



Ecological Assessment

Coleg Cambria Bersham Road Campus

Ref: JWE/1528

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THIS REPORT REPRESENTS AN INITIAL ECOLOGICAL ASSESSMENT OF THE SITE. FURTHER SURVEYS, AS DESCRIBED IN THE CONCLUSIONS SECTION, MAY NEED TO BE IMPLEMENTED PRIOR TO THE SUBMISSION OF A PLANNING APPLICATION.

ECOLOGICAL ISSUES ARE A MATERIAL CONSIDERATION IN DETERMINING PLANNING APPLICATIONS AND ALL RELEVANT SURVEYS MUST BE COMPLETED PRIOR TO APPLYING FOR PLANNING PERMISSION.

PLEASE NOTE THAT WHILST EVERY EFFORT HAS BEEN MADE TO ENSURE THAT THE CONTENT OF THIS REPORT IS ACCURATE THE SURVEY REPRESENTS ONLY A SNAPSHOT IN TIME AND THE ECOLOGICAL ISSUES ON SITE MAY CHANGE. THE ADDITIONAL SURVEY WORKS RECOMMENDED IN THIS REPORT ARE WHAT IS THOUGHT TO BE REQUIRED IN THE OPINION OF THE SURVEYOR. THE LOCAL PLANNING AUTHORITY OR NATURAL ENGLAND MAY IN SOME CASES REQUEST ADDITIONAL INFORMATION NOT OUTLINED IN THIS REPORT.



1.0 INTRODUCTION

- 1.1 J W Ecological Limited were commissioned in June 2014 to undertake a baseline ecological assessment of the Coleg Cambria Bersham Road Campus, Wrexham (SJ 32646 49790). The full survey area is shown on the site location plan D/JWE/1528/001 (Appendix 1).
- 1.2 The aims of this ecological assessment were to:
- Assess and describe the Valuable Ecological Components (VECs) of the proposed development site and all land within 250 metres (referred to as “the wider survey area”).
 - Assess the likely ecological impacts of the development.
 - Identify further survey and mitigation requirements
 - Identify ecological features of the site that should be protected
 - Provide guidance as to ecological enhancement of the site
- 1.3 To meet the aims of the ecological assessment the following actions were undertaken:
- Desktop study of all land within 500 metres of the development site
 - Extended phase one habitat survey of the development site and adjacent land
- 1.4 The sites ecological value was assessed in context with current UK planning and legislative policy, including:
- Protected sites (statutory and non-statutory)
 - Statutorily protected species
 - UK and local Biodiversity Action Plan (BAP) species
 - Species and habitats of local concern
 - Local wildlife strategies
- 1.5 Prior to any survey work a health and safety risk assessment of the site was undertaken. Risk assessments are undertaken on a site by site basis in order to identify potential risks with the aim to reduce these as far as is practicable.

2.0 SITE LOCATION AND DESCRIPTION

- 2.1 The site is located on the northern side of Bersham Road, to the south-west of Wrexham city centre
- 2.2 The site comprises the Bersham Road campus which includes a number of buildings and extensive areas of hard-standing. An area of amenity grassland with scattered trees is located along the southern site boundary adjacent to Bersham Road.
- 2.3 The survey area is bordered by the A525 to the north, a footpath and residential areas to the east, Bersham Road to the south and a railway line to the west.



3.0 DESKTOP STUDY

- 3.1 Ecological data and records of protected species were requested/gathered from the following sources (Table 1):

Table 1: Desktop Study Sources

Consultee/Source of Information	Information Supplied
NBN Gateway	Protected species and site records within 1 kilometre of the proposed development site.
Cofnod	Protected species records within 1 kilometre of the proposed development site.
Natural Resources Wales (NRW)	Protected nature conservation sites within 1 kilometre of the survey area.
UK Biodiversity Action Plan	Identification of national priority species and habitats known to occur in the region.
Local Biodiversity Action Plan	Identification of local priority species and habitats known to occur in the area.

Statutorily Protected Sites

- 3.2 No statutorily designated nature conservation sites are located within 1 kilometre of the survey area.

Non-Statutorily Designated Sites

- 3.3 The Erddig Estate local wildlife site is located approximately 300 metres south of the survey area.

Protected Species

- 3.4 A number of records of reptile species, including grass snake, common lizard and slow worm, exist within 1 kilometre of the survey area. The records are primarily associated with the Erddig Country Park and the Wrexham railway line.

Records of great crested newts exist within 1 kilometre of the site. The nearest record lies within the Erddig Country Park approximately 500 metres south of the survey area.

The full Cofnod search results are provided in Appendix 4.

- 3.5 Based on information gathered from the sources listed above and desk based assessment of the site from OS maps and aerial photographs the following protected species were taken into account during the site assessment:

- Bats (all species);
- Great crested newt (*Triturus cristatus*);
- Badger (*Meles meles*);
- Water Vole (*Arvicola terrestris*);
- Otter (*Lutra lutra*);
- Reptiles (all species);



UK Biodiversity Action Plan (UKBAP) Priority Species

3.6 The UKBAP priority species which may potentially use the survey area, based on the results of the desktop study are:

- Mammals – Bats*, Badgers*, Hedgehog, Otter*, Water Vole*
- Birds – Song Thrush, Sky Lark etc.
- Amphibians – Great Crested Newts*, Common Toad

** These species and/or their habitats are also statutorily protected*

Local Biodiversity Action Plan (LBAP)

3.7 The Wrexham Biodiversity Action Plan (BAP) lists key local species and habitats considered to be rare or declining in the area. Some of these species and habitats may also be of national concern.

3.8 Although local BAP documents have no legal status the Local Planning Authority (LPA) and NRW will expect the listed species and habitats to be taken into account in the overall layout and landscape strategy for the development.

3.9 The species of local concern which may potentially utilise the survey area based on the results of the desktop study are:

- Mammals – Badger*, Otter*, Lesser Horseshoe bat*, Hedgehog;
- Amphibians – Great Crested Newts*;
- Birds – Barn Owl*;
- Reptiles – All species*;
- Invertebrates – Dingy Skipper, Grizzled Skipper.

** These species and/or their habitats are also statutorily protected*



4.0 PLANNING CONTEXT

Planning Policy Wales (Edition 3, July 2010)

- 4.1 This document contains current land use planning policy for Wales. It provides the policy framework for the effective preparation of local planning authorities' development plans. This is supplemented by 21 topic based Technical Advice Notes (TANs). Procedural guidance is given in Welsh Office / National Assembly for Wales / Welsh Assembly Government circulars
- 4.2 Technical Advice Note 5 provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. This guidance note should be read in conjunction with *Planning Policy Wales (2002)*, in particular with Chapter 5 *Conserving and Improving the Natural Heritage and Coast* which sets out the Assembly Government's objectives for the natural heritage and the land use planning policies which support these.
- 4.3 This TAN brings together advice on sources of legislation relevant to various nature conservation topics which may be encountered by local planning authorities. Chapter 2 sets out the key principles of planning for nature conservation. Chapter 3 provides advice about the preparation and review of development plans, including the relevant statutory requirements. Chapter 4 addresses nature conservation in development control procedures. Chapter 5 deals with the conservation of internationally and nationally designated sites and habitats and also covers local sites. Chapter 6 deals with the conservation of protected and priority species.

5.0 LEGISLATIVE CONTEXT

- 5.1 This is a brief summary of the ecological legislative context in Wales. This is general advice only and does not relate specifically to the site being assessed.

Ecological Assessments

- 5.2 Ecological assessments have now become an important part of the planning process. This initial assessment is used as a means of identifying any specific interests of the site in question which are in turn used to assess suitability for protected species and to make recommendations for further survey work and mitigation.

Statutory Designated Sites

- 5.3 Sites with Statutory designations receive varying degrees of legal protection under UK law and European Directives. A number of statutory designations are used for sites of high conservation value in the UK dependent on the importance of the site at a local, regional, national and international level. These designations are:
 - Special Area of Conservation (SACs)
SACs are sites of European importance for nature conservation. These receive legal protection under the EC Habitats Directive (1992) which was incorporated into UK legislation through the Conservation (Natural Habitats, &c) Regulations 1994. In the UK all SACs are also designated as SSSIs.



- **Special Protection Areas (SPAs)**
SPAs are sites of European importance for birdlife as designated under the Birds Directive. As with SACs all SPAs in the UK will also be designated as SSSIs.
- **Ramsar Sites**
These sites are wetlands of international importance designated under the Ramsar Convention 1971. In most cases these sites are also designated as SPAs or Sites of Special Scientific Interest (SSSI) and receive legal protection in the UK through these designations.
- **Sites of Special Scientific Interest (SSSI)**
SSSIs are UK sites of national importance for nature conservation. These sites may be designated as a result of the habitats present or for the presence of rare species or species assemblages. SSSIs receive some legal protection through the Wildlife and Countryside Act 1981. This protection was recently extended through the Countryside and Rights of Way (CROW) Act 2000.
- **National Nature Reserves (NNR)**
NNRs are nationally important nature reserves designated by CCW under the Wildlife and Countryside Act 1981. These sites will either be managed by CCW or an approved body and are often designated as SSSIs.
- **Local Nature Reserves (LNR)**
Local Nature Reserve is a statutory designation made by local authorities under the Section 21 of the National Parks and Access to Countryside Act 1949. These sites may or may not be SSSIs.

Non-Statutory Designated Sites

- 5.4 Non-statutory sites are afforded no statutory legal protection but are in most cases recognised by local planning authorities and statutory agencies as being of local conservation value. The protection of these sites is usually afforded through Local Plan Policies (county, district and Unitary Development Plans) and these sites will in most cases be taken into account as a material consideration by the local authority when deciding planning applications. These sites are designated by the local authority (usually in consultation with the local Wildlife Trust and other agencies).

Protected Species and their Habitats

- 5.5 In the majority of cases relevant to planning applications protected species are those listed in Schedules 1, 5 and 8 of the Wildlife and Countryside Act (as amended), the Protection of Badgers Act 1992 and the Habitats & Species Regulations 2010. The extent of legal protection varies between species, as do the implications for developments where these species are to be affected.



