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BAT PRESENCE / ABSENCE SURVEY

At

Carlton Garden Centre

Pinfold Lane
Llay Industrial Estate
Wrexham
LL12 0PX

NGR: SJ 33060 56223

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EXECUTIVE SUMMARY

Carlton Garden Centre is located within Llay industrial estate Wrexham. The northern site perimeter is bordered by woodland primarily comprising pedunculate oak *Quercus robur* trees. This woodland links to an unnamed tributary of the River Alyn which is also flanked by woodland. The remaining habitats in the nearby area are a mixture of industrial buildings to the north and west, residential buildings to the east, and agricultural land to the south. The wider area of 2km is dominated by arable fields lined with hedgerows or trees that provide dark corridors for bats to commute unrestricted to and from the proposed development site. To the southwest of the site there are more and larger areas of woodland that provide foraging, roosting, and commuting opportunities, such as those associated with Alyn Waters Country Park.

Both buildings were inspected externally which revealed low potential roosting features (PRF's) restricted to gaps between wooden bargeboards/fascias and the walls, most of which are blocked by cobwebs indicating no recent use by roosting bats. High levels of foraging and commuting activity were recorded during the presence / absence survey located at the northeast woodland. However, no bats were recorded using either building for roosting.

Two species of bat were recorded during the survey: common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*. The level of activity was relatively high within the woodland to the north of the site although activity within the development boundary was limited.

In conclusion, no field signs of bats were found during inspections and no bats were recorded using either building for roosting purposes. As such, no further mitigation or compensation measures are required with regards to bats

This report should be read in conjunction with appendices 1 to 6, which provide visual representations of the survey results and statutory and planning context.

1 INTRODUCTION

1.1 Author, surveyors and qualifications

This report is compiled and written by Josh Howard BSc, UES Graduate Ecologist. Other surveyors include:

- Daniel Smith BSc MScRes, UES Ecologist. Daniel is licensed by Natural England to survey all species of bats by observation using an artificial light under licence number 2022-10366-CLS-BAT (level 1). He is listed as an accredited agent on the bat survey licence of Toby Hart. As such, he has been deemed competent to undertake licensable activities such as using a torch and endoscope to survey for bats. Toby is licensed by Natural England to disturb, take, and handle all species of bats under licence numbers 2015-15898-CLS-CLS (level 3) and 2015-15899-CLS-CLS (level 4). Toby is also a registered consultant of the bat mitigation class licence (RC090).

All surveyors have the knowledge, skills and experience identified within CIEEM's "Competencies for Species Survey: Bats" (2013) or were under the supervision of a surveyor with the required competencies.

1.2 Survey objectives

UES was commissioned in July 2023 to conduct site surveys which include the following activities:

- Conduct internal and external building inspections to look for field signs of bats.
- Confirm bat presence or likely absence by conducting emergence and re-entry surveys of the buildings.
- Assess the type and importance of the roost(s) if present
- Recommend appropriate mitigation and compensation, if applicable

1.3 Proposed development

The development proposals include the demolition of the existing structures on site, with the exception of the toilet block, to make room for the construction of a new haulage yard.

1.4 Structure of the report

This report sets out the methodology, results, and recommendations in relation to a specific bat survey. Recommendations are in line with statutory legislation and planning policy objectives.

The report should be read in conjunction with appendices 1 to 6, which give visual representations of the survey results.

2 METHODOLOGY

2.1 General

All surveys were carried out to recognised guidelines, timings, and weather conditions, with reference to Natural England and BCT publications (see references for further information).

The habitats on site and in the surrounding area were assessed during a walkover survey and through studying aerial photographs, to gauge their suitability to support roosting, foraging and commuting bats.

2.2 Building inspections

The buildings on site were searched both externally and internally for bat presence and features associated with bat activity, as detailed in BCT guidance (Collins, 2016). This was conducted on 29th June by Mark Halliwell and Bethan Beeston (see PEA report produced by UES, reference UES04084/01). An updated building inspection was undertaken immediately prior to the emergence survey on 25th July by Daniel Smith and Josh Howard.

