



Preliminary Badger Survey

Land to the rear of 5 & 6 New House Lane, Pentre, Chirk, LL14 5AW

Guy Tyrrell

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Executive summary

Arbtech were commissioned by Guy Tyrrell of Heywood Homes to undertake a Preliminary Badger Survey at Land to the rear of 5 & 6 New House Lane, Pentre, Chirk, LL14 5AW. The survey was completed on 9th June 2021. The aim of the assessment was to determine the presence/likely-absence of badgers within the construction footprint and any activity at or near the site, and to determine the location of any setts present or near the construction footprint.

The development proposals are for the construction of two new residential dwellings with associated parking areas, gardens and landscaping. A planning application has been submitted to Wrexham County Borough Council. Planning permission has already been granted (P/2020/0279) with Wrexham County Borough Council. The purpose of this report is to discharge the following condition of planning:

“3. No part of the development shall take place until a scheme of site investigation and mitigation in respect of badgers has been submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be carried out in strict accordance with the approved scheme”

Recommendations - This is work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent.

Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements
No active badger setts were found on site or within a 30m radius of the proposed development area. No signs of badger foraging activity were found on site, however the site does contain suitable badger foraging habitat.	No impacts on any badger setts. However, a precautionary approach to work should be implemented.	None. However, the following recommendations are given in order to mitigate against potential harm to badgers during the development works. - Any trenches dug should either be covered at night or have a rough sawn plank placed in them to act as a ramp for any wildlife which may fall in. - Security lighting to be directed away from the undergrowth. - Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.	Planting fruit trees on the developed site will provide additional foraging resources for badgers.

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1.0 Introduction and Context

1.1 Background

Arbtech were commissioned by Guy Tyrrell of Heywood Homes to undertake a Preliminary Badger Survey at Land to the rear of 5 & 6 New House Lane, Pentre, Chirk, LL14 5AW. The survey was completed on 9th June 2021. The survey was completed in accordance with the latest guidelines from Natural England and DEFRA *Badgers: surveys and mitigation for development projects* (2015) and The Mammal Society *Surveying Badgers* (1989).

No previous ecological reports have been carried out at this site. Planning permission has previously been granted, with a condition of planning for badgers. The aim of this report is to discharge this condition of planning.

1.2 Site Context

The site is centred on National Grid Reference SJ 29004 40745 and has a total area of approximately 0.2ha. Briefly, the site currently consists of semi-improved grassland and scattered scrub and tall ruderal.

1.3 Scope of the report

The purpose of the badger survey is to search for evidence of badger use and locate extant badger setts. The survey will qualify and quantify, as far as is possible, badger activity and recommend an appropriate course of action if deemed necessary. To achieve this, the following steps have been taken:

- A desk study has been carried out.
- A field survey has been undertaken.
- An outline of likely impacts on any known sett(s) has been provided, based on current development proposals.
- Recommendations for further survey and assessment have been made, along with advice on Badger Mitigation Licensing if appropriate.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2, desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

The development proposals are for the construction of two new residential dwellings with associated parking areas, gardens and landscaping. Planning permission has already been granted (P/2020/0279) with Wrexham County Borough Council. The purpose of this report is to discharge the following condition of planning:

“3. No part of the development shall take place until a scheme of site investigation and mitigation in respect of badgers has been submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be carried out in strict accordance with the approved scheme”

2.0 Methodology

2.1 Desk Study methodology

The desk study included a 2km radius review of statutory and non-statutory designated sites, Biodiversity Action Plan (BAP) Priority Habitats and granted EPSML records for bats held on Magic database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

2.2 Site Survey methodology

The survey was undertaken by Mel Reid Consultant with Arbtech Consulting Ltd.

A walkover survey for badgers was conducted across the site. This includes a search for a number of characteristic field signs of badgers and most importantly a search for any badger setts on the site in all accessible areas beyond the site. In this case the site is taken to mean anything within the red-lined boundary (see Figure 1.1) and the sites immediate peripheries.

