envirotech

Ecological Consultants
Environmental and Rural Chartered Surveyors

Ecological Appraisal

LAND AT CLIFTON HOUSE FARM, FORTON

Green at Heart BEN GOLD

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PROFESSIONAL RESPONSIBILITY

This report has been commissioned and the actions of the surveyor have been made in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management. (www.cieem.org.uk) and the Royal Institution of Chartered Surveyors (www.rics.org.uk)

ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.
If in doubt, stop work and seek further professional advice.

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1. EXECUTIVE SUMMARY

1.1.1 Envirotech NW Ltd were commissioned in August 2016 by Graham Anthony Associates to carry out an ecological appraisal of land at Clifton House Farm, Forton, Lancashire. It is proposed that new houses are constructed on the site.

1.1.2 A data search and desk study of the site and an area within 2km of the site were undertaken to establish the presence of protected species and notable habitats.

1.1.3 The site was then visited by licenced ecologists from Envirotech NW Ltd on the 2nd and 12th September 2016. A full botanical survey of the site was initially undertaken and this was followed by surveys to establish the presence or absence of bats, amphibians, nesting birds, brown hares and badgers at the site or in proximity such that they may be affected by the proposed development.

1.1.4 The plant species assemblages recorded at the site are all common in the local area and of considered of low ecological value. Domestic gardens and sympathetically landscaped open space is considered to offer habitat of equal or greater ecological value.

1.1.5 None of the hedgerows around the site perimeter were considered important under the Hedgerow Regulations (1997).

1.1.6 Low numbers of common bat species were recorded foraging over the site. No bats were recorded roosting on or near site. It is proposed that some roosting provision for bats will however be incorporated into the new houses on site.

1.1.7 Birds are likely to hedges and trees on site for nesting between March and September. Any vegetation clearance should therefore be undertaken outside of this period.

1.1.8 No other notable or protected species were recorded on the site.

2. INTRODUCTION

2.1 Background

2.1.1 In August 2016 Envirotech NW Ltd were commissioned by Graham Anthony Associates to carry out an Ecological Appraisal of land at Clifton House Farm, Forton, Lancashire, central grid reference SD 48371 51283 (Figure 1). A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.

2.1.2 The survey was requested in connection with the proposed construction of new houses.

Figure 1 *OS map with site location circled in red*

2.2 Objectives

2.2.1 The main objectives of the study were:

- The completion of a Phase 1 Habitat Survey including the preparation of a vegetation and habitat map of the site and the immediate surrounding area.
- The survey and assessment of all habitats for statutorily protected species.
- An evaluation of the ecological significance of the site.
- The identification of any potential development constraints and the specification of the scope of mitigation and enhancement required in accordance with wildlife legislation, planning policy and other relevant guidance, and;
- The identification of any further surveys or precautionary assessments that may be required prior to the commencement of any development activities.

3. METHODOLOGY AND SOURCES OF INFORMATION

3.1 Data Search

3.1.1 The Biological Records centre for Lancashire "LERN", the Envirotech dataset, and the Multi-Agency Geographic Information for the Countryside (MAGIC) were searched to establish the presence of any records of statutorily protected, notable or rare species, and any designated sites of international, national, regional or local importance within a 2km radius of the site boundary.

3.1.2 The Envirotech dataset is compiled from extensive field surveys from the period 2004-present, as well as records obtained from third parties during this time.

3.1.3 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.

3.2 Vegetation and Habitats

3.2.1 A vegetation and habitat map was produced for the site and the immediate surrounding area. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2003).

3.2.2 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act (1981) and indicators of important and uncommon plant communities. All plant nomenclature follows Stace (1991).

3.2.3 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act (1981), namely Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water Hyacinth (*Eichhornia crassipes*) and New Zealand pygmyweed (*Crassula helmsii*).

3.2.4 The survey was also informed by questioning the landowner/site agent to ascertain the recent history of the site.

3.3 Timing and Personnel

Date of visit		2nd September 2016		12th September 2016		Notes
Site inspection		1hr		1hr		
Weather conditions	Cloud	10%		50%		1
	Wind	Nil		Moderate		1
	Rain	Nil		Nil		1
	Temperature	14°C		17°C		1
Emergence survey	Start/ Light Level	19:50	250 lux	19:25	250 lux	
	End/ Light Level	21:35	0.2Lux	21:10	0.2Lux	
Surveyors		CA, JS		CA		

Table 1 *Survey dates and times*

1. Weather conditions were considered acceptable for a survey at the site given the potential for use of the site and species which may be present. Bats are usually active with temperatures above 7 degrees Celsius.

Surveyors

1. (CA) Mr Chris Arthur BSc (Hons), MSc, Grad CIEEM
   Natural England Bat Class Licence (Level 2)

2. (JS) Mr Jack Sykes BSc (Hons), MCIEEM
   Natural England Bat Class Licence (Level 2)

4. SPECIES SURVEY METHODOLOGY

4.1 Amphibian

4.1.1 Great crested newts (*Triturus cristatus*) are listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. It is protected under Schedule 2 of the Conservation (Natural Habitats) Regulations (2010) and Schedule 5 of the Wildlife & Countryside Act (1981).

4.1.2 The great crested newt baseline survey involved a pond screening assessment to determine the presence and suitability of ponds located within the study area using a Habitat Suitability Index.

4.1.3 Water-bodies located within or adjacent to the study area were identified and where access was possible were assessed for their potential to support great crested newts. The criteria used in the assessment are based on those contained in the Herpetofauna Workers Manual and Oldham et al, 2000, and in applying these criteria a precautionary approach was adopted. The pond assessment was undertaken in order to determine which water-bodies, based on their potential to support great crested newts, should be subject to presence/absence surveys.

4.1.4 Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's EPS Licensing process was used to determine the suitability of ponds for great crested newts. The HSI was developed as a tool to aid fieldworkers to give ponds and their surrounding habitat a numerical score in terms of their suitability for great crested newts.

4.1.5 These ponds were subject to a suite of four presence/absence surveys for great crested newts, following Natural England guidelines, in 2013 for a separate application. A negative result was obtained from these surveys which we consider to still be "in date".

4.2 Badger

4.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and protects badgers from being killed, injured or disturbed whilst occupying a sett. The main issue on proposed development sites tends to be the potential disturbance of badgers in their setts as a result of construction operations. Natural England recommends that the use of heavy machinery in proximity of a sett entrance should be avoided, with a 'disturbance free-zone' being established. The degree of disturbance attributed to construction activity is a function of the background level of activity badgers are accustomed to and that which will be attributed to a proposed activity. The "disturbance free zone" is therefore site specific.

4.2.2 The survey for badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) for indications of use by badgers.

4.2.3 Signs of badgers which were searched for included:

- Setts - 'D' shaped entrances at least 25cms wide and wider than they are high with large spoil mounds
- Discarded bedding at sett entrances (this includes grass and leaves)
- Scratching posts on shrubs and trees close to a sett entrance
- The presence of badger hairs which are coarse, up to 100mm long with a long black section and a white tip
- Dung pit latrines and footprints
- Habitual runs through vegetation and beneath fences
- Hedgehog carcases
- Surveys were also undertaken at night, during the bat surveys, by scanning the study area with a torch.

