



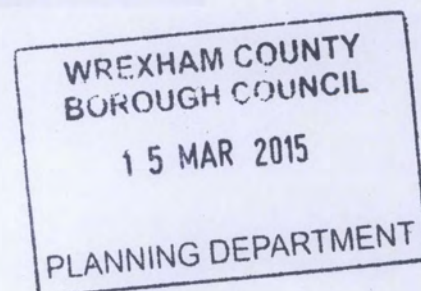
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**Ecological Assessment
for Fennant Road, Ponciau, Wrexham**

Presented to Francis McGuire

March 2015



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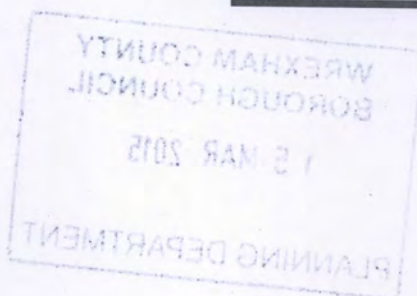
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Executive Summary

Proposed Works

The proposed development at Fennant Road, Ponciau includes:

- Erection of a utility/day room
- Installation of a mobile home and touring caravan
- Construction of foul water drain

Method of Study

The brief was to assess the existing ecological value of the site, identify potential ecological issues associated with the development and make recommendations for general mitigation, compensation, enhancement and further surveys, as appropriate. A desk study and an Extended Phase-1 habitat survey were carried out.

Baseline Ecological Conditions

The site supports ephemeral/short perennial vegetation surrounded by a conifer hedge (Figure 1). There are scattered piles of stones, building material and wood around the edges of the site. The site is situated on the edge of the urban area of Ponciau and backs onto permanent grassland. There are two small fields to the immediate west of the site in the same landownership.

Potential Ecological Issues

No evidence of protected and/or notable species was recorded on site and no notable habitats were recorded. A walkover of land within 500 m of the study site using public footpaths and other publicly accessible areas recorded no evidence of protected/notable species. Two waterbodies were assessed to determine their potential as great crested newt breeding habitat, and both were recorded as unlikely to support successful breeding populations.

Mitigation Recommendations

- Although it is considered unlikely that great crested newts would use the site, it is acknowledged that there is a large population of great crested newts in the Johnstown area (Johnstown Newt Sites SAC). In order to address the unlikely event that great crested newts might occur on site, Reasonable Avoidance Measures (RAMs) are proposed including supervision of the dismantling of piles of stones etc. by a suitably qualified, experienced and competent individual.
- Several badger records were received from COFNOD. No evidence of badger presence on or adjacent to the site was recorded during the survey, but their local presence raises the possibility that new sett(s) might be dug in the time between the survey taking place and the start of works. In order to address this unlikely event, a pre-construction survey for badger setts is proposed

Key Enhancement Recommendations

- None identified

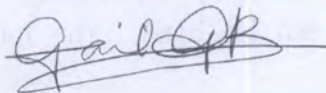
Further Survey Recommendations

None.

I confirm that the information provided in this document is truthful and accurate at the time of completion.

Name of ecologist: Gail Quartly-Bishop

Signature of ecologist:



Date: 16/03/15

1.0 Introduction

This report has been prepared by Biocensus Ltd for Francis McGuire. It provides the details of an ecological assessment of land at Fennant Road, Ponciau, Wrexham.

The site is located to the east of the village of Ponciau and backs onto farmland (see Appendix 1).

The brief was to assess the existing ecological value of the site, to identify potential ecological issues (constraints and opportunities) associated with the development works and make recommendations for general mitigation, compensation, enhancement and further surveys, as appropriate.

To meet the requirements of the brief, a desk study and an Extended Phase-1 habitat survey of the site were carried out by a suitably qualified and experienced ecologist.

2.0 Site Description

The site boundary is shown in Appendix 1.

The site comprises a small fenced enclosure located to the east of the village of Ponciau. It is bounded by farmland to the west and north, a road to the south and existing dwellings to the east.

3.0 Methodology

3.1 Baseline Ecological Conditions

The ecological baseline was established through a desk study and site survey as outlined below.

3.2 Desk Study

COFNOD, the local environmental records centre for North Wales was requested to provide locations and details of ecological information for the site and to a surrounding distance of 1 km (2 km for bats). The following information was requested:

- designated nature conservation sites (statutory and non-statutory)
- records of protected and/or notable species.

The following websites were also reviewed:

- www.magic.gov.uk (the Multi-Agency Geographic Information website for maps of statutory designated nature conservation sites).
- <http://planningguidance.planningportal.gov.uk/>
- <http://jncc.defra.gov.uk/page-1376> (summary of nature conservation legislation)
- http://www.wrexham.gov.uk/english/planning_portal/biodiversity/natural_environment.htm
- www.ukbap.org.uk (archived 2012)
- http://www.wrexham.gov.uk/english/planning_portal/biodiversity/wxmbap.htm
- www.google.com and www.bing.com for aerial photography

3.3 Site Survey

3.3.1 Survey Area

The survey location and area is shown in Appendix 1.

3.3.2 Survey Methodology

An Extended Phase-1 habitat survey of the site was carried out following the standard methodology (IEA, 1995). This involved systematically walking over the site and classifying each parcel of land according to the JNCC phase one survey method (JNCC, 2003). Notes were made on the structure and composition of habitats and a botanical species list was collated. A search for any invasive non-native species such as Japanese knotweed (*Fallopia japonica*) was also conducted.

Target notes were used to record any habitats or features of particular interest and any sightings, signs or evidence of protected or notable fauna or any potential habitats suitable for such species.

Following the Extended Phase 1 habitat survey, land within a 500 m radius of the site was surveyed to locate any waterbodies potentially suitable for great crested newt (*Triturus cristatus*) breeding. As full access was not available, public footpaths and publicly accessible land was used to view the area insofar as possible. Any waterbodies discovered were assessed using the Habitat Suitability Index (HSI) method described by Oldham et al. (2000) and updated by ARG UK (2010). This involves assessment of each waterbody against the following ten suitability indices:

- location of the pond within the context of Britain;
- total surface area of the pond;
- pond drying (based on both local knowledge and field evidence);
- water quality;

- percentage perimeter shaded;
- presence or absence of waterfowl;
- presence or absence of fish;
- number of waterbodies situated within 1 km;
- suitability of terrestrial habitat;
- percentage macrophyte cover.

The HSI is calculated as $1/10$ square root of the product of the suitability indices (expressed as values between 0 and 1, with the lowest value used being 0.01 to prevent the product being zero). The resulting equation will produce a single number between 0 and 1 to indicate the likelihood that the water body could support a population of great crested newts. The lower the Index, the less likely the location is to support a breeding population.

3.3.3 Survey Details

Gail Quartly-Bishop BSc, MSc, CEnv MCIEEM carried out the Extended Phase-1 habitat survey and HSI assessment on 23rd February 2015.

3.3.4 Survey Limitations

Full access to the project site was available. Access to view the adjacent small fields to the west was also available as they lie within the same landownership. Access to other land surrounding the project site was not arranged for this study, therefore all observations of land within a 500 m radius of the site were conducted from public highways and footpaths.

The survey was undertaken at the end of February. At this time plants are difficult to identify and many protected and/or notable animal species can be relatively inactive. However, given that the survey was undertaken by an experienced ecologist and in light of the habitats present, it is considered that the survey data obtained is adequate for planning purposes.

