ASTUTE ECOLOGY

Ecological Consultants

PRELIMINARY ECOLOGICAL APPRAISAL

13A NORTH COMMON ROAD, UXBRIDGE, UB8 1PD

Report Reference: AE22.144

July 2022

Client:	Hitesh Parmer	
Site:	13a North Common Road, Uxbridge, UB8 1PD	
Grid Ref:	TQ 05963 85178	
Report Ref:	AE22.144	
Prepared by:	Andrew Bird BSc (Hons).	10/07/2022
Checked by:	Alex Goldman (Hons)	12/07/2022

Astute Ecology
47 Chadwick Ave
Derby
DE24 9DH
Head Office: 07870 266446
Email: info@astuteecology.co.uk
Website: www.astuteecology.co.uk

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1 Summary

- Astute Ecology Ltd were commissioned by Hitesh Parmer to undertake a Preliminary Ecological Appraisal on land and buildings 13a North Common Road, Uxbridge, UB8 1PD. Recommendations for further surveys, avoidance, mitigation and enhancement measures for protected species and habitats are included in this report where applicable.

- **Habitats**
- The habitats on site are common and widespread species of low ecological value and easy to replace. The site featured amenity grassland, buildings, common short perennial herbs, scrub, introduced shrubs, hardstanding, species poor hedgerows, trees and shrubs (lower value) and Pond (higher value).
- The proposed plans indicate the loss of species poor grassland, scrub, occasional short perennial, the permanently dry Pond 1 area, and the garage and greenhouse buildings. Trees, hedgerows, the existing house and Pond 2 will be retained. Clearance of the habitats on site will result in a negative net loss to biodiversity.
- Policy and legislation requires every development to deliver a Net Benefit for Biodiversity. However, no details of proposed ecological enhancements have been provided at this stage..
- An ecological enhancement plan along with similar species specific enhancements given within section 6 is recommended to be included with the final proposed plans to show how the site will result in a net positive gain to biodiversity in accordance with planning policy.

- **Designated Sites**
- The proposed development site is not designated for its wildlife interest at an international, national, or local level. The site is not directly connected to any LWS and the change in land use will not result in any direct detrimental impacts to the surrounding areas. As the pond on site remains negative for the presence of GCN, indirect impacts to the local GCN population associated with Uxbridge Ponds LWS are highly unlikely. There will be no impacts to designated sites within the 1km of the site as a result of the proposed plans due to the small scale of the development, that works will be contained within the site boundaries, and the distance of the site from any designated sites.

- **Protected Species:**
- **Bats**

  Recommendations are given in Section 6 to prevent impacts from lighting to potential foraging and commuting bats within the local area.

- **Nesting Birds**

  Clearance of any vegetation should be undertaken outside the nesting bird season (March to August inclusive), or (including adjacent habitats) be preceded by a nesting bird check (within 24 hours prior to commencement of works) to avoid infringing legislation which protects all nesting birds.

- **Badgers and GCN**

  Prior and during works, reasonable avoidance measures given in Section 6 tare to be followed to further prevent harm to potential badgers and GCN that may be present within the local area.

2 Introduction

2.1 Astute Ecology Ltd were commissioned by Hitesh Parmer to undertake a Preliminary Ecological Appraisal on land and buildings 13a North Common Road, Uxbridge, UB8 1PD, herein referred to as the 'site'. Recommendations for further surveys, avoidance, mitigation and enhancement measures for protected species and habitats are included in this report where applicable.

2.2 The site survey area (Appendix 3) features an area measuring approximately 0.17 ha comprising a detached house with driveway and small lawn to the front (south), with access around the east side to a rear garden where lawns, sheds and a greenhouse are present. Adjacent to the rear garden ae two ponds surrounded by dense vegetation. The site is enclosed by a mix of fencing and hedges and there are a number of mature trees on the boundary. The site is bordered by residential gardens and houses on all aspects. The driveway leads to a single track access road that connects to North Common Road.

2.3 The proposed plans are to clear sections of the rear garden and side access to facilitate the erection of two new dwellings with associated access, landscaping and garages (Appendix 3).

2.4 The legislation relevant to protected species within the United Kingdom is summarised within Appendix 1.

2.5 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Astute Ecology. The survey is based on information provided by our client, the development proposals, the results of the desk study and our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Desk Study

Data regarding any known statutory sites priority habitat records within 1km of the site were searched for using the Multi-Agency Geographic Information for the Countryside (MAGIC) on 10/07/2022. Data for protected species and non-statutory designated sites within 1km of the site was provided by Greenspace Information for Greater London (GiGL).

3.2 Surveyor Details

Survey undertaken by Andrew Bird BSc. (Hons.) Senior Ecologist: Astute Ecology Ltd. Level 2 Bat Licence Number: 2017-27866-CLS-CLS. Great Crested Newt Licence Number: 2015-18442-CLS-CLS.

3.3 Survey Conditions

The survey was undertaken at 12:00 on the 27th June 2022.

The outside temperature was recorded as 19°C with 2/8 cloud cover and good visibility.

3.4 Field Survey

3.4.1 The survey was undertaken in accordance with Guidelines for Preliminary Ecological Assessment produced by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017), and the general principles and methods outlined in the Handbook for Phase 1 Habitat Survey (JNCC 2010). Plant nomenclature in this report follows Rose (Revised Edition 2006) for native, naturalised, and garden varieties of vascular plant. Introduced species and garden varieties are not always identified.

3.4.2 The habitats on site were assessed for their suitability to support protected species following standard survey guidance (Appendix 2). Any incidental sightings of field signs were noted at the time of survey. This Preliminary Ecological Appraisal is based on a single site survey and provides an overview of the likelihood of protected species occurring on the site: Where no evidence is found, this does not mean that species are not present, or using the site. Further surveys are only recommended if there is a significant likelihood that protected species may be present and impacted by the proposed development, based on the suitability of the habitat and any direct evidence.

