces.

CONFIDENCE LEVEL: HIGH

7.1.7.2 Trees

It is considered that a number of the trees offer bats potential roosting features. These will require further investigation prior to any felling or pruning work. If retained the trees mut be protected in accordance with BS5837 standards.

CONFIDENCE LEVEL: HIGH

7.1.7.3 Winter use

Not yet determined. It is possible that Bolston House is used by individual pipistrelle species bats as these species are known to remain in buildings through the winter.

CONFIDENCE LEVEL: HIGH

7.1.7.4 Roost locations

Not yet determined. However, it is likely that bats are using the crevice between the roofing felt and slates in clise proximity to potential access features, usually holes and gaps on gable neds, under external timberwork on fascias and by missing or raised slates.

CONFIDENCE LEVEL: HIGH

7.1.7.5 Incidental records

None.

7.1.8 Bats - impact characterisation

It is anticipated that in the absence of mitigation, the demolition of Bolston Hose would kill or injure bats as well as disturb them in a place of shelter and result in the destruction of a roost site or sites.

The loss of trees and vegetation from the site may affect bat activity over the site, both that of bats roosting in the house, garage and trees but also those bats which come to the site for foraging purposes. The provision of new lighting may also affect resident or foraging bats.

7.1.9 Bats - impact assessment without mitigation

It is considered that there would be a **certain significant permanent adverse** impacts on bats roosting as a result of the proposed demolition of Bolston Hose and the removal of trees.

7.1.10 Bats - mitigation measures

Mitigation will be required for roosting bats. However, until the status and classification of the roost has been determined, it is not possible to say with accuracy what mitigation measures will be required.

Despite this, mitigation measures may include (but not be limited to) the following:

- Provision of alternative roosting structures;
- Provision of pole mounted bat boxes;
- Retention of trees used by roosting bats;
- Minimisation of vegetation removal;
- Minimisation of site lighting and light spill through design;
- Use of low level PIR operated lighting systems;
- Positioning lights so as not to light up boundaries, retained vegetation and trees.

7.1.11 Bats - impact characterisation with mitigation

It is considered that there will be a **certain major short term adverse** impacts at a **local (site)** level on bats as a result of the development.

7.1.12 Bats - significance of the impact

Without mitigation

It is considered that the significance of the impact is **significant**.

With mitigation

It is considered that the significance of the impact is **slight**.

7.2 GREAT CRESTED NEWT

7.2.1 Summary

There are no waterbodies on the site which would provide great crested newts or other amphibians with breeding habitat.

There is suitable terrestrial habitat within the garden of Bolston which great crested newts could potentially use and there are records of this species within 150m of the site.

Given the lack of waterbodies on the development site, the distance and the barriers between the record and development sites, it is considered unlikely that great crested newts will be present on the site.

7.2.2 Ecology

Six native amphibian species occur in Britain: the common frog (*Rana temporaria*), the common toad (*Bufo bufo*), the natterjack toad (*Epidalea* [prev. *Bufo*] *calamita*), the smooth newt (*Lissotriton* [prev. *Triturus*] *vulgaris*), the palmate newt (*Lissotriton* [prev. *Triturus*] *helveticus*) and the great crested newt (*Triturus cristatus*).

All of these amphibians have aquatic egg and larval stages and are therefore dependent on water for breeding. Eggs are laid in suitable ponds during the early spring, and the larvae (tadpoles) remain in the water for several weeks or months. Adults of each of these species typically spend 6 to 9 months dispersed across invertebrate-rich feeding areas (usually within 500m or so of their breeding sites and over-winter in hibernacula, which often include granular material containing crevices in which the animals can hide e.g. railway ballast. Great crested newts have been known to travel over 1km from their breeding site; this may be because the breeding site has been damaged or disturbed in some way, for population dispersal reasons or purely as a response to low prey availability and lack of suitable foraging habitat close by the ponds.

The great crested newt is the largest of the three native newt species which occur in the UK and is distinguishable by its black and often warty skin, speckled with tiny white dots. Males are particularly distinctive in spring, when they develop a high crest along their back with a serrated edge, and silvery blue streaks along their tail. Great crested newts spend time both on land and in water, and feed on small water creatures such as water fleas and shrimps, as well as various small land invertebrates. Water is an essential requirement for breeding, and sexually mature adults always return to their birth pond to breed. Eggs are laid on underwater plant leaves near the waters edge between February and early August. Tadpoles hatch from eggs four weeks later, taking about three months to develop into young newts which are sufficiently mature to leave the water. Great crested newts go into hibernation in winter in October / November, usually on land, re-emerging again in the spring.

The UK is a stronghold for great crested newt populations world-wide. Although, still quite widespread in the UK, great crested newt numbers have declined considerably over the last 50 years, mainly as a result of loss of suitable breeding ponds, particularly as a result of agricultural changes involving drainage, infilling and chemical pollution. In Wales, the great crested newt is found from Clwyd to Glamorgan. Although most frequent in Wales in the ponds of eastern Clwyd, many ponds are thought to be breeding sites within the Vale of Glamorgan. Great crested newts are considered to be widespread throughout the Vale of Glamorgan. WTSWW records include 19 sites, mainly in the southern part of the Vale, including Rhoose, Castle upon Alun valley, Dyffryn Gardens and Amelia Trust Farm.

As many great crested newts occur in metapopulations, i.e. utilising a number of different ponds, a cluster of ponds within a locality can be essential to newt survival. As fish are the major predators of newt larvae and eggs, ephemeral ponds that are unable to sustain a fish population, can be important newt breeding sites.

In winter, when temperatures fall below 5°C, great crested newt activity falls, with most animals dormant by November.

7.2.3 Legislation

The great crested newt is afforded full protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). In summary, it is an offence to:

- Kill, injure or take a great crested newt;
- Disturb great crested newt(s) (defined as reduce their ability to survive or reproduce);
- Damage or destroy a breeding site or resting place; or damage, destroy or obstruct access to a place used by great crested newt for shelter or protection.

Additionally, the Environment (Wales) Act 2016 requires that all public authorities, when carrying out their functions in Wales, seek to "maintain and enhance biodiversity" where it is within the proper exercise of their functions. In doing so, public authorities must also seek to "promote the resilience of ecosystems".

This ensures that biodiversity is an integral part of the decisions that public authorities take in relation to Wales. It also links biodiversity with the long term health and functioning of our ecosystems, therefore helping to align the biodiversity duty with the framework for sustainable natural resource management provided in the Act.

In Wales, this legislation replaces and enhances the Natural Environment and Rural Communities Act (2006) which sought to raise the profile of biodiversity and to make sure that it is considered in all local authority decisions by ensuring that "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.".

Other elements of NERC 2006 may still apply.

Elements of the Local Planning Authority's development plan apply as the proposed development is wholly within the Monmouthshire County Council area of responsibility. Therefore, all relevant policies adopted by the Council will apply.

7.2.4 Methodology

7.2.4.1 Data search

Please see **section 3** for details.

7.2.4.2 Habitat assessment

The habitat was assessed for its suitability to support otters through the provision of habitat suitable for foraging, commuting, resting up and breeding.

The assessment was based on features such as the:

- proximity of watercourses to potential places of shelter;
- amount of suitable cover;
- suitability of the watercourses to provide a source of prey items;
- presence of mature trees and scrub along the watercourses;
- adjacent land use; and
- appearance of the watercourses (in terms of sediment loading and potential pollution.

7.2.4.3 Field survey

The presence of great crested newt in the field is determined by the use of a number of methodologies. These include:

- Refugia searching;
- eDNA;
- Bottle trapping;
- Egg searching;
- Torching; and
- Netting.

Refugia searching requires a thorough search of potential resting places. A resting place might include any of the following: stones, rocks, logs and other debris.

The other methodologies require the survey of a waterbody and cannot be used for terrestrial sites or waterbodies which do not contain water.

7.2.5 Constraints

The ponds on the site were dry at the time of survey and it was therefore not possible to utilise any of the field survey methodologies with the exception of refugia searching.

There were no other constraints to the assessment.

7.2.6 Results

7.2.6.1 Desk study

Please refer to section 3 above for full details; however, records of great crested newts in the terrestrial phase of their life cycle were recorded within 140m of the site.

7.2.6.2 Habitat assessment

There were no waterbodies on the site useable for breeding purposes by members of this species.

The vegetation in the garden areas provide suitable terrestrial habitat for this species, specifically for sheltering, foraging and hibernation. The lawned areas are probably not suitable due to their open nature and level of management imposed on them.

7.2.6.3 Field survey

No waterbodies were present to survey.

No animals were found under the observed refugia that were present.

7.2.7 GCN – evaluation

Great crested newts are protected under European legislation and are therefore of **high international** ecological importance.

The site provides suitable terrestrial habitat and overwintering sites, but no breeding sites.

As the majority of great crested newts usually remain within 50m of their breeding pond, animals from the known population to the north are less likely to be found on the development site as they would have to cross a road and gardens of properties to the north of Bolston House.

It is therefore anticipated that the probability of this species being present is low and that further surveys are not required. Indeed, it is considered that as there are no waterbodies on the site that could be surveyed for the presence of breeding animals, the only possible methodology would be to undertake refugia surveys and that these would be largely ineffective as the population densities of animals away from their breeding sites is lowered the further they are away from them. The results would therefore have a very low confidence value and could be considered impractical and unpragmatic.

7.2.8 GCN - impact characterisation

While the majority of the suitable habitats within the red line boundary will be lost, the tree'd areas in the north of the site will largely be retained thereby minimising any impact on great crested newts.

However, it is possible that the removal of vegetation, demolition of Bolston House and the subsequent construction of a replacement dwelling could result in the killing of, and injury and disturbance to, great crested newts while in a place of shelter.