4.0 Baseline Ecological Conditions

4.1 Desk Study

4.1.1 Designated Nature Conservation Sites

a) *Statutory sites*

There is one statutory designated site within 2 km of the study site, which is Stryt Las A'r Hafod SSSI. This is also designated as a SAC (Johnstown Newt Sites SAC). Stryt las A'r Hafod SSSI comprises two component sites, the first of which is Bonc yr Hafod Country Park, which lies approximately 775 m east of the proposed development site. The second section is Stryt Las A'r Hafod (*sensu stricto*) which is 600 m south of the proposed development site. Together, these two sites support a nationally important assemblage of amphibians comprising common frog, common toad, smooth newt, palmate newt and great crested newt. The great crested newt population is one of the largest known in the UK and is of international significance. The SSSI has been designated as a SAC in recognition of the significance of this population.

The proposed development site lies within 2 km of Stryt Las A'r Hafod SSSI and is therefore within the SSSI Impact Risk Zone. However, given that the project does not involve pig or poultry installations, incineration or water discharges other than to the mains, no potential pathways of impact on the SSSI relating to air and water have been identified. It is unlikely that individual great crested newts breeding on the SSSI would be encountered on the proposed development site as they are more than 500 m apart. However, since the land between the site and the SSSI is farmland, there is scope for any great crested newts (if present) to be part of the overall metapopulation of the area which includes the SSSI and further consideration is therefore required.

b) *Non-statutory sites*

There is one non-statutory designated site within 1 km of the proposed development site. This is W222 Crematorium Wildlife Site, which has been identified and adopted by Wrexham Council. It lies 800 m to the north and is designated for its habitats and flora, including herb-rich semi-improved neutral grassland, ponds, scattered broadleaved trees and broadleaved woodland. The proposed development site is separated from the Wildlife Site by farmland and there are no obvious pathways of impact by which the proposed scheme could affect habitats or flora on the Wildlife Site.

4.1.2 Protected/ notable Flora

One record of dittander (*Lepidium latifolium*) was received from COFNOD. This plant was recorded at Bonc-yr-Hafod Country Park in 2011. Native populations are Red Data Book 2 (Nationally Rare) but the plant was formerly cultivated as a horseradish-like flavouring and is widely naturalised beyond its native range. Native populations are coastal and associated with saltmarshes and sea walls. Naturalised populations can be found in disturbed areas e.g. waste ground, dockland, roadsides. The proposed development site is inland and does not offer the brackish habitats used by native populations. It is possible that this species could be present on site, but since the site is well beyond the native range of this species, presence would not be significant from a nature conservation perspective.

4.1.3 Protected/ notable Fauna

Great crested newt

The great crested newt is a European Protected Species protected under the Habitats Regulations and Wildlife and Countryside Act. We received 87 records of this species from COFNOD, mostly from Johnstown Newt Sites SAC, which is 600 m away from the proposed development site at its nearest point. The nearest record to the proposed development site is approximately 450 m away on land behind Ponciau fire station and is dated 1984. During our survey visit no pond was visible in this area from the nearby public footpath.

Great crested newts are most likely to breed in well-vegetated ponds with good water quality. The presence of fish is unfavourable and they are typically absent from shaded woodland ponds with little vegetation. Terrestrial habitats include woodland, hedgerows and permanent grassland. Open habitats such as ephemeral/ short perennial vegetation are generally considered unfavourable as they offer no cover for foraging newts.

Breeding birds

All nesting wild birds are protected under the Wildlife and Countryside Act. A large number of species are listed under Section 41 of the NERC Act¹ as species of principal importance for nature conservation, as they are still relatively common but are declining rapidly.

¹ Natural Environment and Rural Communities Act 2006

COFNOD provided records of the following species:

- Redwing (*Turdus iliacus*)
- Song thrush (*Turdus philomelos*)
- Mistle thrush (*Turdus viscivorus*)
- Dunnock (*Prunella modularis*)
- Bullfinch (*Pyrrhula pyrrhula*)
- Hawfinch (*Coccothraustes coccothraustes*)
- Common crossbill (*Loxia curvirostrata*)

These are birds of parks, gardens, woodland, hedges and scrub. Sites offering an abundance of winter-available berries such as hawthorn or rowan are particularly favourable.

- House sparrow (*Passer domesticus*)
- Starling (*Sturnus vulgaris*)

These species are typically associated with human habitation, often nest in or on buildings and are frequently seen in gardens.

Hedgehog

The hedgehog (*Erinaceus europaeus*) is listed under Section 41 of the NERC Act as a species of principal importance for nature conservation. COFNOD provided five records for the Johnstown area. Hedgehogs require dense scrub and brambles/hedges for cover and feed on slugs and other invertebrates, so diverse vegetation structure is beneficial for this species.

Bats

All British bats are European Protected Species and are fully protected under the Habitats Regulations and Wildlife and Countryside Act. Some species are also listed under Section 41 of the NERC Act.

COFNOD provided a total of 17 bat records, including the following bat species:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brandt's bat (*Myotis brandtii*)
- Daubenton's bat (*Myotis daubentonii*)
- Natterer's bat (*Myotis nattereri*)
- Noctule (*Nyctalus noctula*)

- Brown long-eared bat (*Plecotus auritus*)

Bats require secluded spaces for roosting such as holes and crevices in trees, buildings and structures. Structurally diverse vegetation and habitats with an abundance of flying insects are optimal for bat foraging. Most British bats are associated with woodland and/or mature broadleaved trees, but some species such as pipistrelles commonly make use of urban habitats.

Badger

The badger (*Meles meles*) is fully protected under the Protection of Badgers Act. Five records were received from COFNOD.

Badger setts (burrows) are usually in woodland or on hedgebanks. Badgers eat a wide variety of foods and will forage in woodland, grassland, arable fields and many other habitats.

4.2 Site Survey

4.2.1 Habitat Types

The following Phase-1 habitat types were recorded on or adjacent to the site:

- Broadleaved trees
- Conifer hedge
- Poor semi-improved grassland
- Ephemeral/short perennial
- Building (dog shed)
- Fence

4.2.2 Habitat & Species Descriptions

Broadleaved trees

The survey recorded a mature elm on the southern boundary of the adjacent land to the west (TN15, Appendix 2) and small mature Acer species, cherry and unknown broadleaved tree on the boundary of the adjacent land to the east. No obvious potential bat roosting sites were noted during the survey.

Conifer hedge

This is a 3 m tall cypress hedge with individual cypress trees of about 6 cm diameter (TN1, Appendix 2). Nesting birds are likely to use this hedge.

Poor semi-improved grassland

This comprises several areas dominated by coarse grasses with abundant creeping buttercup and tall ruderals (TN9, TN12 and TN18, Appendix 2). This grassland represents potential great crested newt foraging habitat.

Ephemeral/short perennial

This is essentially mossy gravel with patches of grass, teasel, dandelions, docks, ragworts etc. Around the edges of this area there are scattered piles of stone, logs and building materials, with potential as great crested newt refugia.

Building (dog shed)

Small prefab shed with attached run bearing 'Beware of the dog' sign.

Fence

Fences on site include post and wire, typical garden wooden paling.

5.0 Ecological Evaluation

5.1 Designated Nature Conservation Sites

Stryt Las A'r Hafod SSSI/ Johnstown Newt Sites SAC is of international importance for nature conservation as indicated by its designation

W222 Crematorium Wildlife Site is evaluated as being of at least district level importance as it has been designated at district level.