4.3 Bats

4.3.1 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981), and are included on Schedule 2 of the Conservation (of Natural Habitats) Regulations (2010), as European Protected Species. Taken together, these pieces of legislation make it an offence to:

- Intentionally or recklessly kill, injure or capture bats;
- Deliberately or recklessly disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts.

4.3.2 The Bat Conservation Trust (Hundt (2012)) and Collins, J. (ed) (2016) issued guidelines on bat survey methodology, a key feature of their recommendation is for the undertaking of a pre-survey assessment – an initial desk-study and a walkover assessment of the survey area and its surrounding area to identify the relative value of the habitats present for bats and likely commuting routes. This is to be followed by a survey program that is appropriate to the likely level of bat activity within the survey area to be determined by and based on the experience of the surveyor.

4.3.3 The potential value of the survey area for foraging bats was assessed through consideration of two main factors: professional knowledge of bat ecology and foraging behaviour in combination with the geographical location, topography and habitats present within the survey area and surrounds. This resulted in the production of a map showing habitat quality both on and adjacent to the site.

4.3.4 The survey area has small hedgerows within it and linear routes on its boundary. The main site however comprises an area which is open, exposed and structurally poor, it has a very low potential for use by bats.

4.3.5 As a result of the potential suitability of the habitat outside the site and along its boundaries for foraging bats but the low potential for impacts upon bat species due to

the proposal being on open and exposed grassland, a single bat activity survey was deemed necessary. The survey was based upon standard guidelines Hundt (2012), Collins, J. (ed) (2016) and NCC (1987) and Mitchell-Jones (2004) and was undertaken in suitable weather conditions by suitably qualified and experienced personnel (Table 1).

4.3.6 The survey methods comprised a transect route which was walked in order to cover all on-site habitats from sunset until light levels dropped to the extent that bat flight heights could not be determined and walking over the site in the dark was judged to be unsafe.

4.3.7 In addition to the activity survey, trees on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees on site and an assessment of their potential to be used by bats by a licensed surveyor. Trees were all assessed in accordance with Collins, J. (ed) (2016).

4.4 Birds

4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as UK and or County BAP species.

4.4.2 The poor quality habitat suggested a low potential for breeding bird species of interest.

4.4.3 Bird species and behaviour was noted during the other field surveys. All areas are covered equally, in order to avoid the subjective survey of better quality 'bird habitat'. All birds displaying breeding behaviour were recorded.

4.5 Brown Hare

4.5.1 The brown hare (*Lepus europaeus*) is a UK BAP species.

4.5.2 The survey method involved walking boundaries and surveying with binoculars. The survey was conducted at a suitable distance to ensure that the hares were not disturbed. Generally, surveys were undertaken throughout the early afternoon and evening when hares are thought to be most active and feeding.

4.5.3 There present the number of brown hares in each field or hedgerow was recorded, together with the nature and use of the field, climatic conditions and time of day. The presence of forms and faeces where present were also recorded.

4.6 Invertebrates

4.6.1 A general assessment was made of the study area's suitability for supporting invertebrates during the phase 1 survey. The study area's lack of habitat diversity, species-poor composition and uniformity of vegetation structure (i.e., lack of variation in height and microtopography) resulted in our belief that a low diversity of invertebrates would be likely to occur across the site.

4.6.2 The presence of invertebrates was noted during the other surveys which were undertaken. The extent of sampling was limited in that it could be confirmed that no priority or BAP species would be likely to be affected by the proposal.

4.7 Otter

4.7.1 Otters (*Lutra lutra*) are given protection by Annexes II & IV of the Habitats Directive and by Schedule 5 of the Wildlife and Countryside Act (1981) as amended and Schedule 2 of the Conservation (Natural Habitats etc.) Regulations (2010).

This protection means that it is an offence to deliberately or recklessly:

- Kill or injure otters;
- Destroy, damage or obstruct their dens, and
- Disturb them whilst in the den.

4.7.2 Watercourses were assessed for their suitability and for the presence of otters within 10m of the banks. The banks and scrub vegetation were carefully searched for spraints, feeding remains, runs, prints and couches/holts.

4.8 Reptiles

4.8.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.

4.8.2 The survey for these species was based on assessing the habitat type and suitability of the site. This comprised an assessment of satellite imagery for the site and surrounding area as well as comparison of the results from the records searches with habitat types. The general habitat at the site was evaluated in terms of its suitability to reptiles for foraging or breeding.

4.8.3 Reptile surveys comprising visual encounter surveys were undertaken. Habitat at the site was not considered sufficiently suitable for a full presence/ absence survey to be warranted.

4.9 Water Vole

4.9.1 Water voles (*Arvicola amphibious*) and their habitat are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981). This provides protection from killing or taking by certain prohibited methods and their breeding and resting places are fully protected from destruction or obstruction, it is also an offence to disturb them in these places.

4.9.2 There is a stream/wet ditch which runs through the site. This watercourse was surveyed and assessed for evidence of the presence of water vole.

4.9.3 This involved intensive searches by wading upstream where possible, and observing from the banks where not; looking for burrows and other signs including footprints,

droppings and chewed vegetation. This was undertaken up to 5m from the water course.

4.10 Survey limitations

4.10.1 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site. Bats were active at the time of the survey.

4.10.2 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.

4.10.3 No significant survey limitations were encountered.

5. RESULTS

5.1 Data Search

5.1.1 Envirotech and LERN hold no records of protected or notable species for the site. There are however records of protected or notable species within 2km (Figure 2). These are discussed in the relevant sections below.

5.1.2 The nearest non-statutory designated site is the Lancaster Canal Biological Heritage Site, c.500m to the West (Figure 3).

5.1.3 There are no statutory designated sites within 2km, though the site is between two sites of international importance. These are Cockerham Marsh Site of Special Scientific Interest (SSSI), which is part of the Morecambe Bay Special Area of Conservation (SAC), Special Protection Area (SPA) and RAMSAR site, c.3200m to the West, and the Bowland Fells SSSI and SPA, c.4200m to the East (Figure 4).