7.2.9 GCN - impact assessment without mitigation

It is considered that without mitigation, there could be a **potential but unlikely moderate medium term adverse** impact art a **local (site)** level as a result of the proposals.

7.2.10 GCN - mitigation measures

Precautionary mitigation is recommended and will be implemented. Measures will include (but not be limited to) the following:

- minimising the amount of vegetation removal through design;
- all vegetation removal and site clearance will be undertaken under ecological supervision in accordance with a method statement; and
- should a great crested newt be seen at any time during the project, relevant works will cease until Natural Resources Wales have been consulted and an appropriate way forward has been agreed.

Consideration will be given to providing enhancements for this species.

7.2.11 GCN - impact characterisation with mitigation

It is considered that with mitigation there will be **no adverse** impacts on this species.

7.2.12 GCN - significance of the impact

Without mitigation

It is considered that the significance of the impact is **slight**.

With mitigation

It is considered that the significance of the impact is **neutral**.

7.3 BREEDING BIRDS

7.3.1 Summary

A full breeding bird survey or assessment was not undertaken as it should be assumed that all the trees and shrubs will be used by birds for nesting purposes.

7.3.2 Ecology

Most British avian species are found breeding during the spring and summer months, between April and August, although some, such as pigeons, and doves will frequently breed at all times of year, as they are not dependent on small, soft-bodied invertebrates to provide food for their chicks. Some other species, such as barn owl have also been recorded breeding in the winter months, in years when winters have been mild, and small mammal prey plentiful, although such breeding attempts are unusual, with chicks frequently failing to fledge. The breeding season can be extended for most species if the weather is mild, and food plentiful.

Contrary to common belief, whilst some bird species, such as crows and rooks, nest high in trees, often more than 10m high, the majority of British breeding birds will nest within 2m of the ground (or on the ground) within dense scrub or within holes and other natural and manmade cavities in rocks and walls.

Most bird species take considerably less than 60 days from egg-laying to chick fledging, whilst others, such as barn owl, can take more than 90 days. Many, but not all British species will make multiple breeding attempts if environmental conditions and food availability allow.

7.3.3 Legislation

In Britain, all naturally occurring avian species are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). The legislation protects all birds, their nests and eggs, and it is an offence to:

- Intentionally kill, injure or take a wild bird;
- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built; and
- Intentionally take or destroy the egg of any wild bird.

In addition, birds listed on Schedule 1 of the Act, such as the red kite (*Milvus milvus*), are afforded further protection, and it is an offence to:

- Intentionally or recklessly disturb the bird whilst nest building or while at (or near) a nest with eggs or young; and
- Disturb the dependant young of such a bird.

7.3.4 Methodology

7.3.4.1 Habitat assessment

Given the time of year the assessment was undertaken, signs looked for included:

- Availability of nesting habitat;
- Availability of foraging habitat;

7.3.5 Constraints

It was not possible to assess the following behaviours and features due to the time of year the assessment was carried out at:

- Territorial displays by birds;
- Courtship displays;
- Territory establishment and holding behaviour;
- Nests; and
- Food carrying.

There were no other constraints to the assessment.

7.3.6 Results

7.3.6.1 Habitat assessment

The site is a large domestic garden around a single domestic property populated by mature broadleaved and conifer trees and native and non-native shrubs, located in a village centre location. While the species composition of the garden appears to favour low intervention, it is obvious that management is applied to the gardens.

All tree and shrub habitats on the site were suitable for nesting and foraging purposes, providing a variety of nesting sites and food sources.

It is considered that the site does not provide suitable habitat for ground nesting species as the lawns are overlooked by shrubs and tall mature trees that could be used by predators.

It is highly unlikely that the site will be used by wintering birds e.g. woodcock (*Scolopax rusticola*), as the areas of shrub vegetation are relatively small and open and have been subject to disturbance.

7.3.7 Breeding birds – evaluation

Birds should be considered to be of **high national** importance as a result of the legislation protecting them.

All the trees and shrubs on the site should be assumed to be used by birds during the breeding season. Within the context of the site, it is considered that birds are of a generally **low local (site)** ecological importance.

7.3.8 Breeding birds - impact characterisation

It is anticipated that a significant amount of the vegetation on the site will be lost to the development; however, the largest mature trees and associated vegetation will be retained, thereby reducing the impact that the development will have.

However, if the removal of vegetation from the site to facilitate the development was to be undertaken during the breeding season, there is the potential for birds to be disturbed, killed or injured and / or their nests to be disturbed, damaged or destroyed.

7.3.9 Breeding birds - impact assessment without mitigation

In the absence of mitigation, the removal of vegetation during the breeding season could result in the probable disturbance and destruction of nests and the disturbance, killing and injuring of birds (both adults and juveniles). This would constitute a **potential moderate short term adverse** impact at a **local (site)** level.

7.3.10 Breeding birds - mitigation measures

Mitigation will be required and should include (but not be limited to) the following measures:

- All vegetation removal will be minimised through design;
- All vegetation and brash removal should preferentially be undertaken outwith the breeding season i.e. between mid-August / September and April inclusive;
- Any clearance close to the start and end of this period should only be undertaken following an assessment by a suitably experienced ecologist as the breeding season is not fixed and is subject to annual variation;
- Where clearance is required during the breeding season, all areas should be subject to an assessment no more than 48 hours in advance to check for the presence of breeding birds;
- Should evidence of breeding birds, in particularly nests, be recorded, no clearance may be undertaken within 20m of any nest site until such time as the nest is vacated naturally; and
- Any post-development landscaping plan should include the provision of scrub &/or shrub habitats that can be utilised by breeding birds.

Consideration should be given to including measures to benefit birds within the development e.g. installation of bird boxes on new buildings or in vegetation along the site boundaries.

7.3.11 Breeding birds - impact characterisation with mitigation

It is considered that there will be an **unlikely minor short term adverse** impact at a **local (site)** level on breeding birds as a result of the proposed development.

7.3.12 Breeding birds - significance of the impact

Without mitigation

It is considered that the significance of the impact is **slight**.

With mitigation

It is considered that the significance of the impact is **neutral**.

7.4 REPTILES

7.4.1 Summary

No reptile survey was undertaken on the site due to the time of year the visit was carried out; however, a habitat assessment indicated that the site provides only limited suitable habitat for reptiles.

A full trapping and translocation exercise is not considered necessary as long as clearance of the site is undertaken in strict adherence to a method statement designed to prevent harm to reptiles.

7.4.2 Ecology

Reptiles are ectothermic, meaning they have to rely on external heat sources to warm their blood sufficiently to allow foraging and other activity. During the winter they are in brumation (similar to hibernation), emerging in April (or when the temperatures are consistently warm enough). Males tend to emerge before females, to enable them to prepare for mating. Females emerge a few weeks later and mating takes place. Female reptiles in the UK generally breed every other year to allow them to build up sufficient energy reserves. Grass snakes are the UK's only egg-laying reptile, eggs are laid in summer in warm piles of decomposing vegetation (or similar) and left to develop and hatch on their own. Young reptiles are born/hatch in late summer/early autumn. Brumation (hibernation) starts again as temperatures fall in the autumn.

The four more commonly occurring species of reptile in the UK (adder (*Vipera berus*), grass snake (*Natrix natrix*) slow worm (*Anguis fragilis*) and common lizard (*Lacerta vivipara*) have different preferences for habitat and diet. Adders generally prey on small mammals in drier habitats, grass snakes primarily hunt amphibians in wetter areas and aquatic habitats, slow worms take small, slow-moving invertebrates and inhabit drier areas and common lizards prey on small, faster-moving invertebrates and tolerate both wet and dry habitats.

7.4.3 Legislation

The four common species listed above are protected by the Wildlife and Countryside Act 1981 (as amended) against killing, injury and sale.

Smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) are not found in this area, having very specific geographical distribution within Britain, and so will not be referred to in this report despite the higher legislative protection afforded to them.

7.4.4 Methodology

7.4.4.1 Habitat assessment

The habitat assessment looked for features which would be attractive to reptiles such as:

- south facing banks;
- varied profile ground form;
- basking areas;
- vegetation cover;
- structurally diverse vegetation;
- potential hibernation sites; and
- evidence of suitable prey sources.

7.4.5 Constraints

There were no constraints to the assessment.

7.4.6 Results

7.4.6.1 Desk study

No records of reptiles were returned for the development site or immediate vicinity.

The closest records were of a grass snake recorded from 150m and 240m away. Slow worms were recorded from 1.5km away; common lizards were recorded from over 2km away.

7.4.6.2 Habitat assessment

Gardens are generally suitable for reptiles as there are varied opportunities for sheltering, hibernation, basking and foraging. However, this potential is perhaps limited by the mature trees surrounding the site and shrubs which result in large shaded areas; the levels of management may have a part on reducing the overall suitability a little.

7.4.7 Reptiles – evaluation

Reptiles are protected by UK legislation and therefore they are of **medium** to **high national** ecological importance.

It should be assumed that the site could be used by low numbers grass snake, slow worm and common lizard.

Overall the site appears to be generally of **low** value at a **local (site)** to reptiles.

Due to the limited suitability of the site (the open and disturbed nature of the site and shading from trees and shrubs), it is uncertain as to whether a full refugia survey would provide any information other than presence or absence. Therefore, an assumption of presence and undertaking site clearance work in accordance with a method statement is a pragmatic and effective mitigation measure.

7.4.8 Reptiles - impact characterisation

In the absence of mitigation, it is possible that reptiles may be killed or injured during the clearance for the site.

7.4.9 Reptiles - impact assessment without mitigation

It is considered that in the absence of mitigation there would be a **probable minor short term adverse** impact at a **local (site)** level.

7.4.10 Reptiles - mitigation measures

As long as reptile presence is assumed and site clearance us undertaken in accordance with an appropriate method statement, it is considered that a full trapping and translocation exercise is not required, and that habitat manipulation and denial is an appropriate method of ensuring that reptiles are not harmed during the site clearance.