5.2 Habitats

No habitats listed in the UK or local BAP² were recorded during the survey. All habitats recorded on the site are considered of less than local value as they are ubiquitous in the urban environment.

² Biodiversity Action Plan. Relevant Local BAP for this study area is Wrexham BAP. UK BAP refers to species or habitats listed in section 41 of the NERC Act 2004 as a priority for nature conservation (this list was developed from the UKBAP (2000 - 2012)).

5.3 Protected/ notable Species

No evidence of protected or notable species was recorded on or adjacent to the site. Potential habitat for protected and/or notable species is dealt with below under Main Potential Ecological Issues.

5.4 Main Potential Ecological Issues

5.4.1 *Great crested newt*

There is no aquatic habitat and therefore no potential great crested newt breeding habitat on site. However, there are potential refuges for great crested newts around the edges of the site in the form of piles of stone etc. There is potential foraging habitat immediately adjacent to (but not on) the site.

The survey found no obviously suitable great crested newt breeding habitat within 500 m of the site. Two waterbodies were assessed for their potential suitability for great crested newts: one carp pond (Pond 1) and one ephemeral shallow pond (Pond 2) (see Appendix 4 for details). The carp pond was assessed as likely to offer poor breeding habitat. The ephemeral pond had average potential according to the standard calculations, but is in fact very unlikely to support successful breeding because it is highly unlikely to persist long enough for complete development of the young newts.

Taking the above into account, it seems reasonably unlikely albeit possible that great crested newts could use potential refuges around the edges of the site.

5.4.2 *Breeding birds*

There is a hawthorn hedge adjacent to the southern boundary of the site along Fennant Road and there are a few hawthorns on the northern boundary of the land adjacent to the west. Habitats on the site itself (conifer hedge, ephemeral/ short perennial) provide generally unfavourable foraging habitat, although the conifer hedge could be used by roosting or nesting birds.

5.4.3 *Hedgehog*

The conifer hedge and some of the wood piles around the edge of the site offer potential cover for hedgehogs but the open nature of the ephemeral/short perennial vegetation makes it unfavourable for foraging. It remains possible that hedgehogs could find refuge in the hedge and/or wood piles on site.

5.4.4 Bats

There is no obvious bat roosting potential in the conifer hedge or the dog shed on site. The conifer hedge provides good shelter from the wind and the site could potentially be used by foraging bats. However it is unlikely to form a significant part of the foraging range of any individual or group of bats because of its small size and likely low numbers and diversity of prey species owing to the types of habitat present. The bats most likely to use the site are pipistrelle species, as these are commonly found in urban areas.

5.4.5 Badger

The hedgebanks on site provide potential sett habitat but the site has very little foraging potential because it is gravelled. The immediate area around the site includes permanent grassland which provides potential badger foraging habitat.

No evidence of badger activity was recorded on the site during the survey and none was noted within a 500 m radius. It is possible that badgers could make a sett on site in future, should they be present in the local area.

6.0 Recommendations

6.1 Introduction

These recommendations aim to ensure that in the unlikely event of a protected species occurring on site, accidental harm will be avoided and a suitable strategy can be developed by the supervising ecologist.

6.2 Mitigation Recommendations

6.2.1 Great crested newt

The project will involve removal of potential great crested newt refuges comprising piles of wood, stones etc. around the edges of the site. The conifer hedge which also provides potential refuges is to be retained.

If great crested newts were found to be present on site and work were to proceed without any precautions, the work could risk damage to newt refuges and/or harm to individual newts, either of which would contravene the current legislation.

The site is over 500 m from known breeding habitat occupied by this species and waterbodies within this radius appear to offer poor breeding habitat. Furthermore, the site offers generally poor foraging habitat for great crested newts.

Under normal circumstances it would be considered very unlikely that great crested newts would occur on the site and no precautions would be recommended. However, given the very large size of the population of great crested newts in the nearby Johnstown area, it is considered wise to apply Reasonable Avoidance Measures (RAMs) so that in the unlikely event that great crested newt(s) are present on site, they will be discovered during supervision and appropriate measures can then be taken to secure their protection.

Reasonable Avoidance Measures:

Removal of piles of wood, stones etc. identified during the survey as potential refuges for great crested newts should take place as follows:

- During the period March to October when great crested newts are usually active and not in hibernation.
- Under the supervision of a suitably qualified, experienced and competent person holding a licence to survey for great crested newts in Wales.
- Piles will be dismantled by hand and the resulting material removed from site.
- If a great crested newt is found, then dismantling of piles will stop immediately and will resume only when an appropriate scheme of protection for great crested newts has been agreed (this may require a licence from Natural Resources Wales).
- If any common amphibians are found (e.g. common frog) they will be removed by hand by the competent person and taken to a place of safety on the western edge of the two small fields adjacent to the site and in the same land ownership.

6.2.2 Breeding birds

The conifer hedge has potential to support nesting birds but it is to be retained unchanged so there appears to be virtually no risk of any damage to active nests during execution of the project. No precautions are therefore considered necessary.

6.2.3 Hedgehog

The conifer hedge has potential to act as a refuge for hedgehog(s) but it is to be retained unchanged. It is relatively unlikely that hedgehogs would use the piles of stones on site as the apertures available appear too small. Nevertheless, the piles are to be dismantled by hand under the supervision of a competent person so in the unlikely event that a hedgehog is present, the risk of harm is very low.

6.2.4 Bats

The conifer hedge is to be retained unchanged and the loss of ephemeral/short perennial vegetation is considered trivial in the context of bat foraging opportunities in the local area. No precautions are therefore considered necessary.

6.2.5 Badger

The survey recorded no evidence of badgers but, if they are present in the area then there is potential for a new sett to be excavated on or adjacent to the site. This could risk inadvertent damage to the sett and/or harm to individual badgers, either of which would contravene the current legislation.

A suitably qualified, experienced and competent person should carry out a pre-construction survey for badger setts, covering the site and accessible areas within approximately 30 m of the site boundary. This should take place as near to the start of works as possible in order to provide contemporary information. If the survey records no evidence of badger setts then the works will proceed as planned. In the unlikely event that a sett is found then precautions would need to be taken prior to the start of works to protect the sett and resident badgers (which may require a licence from Natural Resources Wales).

6.3 Compensation and Enhancement Recommendations

None.

6.4 Further Survey Recommendations

None.

References

ARG UK (2010) *Advice Note 5: Great crested newt Habitat Suitability Index*.

CIEEM (2015) *Guidelines for Ecological Report Writing*.

Joint Nature Conservation Committee (2007) *Handbook for Phase 1 habitat survey – a technique for environmental audit*. Revised Reprint 2007. JNCC, Peterborough.

Oldham et al (2000) Evaluating the suitability of habitat for the great crested newt *Triturus cristatus*. *Herpetological Journal* vol. 10, pp 143 – 155.

Stace. C (1997). *Field flora of the British Isles*. Cambridge University Press, Cambridge.

7.0 Appendices

The overall hedge is to be retained, maintained and the loss of opportunities for natural vegetation is considered to be in the context of bat foraging opportunities in the local area. No precautionary measures are considered necessary.

The survey recorded no evidence of badger setts. If they are present in the area then there is potential for a new sett to be established on or adjacent to the site. This could result in potential damage to the sett and harm to individual badgers, either of which would contravene the current legislation.