5.1.4 The proposed development type does not fall within the Impact Risk Zone of any statutory designated site locally.

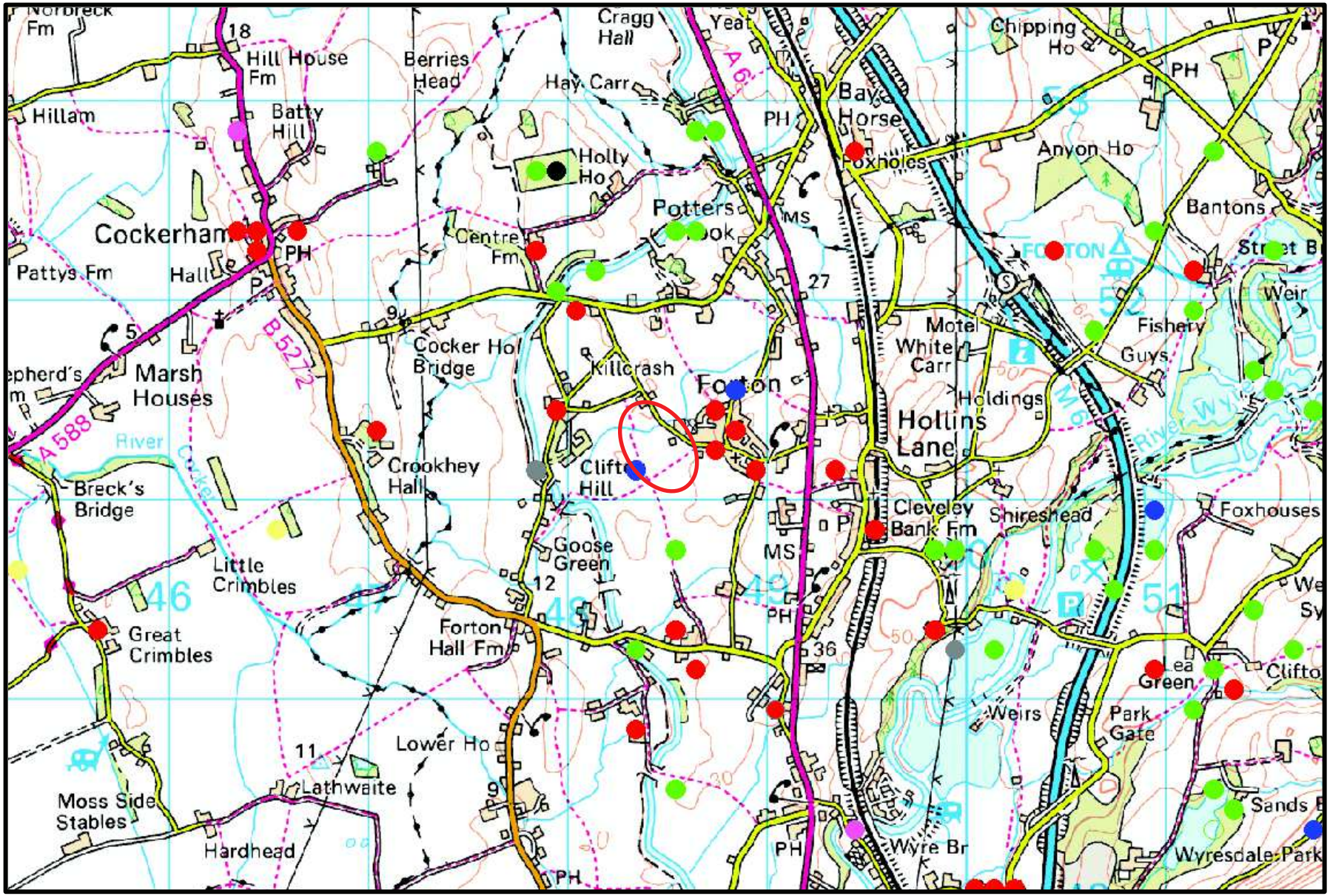


Figure 2 *Notable species records; site location circled red*

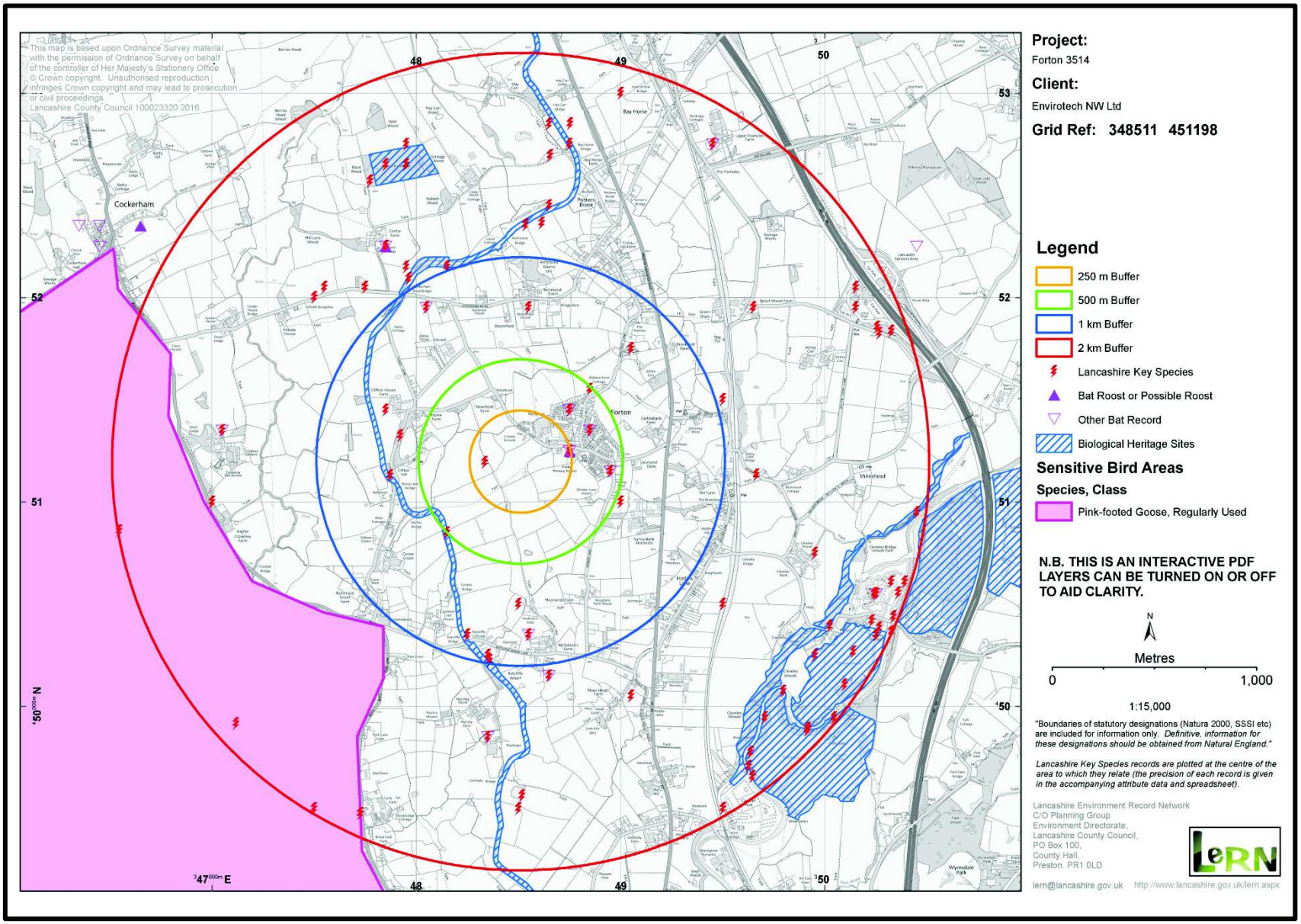


Figure 3 *Non-statutory sites 2km buffer*

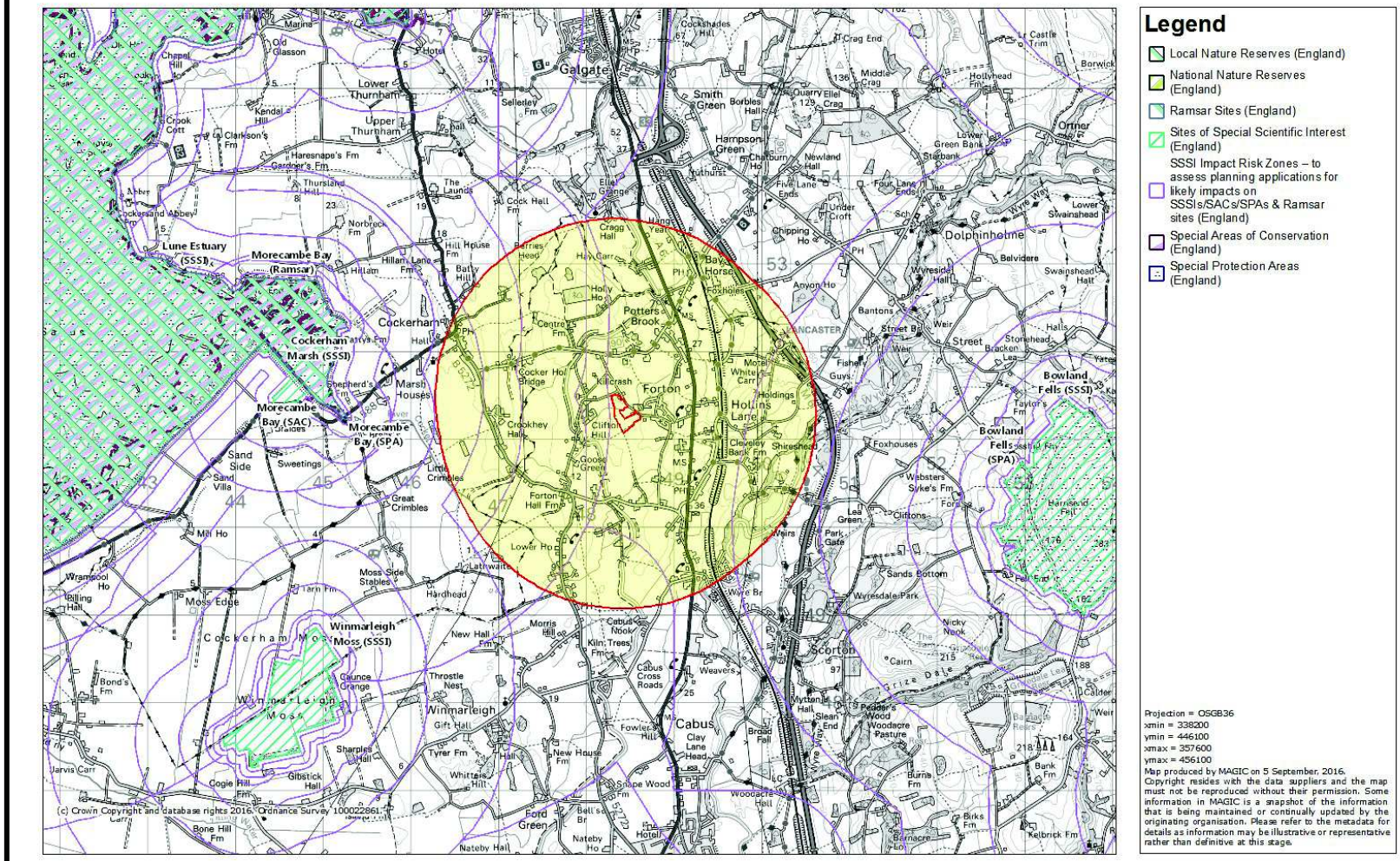


Figure 4 *Statutory designated sites 2km buffer*

6. PHASE 1 SURVEY RESULTS

6.1 Habitat Results