Therefore, the following mitigation will be adopted:

- Vegetation clearance, particularly of scrub and bracken habitats, will be minimised wherever possible;
- Clearance will be conducted in accordance with a Method Statement (**Appendix D**) to ensure that should reptiles be found in the course of site clearance or any other development activity, they will not be harmed and can be adequately cared for;

- Clearance can be undertaken at any time of year as there appear to be no suitable hibernacula within the main body of the site. However, it is perhaps preferred that it be undertaken during the reptile active season (April-October, inclusive);
- Clearance outwith this period depends on weather and temperatures being suitable to ensure that reptiles are likely to be active and therefore;
- There will be no clearance of potential hibernation habitat outwith the active season; and
- Reptiles will be excluded from entering or re-entering the site during clearance/operational phase of works by ensuring that the site is kept as bare ground i.e. clear of any vegetation or other shelter. If this is not possible, reptile fencing may be required.

7.4.11 Reptiles - impact characterisation with mitigation

It is considered that there will be an **unlikely minor short term adverse** impact at a **local (site)** level as a result of the proposed development.

7.4.12 Reptiles - significance of the impact

Without mitigation

It is considered that the significance of the impact is **slight**.

With mitigation

It is considered that the significance of the impact is **neutral**.

8 CONCLUSION AND RECOMMENDATIONS

Overall the site is of a low - moderate ecological value at a local level despite its size, as it is a previously managed garden and now a disturbed site, the dominance of mature trees and shrub borders and its location in a village centre location.

Bolston House does provide bats with roosting habitat within the house and garage and possibly in the trees in the garden. **Activity surveys of the house and garage and climb and insepct surveys of relevant trees will be required**. It is likely that mitigation and a development licence from NRW and will be required.

It is considered unlikely that great crested newts are present on the site. It is considered that further surveys, development licence and mitigation are not required. **However, it is recommended that site clearance in accordance with a suitable method statement and under ecological supervision will ensure no harm comes to this species or other amphibians**.

Reptiles should be assumed to be present on the site. Mitigation will be required. **Site clearance in respect of reptiles should be undertaken in accordance with an appropriate method statement**. This will also benefit other species (e.g. amphibians) which might otherwise be affected by site clearance.

Birds should be assumed to utilise the tree and shrub habitats during the breeding season. Mitigation will be required.

It is considered that other than the surveys identified above, no other ecological surveys are required at this time.

It is recommended that the mitigation measures, outlined in the various sections above are incorporated as far as is possible into the design process for this development and the relevant construction methodologies.

It should be noted that a licence issued by Natural Resources Wales in respect of bats is likely to be required; however, should evidence of any other European Protected Species or badger be found on the site, relevant work will cease immediately and consultation made with NRW. One or all of the following may be required: further surveys, mitigation and / or a licence.

Whenever an ecologist is not present on site, they should be “on call” for the duration of the development in the event that a protected species is found.

It is recommended that consideration be given to the inclusion of enhancement features to benefit wildlife are included within the design of the final development proposals and post-development landscaping scheme on the site, for example pole mounted bat boxes, bird boxes, reptile & hibernacula, pond creation etc.

9 REFERENCES

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APPENDIX A - PHOTOS

PHASE 1 HABITAT SURVEY PHOTOS

Plate 1 – Bolston House front (southern) elevation

Plate 2 – Bolston House side (eastern) elevation

Plate 4 – Bolston house rear elevation and garage building

Plate 4 – Roof space of northern extension

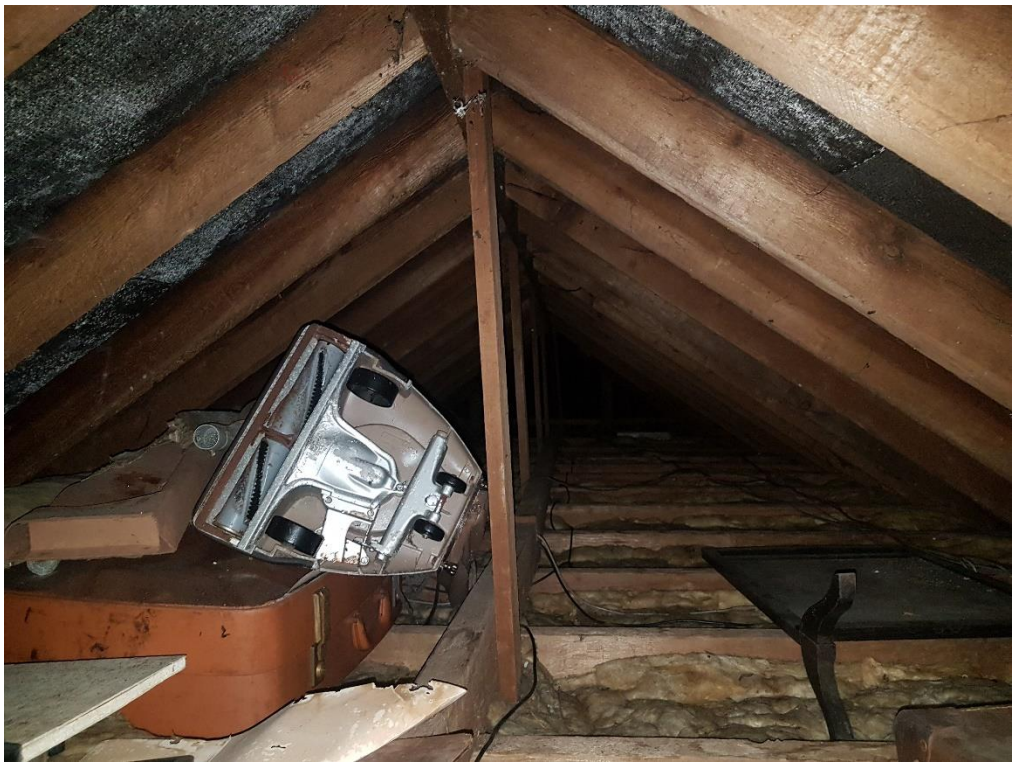

Plate 5 – Roof space of main attic

Plate 6 – Roof space of main attic

Plate 7 – Bat droppings in main attic space

Plate 8 – Garage roof space

Plate 9 – Front garden

Plate 10 – Eastern lawn

Plate 11 – Conifer and shrub area across centre of site

Plate 12 – Northern lawn and bare ground (looking north west)

Plate 13 – Trees in north east corner

Plate 14 – Northern boundary area

Plate 15 – North western boundary

Plate 16 – North western boundary

Plate 17 – Western boundary (looking north from entrance)

APPENDIX B - SEWBReC DATA SEARCH SPECIES SUMMARY

Scientific Name	Common Name	Status
Acanthis cabaret	Lesser Redpoll	S7, WBR(RSPB), LBAP (CON), LBAP (DEN, POW, VOG), UKBR(RSPB)
Acasis viretata	Yellow-barred Brindle	LI(BIS)
Accipiter gentilis	Goshawk	WCA1.1, WCA9, CITES, LBAP (CLY, CON, POW, VOG)
Acer campestre	Field Maple	LI(VC48, LS), LI(VC49, LS)
Aconitum napellus	Monk's-hood	LBAP (CDF, RCT, VOG), LI(SEWBReC)
Aconitum napellus agg.	Monk's-Hood agg.	LBAP (CDF, RCT, VOG), LI(SEWBReC), RDB1 (Wales) - WL, LI(BIS)
Aconitum napellus subsp. napellus	Monk's-Hood	RDB2 (UK) - S, LBAP (CDF, RCT, VOG), LI(SEWBReC), RDB1 (Wales) - WL
Acronicta rumicis	Knot Grass	S7, LBAP (GWY, VOG)
Actitis hypoleucos	Common Sandpiper	WBAm(RSPB), UKBAm(RSPB)
Adoxa moschatellina	Moschatel	LI(VC47)
Aegithalos caudatus	Long-tailed Tit	WBAm(RSPB)
Aethusa cynapium	Fool's Parsley	LI(VC48, LR)
Aglossa pinguinalis	Large Tabby	LI(BIS)
Agrimonia eupatoria	Agrimony	LI(VC47)
Agrochola helvola	Flounced Chestnut	S7, LBAP (GWY, VOG)
Agrochola lychnidis	Beaded Chestnut	S7, LBAP (GWY, VOG)
Alauda arvensis	Skylark	BDir22, S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG), WBAm(RSPB), UKBR(RSPB)
Alcedo atthis	Kingfisher	BDir1, WCA1.1, Bern, LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA), WBAm(RSPB), UKBAm(RSPB)
Alchemilla acutiloba	Lady's-Mantle	RDB1 (UK) - VU, RDB2 (UK) - R, LI(VC47)
Alchemilla vulgaris agg.	Lady's-Mantle agg.	LI(VC47)
Allium ursinum	Ramsons	LI(VC47)
Allium vineale	Wild Onion	LI(VC47), LI(VC48, LR), LI(VC51, LS)
Allophyes oxyacanthae	Green-brindled Crescent	S7, LBAP (GWY, VOG)
Amblyptilia acanthadactyla	Beautiful Plume	LI(BIS)
Amphipyra tragopoginis	Mouse Moth	S7, LBAP (GWY, VOG)
Anagallis tenella	Bog Pimpernel	LI(VC47)
Anania crocealis	Ochreous Pearl	LI(BIS)
Anania stachydalis	Woundwort Pearl	LBAP (BRG)
Anas clypeata	Shoveler	BDir21, CITES, LBAP (ANG, CON, GWY, POW), WBAm(RSPB), UKBAm(RSPB)
Anas crecca	Teal	BDir21, CITES, LBAP (ANG, CON, DEN, FLI, GWY), WBAm(RSPB), LI(VC43), UKBAm(RSPB)
Anas penelope	Wigeon	BDir21, CITES, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)
Anas platyrhynchos	Mallard	BDir21, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)
Anemone nemorosa	Wood Anemone	LI(VC47)
Anguis fragilis	Slow-worm	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, VOG)
Anthemis arvensis	Corn Chamomile	RDB1 (UK) - EN, LBAP (CON, GWY, VOG), LI(VC49, LR), LI(VC50, LR)
Anthemis cotula	Stinking Chamomile	RDB1 (UK) - VU, LBAP (VOG), LI(SEWBReC), LI(VC47), LI(VC49, LR), LI(VC51, LR)
Anthus pratensis	Meadow Pipit	Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)
Anthus trivialis	Tree Pipit	S7, Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB), UKBR(RSPB)
Apamea remissa	Dusky Brocade	S7, LBAP (GWY, VOG)
Apeira syringaria	Lilac Beauty	LI(BIS)
Aphanes arvensis	Parsley-piert	LI(VC47)
Apus apus	Swift	LBAP (BRG, RCT, VOG), WBAm(RSPB), UKBAm(RSPB)
Arctia caja	Garden Tiger	S7, LBAP (GWY, VOG)