5.6 Great Crested Newts

Great Crested Newts (*Triturus cristatus*) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981 (as amended), being listed in Schedule 5 of the act. Under the legislation it is an offence to:

- Intentionally kill, take or injure a great crested newt;
- Damage, destroy or obstruct a place a great crested newt uses for breeding, resting, shelter or protection or to disturb a great crested newt in such a place.
- Possess or control a great crested newt alive or dead, or any part of them, or anything derived from them.
- Sell, offer for sale, advertise for sale or offer to buy a great crested newt, or a part of them or anything derived from them.
- Deliberately disturb or deliberately take or destroy the eggs of a great crested newt.

Offences under Section 9 carry a maximum penalty of a fine up to £5000, imprisonment for up to six months, or both, for each animal in respect of which an offence is committed.

Licenses can be issued in order to allow activities that would constitute an offence under the legislation. Licenses can be issued for specific purposes including scientific study, photography, conservation management and development.

It is important to identify the presence of great crested newts as early as possible in a development so that the legal obligations regarding this species can be observed. If surveys identify the presence of great crested newts on site a mitigation scheme must be developed in consultation with the local NRW team. This mitigation scheme must minimise direct threats to newts and compensate for any habitat loss. A licence issued by the Welsh Assembly is required before the mitigation scheme can be legally implemented. Mitigation licence applications require full Method Statements and a Reasoned Statement of Application. The method statement contains details of the proposed mitigation works whilst the Reasoned Statement must provide justification as to how the proposed development meets the requirements of the legislation.

5.7 Bats

All species of bat and their breeding sites or resting places (roosts) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981 (as amended). Under the legislation it is an offence to:

- intentionally kill, injure or handle a bat;
- to possess a bat (whether live or dead)
- disturb a roosting bat;
- sell or offer a bat for sale without a licence;
- damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

The potential fine for each offence is £5,000. If more than one bat is involved, the fine is £5,000 per bat. An offender can also be imprisoned for up to six months.

Where bats are found to occur on a development site, and there is considered to be a reasonable possibility that a roost may be damaged or destroyed or that bats using a roost will be disturbed, a licence must be obtained from NRW.



5.8 Badgers

Badgers (*Meles meles*) and their habitat are protected under The Protection of Badgers Act 1992 and are also included on Schedule 6 of the Wildlife and Countryside Act 1981, and Appendix III of the Bern Convention. The legislation affords badgers protection against deliberate harm or injury making it an offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a badger (or attempt to do so)
- to interfere with a sett by damaging or destroying it
- to obstruct access to, or entrance of, a badger sett
- to disturb a badger whilst it is occupying a sett

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each illegal sett interference, badger injury or death.

Works that disturb badgers whilst they are occupying a sett are illegal without a licence. Disturbance can occur even without direct interference or damage to the sett in question. In general, the following activities are likely to require a licence:

- Use of heavy machinery or significant earth moving within 30m of a sett
- Use of lighter machinery (usually any wheeled vehicles) within 20m of a sett
- Any digging, chain saw use or scrub clearance within 10m of a sett

5.9 Reptiles

All species of British reptile are protected against intentional killing, injury or sale under the Wildlife and Countryside Act 1981 (as amended). The Sand Lizard and the Smooth Snake are afforded a higher degree of protection under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 making it an offence to:

- Intentionally kill, take or injure these species of reptile;
- Damage, destroy or obstruct a place a these species use for breeding, resting, shelter or protection or to disturb these species in such a place;
- Possess or control these species alive or dead, or any part of them, or anything derived from them;
- Sell, offer for sale, advertise for sale or offer to these species, or a part of them or anything derived from them;
- Deliberately disturb or deliberately take or destroy the eggs of these species.

The distribution of Smooth Snakes and Sand Lizards is limited to heathland habitats in Surrey, Dorset, Hampshire and Sussex. The Sand Lizard is also known to occur on sand dune habitats in Merseyside and has recently been introduced to some areas of North Wales.

Licenses can be issued in order to allow activities that would constitute an offence under the legislation. Licenses can be issued for specific purposes including scientific study, photography, conservation management and development.

In England and Wales a development license must be obtained from Natural England or NRW before undertaking any works that will affect Sand Lizards or Smooth Snakes or their habitat. A license is not required to carry out surveys or mitigation for other reptile species.



5.10 Otters

The Eurasian Otter is protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981 (as amended), being listed in Schedule 5 of the act. Under the legislation it is an offence to:

- Deliberately, capture, injure or kill an Otter;
- Damage, destroy or obstruct their breeding or resting places;
- Disturb otters in their breeding or resting places.

Offences under Section 9 carry a maximum penalty of a fine up to £5000, imprisonment for up to six months, or both, for each animal in respect of which an offence is committed.

There is, however, provision within the legislation to kill, take, disturb or possess otters or to use prohibited methods to kill or take under a licence in certain defined circumstances, if the issue cannot be resolved by any alternative means. Licenses can be granted for a variety of purposes, including development.

5.11 Water Vole

Water Voles and their habitats are afforded protection under Section 9 of the Wildlife & Countryside Act 1981 (as amended). Under the legislation it is an offence to:

- Intentionally kill, injure or take (capture) a water vole;
- Possess or control a live or dead water vole, or any part of a water vole or anything derived from a water vole;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which a water vole uses for shelter or protection
- Intentionally or recklessly disturb a water vole while it is occupying a structure or place which it uses for shelter or protection;
- Sell, offer or expose for sale, or have in one's possession or transport for the purpose of sale, any live or dead water voles, or any part of a water vole or anything derived from a water vole;
- Publish any advertisement, or cause any advertisement to be published, which is likely to be understood as conveying that a person buys or sells, or intends to buy or sell, any of the above things.

Offences under Section 9 carry a maximum penalty of a fine up to £5000, imprisonment for up to six months, or both, for each animal in respect of which an offence is committed.

There is no provision under the Wildlife and Countryside Act 1981 for licences to be issued for the purpose of development



5.12 Birds

Section 1 of the Wildlife and Countryside act 1981 makes it an offence to intentionally kill, injure, handle or remove any wild bird (with the exception of some pest species), to take or damage a nest whilst it is in use or being built and to take or destroy eggs.

Species listed in Schedule 1 of the Act (see Table 1), including the Little Ringed Plover, Barn Owl and Kingfisher, are afforded an even higher level of protection. In addition to the offence of taking, damaging or destroying nests or eggs it is also an offence to disturb Schedule 1 species whilst they are building or sitting on nests.

Whilst it is not an offence to disturb non-Schedule 1 species whilst they are building or sitting on a nest an offence may occur if the bird is permanently driven away from its nesting site by prolonged disturbance which leads to the failure of eggs or the death of young.

Surveys for the presence of breeding birds are required if any nesting habitat is to be removed during the breeding season (March to August inclusive).

Invasive Plant Species

- 5.13 Under Section 14 (2) of the Wildlife and Countryside Act (1981) it is illegal to spread the invasive non-native plants Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*). At present no requirement exists to eradicate these plants from sites where they are already established
- 5.14 Environment Agency guidance also exists for the aquatic weeds Australian swap stonecrop (*Crassula helmsii*), Floating pennywort (*Hydrocotyle ranunculoides*) and Parrot's feather (*Myriophyllum aquaticum*). Although no legal obligation exists it is considered good practice to avoid spreading these invasive plants when working in infested areas.



6.0 HABITAT SURVEY

Extended Phase One Methods

- 6.1 An extended phase one habitat survey of the site was undertaken by Joe Whittick BSc (Hons.) MCIEEM on the 31st July 2014.
- 6.2 The extended phase one habitat survey is a standard method of survey widely used as the basis of ecological assessments (JNCC, 1993). The phase one survey covers the footprint of the proposed development and descriptions of the immediate surrounding area (up to 100 metres). A habitat map is prepared to show the locations and extent of habitats. Detailed descriptions of important plant communities, other valuable ecological components (e.g. protected species potential) and invasive plant species are provided as target notes.
- 6.3 The phase one habitat survey is not intended to provide a comprehensive list of species. Plant species lists have been compiled with the aim of characterising habitats in order to assess their importance for nature conservation.
- 6.4 Incidental observations of birds and mammals were also made during the phase one habitat survey.

Results

- 6.5 The habitat survey is illustrated on Drawing D/JWE/1528/002 (Appendix 1). Target Notes are presented in Appendix 2.
- 6.6 The following habitats were recorded within the survey area and adjacent land:
 - Buildings
 - Bare ground
 - Amenity grassland
 - Semi-improved grassland
 - Scattered broad-leaved trees
 - Scattered coniferous trees
 - Introduced shrubs



6.7 Habitats within the proposed development site and wider survey area:

- Buildings

The site is dominated by three large buildings with a number of additional smaller buildings:

Building 1 is a large two-storey modern brick college building with a corrugated steel sheet roof (see photograph 1, Appendix 3).

Building 2 is a large single-storey workshop building constructed of brick with a corrugated sheet upper wall and a corrugated sheet roof (see photograph 2, Appendix 3).

Building 3 is a second large single-storey workshop building constructed of brick with a corrugated sheet upper wall and a corrugated sheet roof (see photograph 3, Appendix 3).

Building 4 is a small modern single-storey building with a corrugated sheet roof (see photograph 4, Appendix 3).

Buildings 5, 6 and 7 are all small single-storey brick buildings with flat roofs (see photographs 5 and 6, Appendix 3).

Building 8 is a small single-storey brick building with a pitched concrete tile roof (see photograph 7, Appendix 3).

- Bare ground

Extensive areas of hard-standing access roads, paths and car parking areas are located throughout the site (see photograph 8, Appendix 3).

- Amenity grassland

An area of amenity grassland is located on the southern site boundary adjacent to Bersham Road (see photograph 9, Appendix 3).

- Semi-improved grassland

A small area of rough semi-improved grassland is located to the north of the site. Species in this area include cock's-foot, common nettle, cinquefoil and creeping buttercup.