3.5 Limitations

The baseline conditions reported and assessed in this document represent those identified at the time of the survey. Although a reasonable assessment of habitats present can be made during a single walkover survey, seasonal variations are not observed.

4 Results

4.1 Desk Study

4.1.1 Designated Sites

Six non-statutory designated Local Wildlife Sites and two statutory sites were recorded within 1km of the site (Table 1 and 2). The site does not lie within a protected or designated biodiversity opportunity area and no previously designated priority habitats were recorded on or adjacent to the site. Maps provided by MAGIC are included within Appendix 4.

Table 1. *Statutory Sites within 1km of the site.*

Site Name	Distance	Direction	Reason(s) for Designation
Fray's Farm Meadows SSSI	470 m	NW	One of the last remaining examples of relatively unimproved wet alluvial grassland in Greater London and the Colne Valley
Frays Valley LNR	470 m	NW	Includes two Special Sites of Scientific Interest at Fray's Farm Meadow and Denham Lock Wood, five wet gravel pits, Harefield Place Nature Reserve, a small part of Harefield Golf Course, a small part of Denham Lock Meadow adjacent to the Frays River and the length of Frays River within these boundaries. Grassland, ancient woodland herbs and the protected Desmoulin's Whorl Snail.

Table 2. *Non-Statutory Sites within 1km of the site.*

Site Name	Distance (M)	Direction	Reason(s) for Designation
London's Canals LWS	810	SW	London's canals support a wide range of aquatic flora, amongst which are found a number of locally uncommon species.
Little Britain LWS	880	SW	A section of the Colne Valley with a remarkable variety of wildlife habitats, including lakes, rivers, scrub, areas of wasteland, woodland and grassland.
Mid Colne Valley LWS	230	W	A section of the Colne Valley with a remarkable range of high-quality wetland
Uxbridge Ponds LWS	125 –(Nearest Pond)	SW	Three ponds, which support amphibians including two breeding ponds for Great Crested Newts.
Uxbridge Common LWS	800	SE	A large area of old meadows, with the River Pinn meandering through.
Common Plantation LWS	440	NE	Two areas of woodland separated by the Western Avenue.

4.1.2 **Priority Habitats**

According to MAGIC Maps, the site is not recorded as or lies adjacent to priority habitat. (Appendix 4).

4.1.3 **Protected Species records**

Species records provided by GiGL are integrated into the results descriptions within Section 4.2 below.

4.2 Habitats

4.2.1 Associated site photographs are included within Appendix 6. Plant scientific species names and abundance recorded on site is included within Table 2 below.

4.2.1.1 The following habitat types were recorded on site:

- Amenity grassland
- Short perennial
- Dense Scrub
- Species-poor hedgerow
- Trees and Shrubs
- Introduced shrub
- Building
- Hard standing

4.2.2 The front garden area featured a small area of hardstanding driveway adjacent to an amenity grassland area with introduced shrubs bordered by a species poor privet hedgerow which bounds the entire eastern section of the site. Leyland cypress hedgerow formed part of the western boundary until the rear garden area where semi-mature hawthorn, and sycamore formed the western boundary. The northern section of the site featured immature apple and hazel. The north-eastern boundary featured two mature sycamores and occasional immature hawthorn, elder and hazel.

4.2.3 The rear garden featured further amenity grassland within the western section area comprising predominantly Perennial Rye- grass, with frequent Yorkshire-fog, White Clover and Creeping Buttercup, and occasional Groundsel, speedwell sp. and Dove's-foot Crane's-bill. Scattered short perennials were present on the boundaries of the rear garden and included Perennial Sow-thistle, Red Dead-nettle, Herb-Robert, Garlic Mustard and Pendulous Sedge. Introduced shrubs included roses and Rhododendron. Greenhouses and open gages were also present within the western section of the rear garden.

4.2.4 The eastern section of the site featured dense scrub in the form of bramble and saplings with immature hazel and willow bounding two ponds; a smaller one approximately 20m^2 dry at the time of survey (Pond 1) and a larger 180m^2 pond (Pond 2). Within the ponds, bulrush and yellow iris dominated.

Table 1. *Plant species and abundance recorded on site.*

Common Name	Latin Name	DAFOR Scale
Grasses and Short Perennial		
Common nettle	*Urtica dioica*	O
Bramble	*Rubus fruticosus*	D
Creeping buttercup	*Ranunculus repens*	O
Dandelion	*Taraxacum officinale*	O
Ivy	*Hedera helix*	A
Perennial ryegrass	*Lolium perenne*	D
Ribwort plantain	*Plantago lanceolata*	O
Sow thistle	*Sonchus oleraceus*	O
White clover	*Trifolium repens*	A
Cleaver	*Galium aparine*	A
Cows parsley	*Anthriscus sylvestris*	R
Broad-leaved dock	*Rumex obtusifolius*	R
Cocksfoot grass	*Dactylis glomerata*	O
Yorkshire fog	*Holcus lanatus*	O
Bindweed	*Convolvulus arvensis*	O
Groundsel	*Senecio vulgaris*	O
Spear Thistle	*Cirsium vulgare*	R
Speedwell	*Veronica Sp.*	O
Doves Foot -Cranebill	*Geranium molle*	O
Herb Robert	*Geranium robertianum*	O
Garlic Mustard	*Iliaria petiolata*	R
Pendulous Sedge	*Carex pendula*	O
Perennial Sow-thistle	*Sonchus arvensis*	O
Red-Dead nettle	*Lamium purpureum*	O
Bulrush	*Tyhpa latifolia*	O
Yellow Iris	*Iris pseudacorus*	O
Trees, shrubs and saplings		
Willow	*Salix Sp*	O
Hawthorn	*Crataegus monogyna*	R
Silver Birch	*Betula pendula*	R
Leyland Cypress	*Cupressus × leylandii*	O
Elder	*Sambucas nigra*	O
Sycamore	*Acer pseudoplatanus*	O
Hazel	*Corylus avellana*	O
Privet	*Ligsutrum Sp.*	O