2.2.1 External inspection

The external inspections of the buildings were carried out from ground level using binoculars and using ladders and an endoscope to investigate suitable gaps. The objective of the survey was to find and record any signs of bat use, for example:

- Bat droppings
- Feeding remains
- Grease staining / urine marks
- Corpses or skeletons

The bat signs listed above are visible from the outside of a building. The following areas were searched, where present:

- | | |
|---------------------------|---|
| • Roof and ridge tiles | • Gaps under felt |
| • Lead flashing | • Cracks / holes in woodwork or behind cladding |
| • Eaves | • Gaps in brickwork and mortar |
| • Boxed soffits | • Air bricks |
| • Fascia and barge boards | • Grills |
| • Windowsills and panes | • Vents |
| • Walls | |

2.2.2 Internal inspection

The internal inspections covered all the accessible rooms and roof spaces within the buildings.

Bats regularly utilise specific areas within roof spaces, which were searched for any field signs of bats using high-powered torches and an endoscope, where considered necessary by the licenced ecologist. The following features were searched, where present:

- Roof beams and junctions
- Gaps under felt.
- Dividing walls
- Chimney breasts
- Gaps in brickwork and mortar
- Cracks / holes in woodwork
- Floor or other surfaces on which droppings could accumulate.

2.3 Emergence and re-entry surveys

Potential roost access points were identified during the building inspections. These points were covered by a surveyor during the dusk emergence periods.

Bat echolocation, flight and habitat characteristics were recorded where possible, to determine the species. The level and type of bat activity was also recorded to establish how bats are using the site.

2.3.1 Equipment

BATLOGGER M bat detectors and recorders were used during the survey. This device records bat echolocation calls across the full spectrum, with a sensitivity range of 10 – 150 kHz. The integrated heterodyne live monitoring also allows the observer to hear the echolocation calls in real time, with automatic tuning. The recordings are individually time/date, GPS and temperature stamped, and are of high enough quality to produce time expansion quality sonograms.

ANABAT SCOUT full spectrum bat detectors and recorders were used during the survey. This device records bat echolocation calls across the full spectrum, with a sensitivity range of 10 – 160 kHz. The integrated heterodyne live monitoring also allows the observer to hear the echolocation calls in real time, with automatic tuning. The recordings are individually time/date, GPS and temperature stamped, and are of high enough quality to produce time expansion quality sonograms.

2.3.2 Weather conditions

Table 1 - Weather conditions and survey timings

DATE	SURVEY TYPE	TIMINGS	SUNSET / SUNRISE	TEMP.	WIND	RAIN	CLOUD COVER
25/07/23	Emergence	21:03 – 22:48	21:18	14°C	Still	Dry	50%

2.4 Survey limitations

There are no limitations associated with these survey data.

3 RESULTS

3.1 Habitat assessment

Carlton Garden Centre is located within Llay Industrial Estate, Wrexham. The industrial estate comprises areas of managed amenity grassland and small copses and linear strips of woodland. The garden centre's perimeter to the north is bordered by woodland, predominantly pedunculate oaks with sycamore *Acer pseudoplatanus* and hawthorn *Crataegus monogyna*. This section of woodland provides good quality foraging opportunities and connects to other strips of woodland providing commutable dark corridors. Scattered mature trees are present at the perimeter of the site and adjacent to Llay Road, but to the south and west the site is subject to noise pollution from the surrounding industrial estate. However, there is little light pollution due to a lack of immediate streetlights and the surrounding trees which block additional light ingress.

Despite being located within an industrial estate, the surrounding area contains suitable opportunities for foraging and commuting bats, consisting of woodland, arable land, and residential gardens. Furthermore, there are no major main roads that might otherwise act as barriers to movement. Within a 1km radius, north, east and west of the site there are bodies of water that would host invertebrate species providing foraging opportunities for bats. Southeast of the site is Llay village, containing built up suburban areas of residential and commercial buildings. However, it still contains clusters of greenspaces such as playing fields, residential gardens, and nearby areas of woodland, such as Alyn Waters Country Park, that provide additional foraging and commuting habitat for bats.

The wider surrounding area (within 2km) is dominated by arable land beyond Llay Industrial Estate and Llay village. Nevertheless, commuting opportunities to high quality habitat, such as Llay Bog Site of Special Scientific Interest (SSSI), are still present and so the area still provides moderate to high quality habitat for foraging bats.