6.1.1 The site comprises three arable fields which are bound by intact hedgerows and fences. There are several mature broadleaf trees on and around the site.

6.1.2 The site abuts agricultural grassland to the South and West, and minor roads to the North and East.

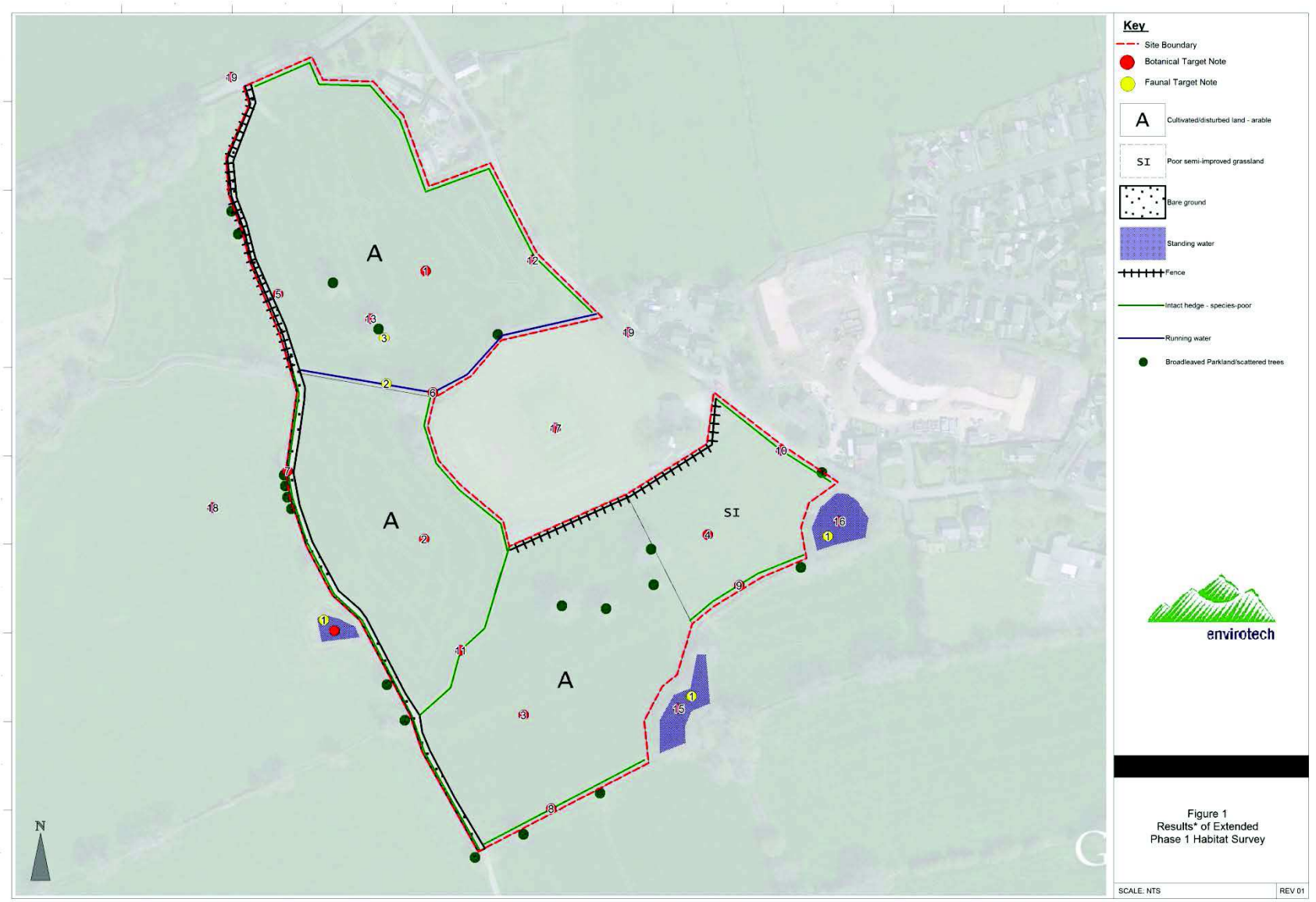
6.1.3 See Figure 5 for the Phase 1 Habitat Plan and Table 2 for the descriptive Botanical and Faunal Target Notes, hereafter referred to as BTN and FTN.