4.2 Protected Species

4.3.1 **Roosting Bats**

- GiGL provided records of Serotine, Myotis sp., Daubenton's Bat, Noctule, Nathusius' Pipistrelle, Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared Bat, all at a location 986 m from the site.
- Two storey detached house loft did not feature any evidence of roosting bats and the lining was in good condition. Externally, the roof and walls lacked any Potential Roost Features (PRF's). A bargeboard at the front gable end was partially coming away from the wall creating a gap which was considered unsuitable as a PRF.
- The garden sheds and greenhouse did not provide any roosting features for bats with the interiors being either open and well lit, or well-sealed against bat entry. The minor covering of ivy on the roofs of the shed did not have any stems of sufficient width to create roosting features.
- None of the trees on site or on the boundaries appeared to have any potential roosting features for bats such as rot holes, split limbs or flaking bark.
- The site is therefore of Negligible potential for roosting bats.

4.3.2 **Foraging and Commuting Bats**

The site as a whole is a sheltered garden with large pond that is expected to provide a good source of invertebrates. It is a given that at least small numbers of common urban species will forage or commute across the site. The potential for more notable species would appear to be limited due to the urban situation of the site.

4.3.3 **Breeding Birds**

The sites boundary trees, buildings, hedgerows and scrub areas offer suitable habitat for a range of common and widespread species of bird. No evidence of previous nesting on site was recorded. However, it can be assumed that birds are likely to nest in the vegetation in the future.

4.3.4 **Badgers** (*Meles meles*)

The sites dense scrub covered pond banks feature suitable potential sett building habitat. Small areas of potential foraging habitat for badgers was present within the rear garden. No mammal paths or evidence of badgers was recorded on site.

4.3.5 **Great Crested Newts** (*Triturus cristatus*)

- The site features limited terrestrial foraging and hibernation habitat for GCN. Mapping and site walkover, indicate 3 ponds within 500m that are not separated from the site by significant barriers to dispersal. There are two ponds on site; Pond 1 was dry (previous surveys at the site by All Ecology show this has been dry for several years and is now defunct as a pond) and the larger Pond 2 (6m away) had retained 50% water and is unlikely to dry completely over summer. A third pond (Pond 3) is located 125m south-west of the site (See Satellite imagery map Appendix 5) and also retained its water.

- There are GCN records located 176 m southwest of the site which corresponds with one of the ponds (Pond 3) which is part the Uxbridge Ponds SINC. The most recent Great Crested Newt record is from 2010. Great Crested Newt surveys of this pond and the pond on site were carried out by All Ecology in 2015. These recorded a maximum count of one (low population) in the Uxbridge Pond (Pond 3); they were found to be absent from Pond 2 on site. A further eDNA survey was undertaken by All Ecology Ltd in April 2019 which found the pond on site (Pond 2) to be negative (no GCN presence).

- Both Pond 2 and 3 were assessed as suitable to support GCN (Table 2). Pond 3 is relatively isolated from the site, requiring newts having to cross roads, driveways, and gardens in order to access the site. Although GCN were previously found to be absent from Pond 1; the eDNA survey took place nearly three years ago and it is possible that they have colonised Pond 1, although given the low population and isolation of Pond 3 from Pond 2, this is considered unlikely.
- Pond 2 was subjected to a eDNA survey by Astute Ecology on 27th June 2022 and proved negative for the presence of GCN (See Appendix 7 for Laboratory results).

***Table 2**. Pond 2 and 3 Habitat Suitability Index (HSI) Results.*

HSI Variables	Pond 2	Pond 3
S1 Location	1	1
S2 Pond Area	0.8	0.9
S3 Pond Drying	0.9	0.9
S4 Water Quality	0.33	0.67
S5 Shade	1	1
S6 Waterfowl	1	1
S7 Fish	1	1
S8 Ponds	0.4	0.4
S9 Terrestrial Habitat	0.67	0.67
S10 Macrophytes	0.4	0.9
HSI Score	**0.69**	**0.82**
Rating	**Average**	**Excellent**

4.3.6 **Reptiles**

There are 3 records of reptiles located 731m and 870m away which are not considered connected to the site. The site lacks suitable habitats for reptiles being either too open (amenity grassland) or shaded around the pond. Although the pond may offer amphibian prey for potential occasional individual grass snake, there is limited dispersal to and from the site due to the immediate urban surroundings and they are expected to be absent from the site.

4.3.7 **Water Vole** (*Arvicola amphibious*)

GiGL provided records of Water Voles from watercourses in the wider area. The site lacked suitable habitat for water vole and they are unlikely to found on site.

4.3.8 **Otter** (*Lutra Lutra*)

There were no records provided for otter within 2km of the site. The site lacked suitable connected habitat for otter and they are unlikely to found on site.

4.3.9 **Invertebrates**

The site lacked floral diversity but is likely to support a range of common and widespread invertebrates.

4.3.10 **Hazel Dormice** (*Muscardinus avellanarius*)

There are no records of hazel dormice within 2km of the site. The site lacked suitable habitat for hazel dormice and they are unlikely to found on site.

5 Evaluation

5.1 Designated sites

The proposed development site is not designated for its wildlife interest at an international, national, or local level. The site is not directly connected to the any LWS and the change in land use will not result in any direct detrimental impacts to the surrounding areas. As the pond on site remains negative for the presence of GCN, indirect impacts to the local GCN population associated with Uxbridge Ponds LWS are highly unlikely. There will be no impacts to designated sites within the 1km of the site as a result of the proposed plans due to the small scale of the development, that works will be contained within the site boundaries, and the distance of the site from any designated sites.