- Scrub

A small area of scrubby habitat is located on the northern site boundary (see photograph 10, Appendix 3).

- Scattered broad-leaved trees

Scattered mature and semi-mature trees are located to the north and south of the site, predominantly in the amenity grassland area adjacent to Bersham Road (see photograph 11, Appendix 3). Species include cherry, whitebeam and silver birch.

- Scattered coniferous trees

Occasional scattered conifers are present on site (see photograph 12, Appendix 3)

- Introduced shrubs

Occasional planted shrubs are located in the amenity grassland area to the south of the site.



6.8 Extended Phase One Habitat Survey Overview

- Great crested newts – No ponds were identified on site and no ponds are shown on OS maps within 250 metres of the site boundary.
- Bats – An internal and external bat survey of the site buildings was undertaken as part of the phase one survey. None of the buildings have loft spaces. In general all buildings on site were assessed as having low potential as roosting sites given their relatively modern construction and corrugated sheet roofs which offer limited roosting opportunities for bats. Single or small numbers of bats, particularly species such as the pipstrelles, could however roost in small gaps and crevices around the edges of the roofs of buildings 3 to 7. Roosting potential also exists in building 8. No evidence of past or present bat roosting activity was however identified during the daytime survey.

No trees on site were found to have features which could support roosting bats.

Bats use linear habitat features, such as lines of trees and hedgerows, as navigational markers allowing them to commute between roosting and foraging sites. The vegetation associated with the railway line to the west of the site could be used by bats in this way.

- Badgers – No badger setts, or other evidence of badger activity (latrines etc.), were identified on site or within 30 metres of the site boundary. Dense scrub and trees did however restrict access to some parts of the site, particularly along the northern boundary.
- Reptiles – The habitats on site offer some limited foraging and refuge opportunities for common reptile species, primarily confined to the areas of rough grassland and scrub on the northern site boundary. The adjacent railway line has good suitability as habitat for reptile species.
- Water Voles – No habitats with potential to support water voles are located on or adjacent to the site.
- Otters – No habitats with potential to support otters are located on or adjacent to the site.
- Birds – Birds are likely to nest in the trees and shrubs located on and adjacent to the survey area. Birds could also potentially nest in/on the school buildings. Active house martin nests were found in a covered section of Building 5 during the phase one survey.
- Invasive Species – No Japanese Knotweed, Himalayan Balsam or Giant Hogweed were identified on site during the survey. Dense vegetation did however restrict the survey in some areas, particularly along the northern site boundary.

6.9 Other Observations

No other issues were identified on site.



7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Protected Sites

No statutorily designated nature conservation sites are located within 1 kilometre of the survey area.

The Erddig Estate local wildlife site is located approximately 300 metres south of the survey area. No impacts on this area are predicted given its distance from the Bersham Road site and the separation imposed by a number of roads between the survey area and the wildlife site.

7.2 Habitats

The site comprises predominantly existing buildings, bare ground and areas of amenity grassland with generally low ecological value. The mature trees located to the north and south of the site do however have some ecological value and these should wherever possible be retained as part of any proposals for the site. Retained trees should be protected during any construction works using temporary fencing in line with BS5837 (Trees in relation to construction).

In order to enhance the ecological value of the site all new tree and shrub planting should contain 100% native species or species with known attraction to wildlife. This will ensure that the site has value to local wildlife. Suitable native species and non-native species with attraction to wildlife are listed in Appendix 5.

New planting schemes as part of the proposals should utilise good horticultural practice including the use of peat free composts and mulches. Pesticide use including herbicides, insecticides and fungicides should be kept to a minimum.

7.3 Great Crested Newts

No ponds were identified on site and no ponds are shown on OS maps within 250 metres of the site boundary. No great crested newt issues are thought to exist for the proposals.

7.4 Bats

The buildings on site have generally low potential as roosting sites for bats. Some limited roosting potential for small numbers of bats does however exist around the edges of the roofs of building 3, 4, 5, 6 and 7. Roosting potential also exists in Building 8. If significant works to the existing buildings will take place, particularly works to the roofs or eaves, then further detailed bat surveys are likely to be required. Given the low potential of the buildings to support bats a single dusk or dawn bat survey is thought to be sufficient in order to determine the likely presence/absence of bats (BCT, 2012). Dusk/dawn bat surveys can only be undertaken between May and August. If evidence of roosting bats is identified during the surveys then a European Protected Species (EPS) license issued by Natural Resources Wales (NRW) may be required for the proposed works.

No trees on site were found to have features which could support roosting bats. No bat roosting issues are thought to exist for any tree works.

Bats use linear habitat features, such as lines of trees and hedgerows, as navigational markers allowing them to commute between roosting and foraging sites. The vegetation along the railway line to the west of the site could be used by bats in this way. Whilst this potential commuting corridor will not be directly impacted by the proposals there is the potential for bat commuting and foraging activity to be disrupted by works on site, particularly by any new external lighting. In order to minimise impacts



external light levels to the west of the site should be kept as low as possible and light should be directed towards the centre of the site and away from the western boundary.

In order to enhance the ecological value of the site the installation of a minimum of four bat boxes or tubes onto new or existing buildings or retained trees would be desirable as part of the proposals. Suitable box designs are shown in Appendix 6.

7.5 Badgers

No badger setts, or other evidence of badger activity, were identified on site during the phase one survey. No badger issues are thought to exist for the proposals.

7.6 Reptiles

The habitats on site are in general of a poor quality for reptiles. Some limited foraging and refuge opportunities do however exist, particularly on the northern site boundary. Reptiles have also been recorded on the adjacent railway line.

As a precaution, the clearance of any potential reptile refuge areas from the site (eg. dense scrub/shrubs) should be undertaken with care under an appropriate method statement in order to allow any reptiles which may be present to disperse.

7.7 Water Voles

No habitats with potential to support water voles are located on or adjacent to the site. No water vole issues are thought to exist for the proposals.

7.8 Otters

No habitats with potential to support otters are located on or adjacent to the site. No otter issues are thought to exist for the proposals.

7.9 Birds

Birds could nest in the trees and shrubs on site and these habitats should wherever possible be retained as part of any proposals. Where removals are unavoidable, works to remove/manage potential nesting habitat should where possible be undertaken outside of the bird nesting season (the nesting season runs from March to August inclusive). If clearance/management works are to take place during the nesting season a recheck of the site should be undertaken by an experienced surveyor immediately prior to the start of works. If breeding birds are found during the survey the nest should not be disturbed and works should be delayed until nesting is complete and young birds have fledged. Nesting bird checks should also be undertaken if works to the site buildings will commence during the nesting season, nesting was specifically recorded in building 5 during the phase one survey.

The installation of a minimum of six new bird boxes onto retained trees or new/existing buildings would be desirable as part of the proposals. Suitable box designs, including boxes suitable for BAP species such as the house sparrow, are shown in Appendix 6.



7.10 Hedgehog

Any clearance of potential hedgehog refuge areas (for example dense shrubs, wood piles) should be undertaken with care and preferably by hand in order to avoid harm to any hedgehogs which may be present. Where possible, clearance of potential refuge areas should also be avoided during the winter months when hedgehogs may be hibernating.

7.11 Invasive Species

No Japanese Knotweed, Himalayan Balsam or Giant Hogweed were identified on site during the phase one survey. The survey was however restricted by dense vegetation in some areas. As a precaution, any clearance of dense vegetation from the site should be undertaken with care as stands of invasive species could be concealed within these areas.

THESE SURVEY RESULTS ARE VALID FOR UP TO 1 YEAR AFTER WHICH RE-SURVEYS ARE RECOMMENDED

8.0 REFERENCES

Wrexham Biodiversity Action Plan (BAP)

NATURE CONSERVANCY COUNCIL (1990) Handbook for Phase 1 habitat survey. NCC. Peterborough.

STACE, C. A. (1997) *Flora of the British Isles, 2nd edition*. Cambridge University Press

ENGLISH NATURE (2001) *Great crested newt mitigation guidelines*. English Nature, Peterborough.

Mitchell-Jones, A.J, & McLeish, A.P. Ed. 2004. *Bat Workers Manual*

ENGLISH NATURE 2004. *Bat Mitigation Guidelines*.

Bat Conservation Trust (BCT), 2012. *Bat Surveys – Good Practice Guidelines, Version 2*



APPENDIX 1

Drawings:

Site Location Plan - D/JWE/1528/001

Extended Phase One Habitat Plan - D/JWE/1528/002





 = Site Location



J W ECOLOGICAL LTD

TITLE: Site Location Plan

SITE: Bersham Road Campus

NGR: SJ 32646 49790

DRAWING NUMBER: D/JWE/1528/001



Site: Bersham Road Campus

Title: Extended Phase One Survey Plan

KEY:

- Buildings
- Bare ground
- A Amenity grassland
- SI Semi-improved grassland
- Scattered broad-leaved trees
- Scattered coniferous trees
- Dense/continuous scrub/shrubs
- Scattered scrub
- Introduced shrubs
- Scattered shrubs
- Fence
- Wall
- Target Notes (See Appendix 2 of report)

GRID REFERENCE:
SJ 32646 49790

SCALE:
1:1000

DRAWN BY:
JW

CHECKED BY:
JM

DATE:
07/08/14

DRAWING NUMBER:
D/JWE/1528/002

ISSUE:
A

THIS PLAN IS ISSUED BY J W ECOLOGICAL LIMITED SUBJECT TO THE
CONDITION THAT IT IS NOT COPIED EITHER IN WHOLE OR IN PART
OR DISCLOSED TO THIRD PARTIES UNLESS PRIOR WRITTEN
AUTHORISATION IS GIVEN.

APPENDIX 2

Target Notes



The target notes listed below relate to drawing number D/JWE/1528/002 (Appendix 1):

Target Note 1 (T1)

Building 1. A large two-storey modern brick college building with a corrugated steel sheet roof.

Target Note 2 (T2)

Building 2. A large single-storey workshop building constructed of brick with a corrugated sheet upper wall and a corrugated sheet roof.