Scientific Name	Common Name	Status
Arctium lappa	Greater Burdock	LI(VC47), LI(VC51, LR)
Argolamprotes micella	Bright Neb	RDB2 (UK) - N
Argynnis paphia	Silver-washed Fritillary	LBAP (BRG, CDF, CON, FLI, MON, NEW, POW, SWN), LI(SEWBReC), LI(VC43)
Aricia agestis	Brown Argus	LBAP (BRG, DEN)
Arvicola amphibius	Water Vole	WCA5, S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VoG)
Asio flammeus	Short-eared Owl	BDir1, Bern, CITES, WBR(RSPB), LBAP (CON, DEN, GWY, PEM, POW), LI(VC43), UKBAm(RSPB)
Asio otus	Long-eared Owl	Bern, CITES, LBAP (CLY, CON, POW), WBAm(RSPB), LI(VC43)
Atethmia centrago	Centre-barred Sallow	S7, LBAP (GWY, VOG)
Aythya fuligula	Tufted Duck	BDir21, LBAP (CON, POW, VOG), WBAm(RSPB)
Ballota nigra	Black Horehound	LI(SEWBReC)
Barbarea vulgaris	Winter-cress	LI(VC48, LS)
Berula erecta	Lesser Water-parsnip	LI(VC48, LR)
Bombus hortorum	Small Garden Bumblebee	LBAP (FLI, MTR)
Bombus lapidarius	Large Red Tailed Bumblebee	LBAP (FLI, MTR)
Bombus lucorum	White-Tailed Bumblebee	LBAP (FLI, MTR)
Bombus pascuorum	Common Carder Bee	LBAP (FLI, MTR)
Bombus pratorum	Early Bumblebee	LBAP (FLI, MTR)
Bombus terrestris	Buff-Tailed Bumblebee	LBAP (FLI, MTR)
Brachylomia viminalis	Minor Shoulder-knot	S7, LBAP (GWY, VOG)
Brachytron pratense	Hairy Dragonfly	LBAP (BRG, CLY, GWY, PEM, SNP), LI(BIS), LI(SEWBReC)
Brassica nigra	Black Mustard	LI(VC48, LR)
Briza media	Quaking-grass	LI(VC47)
Bromopsis ramosa	Hairy-brome	LI(VC47), LI(VC48, LS)
Bromus commutatus	Meadow Brome	LI(SEWBReC), LI(VC50, LR), LI(VC51, LR), LI(VC52, LR)
Bufo bufo	Common Toad	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, TRA, VOG)
Calamotropha paludella	Bulrush Veneer	RDB2 (UK) - NB, LBAP (NEW)
Calopteryx splendens	Banded Demoiselle	LBAP (CLY, SNP), LI(BIS), LI(SEWBReC)
Caradrina morpheus	Mottled Rustic	S7, LBAP (GWY, VOG)
Carex disticha	Brown Sedge	LBAP (BRG, CON, GWY), LI(SEWBReC), LI(VC43), LI(VC48, LR), LI(VC49, LR), LI(VC50, LR), LI(VC51, LS)
Carex divulsa	Grey Sedge	LI(VC47)
Carex flacca	Glaucous Sedge	LI(VC47)
Carex hostiana	Tawny Sedge	LI(VC47), LI(VC50, LR), LI(VC51, LS)
Carex laevigata	Smooth-stalked Sedge	LI(VC47), LI(VC50, LS), LI(VC51, LS)
Carex otrubae	False Fox-sedge	LI(VC43), LI(VC47)
Carex paniculata	Greater Tussock-sedge	LI(VC47)
Carex pulicaris	Flea Sedge	LI(VC47)
Carex riparia	Greater Pond-sedge	LBAP (BRG, DEN, GWY), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC48, LS), LI(VC49, LS), LI(VC50, LS), LI(VC52)
Carex rostrata	Bottle Sedge	LI(VC47)
Carex strigosa	Thin-spiked Wood-sedge	LBAP (BRG), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC50, LR), LI(VC51, LR)
Carex sylvatica	Wood-sedge	LI(VC47)
Catoptria margaritella	Silver-stripe Grass-veneer	LI(BIS)

Scientific Name	Common Name	Status
Catoptria pinella	Pearl Grass-veneer	LI(BIS)
Centaurea cyanus	Cornflower	S7, RDB1 (Wales) - CR, LBAP (CON, GWY, VOG), LI(VC49, LR), LI(VC50, LR)
Centaurea scabiosa	Greater Knapweed	LI(SEWBReC), LI(VC47), LI(VC48, LR), LI(VC49, LR), LI(VC50, LS)
Cephalozia lunulifolia	Moon-leaved Pincerwort	RDB1 (Wales) - LC, LI(VC41, LR), LI(VC43, LR), LI(VC51, LR)
Ceramica pisi	Broom Moth	S7, LBAP (GWY, VOG)
Ceratophyllum demersum	Rigid Hornwort	LBAP (BRG, CON), LI(SEWBReC), LI(VC49, LR), LI(VC50, LR), LI(VC51, LR), LI(VC52, LS)
Ceterach officinarum	Rustyback	LI(VC50, LS), LI(VC51, LS)
Chiasmia clathrata	Latticed Heath	S7, LBAP (GWY, VOG)
Chiroptera	Unknown Bat	EPS, WCA5, LBAP (ANG, DEN, FLI, RCT, SNP, TRA, TRF)
Chloris chloris	Greenfinch	Bern, LBAP (CON, POW)
Chroicocephalus ridibundus	Black-headed Gull	BDir22, S7, WBR(RSPB), LBAP (GWY, VOG), UKBAm(RSPB)
Cichorium intybus	Chicory	LI(VC49, LR), LI(VC50, LS), LI(VC51, LS)
Cinclus cinclus	Dipper	Bern, LBAP (BRG, CLY, CON, MTR, POW, RCT, TRA), WBAm(RSPB), UKBAm(RSPB)
Cirrhia icteritia	Sallow	S7, LBAP (GWY, VOG)
Cirsium acaule	Dwarf Thistle	LBAP (DEN, FLI), LI(SEWBReC), LI(VC47), LI(VC50, LR), LI(VC51, LR)
Cirsium dissectum	Meadow Thistle	LBAP (BRG, GWY, VOG), LI(VC43), LI(VC47), LI(VC48, LR), LI(VC49, LR)
Cleorodes lichenaria	Brussels Lace	LI(BIS)
Clinopodium vulgare	Wild Basil	LI(VC47), LI(VC48, LS)
Coenonympha pamphilus	Small Heath	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
Conocephalus dorsalis	Short-winged Cone-head	LBAP (BRG, TRF), LI(SEWBReC)
Conopodium majus	Pignut	LI(VC47)
Cordulegaster boltonii	Golden-ringed Dragonfly	LBAP (CLY, SNP), LI(BIS), LI(SEWBReC)
Cordulia aenea	Downy Emerald	LBAP (SNP, VOG), LI(BIS), LI(SEWBReC)
Cornus sanguinea	Dogwood	LI(VC52, LS)
Coturnix coturnix	Quail	BDir22, WCA1.1, LBAP (ANG, CON, GWY, POW), WBAm(RSPB), LI(VC43), UKBAm(RSPB)
Craniophora ligustri	Coronet	LBAP (BRG)
Crex crex	Corncrake	BDir1, WCA1.1, WCA9, S7, Bern, WBR(RSPB), LBAP (ANG, CON, GWY, PEM), UKBR(RSPB)
Cuculus canorus	Cuckoo	S7, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, VOG), UKBR(RSPB)
Cyclophora punctaria	Maiden's Blush	LI(BIS)
Cygnus olor	Mute Swan	BDir22, LBAP (CON, POW), WBAm(RSPB), UKBAm(RSPB)
Dactylorhiza incarnata	Early Marsh-orchid	LBAP (BRG, GWY, TRA), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC49, LR), LI(VC51, LS)
Daphne laureola	Spurge-laurel	LBAP (GWY), LI(SEWBReC), LI(VC47), LI(VC49, LS), LI(VC52, LS)
Delichon urbicum	House Martin	Bern, LBAP (BRG, CON, POW, RCT, VOG), WBAm(RSPB), UKBAm(RSPB)
Dendrocopos minor	Lesser Spotted Woodpecker	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)
Diarsia rubi	Small Square-spot	S7, LBAP (GWY, VOG)
Didymodon nicholsonii	Nicholson's Beard-moss	RDB1 (Wales) - LC, LI(BIS)
Diloba caeruleocephala	Figure of Eight	S7, LBAP (VOG)
Dipsacus fullonum	Wild Teasel	LI(VC48, LR)
Ecliptopera silaceata	Small Phoenix	S7, LBAP (GWY, VOG)
Emberiza citrinella	Yellowhammer	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, VOG), UKBR(RSPB)
Emberiza schoeniclus	Reed Bunting	S7, Bern, LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), WBAm(RSPB), UKBAm(RSPB)
Ennomos fuscantaria	Dusky Thorn	S7, LBAP (GWY, VOG)
Ennomos quercinaria	August Thorn	S7, LBAP (GWY, VOG), LI(BIS)