5.2 Habitats

The habitats on site are common and widespread species of low ecological value and easy to replace. The site featured amenity grassland, buildings, common short perennial herbs, scrub, introduced shrubs, hardstanding species poor hedgerows, trees and shrubs (lower value) and Pond (higher value).

The proposed plans indicate the loss of species poor grassland, scrub, occasional short perennial, the permanently dry Pond 1 area, and the garage and greenhouse buildings. Trees, hedgerows, the existing house and Pond 2 will be retained. Clearance of the habitats on site will result in a negative net loss to biodiversity.

Policy and legislation requires every development to deliver a Net Benefit for Biodiversity. However, no details of proposed ecological enhancements have been provided at this stage. Recommendations in section 6 are given to provide options on how to ensure the proposals result in a net positive gain to biodiversity.

5.3 Roosting Bats

Negative impacts to roosting bats are highly unlikely as a result of the proposed works.

5.4 Foraging and Commuting Bats

The proposed plans will not result in any direct negative impacts to foraging and commuting bats. However, any new unsympathetic lighting on site could also pose a low indirect risk of impacting commuting and foraging bats using the retained and adjacent habitats.

5.5 Breeding Birds

Without reasonable avoidance measures (see Section 6), any works such as during removal of any vegetation including construction works within close vicinity of nesting bird habitat, poses a risk of disturbance, death and/or injury to breeding birds.

5.6 **Badgers**

Badgers are a highly transient species and may potentially traverse the site at night between works becoming trapped in any open excavations, and/or create setts close to the proposed working area. Therefore, without reasonable avoidance measures, there is a risk of negative impacts to badgers.

5.7 **Great Crested Newt**

GCN are absent from the ponds on site therefore are likely absent from the site. Pond 3 located approximately 125m from the site via a road is known to have support a low population of GCN in the past. However, as per the eDNA survey, it is unlikely that GCN have begun using the Pond on site. It is therefore unlikely that GCN will be impacted by the proposed plans. This is further demonstrated by using the Natural England GCN Rapid Risk Assessment (Table 3). However it should be noted that this does not take into account the presence of suitable pond on site which still offers opportunities for colonisation in the future. Therefore reasonable avoidance measures to protect this species should be employed to further ensure no impacts to GCN.

***Table 3**. Natural England GCN Rapid Risk Assessment (for Pond 3 located 125m away).*

Component	**Likely effect** (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.1
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

5.8 **Reptiles**

Due to the unlikelihood of reptiles using the site, impacts to reptiles are considered highly unlikely.

5.9 **Water Vole**

The proposed works will not impact upon any water vole habitat, and due to the unlikelihood of water vole using the site or nearby habitats, impacts to water vole are considered highly unlikely.

5.10 **Otters**

The proposed works will not impact upon any otter habitat, and due to the unlikelihood of otter using the site or nearby habitats, impacts to otters are considered highly unlikely.

5.11 **Invertebrates**

Due to the unlikelihood of significant notable, priority or protected species occurring onsite, impacts to significant invertebrate species as a result of proposed plans are considered highly unlikely.

5.12 **Hazel Dormice**

The proposed works will not impact upon any hazel dormice habitat, and due to the unlikelihood of hazel dormice using the site or nearby habitats, impacts to hazel dormice are considered highly unlikely.

6 Recommendations, Mitigation and Enhancements

6.1 Habitats (Floral)

- **Enhance Habitats**

  Any new soft landscaping as part of the development proposals should incorporate the planting of new trees and potentially new shrubs and/or hedgerows, comprising a mix of native species.

- Policy and legislation requires every development to deliver a Net Benefit for Biodiversity. Therefore a site ecological enhancement plan along with similar species specific enhancements given below is recommended to be included with the final proposed plans to show how the site will result in a net positive gain to biodiversity in accordance with planning policy.

6.2 Bats

- **Prevent Disturbance from New Lighting**
- The following measures should be implemented within the development to reduce in-direct impacts on foraging and commuting bats caused by artificial lighting (ILE/BCT, 2007; BCT 2014):
    - Direct any task lighting used during construction away from any vegetation and boundaries.
    - Set any necessary security lighting on short timers with a sensitivity to large moving objects only.
    - Use hoods, cowls, or directional lighting to avoid light being directed at the sky or towards the thatched roof.
    - Limit lighting times to provide dark periods; and low-pressure sodium security lights with glass glazing are recommended, as these produce the least amount of UV light. Avoid white and blue wavelengths of the light spectrum. The brightness of the lamps should be kept as low as feasibly possible (ILE/BCT, 2007; BCT interim guidance 2014).

- **Provide New Roosting Opportunities**

- The instalment of at least 2x artificial bat boxes/brick/tubes to be placed at least 2m high on the external south/south-east/south-west facing elevations of structures or trees on site would provide enhanced roosting opportunities for potential roosting bats in the local area.

6.3 Breeding Birds

- **Prevent Impacts to Breeding Birds**
  - Clearance of vegetation should be carried out outside the nesting bird season (March to August inclusive), or preceded by a nesting bird survey (within 24 hours prior to commencement of works) to avoid infringing legislation which protects all nesting birds.
  - In the event, any breeding birds are found using any areas proposed for works or areas within the vicinity of works; no works should be undertaken within 5m of the breeding bird nest and a 5m buffer shall be maintained until the young have fledged and the adult birds are no longer using the nests.