The field signs searched for were as follows:

Badger Setts

Most badger holes/tunnels also have a distinctive shape as well as size, being generally wider than they are tall, with a flattened bottom. This gives them a “D” shape (on its side). Tunnels excavated by foxes or rabbits tend to be rounder or oval in shape, and taller than they are broad. However, there is a lot of variability and in some cases holes are used by more than one species. The tunnels excavated by badgers are approximately 30cm in diameter, certainly no smaller than 25cm in diameter. Rabbit burrows, on the other-hand can be quite large at their entrances, soon narrow to a diameter of about 15cm. In Britain, the badger is well studied and, several categories of setts have been determined. Every badger family group (“clan”) has one main sett. These are occupied continuously and are used for breeding; they are usually large, well-established setts which have been excavated by several generations of badgers and are vital to survival of that clan. These setts can become very substantial over time: setts with a dozen to 20 or more entrances are fairly normal but can grow up to setts with 50-100 entrance holes. Below ground there are hundreds of metres of networked tunnels, created by the excavation of many tonnes of earth.

In addition to the main sett, most clans also have one or more additional secondary setts within their territories. These secondary setts fall into three categories - annexe setts, subsidiary setts, and outlier setts. Secondary setts are less important to the badgers than main setts, but they are useful nonetheless, especially if the main sett is disturbed. Disused setts may be taken over by rabbits or used by foxes; both of these species will also co-habit with badgers in occupied setts.

Badgers are extremely powerful diggers and the nature of excavated material at sett entrances is often diagnostic. Badgers are able to excavate much greater quantities of material than rabbits and foxes and the nature of the excavated material is often much coarser even containing rocks. Sometimes softer rocks are even physically marked by the badger claws. Spoil is excavated out backwards from the hole and fresh excavations are a sign of occupation. In clay soils the excavated material often contains badger hairs. On occasions the bones of badgers, that have presumably died underground, are found in the excavated material.

Bedding Material

Badgers use bedding material within their setts- various types of plant material. Characteristic field signs associated with bedding material include old bedding material cleaned out of the sett; bundles of fresh material stored by the sett (a very clear indication of occupation) trails of bedding material dropped on the way to the sett.

Tracks and badger paths

Badger footprints are diagnostic. They consist of a broad, kidney-shaped pad with five toes lined up in front. The prints of the front feet are larger than those of the back feet, and the imprints of the ends of the claws are further away from the toes of the front feet as the claws are much longer than those on the hind feet. Sometimes the fifth does not show up on a print but the orientation of the other four toes is still rather characteristic. A typical adult print is about 5.5 cm (+/- 1cm) wide and the hind paws are slightly narrower. On clear ground there will often be an overlap between the front and rear paw print – characteristic of the badger's walk.

Badger paths are usually fairly obvious and represent regularly walked paths by the badger to a point that vegetation is suppressed. Other field signs are often associated with these paths and at certain times of year it is possible to get an idea of if they have been recently used by signs such as freshly crushed plants or new footprints.

Scratching Posts

Badger setts are usually associated with scratching posts-typically tress but often also artificial structures such as fence posts, the bases are criss-crossed with badger claw marks.

Badger hairs

The hairs from the badger's backs and sides are very diagnostic and cannot be confused with other native mammals. They are white or whitish (although may be stained yellow in sandy areas), with a black band towards the tip. They are approximately 7 - 10 cm long. The black band measures 1 - 2 cm and the white tip is also approximately 1cm in length. The hairs can be straight or quite curly. The hairs are quite coarse unlike those of foxes or rabbits. They are oval in cross section and do not roll smoothly between finger and thumb of a surveyor. Hairs are often found trapped on wire fences where badgers cross between land parcels.

Signs of foraging

Badgers typically make “snuffle” marks where they are winning soil invertebrates. These are conical holes about 10 -14cm wide with spoil generally in all directions. They are often just off badger paths. It is sometimes hard to distinguish badger holes from larger rabbit scrapes. Badgers also excavate ant and wasp nest particularly in the late summer. They will also excavate rabbit holes in order to obtain young rabbits.

Dung and latrines

Badger droppings tend to look like those of dogs in size and shape, but they are more variable in appearance because of their catholic diet. When the diet is principally composed of earthworms the droppings are quite soft and muddy; while other foods leave more clearly identifiable traces such as the wing cases of beetles, the husks of grain, and the stones or pips of fruits and berries such as yew berries and blackberries – dung is often very purple when blackberries are in fruit.

Badger latrines are small pits (often referred to as dung pits), which in appearance are not unlike snuffle holes. Badger latrines are very diagnostic. No other native animal in Britain deposits its droppings in pits in the same manner as badgers. Felines dig pits for their droppings, but they cover them up after use, while badgers leave their droppings exposed. Foxes conversely site their droppings on prominent places such as tussocks, stumps etc.