Target Note 3 (T3)

Building 3. A large single-storey workshop building constructed of brick with a corrugated sheet upper wall and a corrugated sheet roof.

Target Note 4 (T4)

Building 4. A small modern single-storey building with a corrugated sheet roof.

Target Note 5 (T5)

Buildings 5. A small single-storey brick buildings with a flat roof.

Target Note 6 (T6)

Buildings 6. A small single-storey brick buildings with a flat roof.

Target Note 7 (T7)

Buildings 7. A small single-storey brick buildings with a flat roof.

Target Note 8 (T8)

Buildings 8. A small single-storey brick buildings with a flat roof.

Target Note 9 (T9)

Extensive areas of hard-standing access roads, paths and car parking areas.

Target Note 10 (T10)

Area of amenity grassland located on the southern site boundary adjacent to Bersham Road.

Target Note 11 (T11)

Small area of rough semi-improved grassland located to the north of the site. Species in this area include cock's-foot, common nettle, cinquefoil and creeping buttercup.

Target Note 12 (T12)

Small area of scrubby habitat located on the northern site boundary.

Target Note 13 (T13)

Scattered mature and semi-mature trees located in the amenity grassland area to the south of the site. Species include cherry, whitebeam and silver birch.



APPENDIX 3

Photographs





Photograph 1 – Building 1



Photograph 2 – Building 2



Photograph 3 – Building 3



Photograph 4 – Building 4





Photograph 5 – Building 5



Photograph 6 – Building 7



Photograph 7 – Building 8



Photograph 8 – Hard-standing parking areas





Photograph 9 – Amenity grassland area on the southern site boundary



Photograph 10 – Scrubby area to north of site



Photograph 11 – Scattered broad-leaved trees



Photograph 12 – Scattered coniferous trees



APPENDIX 4

Record search results





Please read **Important Issues** and **Notes** before interpreting the following information.

Our Ref.	Client Name	Date Run	Your Ref.
E03958	J W Ecological Ltd	28/07/2014	1528

Site Name	Grid Reference
Bersham Campus	SJ3264649790

Category 1 Species (Species with European and/or UK Legal Protection, Section 42 [NERC] Species or UK BAP Priority Species) within 1000m - 68 records										
Taxon Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	V
Chiroptera (Bat Species/Ystlum)	SJ3249	12/07/1994	Anon	2		Site Name Withheld		D1486/001/01 (4092875)	WCA5	3
Anguis fragilis (Slow-worm/Neidr Ddefaid)	SJ324496	1990	Mark Lee			Railway track, Wrexham		D0035/002/01 (2502253)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Anguis fragilis (Slow-worm/Neidr Ddefaid)	SJ326495	1990	Mark Lee			Cemetery, Wrexham		D0035/002/01 (2502252)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Natrix natrix (Grass Snake/Neidr y Gwair)	SJ326495	1990	Mark Lee			Cemetery, Wrexham		D0035/002/01 (2502527)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Natrix natrix (Grass Snake/Neidr y Gwair)	SJ324496	1990	Mark Lee			Railway track, Wrexham		D0035/002/01 (2502529)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Erinaceus europaeus (Hedgehog/Draenog)	SJ325500	2003	Anon	1		Pwll Bwlch Gwyn, Brymbo Road, Wrexham	Alive.	D0971/001/01 (4148165)	S42, UKBAP, LBAP[ANG, CON, FLI, GWY]	4
Scotopteryx chenopodiata (Shaded Broad-bar/Rhesen Lydan Dywyll)	SJ326494	15/08/2010	Justin Williams	2 Adult		Felin Pulston	Grassland. Method: Daytime observation.	D1285/001/02 (5305105)	S42, UKBAP, LBAP[GWY]	3
Pipistrellus pipistrellus (Common Pipistrelle/Ystlum Lleiaf Cyffredin)	SJ3249	25/08/1999	Anon	1		Site Name Withheld		D1486/001/01 (4095402)	Bern, Bonn, EPS, HDir, S42, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	3
Natrix natrix (Grass Snake/Neidr y Gwair)	SJ325494	1990	Mark Lee			Felin Puleston		D0035/002/01 (2502533)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Erinaceus europaeus (Hedgehog/Draenog)	SJ329495	25/07/2007	Graham Evans			81 Ruabon Road, Wrexham	Garden Wildlife Record. Grid reference calculated from post code LL13 7PU, using Streetmap.	D1117/001/01 (2100213)	S42, UKBAP, LBAP[ANG, CON, FLI, GWY]	4
Erinaceus europaeus (Hedgehog/Draenog)	SJ32355005 (Selected from Interactive Map)	12/07/2012	Lizzy Webster	1	Dead on road	Ruthin Road, Wrexham		D1383/001/01 (3691166)	S42, UKBAP, LBAP[ANG, CON, FLI, GWY]	4
Pipistrellus (Pipistrellus Bat Species)	SJ3249	26/06/2003	Anon	0		Site Name Withheld		D1486/001/01 (4093792)	Bonn, EPS, WCA5	3
Pipistrellus pipistrellus (Common Pipistrelle/Ystlum Lleiaf Cyffredin)	SJ3249	16/07/1997	Anon			Site Name Withheld		D1486/001/01 (4095240)	Bern, Bonn, EPS, HDir, S42, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	3
Allophyes oxyacanthae (Green-brindled Crescent/Cilgant Brych)	SJ324501	1982	M.Newstead	1 Adult		Wrexham hospital	Garden: rural. Method: Attracted to a lighted window.	D1285/001/02 (5266904)	S42, UKBAP, LBAP[GWY]	3
Tyria jacobaeae (Cinnabar/Teigr y Benfelen)	SJ324501	2 records, on 17/05/1978 and 11/05/1982	M.Newstead	1 Adult, 1 Adult		Wrexham hospital	Garden: rural. Method: Daytime observation.; Garden: rural. Method: MV Light.	D1285/001/02	S42, UKBAP, LBAP[GWY]	3
Lissotriton vulgaris (Smooth Newt/Madfall Ddwr Gyffredin)	SJ32584935 (Estimated (Centroid of Site Name))	~ Aug 1988	Anon	20		Erddig; Felin Puleston	Translocated here from pool in quarry at Standard Landfill site; SJ290650.	D0269/029/01 (2697770)	WCA5, LBAP[CON, DEN, FLI]	1
Triturus cristatus (Great Crested Newt/Madfall Ddwr Gribog)	SJ32584935 (Estimated (Centroid of Site Name))	~ Aug 1988	Anon	100		Erddig; Felin Puleston	Translocated here from pool in quarry at Standard Landfill site; SJ290650.	D0269/029/01 (2702020)	Bern, EPS, HDir, S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, SNP, WRE]	1
Zootoca vivipara (Common Lizard/Madfall)	SJ327502	2004	Pete Lancashire	100+		Wrexham	On railway triangle site.	D0035/002/01 (2502644)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Erinaceus europaeus (Hedgehog/Draenog)	SJ321500 (Selected from Interactive Map)	12/07/2012	Lizzy Webster	1	Dead on road	Ruthin Road, Wrexham		D1383/001/01 (3691167)	S42, UKBAP, LBAP[ANG, CON, FLI, GWY]	4
Lutra lutra (Otter/Dyfrgi)	SJ3249 (Selected from Interactive Map)	09/07/2013	Philip Oliver	1 Droppings	Dung/Droppings/ Frass/Pellet, etc.	Site Name Withheld	Comments Withheld	D1339/001/01 (4165117)	Bern, CITES, EPS, HDir, S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP, WRE]	1
Natrix natrix (Grass Snake/Neidr y Gwair)	SJ324492	22/05/1995	Mrs P Clarke			Felin Puleston		D0035/002/01 (2502128)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4