- **Provide New Nesting Opportunities**
  - Instalment of at least 2x Generalist Schwegler 1B nest boxes should be placed on site.
  - Generalist bird boxes should be fixed two to five metres high, out of the reach of predators such as domestic cats.
  - Boxes are best mounted facing between north and east, thus avoiding strong sunlight and the wettest winds.
  - Boxes should also be tilted forward slightly to minimise the effect of any driving rain.

6.4 Badgers

- **Reasonable Avoidance Measures**
  - Any excavations left overnight are to be covered at the end of each working day or include a means of escape for any fallen animals.
  - Any temporarily exposed open pipe system is to be capped in such a way as to prevent badgers gaining access.
  - In the event that badgers, or evidence of them is found on site, an ecologist should be contacted immediately.

6.5 GCN

- **Reasonable Avoidance Measures**
  - <u>During Works:</u>
  - Backfill trenches and other excavations before nightfall, or leave a ramp to allow newts to easily exit.
  - Raise stored materials (that might act as temporary resting places) off the ground, e.g. on pallets.
  - In the event GCN are found, further survey and mitigation may be required.

Appendix 1. References

Bat Conservation Trust: Artificial Lighting and Wildlife. Interim guidance: Recommendations to help minimize the impact of artificial lighting. June 2014.

Creswell, W. & Whitworth, R. (2004). An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus. English Nature. Report Number 576.

Conservation of Habitats and Species Regulations 2010 (as amended). HMSO, London. DCLG (2012).

National Planning Policy Framework. ISBN: 9781409834137. Available to download online on the Communities and Local Government website
http://www.communities.gov.uk/publications/planningandbuilding/nppf

English Nature (2001) Great Crested Newt Mitigation Guidelines.

English Nature Froglife (1999) Reptile Survey: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation.

Froglife Advice Sheet 10. Gent, A.H. and Gibson, S.D., eds. (1998) Herpetofauna Workers' Manual. Peterborough, Joint Nature Conservation Committee.

Guidelines for Preliminary Ecological Assessment produced by the Chartered Institute of Ecology and Environmental Management (CIEEM) in July 2015

HMSO (2010) Conservation of Habitats and Species Regulations 2010 (as amended)

HMSO, London. HMSO (2000) Countryside and Rights of Way (CRoW) Act.

HMSO, London. HMSO (1981) Wildlife and Countryside Act. HMSO, London. Hundt, L. (2012).

Bat Surveys – Good Practice Guidelines, 2nd Edition. Bat Conservation Trust.

Jehle, R. (2000). The terrestrial summer habitat radio tracked GCNs (Triturus cristatus and marbled newts (Triturus marmoratus). The Herpetological Journal 10:137-143.

JNCC (2010) Handbook for Phase 1 habitat survey: a technique for environmental audit (revised reprint)

JNCC: Peterborough. MAGIC: Designated area data downloaded from URL http://magic.defra.gov.uk (accessed 8th May 2015).

Natural Environment and Rural Communities Act (NERC Act) (2006) HMSO London.

Appendix 2. Legislation and Methodology

Birds
All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

The bird breeding season is typically accepted to start in February and continue through until August, however breeding birds can be found all year round depending on the given species and climatic conditions.

A sites habitat composition, locality, association to designated sites as well as current usage and management are all considered in the decision as to whether further bird related surveys are required. In addition, surveys may be recommended based on incidental bird records collected during a Preliminary Ecological Appraisal, species identified within an ecological data search or target species listed within a local biodiversity action plan.

Bird surveys are carried out in accordance with:
Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods*. RSPB.

Survey Timing
Breeding Bird surveys (BBS): Four visits, evenly spaced between mid-April and mid-June. The standard BBS methodology may require amendment based on climate and weather conditions, the complexity of habitats within a site, the perceived ecological interest of a site and the extent of the survey area.

Wintering Bird surveys (WBS): Four visits, evenly spaced between October and February. The standard WBS methodology may require amendment based on climate and weather conditions, the complexity of habitats within a site, the perceived ecological interest of a site and the extent of the survey area.

Species Specific Surveys: Certain species owing to their migration patterns, habitat requirements, nocturnal habits and other ecological behaviours should be surveyed as per their given methodologies stated within Gilbert, G. et al (1998).

Roosting Bats
All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended).
It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.
Areas of concern; can be encountered in many types of structure and care should therefore be taken when undertaking maintenance or demolition of suitable structures and trees.

Site assessments of buildings, commuting and foraging habitat and trees are undertaken in accordance with:

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

Preliminary Ecological Surveys look for evidence of bat presence such as feeding remains, bat droppings, roosting individuals and staining around potential access points.

The suitability of site features were also assessed because absence of bat evidence, is not confirmation of a negative result. Within buildings these features include suitable enclosed spaces such as slipped or missing roof tiles, gaps and cracks in brickwork, enclosed roof voids, accessibility into wall spaces, gaps along ridge rafters, joints in roof beams and the presence of suitable soffits and fascia's.

Within tree features searched for include; natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, hollows, and dense cover of ivy over the tree.

If evidence is found, or a building supports features conducive to supporting roosting bats then further presence / absence bat surveys and/or roost characterisation surveys are recommended.

Survey Timing:
Preliminary Ecological Appraisals can be undertaken throughout the year.

Presence /absence surveys and roost characterisation surveys are undertaken during the bat activity season between **May and September** (Specific timings are relative to the suitability of a structure for supporting protected species and weather dependent)

Bat Activity Transect surveys are carried out between **April and October (**weather dependent)

Hibernation surveys are carried out from **November to March**.

Guideline for assessing the suitability of a structure to support roosting habitat (Buildings and Trees), amended from Collins, J (2016).