2.3 Limitations – evaluation of the methodology

Badger Surveys can be conducted at any time of the year, but the best times are in the spring and early autumn/winter. This survey provides a ‘snap-shot’ of the assessed habitat and wildlife value of the site at the time of survey only and may require further survey effort to provide robust, scientifically valid evidence of badger status. “Shelf-life” – badger populations are notoriously dynamic and the normal “shelf-life” for a badger assessment is 6 months after which point refresher surveys may be necessary.

3.0 Results and Evaluation

3.1 Field Survey Results

The survey area consists of semi-improved grassland and scattered scrub with tall ruderal. The survey area is illustrated in the map in Appendix 1. The weather conditions recorded at the time of the survey are shown in Table 6.

Table 6: Weather conditions during the survey

Date: 09/06/2021	
Temperature	17°C
Relative Humidity	60%
Cloud Cover	40%
Wind	7mph
Rain	None

3.6 Survey area description and photos

The survey area consists of a small area of semi-improved grassland with scattered scrub and tall ruderal growth. The vegetation across the site is very dense, however, most of the site could be surveyed and therefore the density of the vegetation is not considered a major limitation to the survey effort. The site is surrounded by wooden and wire fencing. The adjacent habitats to the south and east of the site consists of improved grassland agricultural fields. These areas were also inspected from the site for evidence of badger activity. There is residential housing to the north of site which is separated by wooden fencing. The site and surrounding areas were inspected for any badger setts, as well as other evidence of badger including commuting tracks, latrines and feeding evidence. No setts or other evidence was found on or adjacent to site during the survey. A rabbit warren was located at the south-eastern site corner. Approximately eight holes were found, which were concluded too small and of the wrong dimensions to be considered a badger sett. Further, rabbit droppings were located adjacent to the one the holes provided further evidence that the holes are being used by rabbits. The site boundary fencing was inspected for evidence of mammal tracks, no obvious entry points were located across the fencing.



Site entrance, facing south (pictured above).



South-western site corner, facing south (pictured above).



Centre of site, facing east (pictured above).



Southern end of site, facing west (pictured above).



Southern end of site, facing east (pictured above).



Adjacent habitat to the east (pictured above).



Adjacent habitat to the west (pictured above).



Adjacent habitat to the west (pictured above).



Rabbit hole at south-eastern corner of site (pictured above).



Rabbit hole at south-eastern corner of site (pictured above).



Rabbit hole at south-eastern corner of site (pictured above).



Rabbit droppings located adjacent to rabbit hole (pictured above).

3.6 Evidence of badgers

No badger setts were located on site or within a 30m radius of the site's boundaries during the survey. No evidence of badger foraging activity was found on or off site during the survey.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

The European badger *Meles meles* is known to occur within 2km of the site. The species is protected by the Protection of Badgers Act, 1992. The Act makes it a criminal offence too:

- Wilfully, kill, injure, take or possess or cruelty ill-treat a badger, or attempt to do so;
- Interfere with a sett by damaging or destroying it;
- Obstruct access to, or any entrance of, a badger sett;
- Disturb a badger when occupying a sett.

Badger setts are protected if there are signs of badgers, even if they aren't occupying it at the time. The legislation to protect badgers arises from a desire to control persecution of the species rather than for nature conservation purposes- the native badger population is not under any threat as such.

4.2 Evaluation

Taking the desk-based assessment and site survey results into account, the following evaluation and recommendations for badgers are provided in Table 7 below.