A suitably qualified, experienced and competent person should carry out a topographical survey for badger setts, covering the site and accessible areas within approximately 50m of the site boundary. This should take place as part of the start of works as possible in order to provide contemporary information. If the survey records no evidence of badger setts then the works will proceed as planned. In the unlikely event that a sett is found then precautions would need to be taken prior to the start of works to protect the sett and resident badgers (which may require a licence from Natural Resources Wales).

6.3 Collaboration and Enhancement Recommendations

None

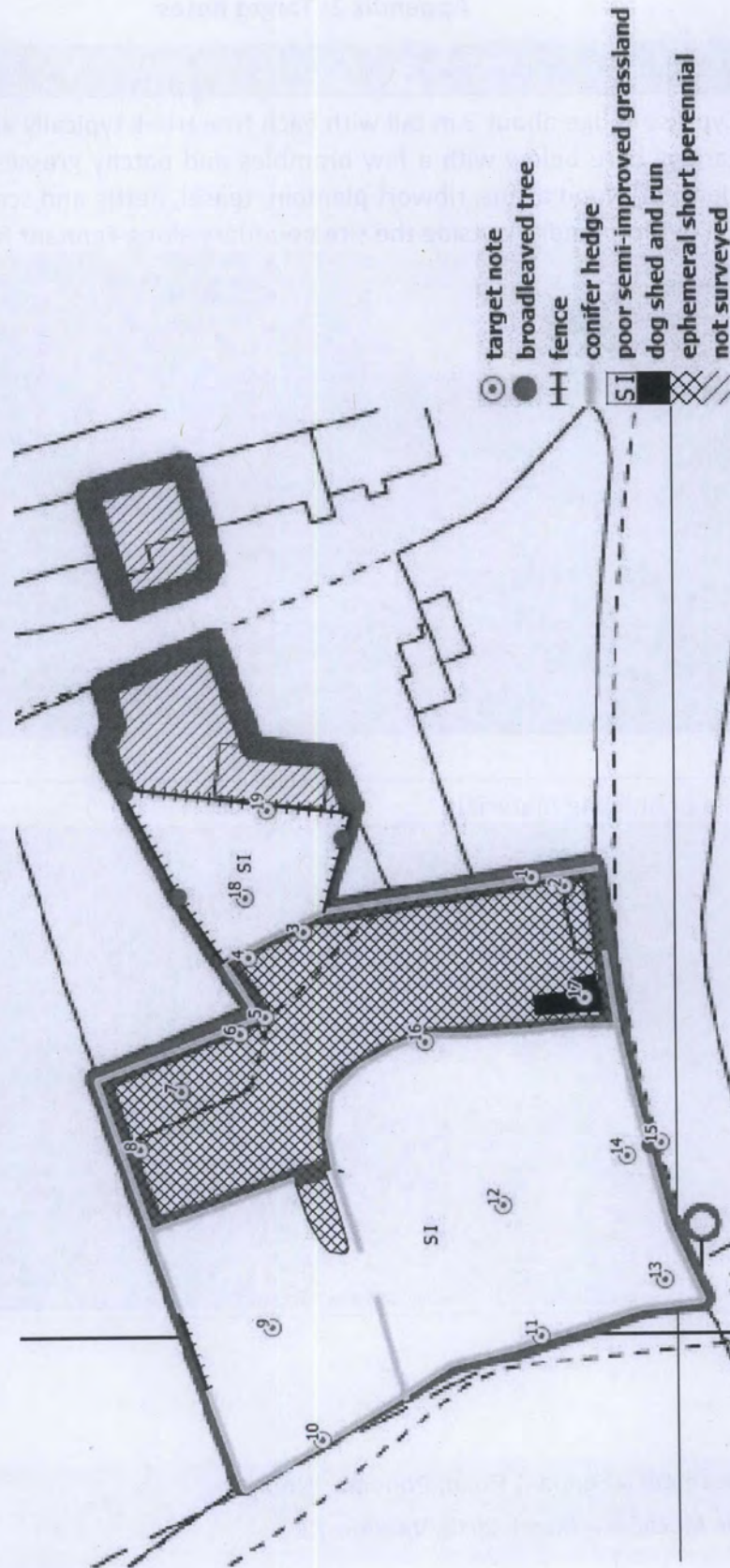
6.4 Further Survey Recommendations

None

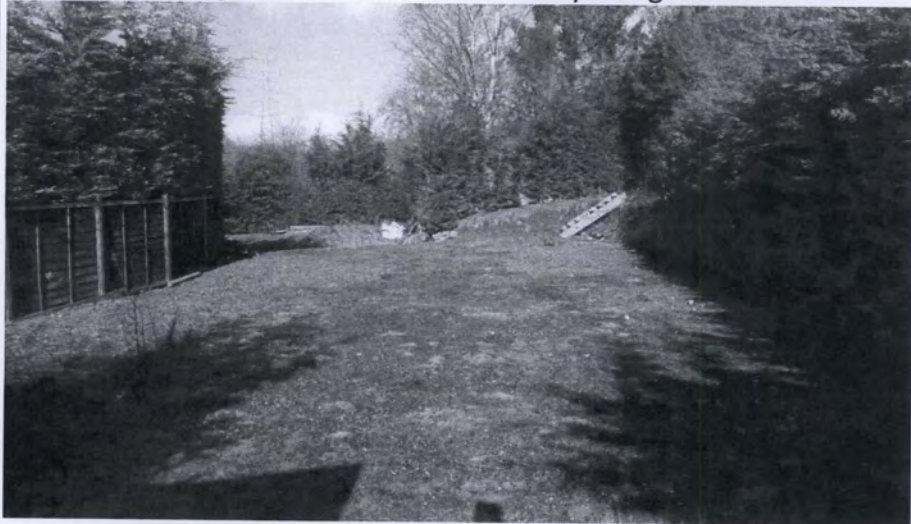
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- ARG VII (2010) Advice Note 5: Great Crested Newt Habitat Suitability Index
- CIEM (2012) Guidelines for Ecological Report Writing
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- Stace, C. (1997) *Vegetation of the British Isles*. Cambridge University Press, Cambridge

Appendix 1: Habitat Map



Appendix 2: Target notes

Target note	Description and species list
1	Cypress hedge about 3 m tall with each tree trunk typically about 6 cm in diameter. Largely bare below with a few brambles and patchy grasses, common chickweed, cleavers, wood avens, ribwort plantain, teasel, nettle and scattered docks. There is a hawthorn hedge outside the site boundary along Fennant Road. 
2	Pile of building materials. 

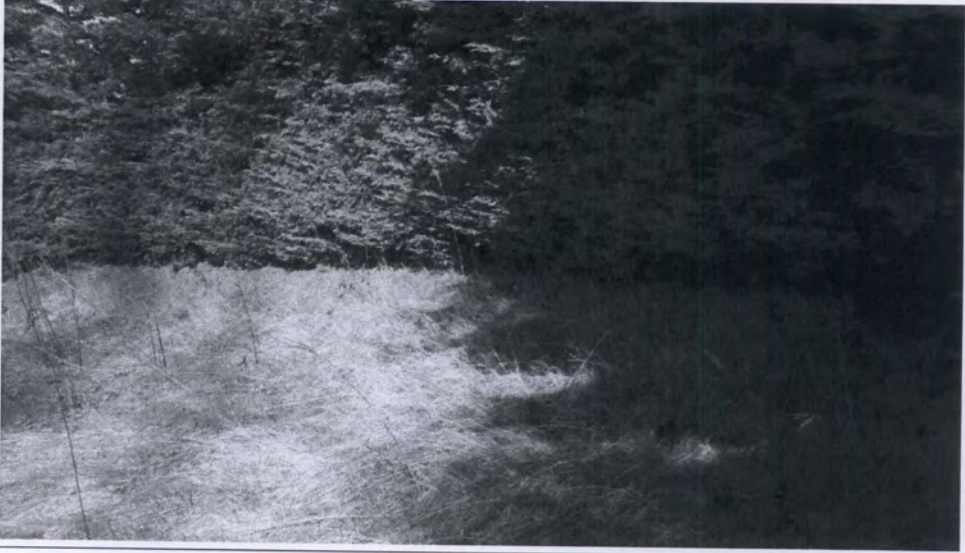
Target note	Description and species list
3	Small pile of stones in bank up to cypress hedge. 
4	Wooden ladder and building materials on edge of bank. 