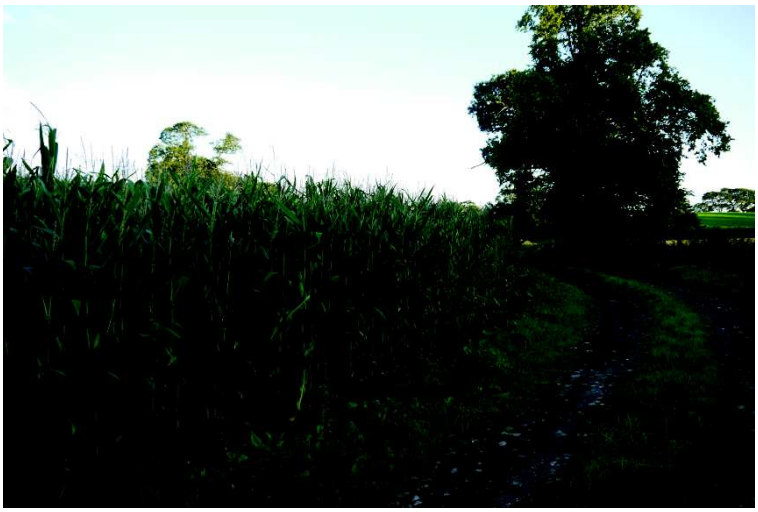
Target Note	Description	Comment
BTN1	Cultivated/disturbed land - arable	The two Northern fields on the site contain arable crops of maize (*Zea mays*). As to be expected, a small amount of arable weeds are present, such as redshank (*Persicaria maculosa*), greater plantain (*Plantago major*), pineapple mayweed (*Matricaria discoidea*) and broad-leaved dock (*Rumex obtusifolius*).
BTN2	Cultivated/disturbed land - arable	
BTN3	Cultivated/disturbed land - arable	To the South is a third arable field, though this was stubble at the time of the survey.
BTN4	Poor semi-improved grassland	A small area of poor semi-improved grassland in the South-east area of the site.
BTN5	Bare ground	An access track leads Southwards from the public highway to the North, along the Western boundary.
BTN6	Running water	Bisecting the site from West to East is a small wet ditch which contained shallow running water at the time of the survey. This was steeply banked and vegetated with terrestrial species comprising comfrey (*Symphytum officinale*), nettle (*Urtica dioica*), bramble (*Rubus fruticosus* agg.) and very small alder (*Alnus glutinosa*) saplings.
BTN7	Intact hedge – species poor	A hedgerow runs along most of the Western boundary, with only a short section to the North replaced by a post and wire fence. Hawthorn (*Cretaegus monogyna*) accounts for the majority of the hedge, though sycamore (*Acer pseudoplatanus*), blackthorn (*Prunus spinosa*), elder (*Sambucus nigra*), hazel (*Corylus avellana*), holly (*Ilex aquifolium*) and rose (*Rosa* sp.) also occur to varying extents. Honeysuckle (*Lonicera periclymenum*) and bramble are present within the hedge, and nettle and ground elder (*Aegopodium podograria*) are found along the base.
BTN8	Intact hedge – species poor	A section of hedgerow forms the Western part of the Southern boundary, composed of hawthorn, blackthorn, elder and bramble.
BTN9	Intact hedge – species poor	After a gap in the Southern boundary, another hedgerow is found to the East. Species diversity is higher here, with hawthorn, blackthorn, elder, holly, hazel, rose and sycamore all occurring in a relatively short length.

BTN10	Intact hedge – species poor	The part of the Eastern boundary along the grassland is marked by a hedgerow composed of hawthorn, blackthorn, holly, oak, sycamore and rose.
BTN11	Intact hedge – species poor	The fields in BTN2 and BTN3 are separated by a hawthorn, elder, sycamore and rose hedge.
BTN12	Intact hedge – species poor	The North-east boundary of the site is formed by a final hedgerow composed of hawthorn, sycamore, elder and rose. This demarcates the curtilage of an adjacent residential dwelling. The hedgerow extends to the Northern boundary for a short section where beech (*Fagus sylvatica*) and holly are also present.
BTN13	Scattered/parkland broadleaf trees	There are several mature oak (*Quercus* sp.) trees within the site, and a single mature ash (*Fraxinus excelsior*). Oak, alder, ash, lime (*Tilia x europaea*) and sycamore trees also occur on all of the site boundaries.
BTN14	Standing water	A small pond is located immediately West of the site. This is surrounded by young trees which completely shades it.
BTN15	Standing water	A second pond is adjacent to the Southern boundary. This is also heavily shaded and was seen to support a high number of mallard (*Anas platyrhynchos*) and other waterfowl which has resulted in low water quality and high turbidity.
BTN16	Standing water	A large pond adjacent to the South-east corner of the site. This appears to have the highest water quality of the three ponds, but is known to be stocked with coarse fish for amenity purposes.
BTN17	Cultivated/disturbed land – amenity grassland	A cricket pitch, primarily amenity grassland, is inset into the site from the East.
BTN18	Poor semi-improved grassland	There is a small area of poor semi-improved grassland in the South-east area of the site. The sward is composed of red fescue (*Festuca rubra*), Yorkshire fog (*Holcus lanatus*), Timothy grass (*Phleum pratensis*) and annual meadow grass (*Poa annua*). Forbs are typical of this habitat type, consisting of white clover (*Trifolium repens*), creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum officinale*) and broad-leaved dock.
BTN19	Hardstanding	Small public highways abut the site to the North and East.