Taxon Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	V
Vipera berus (Adder/Gwiber)	SJ324492	2 records, in 1992 and 2011	Susan Rogers			Felin Puleston	Bitten on arm in garden of Woodland Cottage (NT). Hospitalised for treatment.; Bitten on leg after treading on snake close to Woodland Cottage.	D0035/002/01	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Natrix natrix (Grass Snake/Neidr y Gwair)	SJ3262549160 (GPS Reading)	05/06/2014	Mick Brummage	1 Adult Female	Live Sighting	Felin Puleston	Basking at base of fallen tree trunk close to river on National Trust land.	D0035/002/01 (5098558)	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Chiroptera (Bat Species/Ystlum)	SJ3250	05/09/2002	Anon	1		Site Name Withheld		D1486/001/01 (4094892)	WCA5	3
Chiroptera (Bat Species/Ystlum)	SJ3350	12/07/1999	Anon	1		Site Name Withheld		D1486/001/01 (4092878)	WCA5	3
Alcedo atthis (Kingfisher/Glas y Dorlan)	SJ33425013 (Estimated (Centroid of Site Name))	Mar 1996	Anon	1		Wrexham; Gwenfro, Bridge Street		D0285/138/01 (2720782)	BDir, Bern, WBAm[RSPB], WCA1, LBAP[CON, DEN, FLI, GWY]	1
Lutra lutra (Otter/Dyfrgi)	SJ3150	Spring 2007	Zara Lomax	1		Site Name Withheld	Comments Withheld	D1117/001/01 (2100178)	Bern, CITES, EPS, HDir, S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP, WRE]	4
Pipistrellus pipistrellus (Common Pipistrelle/Ystlum Lleiaf Cyffredin)	SJ3248	03/06/1993	Anon	27		Site Name Withheld		D1486/001/01 (4095159)	Bern, Bonn, EPS, HDir, S42, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	3
Chiroptera (Bat Species/Ystlum)	SJ3248	2 records, on 31/05/1996 and 28/07/1999	Anon			Site Name Withheld		D1486/001/01	WCA5	3
Natrix natrix (Grass Snake/Neidr y Gwair)	SJ334492	3 records, between 27/05/1991 and 14/06/1991	Dr Mary Swan			Erddig Country Park		D0035/002/01	S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	4
Chiroptera (Bat Species/Ystlum)	SJ3348	14/01/2002	Anon	1		Site Name Withheld		D1486/001/01 (4092992)	WCA5	3
Pipistrellus pipistrellus (Common Pipistrelle/Ystlum Lleiaf Cyffredin)	SJ3349	31/08/1999	Anon	1		Site Name Withheld		D1486/001/01 (4095342)	Bern, Bonn, EPS, HDir, S42, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	3
Chiroptera (Bat Species/Ystlum)	SJ3350	03/10/1990	Anon			Site Name Withheld		D1486/001/01 (4094602)	WCA5	3
Chiroptera (Bat Species/Ystlum)	SJ3350	01/10/1998	Anon	1		Site Name Withheld		D1486/001/01 (4092057)	WCA5	3
Pipistrellus pipistrellus (Common Pipistrelle/Ystlum Lleiaf Cyffredin)	SJ3148	26/06/1989	Anon			Site Name Withheld		D1486/001/01 (4095308)	Bern, Bonn, EPS, HDir, S42, WCA5, LBAP[ANG, CON, DEN, FLI, GWY, SNP]	3
Triturus cristatus (Great Crested Newt/Madfall Ddwr Gribog)	SJ32794830 (Approximate)	1992	ML	Present		Erddig Country Park		D1118/011/03 (5337546)	Bern, EPS, HDir, S42, UKBAP, WCA5, LBAP[ANG, CON, DEN, FLI, SNP, WRE]	1
Meles meles (Badger/Mochyn Daear)	SJ3249	2 records, on 01/01/2003 and 19/04/2007	Clwyd Badger Group (CBG)		Badger Sett		CBG Ref: B40.0. Please contact CBG for more details.; CBG Ref: B1.0.	D0059/001/01	BA, LBAP[CON, DEN, FLI, WRE]	3
Erinaceus europaeus (Hedgehog/Draenog)	SJ3250 (Selected from Interactive Map)	01/06/2014	Kim Norman	1	Dead on road	A483 Wrexham bypass, south	Time of sighting: 4pm.	D1383/001/01 (5098382)	S42, UKBAP, LBAP[ANG, CON, FLI, GWY]	4
Meles meles (Badger/Mochyn Daear)	SJ3250	30/04/2002	Clwyd Badger Group (CBG)		Badger Sett		CBG Ref: A76.0. Please contact CBG for more details.	D0059/001/01 (4872064)	BA, LBAP[CON, DEN, FLI, WRE]	3
Anser anser (Greylag Goose/Gwydd Wylt)	SJ3349	10/10/2010	Norman Hallas	20		Wrexham, Centre, S	Birdtrack:.	D1297/005/01 (4615311)	BDir, Bonn, WCA1, LBAP[CON]	1
Emberiza schoeniclus (Reed Bunting/Bras y Cyrs)	SJ3349	14/08/2011	Norman Hallas	2		Wrexham, Centre, S	BirdTrack Still a few to be seen (not heard).	D1297/005/01 (4630605)	Bern, S42, UKBAP, WBAm[RSPB], LBAP[CON, DEN, FLI, GWY]	1
Meles meles (Badger/Mochyn Daear)	SJ3349	09/04/2002	Clwyd Badger Group (CBG)		Badger Sett		CBG Ref: B47.0. Please contact CBG for more details.	D0059/001/01 (4886763)	BA, LBAP[CON, DEN, FLI, WRE]	3
Mustela putorius (Polecat/Ffwlbart)	SJ3149	2012	Kate Evans	1	Dead on road	At side of A483 between A525 and A5152 turn-offs	Seen whilst driving past. Dark brown fur with paler area under chin. Larger than stoat, more like size of ferret.	D1117/001/01 (3689997)	HDir, S42, UKBAP, LBAP[CON, FLI, GWY, SNP]	4
Meles meles (Badger/Mochyn Daear)	SJ3248	5 records, all on 06/06/2005	Clwyd Badger Group (CBG)		Badger Sett		CBG Ref: B3.4. Please contact CBG for more details.; CBG Ref: B3.5; CBG Ref: B62.0; CBG Ref: B62.2; CBG Ref: B6.0.	D0059/001/01	BA, LBAP[CON, DEN, FLI, WRE]	3
Meles meles (Badger/Mochyn Daear)	SJ3150	7 records, between 29/03/2002 and 02/02/2007	Clwyd Badger Group (CBG)		Badger Sett		CBG Ref: A50.1. Please contact CBG for more details.; CBG Ref: A50.0; CBG Ref: A50.2; CBG Ref: A50.3; CBG Ref: A50.4; CBG Ref: A50.5; CBG Ref: A50.6.	D0059/001/01	BA, LBAP[CON, DEN, FLI, WRE]	3

Taxon Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	V
<i>Meles meles</i> (Badger/Mochyn Daear)	SJ3348	6 records, between 28/12/2002 and 06/06/2005	Clwyd Badger Group (CBG)			Badger Sett	CBG Ref: B2.0. Please contact CBG for more details.; CBG Ref: B2.1; CBG Ref: B2.2; CBG Ref: B62.3; CBG Ref: B73.0; CBG Ref: B62.1.	D0059/001/01	BA, LBAP[CON, DEN, FLI, WRE]	3

Category 2 Species (Global Red List, British Red Data Book, Nationally Rare & Scarce, Welsh Red and Amber Birds & Welsh Vascular Plant Red Data List, where these are not identified in Category 1) within 1000m - 35 records										
Taxon Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	V
<i>Silene vulgaris</i> (Bladder Champion/Gludlys Codrwrth)	SJ32314925	08/05/2002	Whild, S.J. & Lockton, A.J.			Rhostyllen	Associated species with Senecio cambrensis.	D1169/001/02 (4442183)	WVP, LI[VC52]	3
<i>Senecio cambrensis</i> (Welsh Groundsel/Creulys Gymreig)	SJ322491	2 records, in 1987 and 08/05/2002	Whild, S.J. & Lockton, A.J.; Anon			Rhostyllen; Wrexham to Rhostyllen	Ten plants along the roadside, but the verge had been cut, so there could have been more. Associated species listed.	D1169/001/02 D0821/001/01	RD1, RD2, WVP, LBAP[CON, FLI]	3
<i>Cinclus cinclus</i> (Dipper/Bronwen y Dwr)	SJ3349	2 records, on 15/08/2010 and 14/08/2011	Norman Hallas	1, 1		Wrexham, Centre, S	BirdTrack Poss juv.; Birdtrack:. Breeding code: H.	D1297/005/01	Bern, WBAm[RSPB], LBAP[CON]	1
<i>Cygnus olor</i> (Mute Swan/Alarch Dof)	SJ3349	3 records, between 15/08/2010 and 14/08/2011	Norman Hallas	2, 6, 2		Wrexham, Centre, S	Birdtrack:. Breeding code: P.; BirdTrack Pair feeding 4 cygnets.; BirdTrack Pair with 4 young still.	D1297/005/01	BDir, Bonn, WBAm[RSPB], LBAP[CON]	1
<i>Delichon urbicum</i> (House Martin/Gwennol y Bondo)	SJ3349	2 records, on 02/10/2010 and 05/09/2011	Norman Hallas	20, 1		Wrexham, Centre, S	Birdtrack:. Breeding code: M.; BirdTrack Flying around houses in Hightown, Wrexham.	D1297/005/01	Bern, WBAm[RSPB], LBAP[CON]	1
<i>Gallinago gallinago</i> (Common Snipe/Giach Cyffredin)	SJ3349	10/10/2010	Norman Hallas	2		Wrexham, Centre, S	Birdtrack:.	D1297/005/01 (4631344)	BDir, Bonn, WBAm[RSPB], LBAP[ANG, CON, DEN, FLI, GWY]	1
<i>Hirundo rustica</i> (Swallow/Gwennol)	SJ3349	02/10/2010	Norman Hallas	2		Wrexham, Centre, S	Birdtrack:. Breeding code: M.	D1297/005/01 (4612085)	Bern, WBAm[RSPB], LBAP[ANG, CON, GWY]	1
<i>Phalacrocorax carbo</i> (Great Cormorant/Mulfran)	SJ3349	2 records, on 10/10/2010 and 14/08/2011	Norman Hallas	1, 2		Wrexham, Centre, S	Birdtrack:.; BirdTrack Most unusual to find any here.	D1297/005/01	WBAm[RSPB], LBAP[CON, GWY]	1
<i>Picus viridis</i> (Green Woodpecker/Cnocell Werdd)	SJ3349	11/06/2011	Norman Hallas	1		Wrexham, Centre, S	BirdTrack.	D1297/005/01 (4610547)	Bern, WBAm[RSPB], LBAP[CON, DEN, FLI, GWY, SNP]	1
<i>Poecile palustris</i> (Marsh Tit/Titw'r Wern)	SJ3349	11/06/2011	Norman Hallas	2		Wrexham, Centre, S	BirdTrack At least 2 seen clearly; with other tits;/05/be more.	D1297/005/01 (4632802)	Bern, WBR[RSPB], LBAP[CON, DEN, FLI, GWY]	4
<i>Sylvia borin</i> (Garden Warbler/Telor yr Ardd)	SJ3349	11/06/2011	Norman Hallas	2		Wrexham, Centre, S	BirdTrack.	D1297/005/01 (4629333)	WBAm[RSPB], LBAP[CON]	1
<i>Aegithalos caudatus</i> (Long-tailed Tit/Titw Cynffon-Hir)	SJ3350	03/01/2007	Anthony Britner	1+		Wrexham, centre		D1297/002/01 (4430983)	WBAm[RSPB]	1
<i>Anas platyrhynchos</i> (Mallard/Hwyaden Wylt)	SJ3350	03/01/2007	Anthony Britner	1+		Wrexham, centre		D1297/002/01 (4431023)	BDir, Bonn, WBAm[RSPB], LBAP[CON, GWY]	1
<i>Cygnus olor</i> (Mute Swan/Alarch Dof)	SJ3350	03/01/2007	Anthony Britner	1+		Wrexham, centre		D1297/002/01 (4431066)	BDir, Bonn, WBAm[RSPB], LBAP[CON]	1
<i>Hirundo rustica</i> (Swallow/Gwennol)	SJ3350	11/05/2007	Peter Lawton	2		Wrexham, centre		D1297/002/01 (4431343)	Bern, WBAm[RSPB], LBAP[ANG, CON, GWY]	1
<i>Larus canus</i> (Common Gull/Gwylan y Gweunydd)	SJ3350	18/02/2007	Peter Lawton	1		Wrexham, centre		D1297/002/01 (4434235)	BDir, WBR[RSPB]	1
<i>Anas platyrhynchos</i> (Mallard/Hwyaden Wylt)	SJ3248	4 records, between 18/02/2007 and 22/05/2011	Peter Lawton; Andrew Thomas; ND Rawlings	2, 1+, 2, 8		Wrexham, Erddig, Park	BirdTrack.	D1297/002/01 D1297/005/01	BDir, Bonn, WBAm[RSPB], LBAP[CON, GWY]	1
<i>Apus apus</i> (Common Swift/Gwennol Ddu)	SJ3248	22/05/2011	ND Rawlings	1+		Wrexham, Erddig, Park	BirdTrack.	D1297/005/01 (4608947)	WBAm[RSPB]	1
<i>Aythya fuligula</i> (Tufted Duck/Hwyaden Gopog)	SJ3248	2 records, on 18/02/2007 and 06/03/2011	Peter Lawton	15, 2		Wrexham, Erddig, Park	BirdTrack.	D1297/002/01 D1297/005/01	BDir, Bonn, WBAm[RSPB], LBAP[CON]	1
<i>Cicuta virosa</i> (Cowbane/Buladd)	SJ3248	1989	Anon			Erddig		D0216/001/03 (4000600)	RD2, LBAP[CON, FLI]	1
<i>Cygnus olor</i> (Mute Swan/Alarch Dof)	SJ3248	06/03/2011	Peter Lawton	2		Wrexham, Erddig, Park	BirdTrack.	D1297/005/01 (4611280)	BDir, Bonn, WBAm[RSPB], LBAP[CON]	1
<i>Hirundo rustica</i> (Swallow/Gwennol)	SJ3248	2 records, on 22/05/2011 and 29/05/2011	ND Rawlings	1+, 1+		Wrexham, Erddig, Park	BirdTrack.	D1297/005/01	Bern, WBAm[RSPB], LBAP[ANG, CON, GWY]	1
<i>Poecile montanus</i> (Willow Tit/Titw'r Helyg)	SJ3248	07/04/2007	Andrew Thomas	1		Wrexham, Erddig, Park		D1297/002/01 (4434333)	Bern, WBR[RSPB], LBAP[CON, DEN, FLI, GWY]	4
<i>Turdus philomelos</i> (Song Thrush/Bronfraith)	SJ3248	18/02/2007	Peter Lawton	1		Wrexham, Erddig, Park		D1297/002/01 (4434298)	BDir, WBAm[RSPB], LBAP[ANG, CON, DEN, FLI, GWY, SNP, WRE]	1