Scientific Name	Common Name	Status
Epilobium tetragonum	Square-stalked Willowherb	LI(VC47), LI(VC48, LR), LI(VC49, LR)
Epinotia brunnichana	Large Birch Bell	LI(BIS)
Epipactis palustris	Marsh Helleborine	CITES, LBAP (FLI, GWY, TRA, VOG), LI(SEWBReC), LI(VC47), LI(VC48, LS), LI(VC49, LR), LI(VC51, LS)
Epirrhoe rivata	Wood Carpet	LI(BIS)
Eptesicus serotinus	Serotine	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (GWY, POW, TRA, TRF)
Equisetum sylvaticum	Wood Horsetail	LI(VC47), LI(VC49, LS), LI(VC52, LR)
Equisetum telmateia	Great Horsetail	LI(VC43), LI(VC47), LI(VC48, LS)
Erica tetralix	Cross-leaved Heath	LI(VC47)
Erinaceus europaeus	Hedgehog	S7, Bern, LBAP (ANG, BGW, BRG, CON, FLI, GWY, NEW, POW, RCT, VOG)
Eriocrania sangii	Large Birch Purple	LI(BIS)
Eriophorum angustifolium	Common Cottongrass	LI(VC47)
Eriophorum latifolium	Broad-leaved Cottongrass	LBAP (BGW, BRG, DEN, GWY, VOG), LI(SEWBReC), LI(VC43), LI(VC49, LR), LI(VC51, LR), LI(VC52, LS)
Erythromma najas	Red-eyed Damselfly	LBAP (SNP, VOG), LI(BIS), LI(SEWBReC)
Euchoeca nebulata	Dingy Shell	LI(BIS)
Eugnorisma glareosa	Autumnal Rustic	S7, LBAP (GWY, VOG)
Euonymus europaeus	Spindle	LI(VC47)
Eupithecia dodoneata	Oak-tree Pug	LI(BIS)
Eupithecia trisignaria	Triple-spotted Pug	LI(BIS)
Euxoa nigricans	Garden Dart	S7, LBAP (GWY)
Falco columbarius	Merlin	BDir1, WCA1.1, Bern, CITES, LBAP (CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBR(RSPB)
Falco peregrinus	Peregrine	BDir1, WCA1.1, Bern, CITES, LBAP (ANG, CLY, CON, GWY, PEM, POW, TRF, VOG), LI(VC43)
Falco subbuteo	Hobby	WCA1.1, Bern, CITES, LBAP (CON, GWY, POW, VOG), WBAm(RSPB), LI(VC43)
Falco tinnunculus	Kestrel	S7, Bern, CITES, WBR(RSPB), LBAP (ANG, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), LI(VC43), UKBAm(RSPB)
Ficedula hypoleuca	Pied Flycatcher	S7, WBR(RSPB), LBAP (CON, GWY, POW, SNP, VOG), UKBR(RSPB)
Filipendula vulgaris	Dropwort	LBAP (ANG), LI(SEWBReC), LI(VC47), LI(VC49, LS), LI(VC50, LR), LI(VC51, LS), LI(VC52, LR)
Fringilla montifringilla	Brambling	WCA1.1, LBAP (CON)
Galium mollugo	Hedge Bedstraw	LI(VC52)
Galium odoratum	Woodruff	LI(VC47)
Galium uliginosum	Fen Bedstraw	LBAP (BRG, VOG), LI(SEWBReC), LI(VC47), LI(VC49, LS), LI(VC51, LS), LI(VC52, LS)
Gallinago gallinago	Snipe	BDir21, LBAP (ANG, CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBAm(RSPB)
Gliophorus psittacinus	Parrot Wax-Cap	LBAP (CDF, DEN, GWY)
Hemistola chrysoprasaria	Small Emerald	S7, LBAP (GWY, VOG)
Hepialus humuli	Ghost Moth	S7, LBAP (GWY, VOG)
Herzogiella seligeri	Silesian Feather-moss	RDB1 (Wales) - VU, LI(VC35, LR)
Hippuris vulgaris	Mare's-tail	RDB1 (Wales) - NT, LBAP (BGW, BRG), LI(SEWBReC), LI(VC48, LS), LI(VC49, LR), LI(VC50, LR), LI(VC52, LS)
Hirundo rustica	Swallow	Bern, LBAP (ANG, CON, GWY, POW, VOG), WBAm(RSPB)
Hoplodrina blanda	Rustic	S7, LBAP (GWY, VOG)
Hyacinthoides non-scripta	Bluebell	WCA8, LBAP (ANG, CLY, CON, FLI, SNP, TRA, TRF)
Hydraecia micacea	Rosy Rustic	S7, LBAP (GWY, VOG)
Hydrocotyle vulgaris	Marsh Pennywort	LI(VC47)
Hygroamblystegium tenax	Fountain Feather-moss	RDB1 (Wales) - LC, LBAP (CON), LI(VC49, LR), LI(VC52, LR)

Scientific Name	Common Name	Status
Hygrocybe flavipes	Yellow Foot Waxcap	LBAP (CDF, DEN, GWY)
Hypericum hirsutum	Hairy St John's-wort	LI(SEWBReC), LI(VC48, LR), LI(VC49, LR)
Hypericum pulchrum	Slender St John's-wort	LI(VC47)
Idaea straminata	Plain Wave	LI(BIS)
Ipimorpha retusa	Double Kidney	LI(BIS)
Ipimorpha subtusa	Olive	LI(BIS)
Iris foetidissima	Stinking Iris	LI(SEWBReC), LI(VC51, LS)
Juncus inflexus	Hard Rush	LI(VC48, LR)
Juncus subnodulosus	Blunt-flowered Rush	LBAP (BGW, BRG, GWY), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC48, LS), LI(VC49, LS)
Kickxia spuria	Round-leaved Fluellen	RDB1 (Wales) - NT, LBAP (VOG)
Kindbergia praelonga	Common Feather-moss	RDB1 (Wales) - LC, LBAP (CON)
Knautia arvensis	Field Scabious	LI(VC48, LS)
Lamiastrum galeobdolon subsp. montanum	Yellow Archangel	WCA9, LI(VC48, LS), LI(VC49, LS)
Larus argentatus	Herring Gull	BDir22, S7, WBR(RSPB), LBAP (CON, GWY, POW, VOG), UKBR(RSPB)
Larus canus	Common Gull	BDir22, WBR(RSPB), UKBAm(RSPB)
Larus fuscus	Lesser Black-backed Gull	BDir22, LBAP (CON, GWY, PEM, POW, SNP), WBAm(RSPB), UKBAm(RSPB)
Larus glaucoides	Iceland Gull	Bern, UKBAm(RSPB)
Lasiommata megera	Wall	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
Lateroligia ophiogramma	Double Lobed	LI(VC42)
Lemna trisulca	Ivy-leaved Duckweed	LBAP (GWY), LI(SEWBReC), LI(VC43), LI(VC49, LR)
Leontodon hispidus	Rough Hawkbit	LI(VC52, LS)
Leptidea sinapis	Wood White	WCA5, S7, RDB1 (UK) - EN, LBAP (POW, VOG), LI(SEWBReC)
Leptophyes punctatissima	Speckled Bush-cricket	LI(SEWBReC)
Lepus europaeus	Hare	S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG)
Leskea polycarpa	Many-fruited Leskea	RDB1 (Wales) - LC, LI(VC49, LR), LI(VC52, LR)
Lestes sponsa	Emerald Damselfly	LBAP (CLY, SNP), LI(SEWBReC), LI(VC42), LI(VC43), LI(VC47), LI(VC50)
Leucania comma	Shoulder-striped Wainscot	S7, LBAP (GWY, VOG)
Linaria cannabina	Linnet	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, DEN, FLI, PEM, VOG), LBAP (CON, GWY), UKBR(RSPB)
Lissotriton helveticus	Palmate Newt	WCA5, Bern, LBAP (ANG, CLY, CON, DEN, FLI, POW, TRA), LI(BIS)
Lithophane socia	Pale Pinion	LI(BIS)
Litoligia literosa	Rosy Minor	S7, LBAP (GWY, VOG)
Littorella uniflora	Shoreweed	LBAP (BGW, BRG), LI(SEWBReC), LI(VC47), LI(VC50, LS), LI(VC51, LR)
Locustella naevia	Grasshopper Warbler	S7, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)
Lutra lutra	Otter	EPS, HDir, WCA5, S7, Bern, CITES, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG, WRE)
Luzula multiflora	Heath Wood-rush	LI(VC47)
Lycia hirtaria	Brindled Beauty	S7, LBAP (GWY, VOG)
Lymnocryptes minimus	Jack Snipe	BDir21, LBAP (CON, POW), WBAm(RSPB)
Lysimachia nemorum	Yellow Pimpernel	LI(VC47)
Lythrum salicaria	Purple-loosestrife	LI(VC43), LI(VC47)
Malacosoma neustria	Lackey	S7, LBAP (GWY, VOG)