In conclusion, within the 2km radius surrounding the site, there are moderate to high quality foraging and commuting habitat for bats. The habitats also provide good connectivity that is unrestricted from barriers such as major roads. There are suburban and residential areas south and southeast from the proposed development site which provide additional foraging and roosting opportunities.

3.2 Building inspections

3.2.1 External inspection

For the purposes of the report, the buildings have been labelled Building 1 and Building 2 (see Appendix 1). Both buildings reside at the northeast aspect of the garden centre within Llay Industrial Estate.

Building 1 is single story with a pitched roof of asbestos sheeting (see Appendix 3 – Photographs, Photograph 1). The corrugated roof is generally well sealed with the exception of a small number of areas where it is slightly raised (Photograph 2), timber bargeboards surround the periphery of the building some of which are in good condition but have gaps between them and the external walls. These gaps are heavily blocked by cobwebs, suggesting they are not currently in use by bats (Photograph 3). The walls are constructed of concrete cladding with timber cladding to the south aspect. Some gaps in between the concrete

cladding are present however these are superficial and do not lead to any crevices that would be suitable for roosting bats.

Building 2 is constructed of similar materials to building 1 with a pitched roof primarily covered with corrugated asbestos (Photograph 5 & 6) that adjoins the garden centre. The portion of roof extending out to the west is pitched with felt roof tiles that do not contain any suitable PRFs (Photograph 7). The eaves of the roof have both timber box soffits and bargeboards, some of which present PRFs by way of gaps between them and the external wall (Photograph 8 & 9). The facade of the building is clad in concrete and is in generally good condition.

Building 3 there is an additional recently constructed toilet block on site with a concrete roof and rendered walls. This structure was assessed as having negligible potential to support roosting bats, furthermore it is due to be retained as part of the proposed plans and will not be discussed further.

No bat droppings or other field signs were found during the external building inspection.

3.2.2 Internal inspection

Building 1 is currently utilised as a storage and is not in regular use, it has a suspended ceiling and no loft space. The space had a floor to ceiling height of approximately 3.5m and has no natural light ingress. There are no PRF's associated with the internal space and no evidence of roosting activity was identified.

Building 2 is a functioning garden centre. The space is open from floor to ceiling with varying roof heights. The internal space is largely well-lit with large proportions of the walls and roof, constructed of glass. Some areas of the internal space are open to the above roof structure, whilst in other areas a suspended ceiling is present as with Building 1. There are no PRF's within the internal spaces and no evidence of roosting activity was found internally..

No bat droppings or other field signs were found during the internal building inspection.

3.3 Activity summary

Table 2 – Bat activity summary

DATE	SURVEY TYPE	SPECIES	NOTES
25/07/23	Emergence (Buildings 1 and 2)	Common and soprano pipistrelle	Common and soprano pipistrelles were most frequently recorded commuting from the northeast to the woodlands along the perimeter of the site.



4 EVALUATION AND RECOMMENDATIONS

4.1 Evaluation of results

The areas surrounding Carlton Garden Centre provide moderate to high quality habitat for bats. The presence of green space, including woodland and arable fields provide foraging opportunities and unrestricted dark corridors for commuting.

The wider area contains habitats that may support good numbers of invertebrate prey, and good commuting opportunities are provided through rivers and areas of arable land and woodland. Alternative roosting opportunities are provided by areas of woodland and large numbers of mature trees in addition to suburban areas and scattered farm buildings.

Buildings 1 and 2 present a number of PRFs which could be used by roosting bats such as gaps between bargeboards, fascia and the walls. However, no field signs of bat activity such as droppings, were identified, and the majority of PRFs are heavily cobwebbed suggesting no recent use by bats.

Two species of bat were recorded during the presence / absence survey: common pipistrelle and soprano pipistrelle. Activity was reasonably consistent with foraging and commuting activity primarily recorded from the northeast to the woodland bordering the northeast aspect of the site boundary.

Despite the favourable conditions, no bats were recorded roosting in the buildings on site.

4.2 Mitigation and compensation measures

As no bats were found to be using the buildings or structures on site to roost, no further survey work or compensation measures are required with regards to bats. However, any additional artificial lighting should be mindful of foraging habitat and commuting corridors used by bats. As such, no lighting should be directed onto the woodland adjacent to the northern perimeter of the site (see Appendix 5 – External Lighting Guidance for more details).