Category 3 Species (LBAP Species not identified under Categories 1 & 2, Locally Important species as specified by local experts) within 1000m - 38 records										
Taxon Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	V
<i>Aeshna grandis</i> (Brown Hawker/Gwas Neidr Brown)	SJ325493	2 records, on 02/08/2010 and 15/08/2010	Sue Loose; Bryan Formstone	1 Adult (Estimate), 1 Adult (Estimate)		Denbighshire - Felin Puleston NT car park pond, Erdigg	Also noted by Bryan Formstone who was leading NWWT walk.	D0067/001/03	LBAP[GWY, SNP]	3
<i>Coenagrion puella</i> (Azure Damselfly/Mursen Las Asur)	SJ325493	20/06/2012	Sue Loose	1 Adult		Denbighshire - Erddig pond	Grid reference type: Imported.	D0067/001/03 (4854531)	LBAP[SNP]	3

Taxon Name	Grid Reference	Date	Recorder(s)	Abundance	Record Type	Site Name	Comments	Dataset ID	Lists	V
<i>Ischnura elegans</i> (Blue-tailed Damselfly/Mursen Dinlas Gyffredin)	SJ325493	15/08/2010	Sue Loose	1 Adult (Estimate)		Denbighshire - Felin Puleston NT car park pond, Erdigg	Also noted by Bryan Formstone who was leading NWWT walk. Grid reference type: Imported.	D0067/001/03 (4857725)	LBAP[SNP]	3
<i>Pyrrhosoma nymphula</i> (Large Red Damselfly/Mursen Fawr Goch)	SJ325493	20/06/2012	Sue Loose	1 Adult		Denbighshire - Erddig pond	Grid reference type: Imported.	D0067/001/03 (4853497)	LBAP[SNP]	3
<i>Sympetrum striolatum</i> (Common Darter/Gwäell Gyffredin)	SJ325493	15/08/2010	Sue Loose	1 Adult (Estimate)		Denbighshire - Felin Puleston NT car park pond, Erdigg	Also noted by Bryan Formstone who was leading NWWT walk. Grid reference type: Imported.	D0067/001/03 (4855429)	LBAP[SNP]	3
<i>Rumex crispus</i> x <i>obtusifolius</i> = <i>R. x pratensis</i> (Dock)	SJ322491	08/05/2002	Whild, S.J.;Lockton, A.J.			Rhostyllen	Recorded as <i>Rumex x pratensis</i> .	D1169/001/02 (4442027)	LBAP[GWY]	3
<i>Acrocephalus schoenobaenus</i> (Sedge Warbler/Telor yr Hesg)	SJ3349	14/08/2011	Norman Hallas	2		Wrexham, Centre, S	BirdTrack Still a few here (seen & heard).	D1297/005/01 (4630604)	LBAP[CON]	1
<i>Buteo buteo</i> (Buzzard/Bwncath)	SJ3349	10/10/2010	Norman Hallas	1		Wrexham, Centre, S	Birdtrack:.	D1297/005/01 (4613242)	Bonn, CITES, LBAP[CON]	1
<i>Corvus corax</i> (Common Raven/Cigfran)	SJ3349	10/10/2010	Norman Hallas	1		Wrexham, Centre, S	Birdtrack:.	D1297/005/01 (4631217)	LBAP[CON]	1
<i>Dendrocopos major</i> (Great Spotted Woodpecker/Cnocell Fraith Fwyaf)	SJ3349	10/10/2010	Norman Hallas	1		Wrexham, Centre, S	Birdtrack:.	D1297/005/01 (4614973)	Bern, LBAP[CON]	1
<i>Motacilla cinerea</i> (Grey Wagtail/Siglen Lwyd)	SJ3349	11/06/2011	Norman Hallas	3		Wrexham, Centre, S	BirdTrack 2 seen together sev sightings in other areas.	D1297/005/01 (4630519)	Bern, LBAP[CON]	1
<i>Buteo buteo</i> (Buzzard/Bwncath)	SJ3350	22/05/2011	ND Rawlings	1		Wrexham, centre	BirdTrack.	D1297/005/01 (4608407)	Bonn, CITES, LBAP[CON]	1
<i>Certhia familiaris</i> (Treecreeper/Dringwr Bach)	SJ3350	03/01/2007	Anthony Britner	1+		Wrexham, centre		D1297/002/01 (4430375)	Bern, LBAP[CON]	1
<i>Cyanistes caeruleus</i> (Blue Tit/Titw Tomos Las)	SJ3350	2 records, on 03/01/2007 and 07/08/2007	Anthony Britner; Ian Newberry	1+, 2		Wrexham, centre		D1297/002/01	Bern, LBAP[CON]	1
<i>Motacilla alba</i> subsp. <i>yarrellii</i> (Pied Wagtail/Siglen Fraith)	SJ3350	03/01/2007	Anthony Britner	1+		Wrexham, centre		D1297/002/01 (4433835)	Bern, LBAP[CON]	1
<i>Parus major</i> (Great Tit/Titw Mawr)	SJ3350	03/01/2007	Anthony Britner	1+		Wrexham, centre		D1297/002/01 (4430642)	Bern, LBAP[CON]	1
<i>Prunella modularis</i> (Dunnock/Llwyd y Gwrych)	SJ3350	03/01/2007	Anthony Britner	1+		Wrexham, centre		D1297/002/01 (4430780)	Bern, LBAP[CON]	1
<i>Buteo buteo</i> (Buzzard/Bwncath)	SJ3248	07/04/2007	Andrew Thomas	1		Wrexham, Erddig, Park		D1297/002/01 (4431562)	Bonn, CITES, LBAP[CON]	1
<i>Carduelis carduelis</i> (Goldfinch/Nico)	SJ3248	3 records, between 07/04/2007 and 22/05/2011	Andrew Thomas; ND Rawlings	3, 1, 1		Wrexham, Erddig, Park	BirdTrack.; BirdTrack singing male.	D1297/002/01 D1297/005/01	Bern, LBAP[ANG, CON]	1
<i>Carduelis chloris</i> (Greenfinch/Llinos Werdd)	SJ3248	29/05/2011	ND Rawlings	1+		Wrexham, Erddig, Park	BirdTrack.	D1297/005/01 (4609926)	Bern, LBAP[CON]	1
<i>Cyanistes caeruleus</i> (Blue Tit/Titw Tomos Las)	SJ3248	07/04/2007	Andrew Thomas	1+		Wrexham, Erddig, Park		D1297/002/01 (4429497)	Bern, LBAP[CON]	1
<i>Mergus merganser</i> (Goosander/Hwyaden Ddanheddog)	SJ3248	2 records, on 18/02/2007 and 06/03/2011	Peter Lawton	1, 3		Wrexham, Erddig, Park	BirdTrack.	D1297/002/01 D1297/005/01	BDir, Bonn, LBAP[CON]	1
<i>Molophilus pusillus</i> (An Insect - True Fly (Diptera))	SJ3248	25/05/1994	Paul Beuk		Field record	Erddig Park		D0217/001/01 (5171724)	LBAP[DEN]	3
<i>Motacilla alba</i> subsp. <i>yarrellii</i> (Pied Wagtail/Siglen Fraith)	SJ3248	3 records, between 07/04/2007 and 22/05/2011	ND Rawlings; Andrew Thomas	1+, 1+, 1		Wrexham, Erddig, Park	BirdTrack.	D1297/005/01 D1297/002/01	Bern, LBAP[CON]	1
<i>Orthotrichum pulchellum</i> (Elegant Bristle-moss)	SJ3248	1833	Bowman, J.E.			Erddig Park		D1075/001/03 (4926157)	LBAP[CON, FLI]	3
<i>Parus major</i> (Great Tit/Titw Mawr)	SJ3248	07/04/2007	Andrew Thomas	1+		Wrexham, Erddig, Park		D1297/002/01 (4430657)	Bern, LBAP[CON]	1
<i>Phylloscopus collybita</i> (Common Chiffchaff/Siff-Siaff)	SJ3248	2 records, on 07/04/2007 and 22/05/2011	Andrew Thomas; ND Rawlings	1, 1		Wrexham, Erddig, Park	BirdTrack heard singing.	D1297/002/01 D1297/005/01	LBAP[CON]	1
<i>Prunella modularis</i> (Dunnock/Llwyd y Gwrych)	SJ3248	07/04/2007	Andrew Thomas	1		Wrexham, Erddig, Park		D1297/002/01 (4431994)	Bern, LBAP[CON]	1
<i>Sitta europaea</i> (Wood Nuthatch/Delor y Cnau)	SJ3248	07/04/2007	Andrew Thomas	1		Wrexham, Erddig, Park		D1297/002/01 (4432138)	Bern, LBAP[CON]	1
<i>Aeshna cyanea</i> (Southern Hawker/Gwas Neidr y De)	SJ3348 (Estimated Centroid of Site))	Sep 1981	Alexander, KNA			Erddig Park		D0158/003/01 (2506601)	LBAP[SNP]	4