Target note	Description and species list
5	Small pile of stones adjacent to hedge. 

Target note	Description and species list
6	Pile of stones and wooden fencing panels. 
7	Grassy patch with Yorkshire fog and bag containing building materials. 
8	Pile of wood.

Target note	Description and species list
9	Poor semi-improved grassland with Yorkshire fog, docks, ribwort plantain, ragwort, couch grass, spear thistle, creeping buttercup and teasel. 
10	Soil bank to hedge with nettles, docks and winter heliotrope.
11	Abundant winter heliotrope under hedge.
12	Poor semi-improved grassland with couch, docks, creeping buttercup, ragwort, spear thistle, Yorkshire fog, meadowgrass, willowherb, cocksfoot, ribwort plantain and one plant of black knapweed. 

Target note	Description and species list
13	Pile of soil containing scattered bricks. Starting to revegetate with species similar to TN12. Plus one purple crocus. 
14	Pile of broken concrete blocks. 

Target note	Description and species list
15	Mature elm with evidence of previous tree works and regrowth. No obvious bat roosting features. 
16	Narrow bank approximately 1 m wide dominated by fine-leaved grasses, mostly common bent with fescue and docks. 

Target note	Description and species list
17	Pre-fabricated wooden shed with attached run. Between the dog shed and the hedge there are planks of wood and large pieces of stone. 
18	Poor semi-improved grassland with creeping buttercup, perennial ryegrass, docks and Yorkshire fog - similar to TN12 and TN9. There are snowdrops along the eastern boundary. 

Target note	Description and species list
19	Boundary fence has a few mature trees - cherry in the northern corner, a maple on the northern boundary (next to a low bush of cherry laurel) and an unknown broadleaved tree on the southern boundary which has been heavily cut back. 

Appendix 3: Legislation and Policy Context

Designated Sites

Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are sites of international level importance for nature conservation. SPAs are designated for their bird populations, whilst SACs can be designated for habitats or important species. Together, these two designations are often referred to as "European sites" or "Natura 2000 sites". They are designated by Natural England and receive strict protection under the Habitats Regulations. Ramsar sites are also of international importance for nature conservation, selected for their wetland habitats or species. Technically, Ramsar sites are not protected under the Habitats Regulations, as they were not included in the EU Habitats Directive from which the Regulations derive. However, in practice, they are treated in the same way as SACs and SPAs³, and the designations often overlap.

Sites of Special Scientific Interest (SSSI) are sites of national level importance for nature conservation. They are designated by Natural England and receive protection under the Wildlife and Countryside Act.

Local Wildlife Sites are sites of county level importance for nature conservation. They are designated by the local authority, usually in partnership with the local wildlife trust, and are protected through Local Plan or Local Development Framework policies.

The presence of a designated site on or close to an application site does not preclude successful development, but it does mean that careful consideration is usually needed to ensure that significant adverse effects on the important nature conservation features are avoided. In cases involving sites of international importance for nature conservation, a Habitats Regulations Assessment may be needed to demonstrate that the project will comply with current legislation.

UKBAP and the NERC Act

The UK Biodiversity Action Plan (UKBAP) period ended in 2012. The purpose of the BAP was to identify habitats and species of conservation concern at a UK level and, where possible, to identify measures which could be taken to conserve these habitats and species, hence conserving biodiversity as a whole. The UKBAP was complemented by many local BAPs (e.g. Wrexham BAP) which provided additional information and actions for species and habitats of national concern as well as identifying any local needs for conservation of additional species and habitats.

Although the UKBAP plan period is now complete, the list of habitats and species of conservation concern at the UK level lives on indirectly as a result of the Natural Environment and Rural Communities Act 2006, section 41 of which requires the English and Welsh authorities to prepare a list for each country of the species and habitats of principal importance for the

³ As specified in paragraph 118 of the National Planning Policy Framework (March 2012)

conservation of biodiversity. Many protected species are listed under section 41 of the NERC Act and it also includes relatively common but declining species such as the hedgehog.

The purpose of the section 41 lists, amongst other things, is to ensure that species and habitats of national conservation concern are identified as a material planning consideration.

Breeding Birds

All species of bird are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly kill, injure or take any wild bird; damage or destroy a nest while it is in use or being built; or take or destroy an egg. Certain species listed on Schedule 1, including barn owl, have further protection from disturbance while building a nest; while in, on or near a nest containing eggs or young; or disturbance to dependent young. Amber and Red lists are taken from Birds of Conservation Concern compiled by the BTO and RSPB, which can be found at <http://www.bto.org/science/monitoring/psob>.

Great crested newt

The great crested newt is fully protected under the Wildlife and Countryside Act, 1981 (as amended) and the Conservation (Natural Habitats, &c.) Regulations, 2010. This legislation makes it an offence to:

- Deliberately (or intentionally) kill, injure or capture (or take) any individual great crested newt, including adults, eggs, larvae and juveniles
- Deliberately (intentionally) damage or destroy any breeding site or resting place (i.e. pond, egg-laying site, refuge, hibernaculum)
- Deliberately or recklessly obstruct access to any breeding site or resting place
- Deliberately, intentionally or recklessly disturb a great crested newt, in particular disturbance which is likely to:
 - impair the ability of the animal to survive, breed, reproduce, or to rear or
 - nurture young;
 - impair the ability of the animal to hibernate or migrate; or
 - significantly affect the local distribution or abundance of the species

The great crested newt is a Species of Principal Importance under Section 41 of the NERC Act and was a priority species in the UK Biodiversity Action Plan.

Bats

All bat species and their roosts and resting places are protected in the UK under Schedules 5 & 6 of the Wildlife and Countryside Act, 1981 (as amended) and the Conservation of Habitats and Species Regulations, 2010. Taken together, the legislation makes it an offence to:

- Deliberately (or intentionally) kill, injure or capture (or take) a bat
- Deliberately (intentionally) damage or destroy any breeding site or resting place (i.e. bat roost)

- Deliberately or recklessly obstruct access to any bat roost
- Deliberately, intentionally or recklessly disturb a bat, in particular disturbance which is likely to:
 - impair the ability of the bat to survive, breed, reproduce, or to rear or nurture young;
 - impair the ability of the bat to hibernate or migrate; or
 - significantly affect the local distribution or abundance of the affected bat species

A bat roost is defined as 'any structure or place, which is used for shelter or protection' or a 'breeding site or resting place'. Because bats commonly use the same roosts at particular times of the year after periods of absence, the roost is protected whether or not bats are actually present.