Table 7: Evaluation of survey area

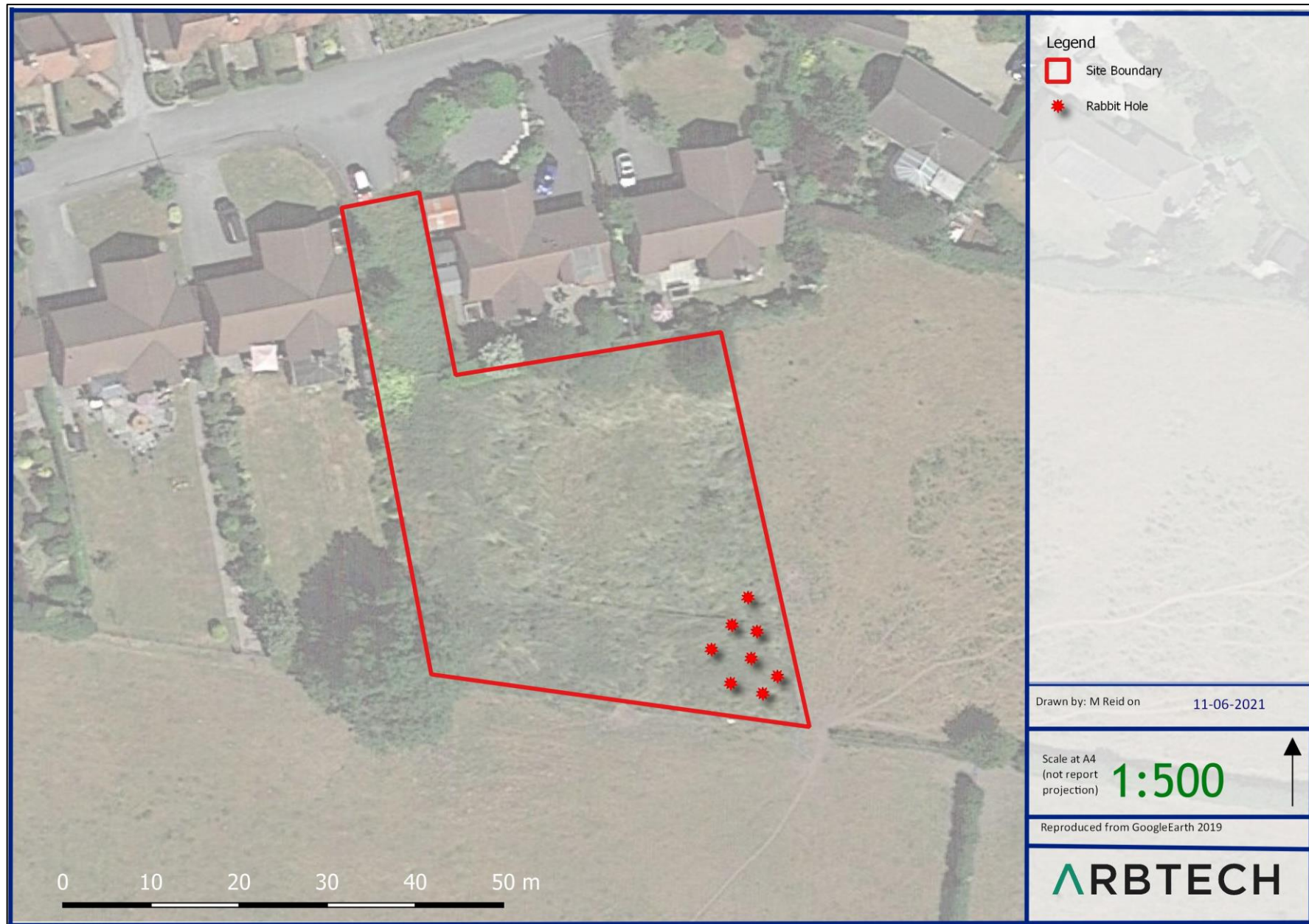
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Appendix 1: Survey Map



Appendix 2: Proposed Site Plan



Appendix 3: Legislation related to badgers

LEGAL PROTECTION

Badgers are protected under the ***Protection of Badgers Act 1992*** under this Act it is an offence to:

- Intentionally capture, kill or injure a badger
- Damage, destroy or block access to their setts
- Disturb badgers in setts
- Treat a badger cruelly
- Deliberately send or intentionally allow a dog into a sett
- Bait or dig for badgers

It is also an offence if you:

- Have or sell a badger, or offer a live badger for sale
- Have or possess a dead badger or parts of a badger (if you got it illegally)
- Mark or attach a marking device to a badger

Activities that can harm/affect badgers include:

- Destroying or damaging their setts
- Noise, additional lighting or vibration
- Pile driving
- Quarry blasting
- Lighting fires
- Using chemicals
- Excavation
- Ploughing and harvesting crops
- Tree felling and timber extraction
- construction or repair of flood defences or watercourses

Effect on development works:

Licences are issued by the Statutory Nature Conservation Organisation (Natural England, Natural Resources Wales, Scottish Natural Heritage) for development operations likely to result in an offence. In most cases it should be possible to avoid disturbing badgers and damaging or blocking access to their sett. However, if this is unavoidable an application for a licence to interfere with a badger sett must be obtained.