Statutory Sites intersecting 1000m buffer	None
Wildlife Sites within 1000m (C=Candidate)	Erddig Estate (W317) (312m)
NWWT Reserves within 1000m	None
RSPB Reserves within 1000m	None
RIGS within 1000m	None
Habitat type at application grid reference	Buildings
Habitat type(s) within 1000m	Amenity Grassland, Arable, Buildings, Caravan Site, Dense Scrub, Ephemeral/Short Perennial, Improved Grassland, Not Accessed Land, Planted Broad-leaved Woodland, Running Water, Semi-improved Neutral Grassland, Semi-natural Broad-leaved Woodland, Standing Water
Ancient Woodland within 1000m	Ancient Semi Natural Woodland, Restored Ancient Woodland Site

Important Issues

1. Usage of the above information is governed by Cofnod's **Terms and Conditions of Data Release** (available from Cofnod on request).
2. Records shown in bold typeface are sensitive species records. In this public version of the original report, the resolution of sensitive species grid references have been reduced and site names and comments have been removed.
3. Past records of presence of a habitat or species do not guarantee continued occurrence; absence of records does not imply absence of a species, merely that no records are held at Cofnod; Cofnod cannot guarantee the accuracy of supplied data; copyright of records remains with the original recorder.

Notes

This report should be used in conjunction with any relevant maps, where these are supplied.

Cofnod uses a search system which reports species (usually high priority or protected species) within a specified search radius or buffer. Where required a search will also include high priority 'Mobile Species', such as bats, otters, amphibians and certain invertebrates, which lie outside the specified search radius. These species are highlighted on the report with an **asterisk**. They have been selected as 'Mobile Species' as their territory (possibly due to foraging activity or life cycle) could intersect with the search radius. The list of 'Mobile Species', invasive non-native plant species and species categories used in Cofnod's reporting system can be found at <http://www.cofnod.org.uk/Enquiries.aspx> under the 'Species Categories' tab.

Records with 4 figure grid references are displayed as 1km squares on any relevant maps. They are listed separately in reports and highlighted in grey *italic* script.

Please note that while we hold Wales Raptor Study Group data for North East Wales we are only permitted to release it to a limited number of trusted partners. We can provide contact details if you would like to contact the Raptor Study Group directly to request species information.

Sites - Designated Sites and non-designated Wildlife Sites within 50m of the grid reference are highlighted in red. Wildlife Sites which remain unconfirmed by the relevant Local Authority are given 'Candidate' status and are displayed with the (c) suffix. The following reasons for candidate status apply: 1. Anglesey and Flintshire Wildlife Sites were identified by survey but have not been formally confirmed. 2. Conwy and Gwynedd Wildlife Sites were identified by survey and air photos and remain candidate until evaluated using selection criteria.

Dataset ID - All species records within the reports include Dataset ID codes, which can be used to find the relevant Metadata, using the **Data We Hold** page on the Cofnod website (www.cofnod.org.uk/DataWeHold.aspx). The number below the Dataset ID is the individual record ID. Please quote this if you need more information on a specific record.

'V' column - Record Verification Level. The following abbreviations apply: **1**: Unassessed, **2**: Unconfirmed, **3**: Considered Correct by Cofnod, **4**: Considered Correct by Expert. Dataset Categories and Record Verification Levels are explained in more detail within Cofnod's policy on Data Quality, available from our website.

Maps - This report should be used in conjunction with any relevant maps, where these are supplied. Where Statutory protected sites (e.g. SSSI, SAC, SPA) are displayed on Cofnod maps, more details can be obtained from Countryside Council for Wales. (Visit their website at <http://www.ccw.gov.uk/interactive-maps/official-maps-search.aspx>) Where a Phase 1 Habitat map has been supplied, this illustrates habitats mapped by CCW as part of their Habitat Survey of Wales 1979 to 1997. A separate legend is also supplied.

Lists

BA - Protection of Badgers Act, **BDir** - EU Birds Directive, **Bern** - The Bern Convention on the Conservation of European Wildlife and Natural Habitats, **Bonn** - The Bonn Convention on the Conservation of Migratory Species of Wild Animals, **CCWP** - CCW Priority Species List, **CITES** - Convention on International Trade in Endangered Species, **EPS** - European Protected Species, **HDir** - EU Habitats Directive, **LI** - Locally Important Species, identified by the County Recorder as being of particular importance in the specified Vice-County (see below for a list of Vice-Counties) N.B: Only available for certain species groups and certain areas, **LBAP** - Local Biodiversity Action Plan, **RD1** - Red Data Book listing based on IUCN guidelines, **RD2** - Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce), **S42** - Natural Environment and Rural Communities Act 2006 (Section 42), **UKBAP** - UK Biodiversity Action Plan Priority Species, **WBAm[RSPB]** - Birds of Conservation Concern 2002-07 - Welsh Amber listed birds (not based on IUCN criteria), **WBR[RSPB]** - Birds of Conservation Concern 2002-07 - Welsh Red listed birds (not based on IUCN criteria), **WCA1** - Wildlife & Countryside Act 1981 Schedule 1, **WCA5** - Wildlife & Countryside Act 1981 Schedule 5, **WCA8** - Wildlife & Countryside Act 1981 Schedule 8, **WVP** - IUCN Threat Listing of Welsh Vascular Plants

Abbreviations

ANG - Isle of Anglesey, **CON** - Conwy, **DEN** - Denbighshire, **FLI** - Flintshire, **GWY** - Gwynedd, **SNP** - Snowdonia National Park, **WRE** - Wrexham, **LBAP** - Local Biodiversity Action Plan, **NWWT** - North Wales Wildlife Trust, **RSPB** - Royal Society for the Protection of Birds, **RIGS** - Regionally Important Geodiversity Sites, **WS** - Wildlife Site

Vice-Counties

48 - Meirionethshire, **49** - Caernarfonshire, **50** - Denbighshire, **51** - Flintshire, **52** - Anglesey

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APPENDIX 5

Species Lists



TABLE 1 - NATIVE HERBACEOUS SPECIES

Botanical Name	Common Name
<i>Achillea millefolium</i>	Yarrow
<i>Achillea ptarmica</i>	Sneezewort
<i>Ajuga reptans</i>	Bugle
<i>Alliaria petiolata</i>	Garlic mustard
<i>Cardamine flexuosa</i>	Wavy bitter-cress
<i>Cardamine pratensis</i>	Cuckoo-flower
<i>Centaurea nigra</i>	Knapweed
<i>Eupatorium cannabinum</i>	Hemp agrimony
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Galium mollugo</i>	Hedge bedstraw
<i>Geranium pratensis</i>	Meadow cranesbill
<i>Geranium robertianum</i>	Herb Robert
<i>Geum urbanum</i>	Herb Bennett
<i>Glechoma hederacea</i>	Ground-ivy
<i>Hypericum maculatum</i>	Imperforate SJ-wort
<i>Hypericum perforatum</i>	Perforate SJ-wort
<i>Hypericum tetrapterum</i>	Square-stemmed SJ
<i>Hypochaeris radicata</i>	Cat's-ear
<i>Lathyrus pratensis</i>	Meadow vetchling
<i>Leucanthemum vulgare</i>	Ox-eye daisy
<i>Linaria vulgaris</i>	Common toadflax
<i>Lotus corniculatus</i>	Birds-foot trefoil
<i>Medicago lupulina</i>	Black medick
<i>Myosotis sylvatica</i>	Wood forget-me-not
<i>Persicaria bistorta</i>	Bistort
<i>Plantago lanceolata</i>	Ribwort plantain
<i>Primula vulgaris</i>	Primrose
<i>Prunella vulgaris</i>	Self-heal
<i>Pulicaria dysenterica</i>	Fleabane
<i>Ranunculus acris</i>	Meadow buttercup
<i>Rumex acetosa</i>	Common sorrel
<i>Silene dioica</i>	Red campion
<i>Silene vulgaris</i>	Bladder campion
<i>Sonchus arvensis</i>	Corn sow-thistle
<i>Stachys sylvatica</i>	Hedge woundwort
<i>Stellaria holostea</i>	Greater stitchwort
<i>Succisa pratensis</i>	Devil's-bit scabious
<i>Trifolium pratense</i>	Red clover
<i>Trifolium repens</i>	White clover
<i>Veronica chamaedrys</i>	Germander speedwell
<i>Vicia cracca</i>	Tufted vetch