Category	Description of roosting habitat	Number of presence / absence surveys required
No Potential	The structure or tree is wholly unsuitable for a bat roost.	None
Negligible Potential	Suitable cavities may exist but these are open to wind, rain or disturbance.	None
Low Potential	This category describes a structure with one or more potential roost sites that could be used by individual bats opportunistically, that less than ideal in some way. For example, the feature may be subject to intermittent disturbance, and does not provide enough shelter, conditions* space and/or suitable surrounding habitat (e.g. unlikely to support a maternity or hibernation roost). This category described a tree of sufficient size and age to support rooting bats, but with no features observed from the ground, or the features only have a limited potential to support roosting bats.	One survey between May and August Trees – No further surveys required

Moderate Potential	This category describes a structure or tree considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed) Features considered to have adequate potential would include cavities of appropriate dimensions that are generally free from disturbance and free from fluctuations in the weather.	Two surveys between May and September (with at least one survey undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be ideally undertaken at least two weeks apart.
High Potential	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions* and surrounding habitat.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn. The surveys should ideally be undertaken at least two weeks apart.
Confirmed	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the structure.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn. The surveys should be undertaken at least two weeks apart.

(in this context conditions refers to the level of disturbance, light, height above ground, temperature, and humidity etc.)*

If bats are discovered emerging or re-entering any structure, the survey schedule should be appropriately adjusted to increase the survey effort so that sufficient information for roost characterisation can be collected to advise the planning application or EPS development license.

Foraging and Commuting bats

Habitat features on site were assessed for their suitability to support foraging and commuting bat populations. This assessment was independent from the suitability of the site to support roosting bats, and provides information on the likeness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

Potential suitability of foraging and commuting habitat within an application boundary. Features should be assessed following this guide and professional judgement. Adapted from Collins J (2016)

Category	Description of commuting and foraging habitat	Survey effort to establish the value of commuting and foraging habitat**
Negligible Potential	Negligible habitat features on site likely to be used by commuting or foraging bats	None
Low Potential	Habitat which could be used by low numbers of commuting bats such as an isolated guppy hedgerow, or an unvegetated stream unconnected to suitable habitat in the wider environment. Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	**Transect /spot count/ timed search survey:** One survey visit per season: Spring- April/ May Summer- June/July/ Aug Autumn – Sept/ Oct In weather conditions conducive to finding bats **AND** **Static automated surveys:** One location per transect, over a five-night period, per season: Spring- April/ May Summer- June/July/ Aug Autumn – Sept/ Oct In weather conditions conducive to finding bats *Further survey may be required if surveys reveal higher activity than predicted from habitat alone*
Moderate Potential	Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens. Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.	**Transect /spot count/ timed search survey** One survey visit per month (April to October) In weather conditions conducive to finding bats At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. **AND** **Static automated surveys:** Two locations per transect, over a five-night period, per month (April to October)

		In weather conditions conducive to finding bats
High Potential	Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, and woodland edge High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses, and grazed parkland. Site is close to and connected to known roosts.	Transect /spot count/ timed search survey Up to two survey visit per month (April to October) In weather conditions conducive to finding bats At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. **AND** **Static automated surveys:** Three locations per transect, over a five-night period, per month (April to October) In weather conditions conducive to finding bats

*(** This is only a guide for survey effort required, the complexity of the site and the proposed disturbance / loss of features will determine the extent of works required on a site by site basis).*

Badgers (*Meles meles*)
Badgers are protected under the Protection of Badgers Act 1992. It is illegal to wilfully kill, injure, disturb or take any badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett.

Site assessments are undertaken in accordance with:
Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*.

Badgers can be found along the side of arable fields but as their main diet is earthworms they are more commonly found where there is a patchwork of undisturbed grassland areas where an abundant supply of earthworms can be found. Consequently, badgers are more common in areas that are used for grazing farm animals. Other features to be aware of when assessing the likelihood of badgers are suitable hedgerows, woodland and banking's where badgers are able to excavate setts. Also, badgers prefer well drained areas and are less common where the water table is relatively high over large areas.
If these types of suitable features are found in or around the project site then badger surveys are recommended.

Survey Timing
Badger surveys can be carried out throughout the year.

Amphibians

The great crested newt (*Triturus cristatus*) and natterjack toad (*Bufo calamita*), are fully protected under Schedule 5 of the wildlife and countryside Act 1981. The legislation protects these amphibians and their place of shelter or protection which may extend 500 metres from the breeding pond.

Great Crested Newt (*Triturus cristatus*)
The great crested newt (*Triturus cristatus*), is fully protected under Schedule 5 of the wildlife and countryside Act 1981 (As amended) and the Habitat regulations 2010, making it an offence to intentionally or recklessly kill, injure, disturb or take great crested newts, intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection.

Great crested newt site assessments are undertaken in accordance with:
English Nature. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. and
Langton T, Beckett C and Foster J (2001) Great Crested Newt Conservation Handbook. Froglife, Halesworth.

Reptiles

Two species of reptile, the Sand Lizard (*Lacerta agilis*) and Smooth Snake (*Coronella austriaca*) and their habitats, are fully protected under Schedule 5, Section 9 of the Wildlife and Countryside Act 1981. All other native British reptiles are protected against intentional killing and injury.

British reptiles are found in exposed undisturbed areas. For example, areas without cultivation with differing areas of grassland sward length. Suitable areas include abandoned sand quarries, fallow farmland land, heathland, post-industrial land, railway corridors etc. Grass snake (*Natrix natrix*) are often found in areas of tall vegetation near water bodies.
Common lizard and slow worm favour areas of longer grassland with opportunities to bask in more open areas. Slow worm favour grassland, hedgerows, woodland borders (as do adder) and rural gardens.

If these types of suitable features are found then reptile surveys are recommended.

Edgar P, Foster J and Baker J (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

Gent T and Gibson S (2003) Herpetofauna Workers Manual. JNCC, Peterborough.

Survey Timing.
Surveys can only be undertaken during suitable weather conditions (Between March and September) when temperatures are between 9º C and 18º C. Consequently, the best time of year to survey is spring and autumn.