FTN1	Amphibians	A suite of presence/absence surveys for great crested newts undertaken in 2013 found no evidence of this species. The ponds are all assessed as being of poor suitability for great crested newt and they are considered absent from the immediate area.
FTN2	Otters/water voles	No evidence of otters or water voles was found along the wet ditch and their occurrence on site is considered highly unlikely.
FTN3	Bats	Many of the trees on the site and its boundaries are assessed as being highly suitable for use by roosting bats. If any of these trees are to be removed, further surveys will be required to discern if bats are present.

Table 2 *Details of Botanical and Faunal Target Notes*


Key
Site Boundary
Botanical Target Note
Faunal Target Note
A
Cultivated/disturbed land - arable
SI
Poor semi-improved grassland
Bare ground
Standing water
Fence
Intact hedge - species-poor
Running water
Broadleaved Parkland/scattered trees
A
SI
A
A
N
envirotech
Figure 1
Results* of Extended
Phase 1 Habitat Survey
SCALE: NTS
REV 01
*Habitats outside the site boundary are indicative only
and have been mapped from within the site boundary or from publicly accessible land

	The site comprises three large agricultural fields. The Northern two fields contained maize at the time of the surveys (BTN1 and BTN2). A track leads Southwards along the Western boundary of the site (BTN5).
	The Southernmost arable field was stubble at the time of the surveys (BTN3), and there is a small area of poor semi-improved grassland in the South-east corner (BTN4).
	There are several hedges bounding and bisecting the site (BTN7-BTN12). These are all species poor, of similar composition, and are not considered important under the Hedgerow Regulations (1997).

	A wet ditch runs through the site from the West (BTN6). This is densely vegetated and no evidence of otters, water voles or other notable fauna could be found (FTN2).
	There are numerous mature trees on the site boundaries and in its centre (BTN13). Many of these contain features suitable for use by roosting bats (FTN3).
	There are three ponds on the boundary of the site (BTN13-BTN15). Presence/absence surveys for great crested newt undertaken in 2013 found no evidence of this species, but other common amphibian species were encountered (FTN1).

Table 3 *Photographs*

6.2 Vegetation

6.2.1 Details of the plant species found on site are included in the target notes. Species recorded are all commonly occurring and undoubtedly occur elsewhere in similar habitats in the local area.

6.2.2 The arable fields are of negligible ecological interest, containing a commercial crop with only infrequent arable weeds.

6.2.3 The poor semi-improved grassland has a very low species diversity and ecological value. Whilst the assemblage of species within it is higher than improved pasture, the species are all common and indicative of regular disturbance; this habitat does not constitute a BAP habitat.

6.2.4 The intact hedges bounding the site are species poor and contain a low diversity of woody plant species but all hedgerows are a UK BAP habitat. They should be retained in any proposed scheme and where lengths need to be lost, they should be transplanted or new hedges planted as compensation.

6.2.5 None of the hedgerows are classified as important under the Hedgerow Regulations (1997) (See Appendix 1).

6.2.6 Trees within the site boundary comprise numerous mature oak and ash, along with occasional lime, sycamore and alder. These trees do not form woodland but all trees should be retained in any proposed scheme or where they are removed new tree planting should be undertaken. Cut wood from felled trees should be stacked on the site boundaries where it can decay naturally and provide habitat for invertebrates.

6.2.7 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. No other invasive or notable weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified within the site or adjacent land.

6.3 Amphibian

6.3.1 There are 155 records for amphibians within 2km of the site. 32 of these instances are for great crested newt, with the remainder comprising records of smooth newt (*Lissotriton vulgaris*), palmate newt (*L. helveticus*) and common frog (*Rana temporaria*).

6.3.2 There is no standing water on site, though there are three ponds adjacent to its boundaries. These are shown as BTN14-BTN16 on Figure 5.

6.3.3 These ponds were subject to a suite of four presence/absence surveys for great crested newts, following Natural England guidelines, in 2013. No great crested newts, or their eggs, were found in any of the ponds. This report is in the public domain at https://publicaccess.wyre.gov.uk/online-applications/files/76401D2AFE122033B676409CF921D556/pdf/13_00864_FULMAJ-Revised_Great_Crested_Newt_Survey.pdf-54774.pdf.

6.3.4 Due to the timing of the instruction, and subsequent surveys undertaken in 2016, specific surveys for great crested newt were not possible. However, the findings of the surveys in 2013 are considered to remain valid, particularly because of the lack of connectivity between any of the ponds and known populations of great crested newts.

6.3.5 Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's EPS Licensing process was used to determine the suitability of the three ponds for great crested newts. The HSI was developed as a tool to aid fieldworkers to give ponds and their surrounding habitat a numerical score in terms of their suitability for great crested newts. See Table 4.

Pond ref	BTN14	BTN15	BTN16
SI1 - Location	1	1	1
SI2 - Pond area	0.3	0.9	1
SI3 - Pond drying	0.9	0.9	0.9
SI4 - Water quality	0.33	0.33	0.67
SI4 - Shade	0.2	0.2	0.6
SI6 - Fowl	0.67	0.01	0.67
SI7 - Fish	0.67	0.67	0.01
SI8 - Ponds	0.7	0.7	0.7
SI9 - Terr'l habitat	0.33	0.33	0.33
SI10 - Macrophytes	0.3	0.3	0.7
HSI	**0.47**	**0.35**	**0.46**

Table 4 *Results of Habitat Suitability Index*

6.3.6 The core development area has a low value to amphibians being open and exposed. The boundary hedgerows could be utilised as refuges and/or hibernacula but there are no breeding ponds in proximity to the site.

6.3.7 Structural diversity at ground level across the site is very poor. There are no areas with log, rubble piles or compost heaps which would be particularly favourable to amphibians.

6.3.8 The proposed development will not result in the permanent loss of or a substantial negative effect on any waterbodies or foraging areas linked to them. Boundary areas which may provide foraging or refuge sites are to be retained.

6.3.9 Common toad (*Bufo bufo*) are UK BAP species This species was recorded within Ponds BTN14 and BTN15 in 2013 and so the potential presence of this or other species, which are less prone to fish predation than great crested newt, should be considered. As such precautionary mitigation would be appropriate in respect of construction activities.

6.4 Badger

6.4.1 Ten records of badgers occur within 2km of the site.

6.4.2 Badger setts do no occur on site or within 30m of its boundaries, and there were no indications of badger feeding found on site.

6.4.3 The proposed development will not impact on any existing badger runs or setts. The porosity of the surrounding fields to the passage of badgers will not be affected.

6.4.4 Precautionary mitigation is considered appropriate during construction. The landscaping scheme should also include species such as Apple or other fruit trees which would provide a food source in winter.

6.4.5 The design of fences/walls should be considerate to the passage of badgers.

6.5 Bats

6.5.1 There are 171 records of six species of bat within 2km of the site. Species recorded locally are common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), noctule (*Nyctalus noctula*), whiskered (*Myotis mystacinus*), Brandt's (*M. brandtii*) and brown long-eared (*Plecotus auritus*) bats.