Scientific Name	Common Name	Status
Malva neglecta	Dwarf Mallow	RDB1 (Wales) - NT, LBAP (BRG), LI(SEWBReC), LI(VC47), LI(VC48, LR), LI(VC49, LS), LI(VC52, LR)
Melanargia galathea	Marbled White	LBAP (SWN, VOG), LI(BIS)
Melanchra persicariae	Dot Moth	S7, LBAP (GWY, VOG)
Melanthia procellata	Pretty Chalk Carpet	S7, LBAP (GWY, VOG), LI(BIS)
Meles meles	Badger	BA, Bern, LBAP (CLY, CON, DEN, FLI, PEM, POW, TRF, WRE)
Melica uniflora	Wood Melick	LI(VC47)
Meloe proscarabaeus	Black Oil-beetle	S7
Meloe violaceus	Violet Oil-beetle	S7, RDB2 (UK) - NB
Mentha suaveolens	Round-leaved Mint	RDB1 (Wales) - DD, RDB1 (UK) - DD, RDB2 (UK) - S, LI(SEWBReC), LI(VC48, LS), LI(VC49, LS), LI(VC50, LR)
Micromys minutus	Harvest Mouse	S7, LBAP (BRG, CON, FLI, GWY, VOG), LI(BIS)
Milvus milvus	Red Kite	BDir1, WCA1.1, WCA9, CITES, LBAP (CON, CRM, GWY, POW), WBAm(RSPB)
Moehringia trinervia	Three-nerved Sandwort	LI(VC47)
Mompha divisella	Neat Cosmet	LI(BIS)
Motacilla flava	Yellow Wagtail	S7, Bern, WBR(RSPB), LBAP (CON, DEN, FLI, POW, TRA, VOG), LI(VC43), UKBR(RSPB)
Muscardinus avellanarius	Hazel Dormouse	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRA, TRF, VOG)
Muscicapa striata	Spotted Flycatcher	S7, Bern, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), UKBR(RSPB)
Mustela nivalis	Weasel	NRW, Bern, LBAP (ANG, BGW, BRG, CON, FLI, NEW, POW)
Mustela putorius	Polecat	HDir, S7, Bern, RDB2 (UK), LBAP (BGW, BRG, CON, FLI, GWY, NEW, POW, SNP, VOG)
Mycelis muralis	Wall Lettuce	LI(VC52, LS)
Myosotis discolor	Changing Forget-me-not	LI(VC47)
Myosotis laxa	Tufted Forget-me-not	LI(VC47)
Myosotis laxa subsp. caespitosa	Myosotis laxa subsp. caespitosa	LI(VC47)
Myosotis secunda	Creeping Forget-me-not	LI(VC47)
Myosoton aquaticum	Water Chickweed	LBAP (BRG), LI(SEWBReC), LI(VC43), LI(VC49, LR), LI(VC51, LS)
Myotis	Myotis Bat Species	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Narcissus pseudonarcissus subsp. major	Spanish Daffodil	LBAP (TRF), LI(VC47), LI(VC50, LS)
Natrix helvetica	Grass Snake	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, VOG), LBAP (ANG, CLY, DEN, FLI, POW, SNP, TRA, VOG)
Neottia nidus-avis	Bird's-nest Orchid	CITES, RDB1 (UK) - NT, LBAP (DEN, TRA, VOG), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC49, LR), LI(VC50, LR), LI(VC51, LR), LI(VC52, LR)
Notocelia trimaculana	Triple-blotched Bell	LI(BIS)
Nowellia curvifolia	Wood-rust	RDB1 (Wales) - LC, LI(VC52, LR)
Numenius arquata	Curlew	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, VOG), LI(VC43), UKBR(RSPB)
Numenius phaeopus	Whimbrel	BDir22, WCA1.1, LBAP (CON, GWY), WBAm(RSPB), UKBR(RSPB)
Nyctalus noctula	Noctule Bat	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
Nymphaea alba	White Water-lily	LBAP (GWY), LI(SEWBReC), LI(VC49, LS)
Odontites vernus	Red Bartsia	LI(VC47)
Oenanthe fistulosa	Tubular Water-dropwort	S7, RDB1 (UK) - VU, LBAP (GWY, VOG), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC48, LR), LI(VC49, LS), LI(VC50, LS), LI(VC51, LS), LI(VC52, LS)
Oidaematophorus lithodactyla	Dusky Plume	LI(BIS)

Scientific Name	Common Name	Status
Ononis repens	Common Restharrow	LI(VC47)
Ophioglossum vulgatum	Adder's-tongue	LI(VC43), LI(VC47), LI(VC48, LS), LI(VC49, LS), LI(VC50, LS), LI(VC51, LS)
Ophrys apifera	Bee Orchid	CITES, LBAP (CLY, GWY, TRA, TRF), LI(SEWBReC), LI(VC47), LI(VC48, LR), LI(VC49, LS)
Orthetrum cancellatum	Black-tailed Skimmer	LBAP (CLY, SNP), LI(BIS), LI(SEWBReC)
Orthosia gracilis	Powdered Quaker	S7, LBAP (GWY, VOG)
Orthotrichum tenellum	Slender Bristle-moss	RDB1 (Wales) - LC, LI(VC42, LR)
Oxalis acetosella	Wood-sorrel	LI(VC47)
Parietaria judaica	Pellitory-of-the-wall	LI(VC47)
Paris quadrifolia	Herb-paris	LBAP (CDF, CON, FLI), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC51, LS), LI(VC52, LR)
Passer domesticus	House Sparrow	S7, LBAP (CLY, CON, FLI, GWY, VOG), WBAm(RSPB), UKBR(RSPB)
Passer montanus	Tree Sparrow	S7, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, VOG), LI(VC43), UKBR(RSPB)
Pedicularis palustris	Marsh Lousewort	LI(VC47), LI(VC50, LS), LI(VC51, LR)
Pedicularis sylvatica	Lousewort	LI(VC47)
Pelenomus canaliculatus	Pelenomus canaliculatus	RDB2 (UK) - NB, LBAP (GWY)
Perdix perdix	Grey Partridge	BDir21, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, DEN, FLI, GWY, POW, TRF, VOG), LI(VC43), UKBR(RSPB)
Periparus ater	Coal Tit	Bern, LBAP (CON, POW), WBAm(RSPB)
Perizoma albulata	Grass Rivulet	S7, LBAP (VOG)
Persicaria lapathifolia	Pale Persicaria	LI(VC48, LS)
Petasites hybridus	Butterbur	LI(VC48, LS), LI(VC50, LR)
Phalacrocorax carbo	Cormorant	LBAP (CON, GWY, POW), WBAm(RSPB)
Phoenicurus ochruros	Black Redstart	WCA1.1, Bern, LBAP (GWY, VOG), WBAm(RSPB), UKBR(RSPB)
Phoenicurus phoenicurus	Redstart	Bern, LBAP (CON, GWY, POW, SNP), WBAm(RSPB), UKBAm(RSPB)
Phylloscopus trochilus	Willow Warbler	WBR(RSPB), LBAP (CON), UKBAm(RSPB)
Picris hieracioides	Hawkweed Oxtongue	LI(SEWBReC), LI(VC43), LI(VC49, LR), LI(VC50, LR), LI(VC51, LR)
Picus viridis	Green Woodpecker	Bern, LBAP (CLY, CON, DEN, FLI, GWY, PEM, POW, SNP), WBAm(RSPB)
Pimpinella saxifraga	Burnet-saxifrage	LI(VC47)
Pipistrellus	Pipistrellus Bat Species	EPS, WCA5, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Pipistrellus pipistrellus	Common Pipistrelle	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Pipistrellus pipistrellus agg.	Pipistrelle agg.	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Pipistrellus pygmaeus	Soprano Pipistrelle	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Plagiothecium curvifolium	Curved Silk-moss	RDB1 (Wales) - LC, LI(VC42, LR), LI(VC48, LR), LI(VC49, LR)
Platanthera chlorantha	Greater Butterfly-orchid	RDB1 (UK) - NT, LBAP (GWY, MON, TRA), LI(SEWBReC), LI(VC43), LI(VC49, LS), LI(VC50, LS), LI(VC51, LS), LI(VC52, LR)
Plecotus	Long-eared Bat Species	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Plecotus auritus	Brown Long-eared Bat	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
Pluvialis apricaria	Golden Plover	BDir1, BDir22, S7, WBR(RSPB), LBAP (BBNP, CON, CRM, FLI, GWY, POW, SNP, VOG), LI(VC43)
Poa palustris	Swamp Meadow-grass	LI(VC48, LR)
Poecile palustris	Marsh Tit	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)