5 CONCLUSION

Carlton Garden Centre is situated in an area that provides good quality opportunities for foraging, roosting, and commuting. However, the site itself presents little opportunity for roosting bats with both Buildings 1 and 2 considered to have low roosting suitability. The site is bordered by woodland to the north, but with urban areas extending west and south of the site.

No field signs of bats such as dropping were found during inspections. Furthermore, no bats were recorded roosting in either building on site.

As no bats were found to be using the buildings or structures on site to roost, no further mitigation or compensation measures are required with regards to bats.



6 REFERENCES

Chartered Institute of Ecology and Environmental Management (2013). *Competencies for Species Survey: Bats*.

Ministry of Housing Communities and Local Government (2021). *National Planning Policy Framework*.

Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. (3rd ed.) The Bat Conservation Trust, London.

Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature.

Mitchell-Jones, A.J. & McLeish, A.P. (2004). *The Bat Workers Manual*. (3rd ed.) JNCC



APPENDICES

Appendix 1 – Site plan



Carlton Garden Centre, Wrexham

Site Plan

-  Survey Boundary
-  Development Boundary
-  Surveyors or infrared camera
-  Bat flight paths

Building 1

Building 2



Appendix 2 – Aerial photographs



Carlton Garden Centre, Wrexham

Close aerial photograph

 Building 1

 Building 2

L12 0PX



Carlton Garden Centre, Wrexham

Wide aerial photograph



Site location



Appendix 3 – Photographs

Building 1



Photograph 1 – northeast aspect of building 1 on site.



Photograph 2 – southeast aspect of building 1 showing lifted corrugated asbestos sheeting.



Photograph 3 – gap beneath timber barge board on northeast aspect.



Photograph 4 – south to north across internal space within building 1, false ceiling and no roof void.

Building 2



Photograph 5 – northwest aspect of building 2.



Photograph 6 – northeast aspect of building 2 with asbestos flat roof.



Photograph 7 – roof structure extending from west aspect of building 2.



Photograph 8 – gap beneath timber barge boards on northeast aspect of the building on site.



Photograph 9 –gap between timber soffit and concrete façade on south aspect of building on site.



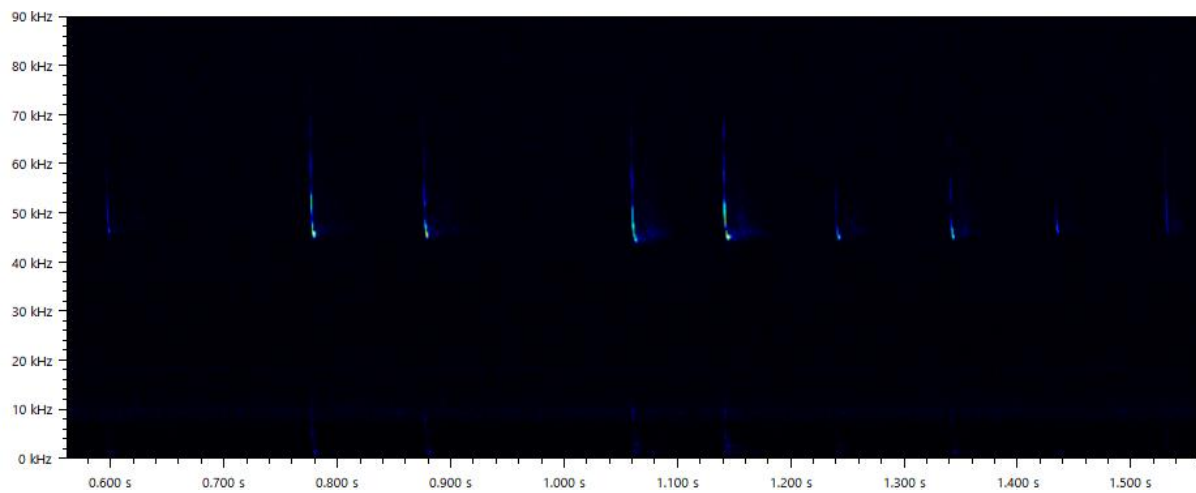
Photograph 10 – north to south across garden centre showing single lined pitched roof.