Water Vole (*Arvicola amphibius*)

The water vole is fully protected under Section 9. Legal protection makes it an offence to intentionally kill, injure or take (capture) a water vole. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to any structure or place which

water voles use for shelter or protection or disturb water voles while they are using such a place.
Areas of concern; well vegetated ditches and ponds therefore particular care should be given while undertaking work such as dredging.
Water vole site assessments are undertaken in accordance with:
Strachan R. (1998) Water Vole Conservation Handbook. English Nature, the Environment Agency and the Wildlife Conservation Research Unit.
Water vole are usually found along water bodies that have still or slow flowing deep water with an abundance of bankside herbaceous vegetation. Such areas include dykes, rivers, streams and drains, but they can also be found on isolated large ponds.
If these types of suitable features are found during an Ecological Appraisal then water vole surveys are recommended.
Timing:
Water voles are best surveyed between April and September although signs can be found more easily when vegetation is relatively low during spring and autumn. Water voles cannot be surveyed during periods of flooding.

Botanical Value

There are 60 plant species listed in Schedule 8 of the Wildlife and Countryside Act 1981 where it is an offence to intentionally pick or uproot or destroy any of these plant species.

During the Preliminary Ecological Appraisal notes are taken of areas that could contain rare or local important plant species/communities. Such areas could include mature woodland, calcareous sites, undisturbed areas such as ridge and furrow pasture or even semi-improved areas that have a varied sward length.

If habitat such as these are found on the project area during the Preliminary Ecological Appraisal, then a full botanical survey will be recommended.

Survey Timing
Woodland during April.
Open areas from May to July.

Rodwell, J.S. Joint Nature Conservation Committee (JNCC). National Vegetation Classification: Users' handbook (2006). JNCC.

Ecological Enhancement

In March 2012 the Department for Communities and Local Government published the National Planning Policy Framework. This sets out planning policies on protection of biodiversity through the planning system. The document states - *opportunities to incorporate biodiversity in and around developments should be encouraged*.
Usually when reviewing how ecological enhancements can be implemented the Local Biodiversity Action Plan for the area is considered.

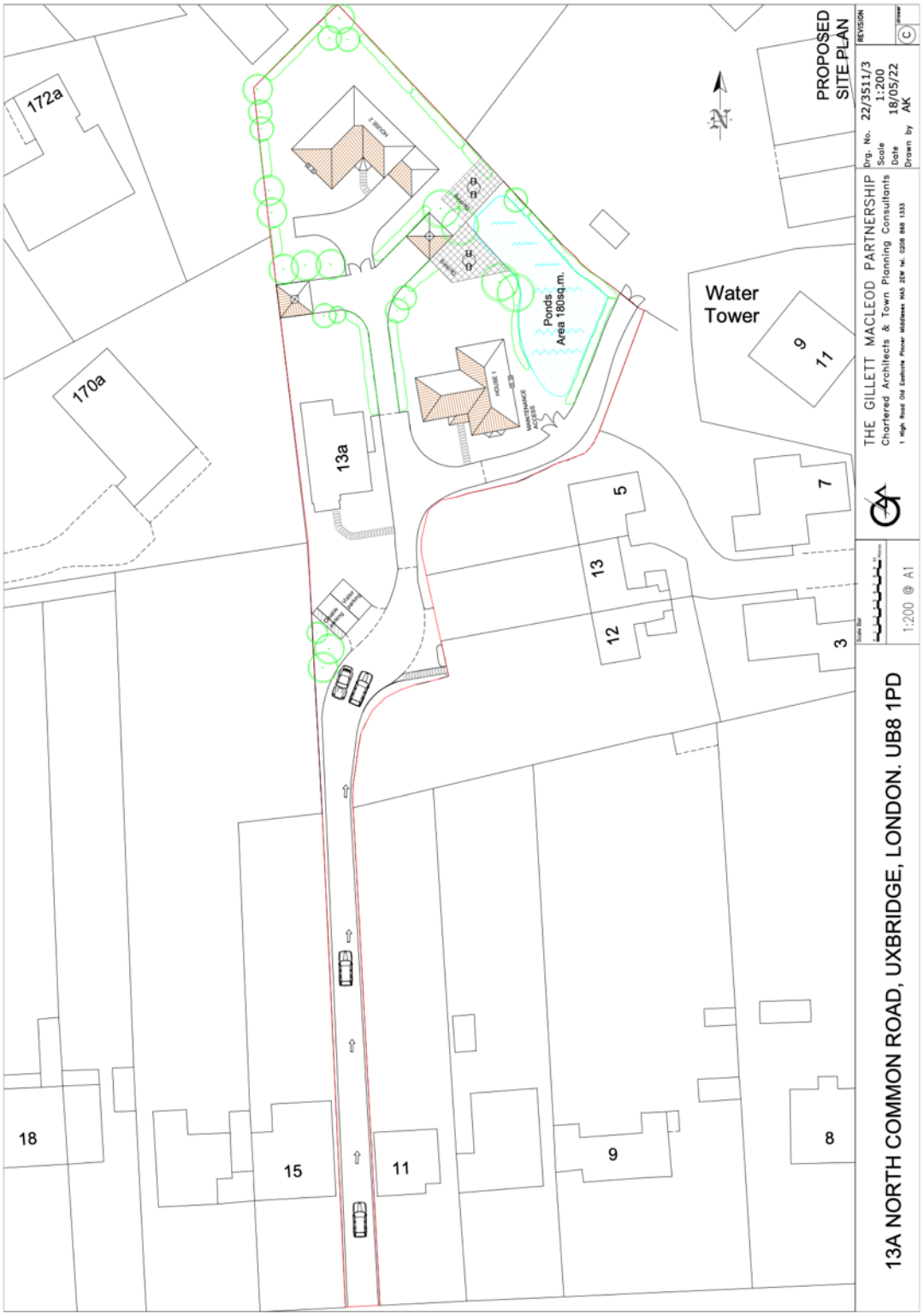
For new buildings guidance such as in the following will be used:
Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build*. Riba Publishing.