Badgers

Badgers and their setts are fully protected under the Protection of Badgers Act 1992. This legislation makes it an offence to:

- wilfully kill, injure or take a badger (or attempt to do so)
- intentionally or recklessly damage or destroy a badger sett or any part of it
- intentionally or recklessly obstruct access to a badger sett
- intentionally or recklessly disturb a badger when it is occupying a badger sett

The legislation includes other provisions regarding cruel ill-treatment of badgers, possession or sale of badgers and so on which are not considered relevant here.

Appendix 4: Pond descriptions and Habitat Suitability Index Assessment

Project:	Fennant Rd	Pond no:	1	Grid ref:	SJ2977746727
Date assessed:	23/02/2015	Surveyor(s):	GQB	Pond area:	2,650 sq m



Description:

Large deep pool surrounded by brambles, scrub, scattered mature trees and patches of Japanese knotweed. No obvious emergent vegetation except the occasional patch of what appeared to be soft rush. No access permission for inspection had been obtained and hence the presence of aquatic vegetation remains unknown. There was a sign on the fence advising members of the angling club to use the proper procedure when fishing for large carp.

Location	Pond area (m ²)	Yrs of drought/ decade	Water quality	% shading
Optimal = 1	Omitted from calculations as H.S.I. was not developed for very large ponds.	Never dries = 0.9	Not known, but carp present so assume Moderate = 0.67	Estimated from aerial photo 90% = 0.4
Waterfowl impact	Fish	Ponds within 1 km	Terrestrial habitat within 250 m	% macrophyte cover
None = 1	Major = 0.01	5 ponds = 0.75	Dense urban development Poor = 0.33	Not known, but carp present so assume no more than 20% 20% = 0.5
Calculated HSI:	0.44	Habitat quality for	0 – 0.5 = poor	

		great newts:	crested	Unlikely to be used as a breeding site owing to presence of carp
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Project:	Fennant Rd	Pond no:	2	Grid ref:	SJ2998746929
Date assessed:	23/02/2015	Surveyor(s):	GQB	Pond area:	c. 400 sq m



Description:

Poached area in pony field marked as a drain on the Ordnance Survey map. Approximately 60 m long and up to 10 m wide. The water is very shallow and pasture grasses are visible beneath the surface for approximately 70% vegetation cover. Very probably an ephemeral pond as there was heavy rain the day before the survey.

Location	Pond area (m ²)	Yrs of drought/ decade	Water quality	% shading
Optimal = 1	400 = 0.8	Dries every year = 0.1	Poached, pony dung Poor = 0.33	0 – 60% = 1
Waterfowl impact	Fish	Ponds within 1 km	Terrestrial habitat within 250 m	% macrophyte cover
None = 1	Absent = 1	8 ponds = 0.9	Pasture, mature gardens Good = 1	70% = 1

Calculated HSI:	0.69	Habitat quality for great crested newts:	0.6 – 0.7 = average Unlikely to be a successful breeding site because it dries up often.
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Appendix 5: Species recorded within 2 km of the site but unlikely to be present

Species name	Information source	Status (see Appendix 2)	Habitat requirements	Habitat presence on site	Likely presence of species on application site
Sand feather-moss <i>Brachythecium mildeanum</i>	COFNOD	Red Data Book 2 A rare moss species recorded in 2008 on colliery spoil in Johnstown	Open damp basic habitats e.g. pond edges, riverbanks, tracks through wet woodland	Habitats on site are unfavourable for this species	Unlikely
Willow feather-moss <i>Amblystegium varium</i>	COFNOD	Locally uncommon Recorded in 2008 on colliery spoil in Johnstown	On rocks, wood or soil in open damp places e.g. by streams, pond edges or marshy ground	Habitats on site are unfavourable for this species	Unlikely
Black poplar <i>Populus nigra</i> ssp <i>betulifolia</i>	COFNOD	Local Biodiversity Action Plan Species 3 individuals recorded in hedges in Johnstown area in 1994	Usually found in wet places by streams and ponds or in river floodplains. Widely planted outside its native range.	The adjacent fields are fairly damp so it is conceivable the habitats on the edge of the site could be suitable for this species.	Unlikely This is a large and distinctive tree and was not recorded during the survey.

Species name	Information source	Status (see Appendix 2)	Habitat requirements	Habitat presence on site	Likely presence of species on application site
Dingy skipper <i>Erynnis tages</i>	COFNOD	Red Data Book 1 Listed under Section 41 of the NERC ⁴ Act as a species of principal importance for nature conservation 1 record for Aberderfyn dated 2003.	Warm open sites, often south-facing. Suitable conditions can be found on open hillsides, railway embankments, woodland clearings, quarries etc. Larval foodplant is bird's-foot trefoil.	The site is surrounded by tall cypress hedges and is unlikely to support bird's-foot trefoil in quantity as it is mostly mossy gravel.	Unlikely
A weevil <i>Tychius parallelus</i>	COFNOD	One record dated 2013 for larvae on broom - first Welsh record since 1829 for this rare weevil.	The larval foodplant is broom and the adults are found in a variety of habitats including grassland, woodland and roadside verges.	Broom is a distinctive shrub easily identifiable even in winter. It was not recorded during the survey.	Unlikely

⁴ Natural Environment and Rural Communities Act 2006.

Species name	Information source	Status (see Appendix 2)	Habitat requirements	Habitat presence on site	Likely presence of species on application site
Grass snake <i>Natrix natrix</i>	COFNOD	Protected from killing and injury under the Wildlife and Countryside Act 9 records received from COFNOD, mostly from the area south of Bonc-yr-Hafod Country Park and the closest being 925m away	Grass snakes are sometimes known as water snakes as they are strongly associated with ponds, lakes and canals. Their preferred prey is amphibians.	No aquatic habitat on site, therefore the preferred foraging habitat of grass snakes is absent. Potential refuges on site	Unlikely to occur given that there is no permanent aquatic habitat on or near to the site.

Species name	Information source	Status (see Appendix 2)	Habitat requirements	Habitat presence on site	Likely presence of species on application site
Birds associated with water and wetland habitats: Reed bunting <i>Emberiza schoeniclus</i> Kingfisher <i>Alcedo atthis</i> Water rail <i>Rallus aquaticus</i> Willow warbler <i>Phylloscopus trochilus</i> Pochard <i>Aythya ferina</i> Grey wagtail <i>Motacilla cinerea</i>	COFNOD	All wild birds are protected when nesting under the Wildlife and Countryside Act. Various: kingfishers are specially protected when breeding. The remainder are listed under Section 41 of the NERC Act as species of principal importance for nature conservation or are on the Red List for Wales, as they are declining rapidly.	Associated with water and wetland habitats such as reedbeds.	No aquatic habitat on site or immediate vicinity which is likely to attract these species	Unlikely

Species name	Information source	Status (see Appendix 2)	Habitat requirements	Habitat presence on site	Likely presence of species on application site
Lapwing <i>Vanellus vanellus</i>	COFNOD	All wild birds are protected when nesting under the Wildlife and Countryside Act. Listed under Section 41 of the NERC Act as a species of principal importance for nature conservation. Rapidly declining. Two records received for the grid square north of the site	Typical breeding habitat includes wet permanent grassland, usually with a wide open feel; small hedged fields are not preferred.	Unfavourable to breeding lapwing and unlikely to attract this species outside the breeding season.	Unlikely