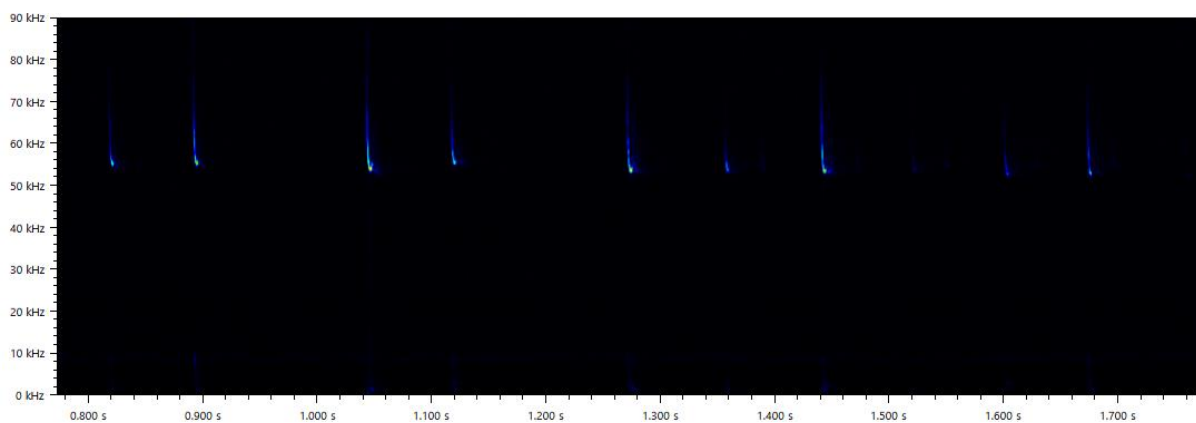
Photograph 11 – negligible WC structure on site due to be retained as part of proposed plans.



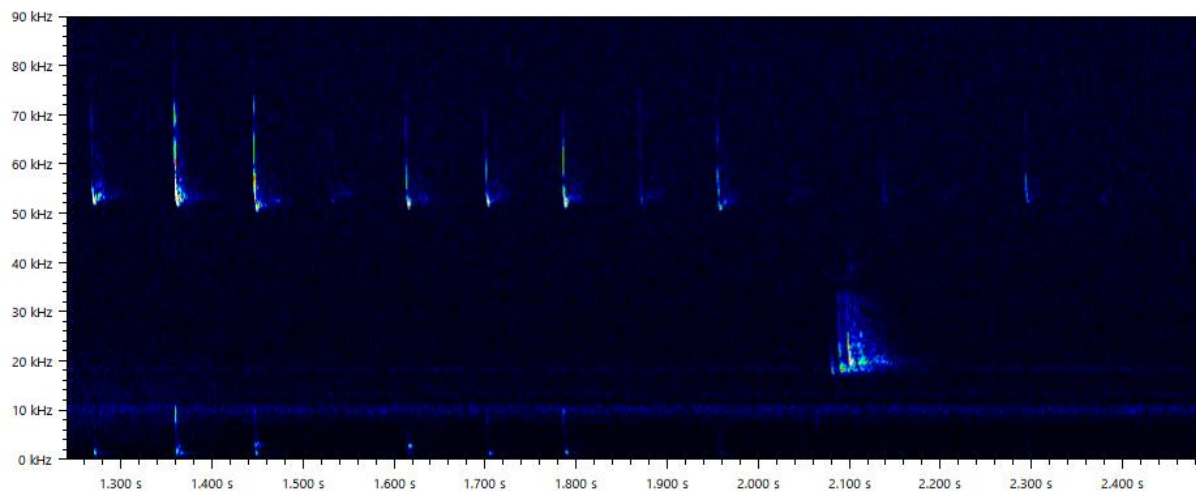
Appendix 4 – Results



Sonogram 1 – first common pipistrelle call heard and not seen at 21:26 on 25/07/23.



Sonogram 2 – first soprano pipistrelle heard and not seen at 21:42 on 25/07/23.



Sonogram 3 – Soprano pipistrelle recorded with Type C social call at 21:45 on 25/07/23.