Designated Protected Areas

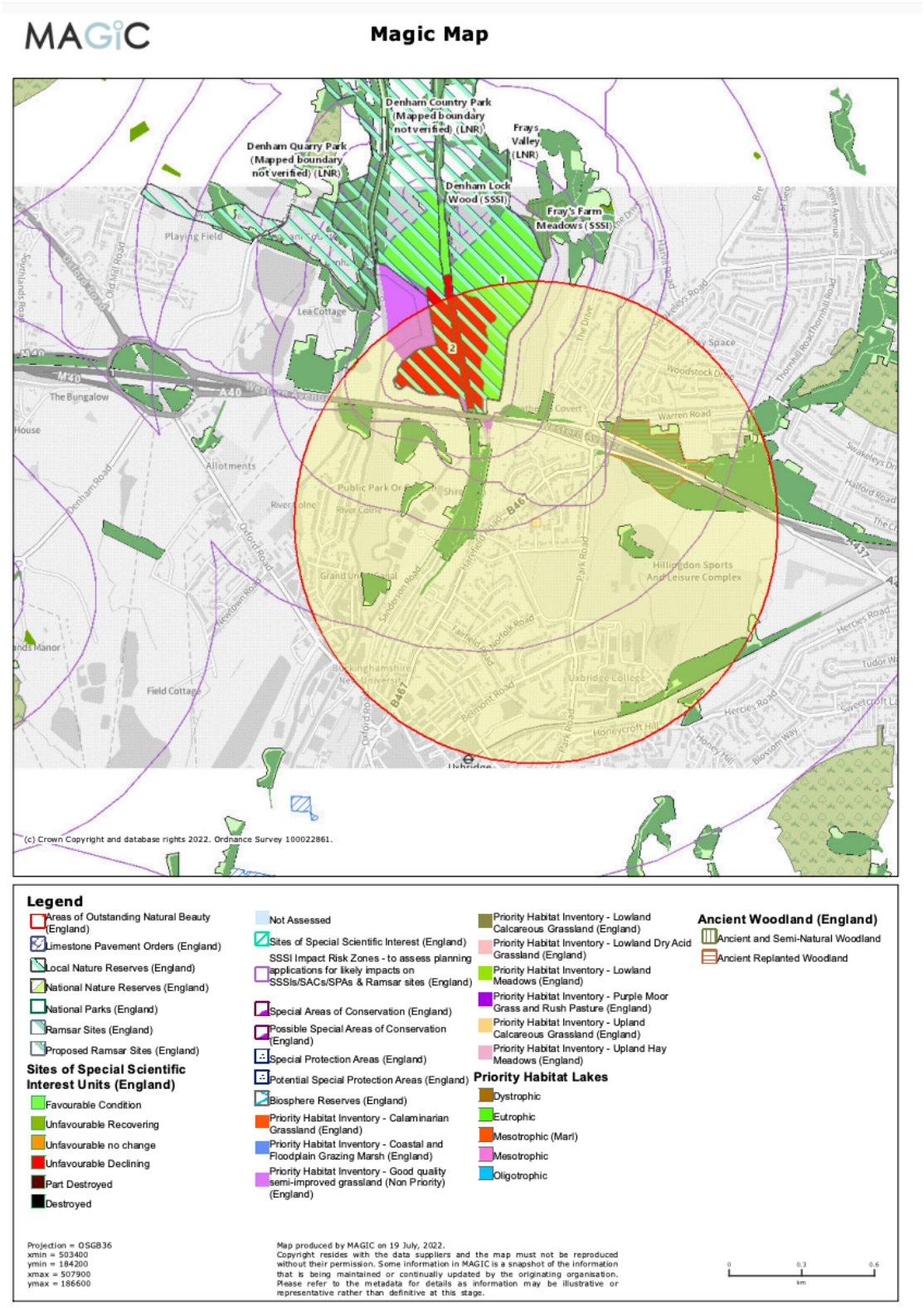
Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.
European designated status includes Special Protection Areas (SPAs) that preserve areas for birds and Special Areas of Conservation (SACs) which provides protection for habitats and the species which these habitats supports. Laws stipulate that SSSIs, SPAs and SACs have to be maintained in a 'favourable condition' which requires efforts to preventing any potential impacts to these sites.

Information of Designated Protected Areas is received through Ecological Data Searches and Magic Map searches.

Appendix 3. Site Plans



Appendix 4. MAGIC Map



Appendix 5. Satellite Imagery

Appendix 6. Site Photographs

Photograph 1. Front and entrance of site.

Photograph 2. Hedgerow boundary (eastern) of site

Photograph 3. Current access to rear garden.

Photograph 4. Rear Garden Area.

Photograph 5. Pond 1 (Dry).

Photograph 6. Pond 2.

Photograph 7. Pond 3.

Appendix 7. eDNA Report

SureScreen Scientifics

Folio No: E14671
Report No: 1
Purchase Order: 2022
Client: ASTUTE ECOLOGY
Contact: Andy Bird

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 30/06/2022
Date Reported: 13/07/2022
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
6914	3 North Common, Uxbridge		Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth **Approved by:** Chelsea Warner

Forensic Scientists and Consultant Engineers
SureScreen Scientifics Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE
UK Tel: +44 (0)1332 292003 Email: scientifics@surescreen.com
Company Registration No. 08950940

METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

SIC: **Sample Integrity Check** [Pass/Fail]
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

DC: **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

IC: **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result: **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.