Species name	Information source	Status (see Appendix 2)	Habitat requirements	Habitat presence on site	Likely presence of species on application site
Gulls: Herring gull <i>Larus argentatus</i> Common gull <i>Larus canus</i>	COFNOD	All wild birds are protected when nesting under the Wildlife and Countryside Act. Herring gull is listed under Section 41 of the NERC Act as a species of principal importance for nature conservation. Common gull is on the Red List for Wales. Several records received for Stryt Las.	These familiar birds occupy a range of habitats outside the breeding season, from arable fields to landfills to lakes. They typically breed on coastal sites which are undisturbed by humans, such as cliffs, uninhabited islets etc. Urban birds make use of the roofs of buildings.	The site offers no obvious nesting sites likely to attract gulls and ephemeral/short perennial vegetation has very limited foraging potential.	Unlikely

Species name	Information source	Status (see Appendix 2)	Habitat requirements	Habitat presence on site	Likely presence of species on application site
Water vole <i>Arvicola amphibius</i>	COFNOD	Fully protected under the Wildlife and Countryside Act 2 records for Stryt Las dated 1999.	Ditches, rivers, canals and ponds with well-developed marginal and bankside vegetation with abundant grasses and/or rushes.	No aquatic habitat recorded on site.	Unlikely

BIOGEOGRAPHY

Geographical Distribution		Ecological Distribution		Physiological Distribution	
Area	Species	Area	Species	Area	Species
North America	100	North America	100	North America	100
Europe	80	Europe	80	Europe	80
Asia	60	Asia	60	Asia	60
Africa	40	Africa	40	Africa	40
Australia	20	Australia	20	Australia	20
Antarctica	10	Antarctica	10	Antarctica	10
South America	30	South America	30	South America	30
Oceania	15	Oceania	15	Oceania	15
Arctic	5	Arctic	5	Arctic	5
Tropical	95	Tropical	95	Tropical	95
Temperate	85	Temperate	85	Temperate	85
Subtropical	75	Subtropical	75	Subtropical	75
Subarctic	65	Subarctic	65	Subarctic	65
Alpine	55	Alpine	55	Alpine	55
Mountain	45	Mountain	45	Mountain	45
Desert	35	Desert	35	Desert	35
Forest	25	Forest	25	Forest	25
Grassland	15	Grassland	15	Grassland	15
Wetland	10	Wetland	10	Wetland	10
Urban	5	Urban	5	Urban	5
Rural	95	Rural	95	Rural	95
Coastal	85	Coastal	85	Coastal	85
Inland	75	Inland	75	Inland	75
Marine	65	Marine	65	Marine	65
Freshwater	55	Freshwater	55	Freshwater	55
Terrestrial	45	Terrestrial	45	Terrestrial	45
Aquatic	35	Aquatic	35	Aquatic	35
Subterranean	25	Subterranean	25	Subterranean	25
Aerial	15	Aerial	15	Aerial	15
Soil	10	Soil	10	Soil	10
Rock	5	Rock	5	Rock	5
Plant	95	Plant	95	Plant	95
Animal	85	Animal	85	Animal	85
Fungi	75	Fungi	75	Fungi	75
Bacteria	65	Bacteria	65	Bacteria	65
Protists	55	Protists	55	Protists	55
Viruses	45	Viruses	45	Viruses	45
Parasites	35	Parasites	35	Parasites	35
Symbionts	25	Symbionts	25	Symbionts	25
Pathogens	15	Pathogens	15	Pathogens	15
Commensals	10	Commensals	10	Commensals	10
Mutualists	5	Mutualists	5	Mutualists	5
Antagonists	95	Antagonists	95	Antagonists	95
Competitors	85	Competitors	85	Competitors	85
Predators	75	Predators	75	Predators	75
Prey	65	Prey	65	Prey	65
Hosts	55	Hosts	55	Hosts	55
Parasitoids	45	Parasitoids	45	Parasitoids	45
Scavengers	35	Scavengers	35	Scavengers	35
Decomposers	25	Decomposers	25	Decomposers	25
Producers	15	Producers	15	Producers	15
Consumers	10	Consumers	10	Consumers	10
Detritivores	5	Detritivores	5	Detritivores	5
Herbivores	95	Herbivores	95	Herbivores	95
Carnivores	85	Carnivores	85	Carnivores	85
Omnivores	75	Omnivores	75	Omnivores	75
Insectivores	65	Insectivores	65	Insectivores	65
Frugivores	55	Frugivores	55	Frugivores	55
Nectarivores	45	Nectarivores	45	Nectarivores	45
Granivores	35	Granivores	35	Granivores	35
Saprophages	25	Saprophages	25	Saprophages	25
Scavengers	15	Scavengers	15	Scavengers	15
Decomposers	10	Decomposers	10	Decomposers	10
Producers	5	Producers	5	Producers	5
Consumers	95	Consumers	95	Consumers	95
Detritivores	85	Detritivores	85	Detritivores	85
Herbivores	75	Herbivores	75	Herbivores	75
Carnivores	65	Carnivores	65	Carnivores	65
Omnivores	55	Omnivores	55	Omnivores	55
Insectivores	45	Insectivores	45	Insectivores	45
Frugivores	35	Frugivores	35	Frugivores	35
Nectarivores	25	Nectarivores	25	Nectarivores	25
Granivores	15	Granivores	15	Granivores	15
Saprophages	10	Saprophages	10	Saprophages	10
Scavengers	5	Scavengers	5	Scavengers	5
Decomposers	95	Decomposers	95	Decomposers	95
Producers	85	Producers	85	Producers	85
Consumers	75	Consumers	75	Consumers	75
Detritivores	65	Detritivores	65	Detritivores	65
Herbivores	55	Herbivores	55	Herbivores	55
Carnivores	45	Carnivores	45	Carnivores	45
Omnivores	35	Omnivores	35	Omnivores	35
Insectivores	25	Insectivores	25	Insectivores	25
Frugivores	15	Frugivores	15	Frugivores	15
Nectarivores	10	Nectarivores	10	Nectarivores	10
Granivores	5	Granivores	5	Granivores	5
Saprophages	95	Saprophages	95	Saprophages	95
Scavengers	85	Scavengers	85	Scavengers	85
Decomposers	75	Decomposers	75	Decomposers	75
Producers	65	Producers	65	Producers	65
Consumers	55	Consumers	55	Consumers	55
Detritivores	45	Detritivores	45	Detritivores	45
Herbivores	35	Herbivores	35	Herbivores	35
Carnivores	25	Carnivores	25	Carnivores	25
Omnivores	15	Omnivores	15	Omnivores	15
Insectivores	10	Insectivores	10	Insectivores	10
Frugivores	5	Frugivores	5	Frugivores	5
Nectarivores	95	Nectarivores	95	Nectarivores	95
Granivores	85	Granivores	85	Granivores	85
Saprophages	75	Saprophages	75	Saprophages	75
Scavengers	65	Scavengers	65	Scavengers	65
Decomposers	55	Decomposers	55	Decomposers	55
Producers	45	Producers	45	Producers	45
Consumers	35	Consumers	35	Consumers	35
Detritivores	25	Detritivores	25	Detritivores	25
Herbivores	15	Herbivores	15	Herbivores	15
Carnivores	10	Carnivores	10	Carnivores	10