6.5.2 The foraging habitat at the site is of low quality for bat species being open and exposed arable land, although the peripheral hedgerows and adjacent ponds are likely to be used by low numbers of foraging bats.

6.5.3 Opportunities locally are sparse for foraging bats, with the Lancaster Canal offering the only high quality foraging opportunities, as well as a strong commuting route across the landscape. Small residential gardens and farmyards offer fragments of moderate quality habitat throughout the local area (Figure 6).

6.5.4 It is not considered there would be significant degradation of foraging habitat as a result of the proposal so long as the hedgerows and trees are retained or their loss is compensated for in any landscaping scheme.

6.5.5 To confirm the site is not used by significant numbers of bats, two walked transects of the site for a period of 1.45hrs were undertaken by two surveyors. Dates, times, weather conditions and personnel are shown in Table 1.

6.5.6 A similar level of activity was recorded on both occasions. Low levels of foraging by common pipistrelle bats was observed along the Western boundary of the site and over the pond to the South-east. A noctule bat was also seen commuting over the site from the South-west on both surveys. No bats were seen to emerge from trees and all bats appeared to commute into the site.

6.5.7 The results of the activity survey (Figure 7) confirm our assessment of the potential for the site to support bats.

6.5.8 Trees on and within the site boundary were assessed in accordance with Collins ed. (2016) and assigned a risk category. Many of the trees on site are mature oaks which

are category 1 (high risk), though there are also category 2 (medium risk) and category 3 (negligible risk) trees on site (Figure 8). Risk categories from Hundt (2012) and the requirement for mitigation for each tree category are shown on Figure 9.

6.5.9 We consider bat species are highly unlikely to rely on the site for feeding but may occur in the local area. Roosting by bats may occur in trees on and around the site.

6.5.10 Precautionary mitigation would be appropriate in respect of ensuring the foraging habitat on site is at least improved for use by bats during development. Any trees to be felled will need to be re-inspected to ensure that bats are not roosting in them.

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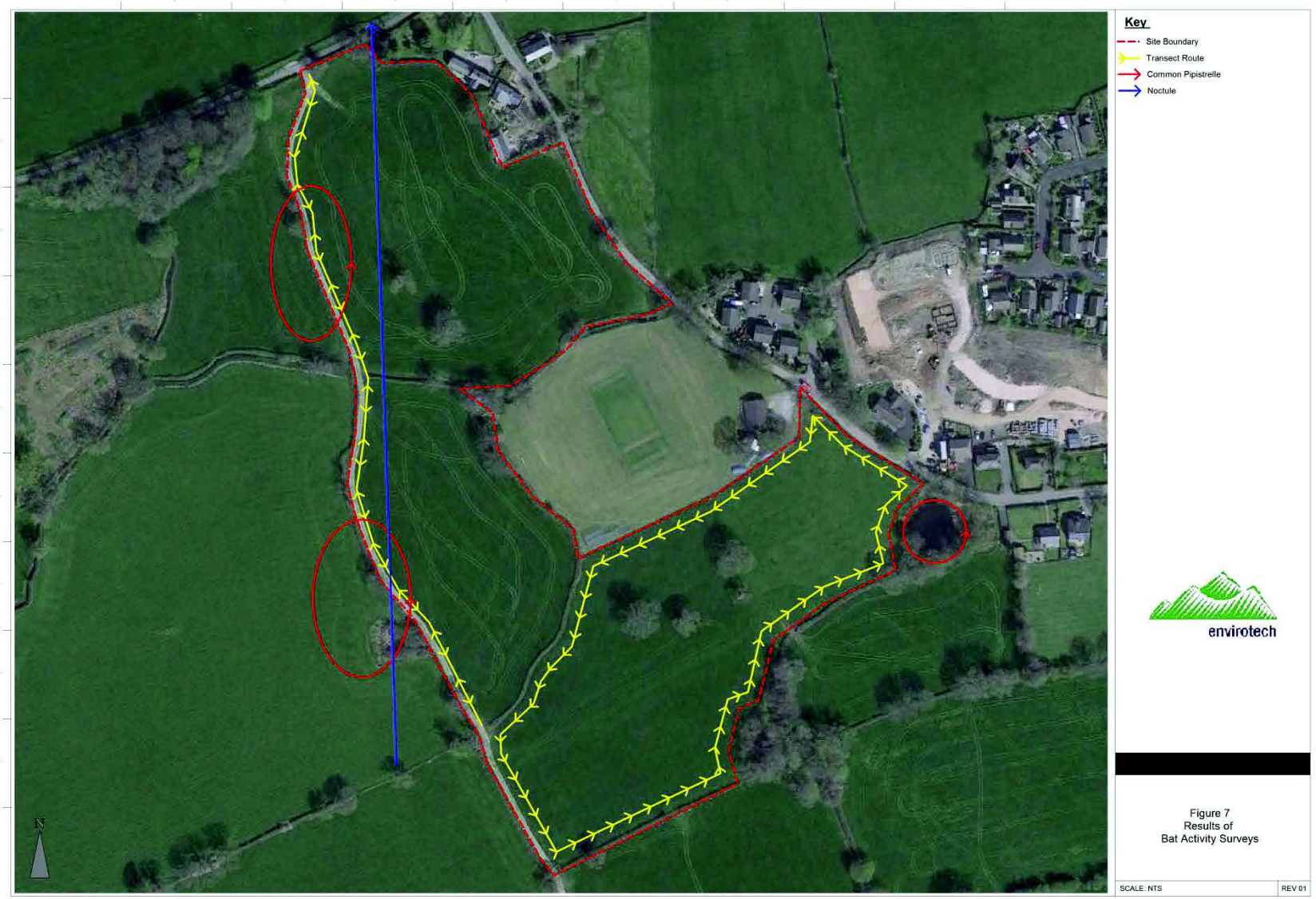
Figure 6
Results* of
Bat Habitat Survey

SCALE: NTS | REV 01

*Habitats outside the site boundary are indicative only
and have been mapped from within the site boundary or from publicly accessible land


Key
Site Boundary
Transect Route
Common Pipistrelle
Noctule
N
envirotech
Figure 7
Results of
Bat Activity Surveys
SCALE. NTS
REV 01