Scientific Name	Common Name	Status
Polygala vulgaris	Common Milkwort	LI(VC47)
Polymixis flavicincta	Large Ranunculus	LBAP (BRG)
Polypodium interjectum	Intermediate Polypody	LI(VC51, LS)
Polystichum aculeatum	Hard Shield-fern	LI(VC47), LI(VC49, LS), LI(VC52, LS)
Polystichum setiferum	Soft Shield-fern	LI(VC52)
Populus nigra	Black-poplar	LBAP (CRM, DEN, FLI, SNP, TRA, WRE), LI(SEWBReC), LI(VC52)
Populus tremula	Aspen	LI(VC52, LS)
Potamogeton crispus	Curled Pondweed	LI(VC47), LI(VC48, LR), LI(VC49, LS)
Potentilla palustris	Marsh Cinquefoil	LI(VC47)
Poterium sanguisorba subsp. sanguisorba	Salad Burnet	LI(VC43), LI(VC47)
Prunella modularis	Dunnock	S7, Bern, LBAP (CON, POW, VOG), UKBAm(RSPB)
Prunus padus	Bird Cherry	LBAP (GWY), LI(SEWBReC), LI(VC47), LI(VC49, LS)
Psacadina verbekei	Psacadina verbekei	RDB2 (UK) - N
Puccinellia distans	Reflexed Saltmarsh-Grass	LBAP (CON, DEN, GWY), LI(SEWBReC), LI(VC48, LR), LI(VC49, LR), LI(VC51, LS), LI(VC52, LR)
Pulicaria dysenterica	Common Fleabane	LI(VC48, LS)
Pyrausta aurata	Small Purple & Gold	LI(BIS)
Pyrausta purpuralis	Common Purple & Gold	LI(BIS)
Pyrochroa coccinea	Black-headed Cardinal Beetle	RDB2 (UK) - NB
Pyrrhula pyrrhula	Bullfinch	S7, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, TRF, VOG), UKBAm(RSPB)
Rana temporaria	Common Frog	HDir, WCA5, Bern, LBAP (ANG, CLY, CON, FLI, POW, TRA)
Ranunculus aquatilis	Common Water-crowfoot	LI(VC48, LR), LI(VC50, LS)
Ranunculus auricomus	Goldilocks Buttercup	LI(SEWBReC), LI(VC48, LR), LI(VC49, LS), LI(VC52, LS)
Ranunculus ficaria subsp. bulbilifer	Lesser Celandine	LI(VC49, LS), LI(VC52, LS)
Ranunculus lingua	Greater Spearwort	LI(VC43), LI(VC48, LR), LI(VC50, LS), LI(VC51, LR)
Regulus regulus	Goldcrest	Bern, LBAP (CON, POW), WBAm(RSPB)
Reseda lutea	Wild Mignonette	LBAP (BGW, GWY), LI(SEWBReC), LI(VC43), LI(VC49, LR), LI(VC50, LR)
Reseda luteola	Weld	LI(VC48, LS)
Rhagium mordax	Rhagium mordax	LBAP (TRF)
Rhinolophus hipposideros	Lesser Horseshoe Bat	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRA, TRF, VOG, WRE)
Rhizedra lutosa	Large Wainscot	S7, LBAP (BRG, GWY)
Riparia riparia	Sand Martin	Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB)
Rorippa sylvestris	Creeping Yellow-cress	LI(VC47), LI(VC48, LS), LI(VC49, LR), LI(VC52, LR)
Salix repens	Creeping Willow	LI(VC43), LI(VC47), LI(VC50, LS)
Salmo trutta	Brown/Sea Trout	S7, LBAP (BGW, CLY, CON, GWY, MTR, RCT, TRA, TRF, VOG), LI(BIS)
Samolus valerandi	Brookweed	LBAP (CON), LI(SEWBReC), LI(VC47), LI(VC51, LS)
Sanicula europaea	Sanicle	LI(VC47)
Satyrium w-album	White-letter Hairstreak	WCA5, S7, RDB1 (UK) - EN, LBAP (BRG, FLI, NEW, SWN, VOG), LI(SEWBReC)
Schrankia costaestrigalis	Pinion-streaked Snout	LI(BIS)
Scirpus sylvaticus	Wood Club-rush	LI(SEWBReC), LI(VC50, LR)
Scolopax rusticola	Woodcock	BDir21, LBAP (CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBR(RSPB)

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Scopula immutata	Lesser Cream Wave	LI(BIS)
Scotopteryx chenopodiata	Shaded Broad-bar	S7, LBAP (GWY, VOG)
Scrophularia auriculata	Water Figwort	LI(VC48, LR), LI(VC52, LS)
Scutellaria galericulata	Skullcap	LI(VC51, LR)
Sherardia arvensis	Field Madder	LI(VC47), LI(VC48, LS)
Silene flos-cuculi	Ragged-Robin	LI(VC47)
Silene gallica	Small-flowered Catchfly	S7, RDB1 (Wales) - VU, RDB1 (UK) - EN, RDB2 (UK) - S, LBAP (CER, CON, CRM, POW), LI(VC49, LR), LI(VC50, LR), LI(VC52, LR)
Silene noctiflora	Night-flowering Catchfly	RDB1 (Wales) - EN, RDB1 (UK) - VU, LBAP (CON), LI(VC51, LR)
Sinapis arvensis	Charlock	RDB1 (Wales) - VU
Sitochroa palealis	Sulphur Pearl	RDB2 (UK) - N
Smyrnium olusatrum	Alexanders	LI(VC48, LS)
Solidago virgaurea	Goldenrod	LI(VC47)
Sparganium emersum	Unbranched Bur-reed	LBAP (GWY), LI(SEWBReC), LI(VC49, LS), LI(VC51, LS)
Sparganium erectum subsp. erectum	Branched Bur-Reed	RDB1 (Wales) - WL
Spergula arvensis	Corn Spurrey	RDB1 (Wales) - NT, RDB1 (UK) - VU, LBAP (GWY, VOG)
Spilosoma lubricipeda	White Ermine	S7, LBAP (GWY, VOG)
Spilosoma lutea	Buff Ermine	S7, LBAP (GWY, VOG)
Stachys officinalis	Betony	LI(VC47)
Stachys palustris	Marsh Woundwort	LI(VC47)
Streptopelia turtur	Turtle Dove	BDir22, S7, CITES, WBR(RSPB), LBAP (BBNP, CON, GWY, MON, POW), UKBR(RSPB)
Sturnus vulgaris	Starling	BDir22, S7, Bern, WBR(RSPB), LBAP (BBNP, CON, FLI, GWY, VOG), UKBR(RSPB)
Succisa pratensis	Devil's-bit Scabious	LI(VC47)
Sylvia communis	Whitethroat	LBAP (CON, POW), WBAm(RSPB)
Tanacetum vulgare	Tansy	LI(VC48, LS)
Tetrix subulata	Slender Ground-hopper	LBAP (BRG), LI(SEWBReC)
Tholera cespitis	Hedge Rustic	S7, LBAP (GWY, VOG)
Tholera decimalis	Feathered Gothic	S7
Thumatha senex	Round-winged Muslin	LBAP (BRG)
Tiliacea aurago	Barred Sallow	LBAP (BRG)
Tiliacea citrago	Orange Sallow	LI(BIS)
Timandra comae	Blood-vein	S7, LBAP (VOG)
Tragopogon pratensis	Goat's-beard	LI(VC48, LS)
Trichocolea tomentella	Handsome Woollywort	RDB1 (Wales) - LC, LI(VC35, LS), LI(VC41, LR), LI(VC52, EX)
Trifolium medium	Zigzag Clover	LI(VC48, LS)
Triglochin palustre	Marsh Arrowgrass	LI(VC47), LI(VC50, LS)
Tringa nebularia	Greenshank	BDir22, WCA1.1, LBAP (CON, POW), UKBAm(RSPB)
Tringa ochropus	Green Sandpiper	WCA1.1, Bern, LBAP (CON, VOG), UKBAm(RSPB)
Tripleurospermum inodorum	Scentless Mayweed	LI(VC48, LS)
Triturus cristatus	Great Crested Newt	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, CON, DEN, FLI, MON, POW, SNP, TRA, TRF, VOG, WRE)
Turdus iliacus	Redwing	BDir22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)
Turdus philomelos	Song Thrush	BDir22, S7, Bern, LBAP (ANG, BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG, WRE), WBAm(RSPB), UKBR(RSPB)
Turdus pilaris	Fieldfare	BDir22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)
Turdus viscivorus	Mistle Thrush	BDir22, Bern, UKBR(RSPB)
Tyria jacobaeae	Cinnabar	S7, LBAP (GWY, VOG)

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Tyto alba	Barn Owl	WCA1.1, WCA9, Bern, CITES, LBAP (ANG, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, VOG, WRE), WBAm(RSPB), LI(VC43)
Ulmus glabra x minor x plotii = U. x hollandica	Dutch Elm	LI(VC48, LR)
Ulmus procera	English Elm	LI(VC48, LS)
Umbilicus rupestris	Navelwort	LI(VC51, LS)
Valeriana dioica	Marsh Valerian	LI(VC47), LI(VC48, LS), LI(VC49, LR), LI(VC50, LS)
Vanellus vanellus	Lapwing	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRF, VOG), LI(VC43), UKBR(RSPB)
Veronica montana	Wood Speedwell	LI(VC47)
Veronica scutellata	Marsh Speedwell	LI(VC47)
Viburnum lantana	Wayfaring-tree	LI(SEWBReC), LI(VC51, LS)
Viburnum opulus	Guelder-rose	LI(VC52, LS)
Viola odorata	Sweet Violet	LI(VC48, LR)
Viola palustris	Marsh Violet	LI(VC47)
Viola reichenbachiana	Early Dog-violet	LI(VC47), LI(VC52, LS)
Watsonalla binaria	Oak Hook-tip	S7, LBAP (GWY, VOG)
Xanthorhoe ferrugata	Dark-barred Twin-spot Carpet	S7, LBAP (GWY, VOG)
Xylena vetusta	Red Sword-grass	LBAP (BGW, BRG)
Zannichellia palustris	Horned Pondweed	LBAP (GWY), LI(SEWBReC), LI(VC43), LI(VC48, LR), LI(VC49, LR), LI(VC50, LR)
Zeuzera pyrina	Leopard Moth	LI(BIS)
Zootoca vivipara	Common Lizard	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)

APPENDIX C – TARGET NOTES

Target note	Description
TN 1	Tree with potential roost feature
TN 2	Tree with potential roost feature
TN 3	Tree with potential roost feature
TN 4	Tree with potential roost feature
TN 5	Tree with potential roost feature
TN 6	Tree with potential roost feature
TN 7	Bat droppings in roof spaces

APPENDIX D – SITE CLEARANCE METHOD STATEMENT (HERPETOFAUNA)

1. Following a reptile habitat assessment, it was considered that the site has the potential to support a low population of slow worm (*Anguis fragilis*), common lizard (*Lacerta vivipara*) and possibly grass snake (*Natrix natrix*). The presence of reptiles should therefore be assumed, hence the need for a Method Statement to ensure that works are carried out in such a way as to avoid harm to reptiles. This method statement will also ensure that no harm comes to amphibians, in particular, great crested newt.

2. Vegetation will be cleared from directly affected areas only e.g. areas to be built on, used for storage, be part of the construction site or which will form part of the landscaping scheme.