Omnivores	5	Omnivores	5	Omnivores	5
Insectivores	95	Insectivores	95	Insectivores	95
Frugivores	85	Frugivores	85	Frugivores	85
Nectarivores	75	Nectarivores	75	Nectarivores	75
Granivores	65	Granivores	65	Granivores	65
Saprophages	55	Saprophages	55	Saprophages	55
Scavengers	45	Scavengers	45	Scavengers	45
Decomposers	35	Decomposers	35	Decomposers	35
Producers	25	Producers	25	Producers	25
Consumers	15	Consumers	15	Consumers	15
Detritivores	10	Detritivores	10	Detritivores	10
Herbivores	5	Herbivores	5	Herbivores	5
Carnivores	95	Carnivores	95	Carnivores	95
Omnivores	85	Omnivores	85	Omnivores	85
Insectivores	75	Insectivores	75	Insectivores	75
Frugivores	65	Frugivores	65	Frugivores	65
Nectarivores	55	Nectarivores	55	Nectarivores	55
Granivores	45	Granivores	45	Granivores	45
Saprophages	35	Saprophages	35	Saprophages	35
Scavengers	25	Scavengers	25	Scavengers	25
Decomposers	15	Decomposers	15	Decomposers	15
Producers	10	Producers	10	Producers	10
Consumers	5	Consumers	5	Consumers	5
Detritivores	95	Detritivores	95	Detritivores	95
Herbivores	85	Herbivores	85	Herbivores	85
Carnivores	75	Carnivores	75	Carnivores	75
Omnivores	65	Omnivores	65	Omnivores	65
Insectivores	55	Insectivores	55	Insectivores	55
Frugivores	45	Frugivores	45	Frugivores	45
Nectarivores	35	Nectarivores	35	Nectarivores	35
Granivores	25	Granivores	25	Granivores	25
Saprophages	15	Saprophages	15	Saprophages	15
Scavengers	10	Scavengers	10	Scavengers	10
Decomposers	5	Decomposers	5	Decomposers	5
Producers	95	Producers	95	Producers	95
Consumers	85	Consumers	85	Consumers	85
Detritivores	75	Detritivores	75	Detritivores	75
Herbivores	65	Herbivores	65	Herbivores	65
Carnivores	55	Carnivores	55	Carnivores	55
Omnivores	45	Omnivores	45	Omnivores	45
Insectivores	35	Insectivores	35	Insectivores	35
Frugivores	25	Frugivores	25	Frugivores	25
Nectarivores	15	Nectarivores	15	Nectarivores	15
Granivores	10	Granivores	10	Granivores	10
Saprophages	5	Saprophages	5	Saprophages	5
Scavengers	95	Scavengers	95	Scavengers	95
Decomposers	85	Decomposers	85	Decomposers	85
Producers	75	Producers	75	Producers	75
Consumers	65	Consumers	65	Consumers	65
Detritivores	55	Detritivores	55	Detritivores	55
Herbivores	45	Herbivores	45	Herbivores	45
Carnivores	35	Carnivores	35	Carnivores	35
Omnivores	25	Omnivores	25	Omnivores	25
Insectivores	15	Insectivores	15	Insectivores	15
Frugivores	10	Frugivores	10	Frugivores	10
Nectarivores	5	Nectarivores	5	Nectarivores	5
Granivores	95	Granivores	95	Granivores	95
Saprophages	85	Saprophages	85	Saprophages	85
Scavengers	75	Scavengers	75	Scavengers	75
Decomposers	65	Decomposers	65	Decomposers	65
Producers	55	Producers	55	Producers	55
Consumers	45	Consumers	45	Consumers	45
Detritivores	35	Detritivores	35	Detritivores	35
Herbivores	25	Herbivores	25	Herbivores	25
Carnivores	15	Carnivores	15	Carnivores	15
Omnivores	10	Omnivores	10	Omnivores	10
Insectivores	5	Insectivores	5	Insectivores	5
Frugivores	95	Frugivores	95	Frugivores	95
Nectarivores	85	Nectarivores	85	Nectarivores	85
Granivores	75	Granivores	75	Granivores	75
Saprophages	65	Saprophages	65	Saprophages	65
Scavengers	55	Scavengers	55	Scavengers	55
Decomposers	45	Decomposers	45	Decomposers	45
Producers	35	Producers	35	Producers	35
Consumers	25	Consumers	25	Consumers	25
Detritivores	15	Detritivores	15	Detritivores	15
Herbivores	10	Herbivores	10	Herbivores	10
Carnivores	5	Carnivores	5	Carnivores	5
Omnivores	95	Omnivores	95	Omnivores	95
Insectivores	85	Insectivores	85	Insectivores	85
Frugivores	75	Frugivores	75	Frugivores	75
Nectarivores	65	Nectarivores	65	Nectarivores	65
Granivores	55	Granivores	55	Granivores	55
Saprophages	45	Saprophages	45	Saprophages	45
Scavengers	35	Scavengers	35	Scavengers	35
Decomposers	25	Decomposers	25	Decomposers	25
Producers	15	Producers	15	Producers	15
Consumers	10	Consumers	10	Consumers	10
Detritivores	5	Detritivores	5	Detritivores	5
Herbivores	95	Herbivores	95	Herbivores	95
Carnivores	85	Carnivores	85	Carnivores	85
Omnivores	75	Omnivores	75	Omnivores	75
Insectivores	65	Insectivores	65	Insectivores	65
Frugivores	55	Frugivores	55	Frugivores	55
Nectarivores	45	Nectarivores	45	Nectarivores	45
Granivores	35	Granivores	35	Granivores	35
Saprophages	25	Saprophages	25	Saprophages	25
Scavengers	15	Scavengers	15	Scavengers	15
Decomposers	10	Decomposers	10	Decomposers	10
Producers	5	Producers	5	Producers	5
Consumers	95	Consumers	95	Consumers	95
Detritivores	85	Detritivores	85	Detritivores	85
Herbivores	75	Herbivores	75	Herbivores	75
Carnivores	65	Carnivores	65	Carnivores	65
Omnivores	55	Omnivores	55	Omnivores	55
Insectivores	45	Insectivores	45	Insectivores	45
Frugivores	35	Frugivores	35	Frugivores	35
Nectarivores	25	Nectarivores	25	Nectarivores	25
Granivores	15	Granivores	15	Granivores	15
Saprophages	10	Saprophages	10	Saprophages	10
Scavengers	5	Scavengers	5	Scavengers	5
Decomposers	95	Decomposers	95	Decomposers	95
Producers	85	Producers	85	Producers	85
Consumers	75	Consumers	75	Consumers	75
Detritivores	65	Detritivores	65	Detritivores	65
Herbivores	55	Herbivores	55	Herbivores	55
Carnivores	45	Carnivores	45	Carnivores	45
Omnivores	35	Omnivores	35	Omnivores	35
Insectivores	25	Insectivores	25	Insectivores	25
Frugivores	15	Frugivores	15	Frugivores	15
Nectarivores	10	Nectarivores	10	Nectarivores	10
Granivores	5	Granivores	5	Granivores	5
Saprophages	95	Saprophages	95	Saprophages	95
Scavengers	85	Scavengers	85	Scavengers	85
Decomposers	75	Decomposers	75	Decomposers	75
Producers	65	Producers	65	Producers	65
Consumers	55	Consumers	55	Consumers	55
Detritivores	45	Detritivores	45	Detritivores	45
Herbivores	35	Herbivores	35	Herbivores	35
Carnivores	25	Carnivores	25	Carnivores	25
Omnivores	15	Omnivores	15	Omnivores	15
Insectivores	10	Insectivores	10	Insectivores	10
Frugivores	5	Frugivores	5	Frugivores	5
Nectarivores	95	Nectarivores	95	Nectarivores	95
Granivores					