TABLE 2 – NATIVE GRASS AND SEDGE SPECIES

Botanical Name	Common Name
<i>Agrostis capillaris</i>	Common bent
<i>Agrostis stolonifera</i>	Creeping bent
<i>Alopecurus pratensis</i>	Meadow foxtail
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass
<i>Brachypodium sylvaticum</i>	False-brome
<i>Carex flacca</i>	Glaucous sedge
<i>Carex hirta</i>	Hairy sedge
<i>Carex nigra</i>	Common sedge
<i>Cynosurus cristatus</i>	Crested dog's-tail
<i>Deschampsia cespitosa</i>	Tufted hairgrass
<i>Deschampsia flexuosa</i>	Wavy hairgrass
<i>Festuca ovina</i>	Sheep's fescue
<i>Festuca rubra</i>	Red fescue
<i>Holcus lanatus</i>	Yorkshire fog
<i>Holcus mollis</i>	Creeping soft-grass
<i>Luzula campestris</i>	Field woodrush
<i>Melica uniflora</i>	Wood melick
<i>Milium effusum</i>	Wood millet
<i>Poa annua</i>	Annual meadowgrass
<i>Poa pratensis</i>	Smooth meadowgrass
<i>Poa trivialis</i>	Rough meadowgrass

TABLE 3 – NATIVE BULBS AND TUBEROUS SPECIES

Botanical Name	Common Name
<i>Allium ursinum</i>	Wild garlic
<i>Crocus nudiflorus</i>	Autumn crocus
<i>Crocus vernus</i>	Spring crocus
<i>Crocus x stellaris</i>	Dutch crocus
<i>Galanthus nivalis</i>	Snowdrop
<i>Hyacinthoides non-scriptus</i>	Bluebell
<i>Iris foetidissima</i>	Stinking iris
<i>Iris pseudacorus</i>	Yellow flag
<i>Muscari armeniacum</i>	Grape-hyacinth
<i>Narcissus cultivars</i>	Garden daffodil
<i>Narcissus pseudonarcissus</i>	Wild daffodil
<i>Ornithogalum angustifolium</i>	Star- of - Bethlehem



TABLE 4 – NATIVE WOODY SPECIES

Botanical Name	Common Name
<i>Alnus glutinosa</i>	Alder
<i>Betula pendula</i>	Silver birch
<i>Betula pubescens</i>	Downy birch
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Cytisus scoparius</i>	Broom
<i>Frangula alnus</i>	Alder buckthorn
<i>Fraxinus excelsior</i>	Ash
<i>Hedera helix</i>	Ivy
<i>Ilex aquifolium</i>	Holly
<i>Lonicera periclymenum</i>	Honeysuckle
<i>Malus sylvestris</i>	Crab apple
<i>Populus nigra betulifolia</i>	Black poplar
<i>Populus tremula</i>	Aspen
<i>Prunus avium</i>	Wild cherry
<i>Prunus spinosa</i>	Blackthorn
<i>Quercus petraea</i>	Sessile oak
<i>Quercus robur</i>	Oak
<i>Rosa arvensis</i>	Field rose
<i>Rosa canina</i> agg.	Dog-rose
<i>Rosa pimpinellifolia</i>	Burnet rose
<i>Rubus fruticosus</i>	Bramble
<i>Rubus idaeus</i>	Raspberry
<i>Salix caprea</i>	Goat willow
<i>Salix cinerea</i>	Grey willow
<i>Salix pentandra</i>	Bay willow
<i>Salix purpurea</i>	Purple willow
<i>Salix repens</i>	Creeping willow
<i>Sambucus nigra</i>	Elder
<i>Solanum dulcamara</i>	Bittersweet
<i>Sorbus aucuparia</i>	Mountain ash
<i>Taxus baccata</i>	Yew
<i>Tilia cordata</i>	Small-leaved lime
<i>Ulex europaeus</i>	Gorse
<i>Ulmus glabra</i>	Wych elm
<i>Viburnum opulus</i>	Guelder-rose



TABLE 5 – NON-NATIVE HERBACEOUS SPECIES WITH KNOWN VALUE TO WILDLIFE

Botanical Name	Common Name
<i>Aubretia deltoidea</i>	Aubretia
<i>Monarda didyma</i>	Bergamot
<i>Rudbeckia hirta</i>	Black-eyed Susan
<i>Borago officinalis</i>	Borage
<i>Primula chungensis</i>	Candelabra primula sp
<i>Cynara cardunculus</i>	Cardoon
<i>Nepeta x faassenii</i>	Catmint
<i>Malva sylvestris</i>	Common mallow
<i>Chrysanthemum segetum</i>	Corn marigold
<i>Onopordon acanthium</i>	Cotton thistle
<i>Euphorbia cyparissias</i>	Cypress spurge
<i>Hesperis matronalis</i>	Dame's violet
<i>Verbascum nigrum</i>	Dark mullein
<i>Lamium orvala</i>	Dead-nettle
<i>Foeniculum vulgare</i>	Fennel
<i>Tanacetum parthenium</i>	Feverfew
<i>Geranium renardii</i>	French cranesbill
<i>Centaurea macrocephala</i>	Giant hardhead
<i>Cephalaria gigantea</i>	Giant scabious
<i>Echinops bannaticus</i>	Globe thistle
<i>Solidago spp</i>	Goldenrod species
<i>Lunaria biennis</i>	Honesty
<i>Sedum spectabile</i>	Ice-plant
<i>Stachys lanata</i>	Lambs lugs
<i>Melissa officinalis</i>	Lemon balm
<i>Pulmonaria officinalis</i>	Lungwort
<i>Aster spp</i>	Michaelmas daisies
<i>Linaria purpurea</i>	Purple toadflax
<i>Centranthus ruber</i>	Red valerian
<i>Geranium macrorrhizum</i>	Rock cranesbill
<i>Mentha suaveolens</i>	Round-leaved mint
<i>Salvia officinalis</i>	Sage
<i>Saponaria officinalis</i>	Soapwort
<i>Scabiosa atropurpurea</i>	Sweet scabious
<i>Symphytum tuberosum</i>	Tuberous comfrey
<i>Lamium album</i>	White deadnettle
<i>Achillea filipendulina</i> Gold Plate	Yarrow



TABLE 6 – NON-NATIVE WOODY AND SHRUB SPECIES WITH KNOWN VALUE TO WILDLIFE

Botanical Name	Common Name
<i>Berberis x stenophylla</i>	Berberis
<i>Buddleia davidii</i>	Butterfly bush
<i>Buddleia globosa</i>	Orange-ball tree
<i>Ceanothus divergens</i>	Californian lilac
<i>Caryopteris x clandonensis</i>	Caryopteris
<i>Prunus laurocerasus</i>	Cherry laurel
<i>Clematis tangutica</i>	Clematis species
<i>Clematis montana</i>	Clematis species
<i>Olearia macrodonta</i>	Daisy-bush species
<i>Escallonia spp</i>	Escallonia species
<i>Robinia pseudoacacia</i>	False-locust
<i>Pyracantha angustifolia</i>	Firethorn
<i>Ribes sanguineum</i>	Flowering currant
<i>Fuchsia magellanica</i>	Fuchsia
<i>Hebe</i> Midsummer beauty	Hebe
<i>Leycesteria formosa</i>	Himalayan honeysuckle
<i>Amelanchier lamarckii</i>	June-berry
<i>Lavandula angustifolia</i>	Lavender
<i>Choisya ternata</i>	Mexican orange-blossom
<i>Myrtus communis</i>	Myrtle
<i>Pyrus communis</i>	Pear
<i>Prunus lusitanica</i>	Portugal laurel
<i>Rosmarinus officinalis</i>	Rosemary
<i>Pinus sylvestris</i>	Scot's pine
<i>Cotoneaster frigidus</i>	Tree cotoneaster
<i>Parthenocissus quinquefolia</i>	Virginia creeper
<i>Cotoneaster horizontalis</i>	Wall cotoneaster



APPENDIX 6

Bat and bird box designs



SECTION A - BAT BOXES

Schwegler 1FR Bat Tube

This bat brick is designed for buildings, or underneath bridges, arches or tunnels, where conditions are relatively humid. It is particularly useful for siting in new buildings or bridges to attract bats, or to provide new roost sites where existing buildings with bats are being renovated.



Schwegler 1FF Bat Box

The rectangular shape of the 1FF bat box makes it suitable for either trees or buildings. It can be attached to the sides of buildings or in sites such as underneath bridges.

The 1FF is made of natural Woodcrete to provide a natural stable environment for roosting bats. The flatness of this box provides a narrow crevice-like internal space suitable for Pipistrelle and Noctule bats.



Schwegler 1FQ Bat Roost

The latest model from Schwegler is designed specifically to be fitted on the external wall of a house, barn or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside as well as a roughened front panel to enable the bats to land securely. Access into the box is via a step-like recess.

Inside the box, rough pieces of wood are incorporated into the back of the box which are good insulators and are used by the bats as perches. The internal layout offers three different areas with varying degrees of brightness and temperature.



SECTION B - BIRD BOXES

Sparrow Terrace

House sparrows are gregarious and prefer to nest close to each other. This woodcrete box provides room for three nesting pairs in one unit.

Made from long-lasting, breathable woodcrete (expected to last up to 25 years). No maintenance required.



1N Schwegler Deep Nest Box

The 1N has two entrances and a removable wooden insert and offers excellent protection. With two entrances the interior is well lit and birds will readily use it.

The wooden insert, which can be removed for inspection and cleaning purposes, gives protection against predators because nesting takes place at the far end of the box.

The two nest box entrance holes, each measuring 30mm x 50mm, are suitable for redstarts and black redstarts, spotted flycatchers, pied wagtail, robins and wrens.



Schwegler 1B Bird Box

Appeals to a wide range of species.

This box mimics natural holes in trees. The box can be nailed to the trunk of a tree, or hung from a branch so is ideal for use in wooded areas.

This woodcrete box can be expected to last 25 years or more without maintenance.