3. Once cleared, the vegetation will be maintained as close to bare ground as possible either by spraying or ongoing repeated cutting using brush cutters with knife blades to ensure that there is no potential for reptiles to utilise the site after the initial clearance. This is the preferred method as it reduces the potential for killing and injuring of reptiles and other animals when using tractor towed flails and mowers. Reptile fencing will not be required as long as the bare ground / short vegetation habitat is maintained.

4. All arisings will be raked off and spread (creating habitat piles) on unaffected land or removed from site for disposal.

5. Trees and scrub will be cleared to ground level using a chainsaw with the stem material. Stumps and roots will only be removed by machine (under ecological supervision) once the clearance is complete.

6. The orientation of the cutting will be designed to push reptiles into unaffected areas once the areas for clearance have been identified without having to undertake a full translocation exercise. In this instance, cutting will start on the northern edge of Bolston House and progress in a circular direction around the house.

7. Vegetation will be cut in three phases. The first phase will reduce the vegetation height to 75mm; the second will reduce it to ≈30mm; the third phase will reduce the height to as close to ground level as possible. There will be a time delay of 48 hours between the first and second cuts.

8. After clearance, should the vegetation be allowed to regrow above 150mm high, it will be cut and raked as short as possible, ≤ 30 mm wherever possible.

9. Clearance may only take place during the reptile active season.

10. Potential hibernacula will only be cleared while day time temperatures are consistently over 12°C for a period of at least seven days prior as otherwise reptiles may be killed or injured as a result of inconsistent (low) temperatures (during the day and night) and/or low prey availability. Potential hibernacula will only be dismantled by hand unless the supervising ecologist gives the approval for machine dismantling.

11. If reptiles are observed within the clearance area during the works, a decision on how to deal with them will be made on site in light of the conditions on site at the time and the state of the animals themselves. There are three options for dealing with them:

    - It may be possible to leave the animals alone to find their own way into cover, depending on where they are seen, what they are doing and their apparent activity levels; or

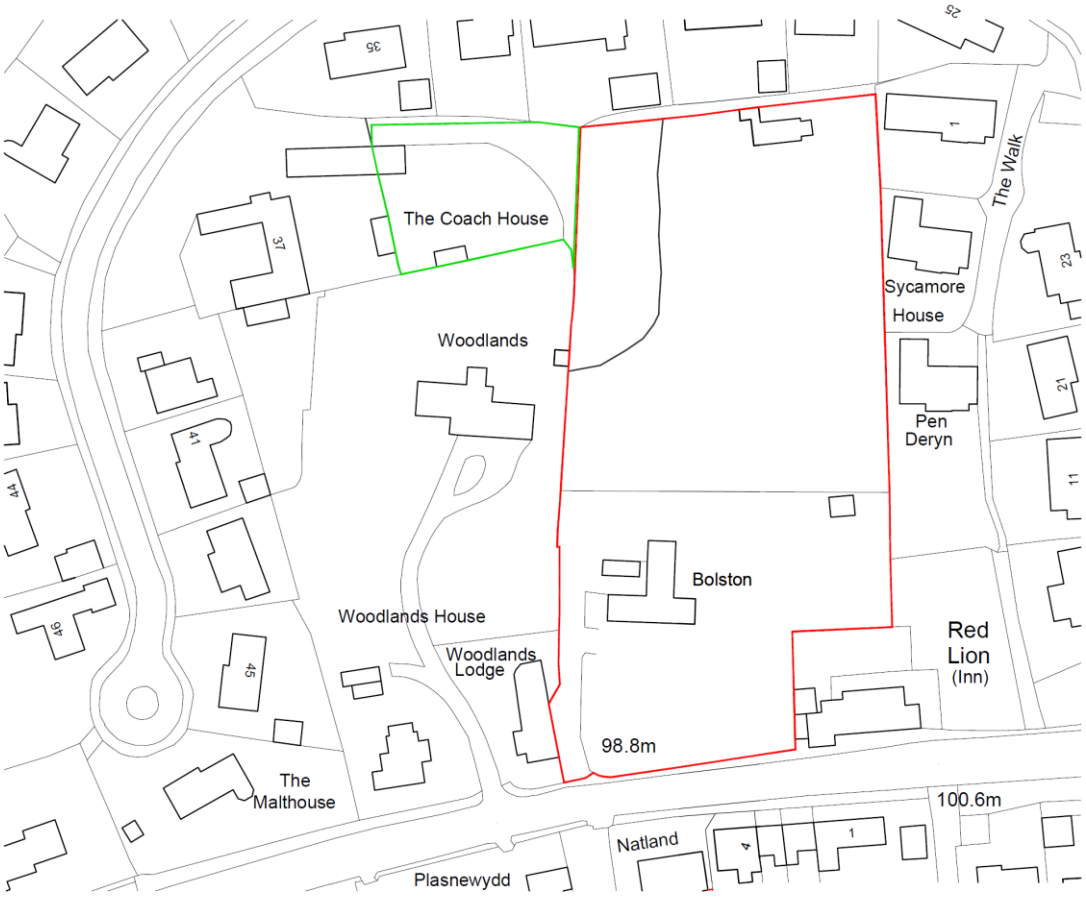
    - Capture, remove from site and take into temporary captivity until such time as they can be released adjacent to the cleared area (a vivarium has been prepared in case it is required); or

- Should conditions allow, capture and translocate the animals to a safe area immediately adjacent to the site.

12. Habitat (e.g. hibernation sites for other species especially great crested newt and other amphibians) can be identified and avoided by following this method statement.

13. All vegetation and site clearance will be supervised by a suitably experienced ecologist.

APPENDIX E – SITE LOCATION PLAN



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Project Name :	Bolston House, Bonvilston		
Project Ref :	SP612		
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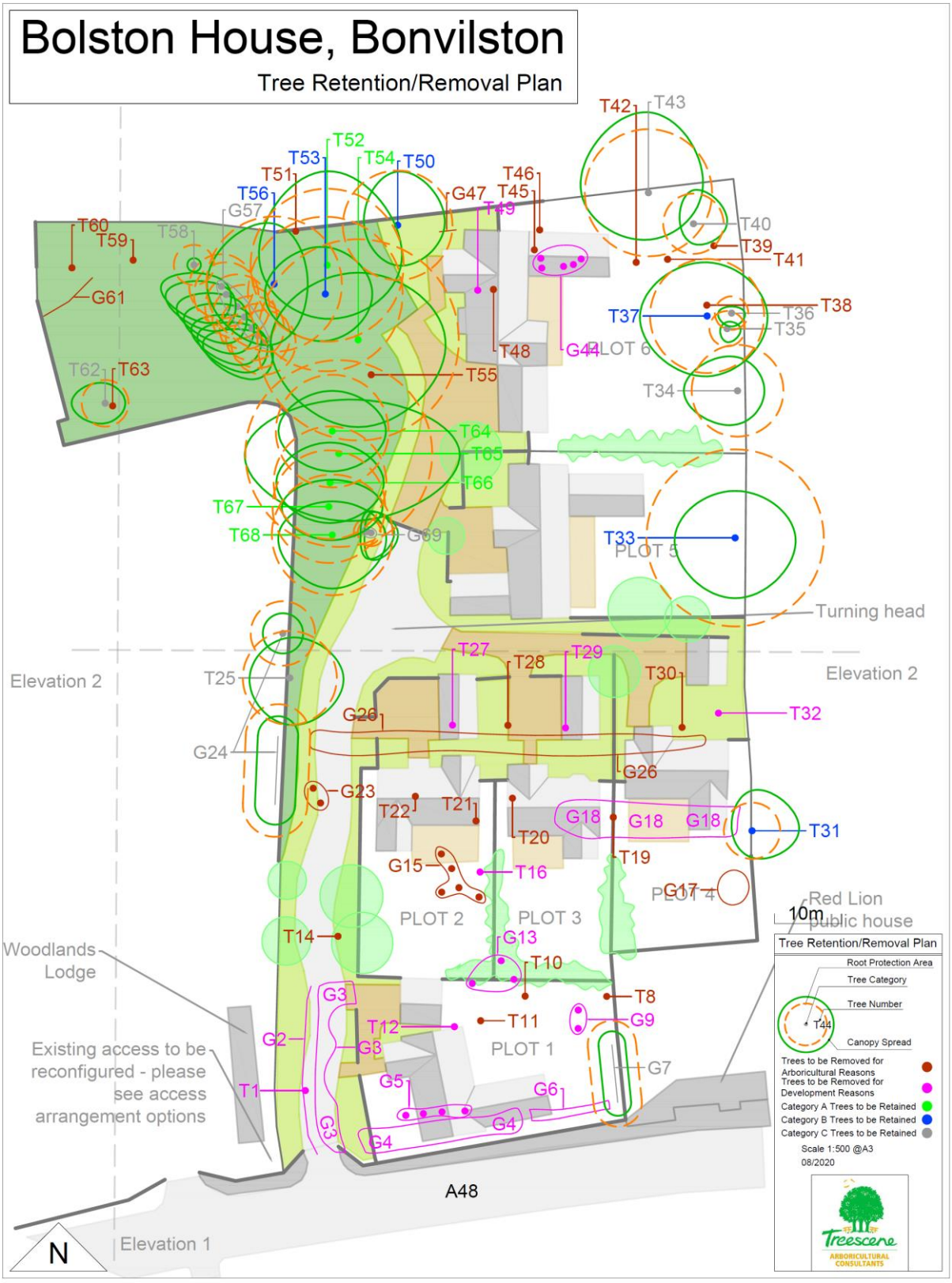
Drawing Number :	LRP100		1:1250 @ A4
Revision:	-	Drawn by: rb	Date: Nov 2020

APPENDIX F – TREE RETENTION AND REMOVAL PLAN (OVER PROPOSED SITE LAYOUT)