A licence is usually not required to:

- Work with hand tools or machinery above or below ground close to a sett
- Clear vegetation near setts, including felling small trees or shrubs, provided they are not uprooted and don't block access to the sett
- Clear ditches and watercourses using hand tools or machinery

The Statutory Nature Conservation Organisation will consider the existing level of disturbance around a sett when deciding if you need a licence.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CROW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is no possible to obtain a licence to translocate badgers.

Planning Policy Wales (Published: December 2018, Revised 2021)

Paragraph 6.4.3 of the document refers to Biodiversity and Ecological Networks and states:

The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Addressing the consequences of climate change should be a central part of any measures to conserve biodiversity and the resilience of ecosystems. Information contained in The State of Natural Resources Report (SoNaRR) (published by Natural Resources Wales and Area Statements should be taken into account. Development plan strategies, policies and individual development proposals must consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- Ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- Ensure statutorily designated sites are properly protected and managed;
- Safeguard protected species; and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil; and
- Secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)

6.4.5 Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. Planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

- a) Diversity between and within ecosystems;
- b) The connections between and within ecosystems;
- c) The scale of ecosystems;
- d) The condition of ecosystems (including their structure and functioning); and
- e) The adaptability of ecosystems.

6.4.6 In fulfilling this duty, planning authorities must have regard to:

- a) The list of habitats of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016;
- b) The State of Natural Resources Report (SoNaRR), published by NRW; and
- c) Any Area Statement that covers all or part of the area in which the authority exercises its functions.

6.4.7 Planning Authorities should also refer to up to date ecological survey information (where appropriate).

6.4.8 A proactive approach towards facilitating the delivery of biodiversity and resilience outcomes should be taken by all those participating in the planning process. In particular, planning authorities should demonstrate that they have sought to fulfil the duties and requirements of Section 6 of the Environment Act by taking all reasonable steps to maintain and enhance biodiversity in the exercise of their functions.

6.4.9 The broad framework for implementing the duty and building resilience through the planning system includes addressing:

- Diversity: to ensure mechanisms are in place to minimise further loss and that circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. This means development should provide a net benefit for biodiversity, and at the very least, with no significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity;
- Extent: to ensure mechanisms allow for the maintenance of existing assets and networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. This means that planning choices should incorporate measures which seek the creation and restoration of green networks and linkages between habitats and maintaining and enhancing other green infrastructure features and networks;
- Condition: Ecosystems need to be in a healthy condition to function effectively, to deliver a range of important ecosystem services. Planning decisions should not compromise the condition of ecosystems. By taking an integrated approach to development, for example, which considers both direct and wider impacts and benefits it should be possible to make a positive contribution. Planning for the long term management of retained habitats is key to maintaining condition through for example, the use of planning obligations;
- Connectivity: to take opportunities to develop functional habitat and ecological networks within and between ecosystems and across landscapes, building on existing connectivity and quality and encouraging habitat creation, restoration and appropriate management. The opportunities could include enlarging habitat areas, developing buffers around designated sites or other biodiversity assets or corridors, including transport and river corridors, and the creation of 'stepping stones' which will strengthen the ability of habitats and ecological networks to adapt to change, including climate change; and
- Adaptability to change: primarily in the form of climate change, for both species (diversity) and ecosystems requires action to protect the extent, condition and connectivity of habitats, features and ecological networks. Development plans, planning proposals and applications which build on protecting designated sites and securing and enhancing green infrastructure will be key ways of addressing the attributes of ecosystems resilience identified in the Environment Act as well as facilitating social and economic resilience aspirations of the Well-being of Future Generations Act.

Environment (Wales) Act 2016 and the Biodiversity Duty

The Environment (Wales) Act introduces a new biodiversity duty, which highlights biodiversity as an essential component of ecosystem resilience. This new duty replaces the biodiversity duty in the Natural Environment and Rural Communities Act 2006 (referred to as the NERC Act). Part 1 of the Act deals with Sustainable management of natural resources including Biodiversity and Resilience of Ecosystems Duty. The Environment Act enhances the current NERC Act duty to require all public authorities, when carrying out their functions in Wales, to 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". As under the NERC Act the new duty will apply to a range of public authorities such as the Welsh Ministers, local authorities, public bodies and statutory undertakers. 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.