Appendix 5 – External lighting guidance

Lighting scheme in relation to bats

The two most important features of street and security lighting with respect to bats are:

1. The UV component. Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.
2. Restriction of the area illuminated. Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:

Low

- Low pressure Sodium Lamps (SOX) emit a minimal UV component.
- High pressure Sodium Lamps (SON) emit a small UV component.
- White SON, though low in UV, emit more than regular SON.

High

- Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
- Mercury lamps (MBF) emit a high UV component.
- Tungsten Halogen, if unfiltered, emit a high UV component
- Compact Fluorescent (CFL), if unfiltered, emit a high UV component.
- Variable
- Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.
- Glass glazing and UV filtering lenses are recommended to reduce UV output.

Street lighting

- Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.
- Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.
- If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

Security and domestic external lighting

The above recommendations concerning UV output and direction apply. In addition:

- Lighting should illuminate only ground floor areas. Light should not leak upwards to illuminate first floor and higher levels.
- Lamps of greater than 2000 lumens (150 W) must not be used.
- Movement or similar sensors must be used. They must be carefully installed and aimed, to reduce the amount of time a light is on each night.
- Light must illuminate only the immediate area required, by using as sharp a downward angle as possible. Light must not be directed at or close to bat roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit.
- Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
- Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.



Appendix 6 – Statutory and planning context

STATUTORY AND PLANNING CONTEXT

Ecological assessments

Ecological assessments play an important part within the planning context; they include an initial assessment which highlights any specific interests of a site. From the initial site assessment, the surveyor assesses the suitability of habitats within the site to support protected species and makes recommendations for further survey works if required. The following paragraphs provide a brief interpretation of the legislative protection that is relevant to the findings of this report.

Habitats

Section 7 of the Environment Act (Wales) places a duty on Welsh Ministers to publish, review and revise lists of types of habitats and species in Wales which they consider are of key significance to sustain and improve biodiversity. The Welsh Ministers must also take all reasonable steps to maintain and enhance the habitats published in these lists, and encourage others to take such steps.

Bats

In the United Kingdom, all species of bat and their roosts are afforded full protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (known as the “Habitats Regulations”). The Wildlife and Countryside Act is the domestic implementation of the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) and was amended by the Countryside and Rights of Way Act 2000. This makes it an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture a bat
- Deliberately, intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection
- Deliberately, intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (even if the bat is not present at the time)
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead bat, any part of a bat or anything derived from a bat

Under UK law, a bat roost is *any structure or place which any wild [bat] ... uses for shelter or protection*. As bats often reuse the same roosts, legal opinion is that a roost is protected whether or not the bats are present at the time of the activity taking place.

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

If an activity is likely to result in any of the above offences, a licence can be applied for to derogate from the protection afforded. These licences must provide appropriate mitigation and are issued by NRW.

The Environment (Wales) Act 2016 also lists the following bat species as species of principle importance under Section 7:

- Barbastelle *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Brown long-eared bat *Plecotus auritus*
- Greater horseshoe *Rhinolophus ferrumequinum*
- Lesser horseshoe *Rhinolophus hipposideros*

Birds

All wild birds, their nests and young are protected throughout England and Wales by the Wildlife & Countryside Act 1981 (as amended). It is illegal to kill, injure or take any wild bird, or damage or destroy the nest or eggs of breeding birds. The legislation applies to all bird species, common and rare.

In addition to the protection afforded to all wild birds, more vulnerable species listed on Schedule 1 of the Act receive enhanced protection when breeding. Schedule 1 species, including their dependent young, are protected from intentional or reckless disturbance whilst at or near the nest, in addition to the protection afforded the more common species.

The Environment (Wales) Act 2016 offers further protection to the nests of some species that regularly re-use their nests, even when the nests are not in use.

The leading governmental and non-governmental conservation organisations in the UK have reviewed the population status of 244 UK bird species. "Birds of Conservation Concern 4: the Red List for Birds" is the most recent publication summarising their findings. Three lists, Red, Amber and Green, have been produced based on the most up-to-date evidence available and criteria include conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity, localised distribution and international importance. These lists are a valuable resource when considering conservation priorities.

Planning Policy

National planning guidance is issued in the form of Planning Policy Wales (PPW - 2018). The most relevant sections are included in Chapter 6: Distinctive and Natural Places. This chapter details the policies on issues such as the protection of trees, woodlands, species, and designated sites. The document is free and available to view online