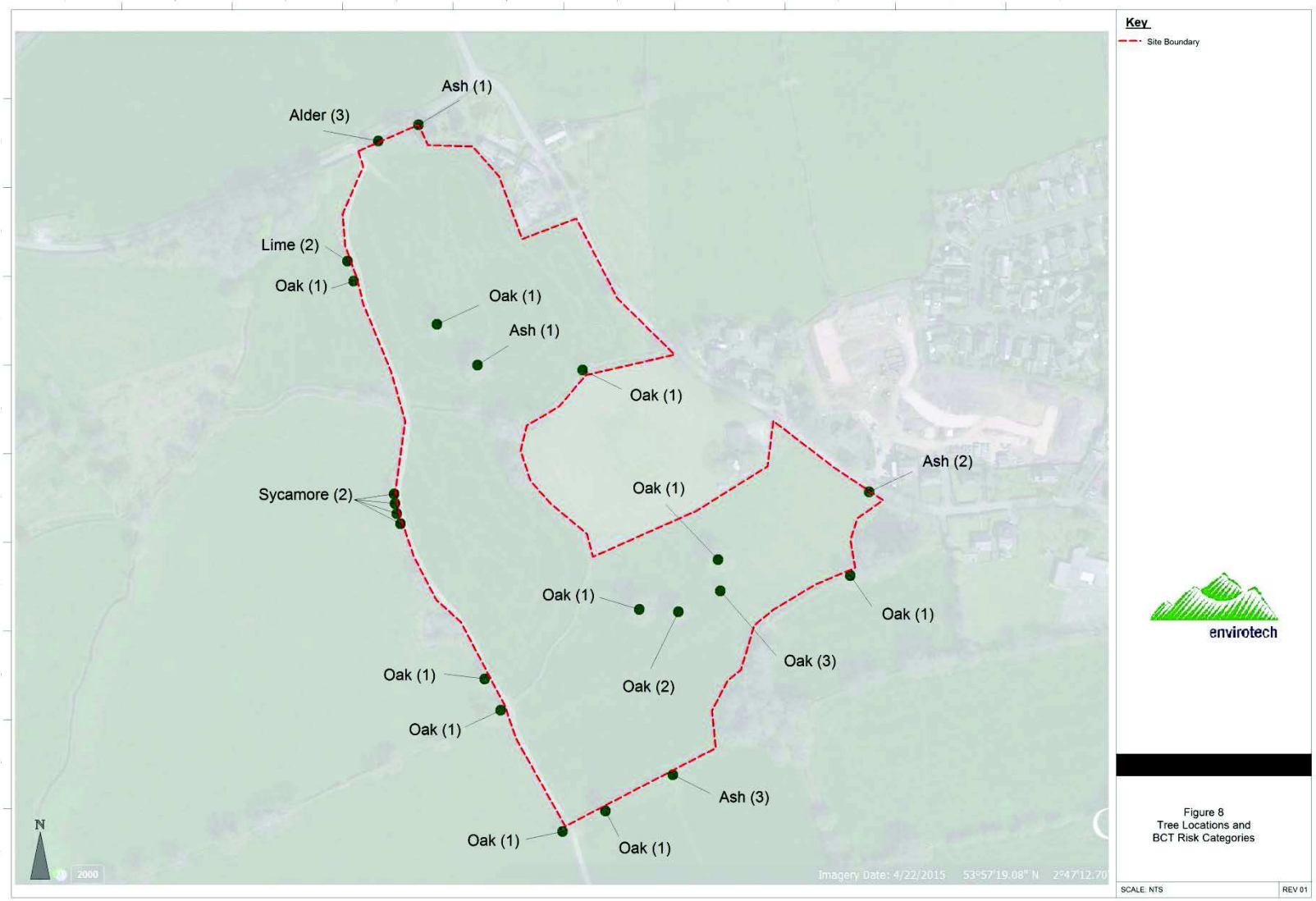

Key
Site Boundary
Ash (1)
Alder (3)
Lime (2)
Oak (1)
Oak (1)
Ash (1)
Oak (1)
Ash (2)
Sycamore (2)
Oak (1)
Oak (1)
Oak (1)
Oak (3)
Oak (1)
Oak (2)
Oak (1)
Ash (3)
Oak (1)
Oak (1)
N
2000
Imagery Date: 4/22/2015 53°57'19.08" N 2°47'12.70
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Figure 8
Tree Locations and
BCT Risk Categories
SCALE: NTS
REV 01

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Known or confirmed roost	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement.
Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. ***A consultant ecologist is required***	Avoid disturbance to trees, where possible. Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures[3] such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1 Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. ***A consultant ecologist required***	Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None. ***A consultant ecologist is unlikely to be required***	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.
Category 3 Trees with no potential to support bats	None. ***A consultant ecologist is not required unless new evidence is found***	None.	No mitigation for bats required.

Figure 9 *Tree risk categories from Hundt (2012)*

6.7 Birds

6.7.1 There are numerous records of birds within 2km of the site. Woodpigeon (*Columba palumbus*) were noted on site during the survey.

6.7.2 The intact hedgerows bounding and compartmenting the site offer potential habitat for feeding and nesting birds. The poor semi-improved grassland has a low potential for use by nesting birds as the grassland is maintained at a short sward height.

6.7.3 The arable fields contain maize and as such will be of negligible value to feeding or nesting birds.

6.7.4 There were numerous rot holes or cracks in the trees within the site boundary which would support tree hole dwelling species such as woodpeckers.

6.7.5 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.

6.7.6 The habitat on site is not considered to be of anything more than of local significance, habitats present are well represented in the local area. The impact on nesting birds is therefore considered likely to be minor.

6.7.7 Precautionary mitigation would be appropriate in respect of construction activities and compensation for lost nesting and foraging opportunities will be required.

6.8 Brown Hare

6.8.1 Brown hare are a UK BAP priority species. There are two records of brown hares within 2km of the site.

6.8.2 No indication of brown hares was recorded on the site.

6.8.3 The site boundary has some potential for brown hares to create forms but use of the site is likely to be limited due to its open and exposed nature and regular human presence.

6.8.4 A risk assessment of the site in respect of its future potential for and value to brown hares could be adequately made. We consider the risk to brown hares is very low.

6.9 Invertebrates

6.9.1 Notable invertebrates have been recorded within 2km of the site.

6.9.2 No deadwood or vegetation on site was recorded which would provide an important resource for invertebrates in the local area.

6.9.3 Given the poor quality habitats contained within the site in comparison to the wider area, it is not considered that this site is of any local significance for invertebrates.

6.9.4 Impacts on the species are considered likely to be negligible; post development domestic gardens will create greater habitat diversity in the area than already exists.

6.10 Otter

6.10.1 There are 13 records of otters within 2km of the site.

6.10.2 No indication of the presence or past use of the site by otter was found.

6.10.3 The wet ditch is too insubstantial for this species and is considered unlikely to support fish.

6.10.4 This species is considered as being absent from the site. Precautionary mitigation would be appropriate in respect of construction activities which will need to be restricted at night.

6.11 Reptiles

6.11.1 There are no recent records for reptiles within 2km of the site. Slow worms (*Anguis fragilis*) were recorded in the area in 1955.

6.11.2 No indication of reptiles was recorded at the site.

6.11.3 The majority of the site has a very low value to reptiles being devoid of significant ground cover. There are no areas of the core development area which would be particularly favourable to reptiles.

6.11.4 Reptiles may occur along the boundary of the site and this provides linkage across the local landscape. It is however outside the site boundary and is unaffected by the proposal.

6.11.5 No specific mitigation for these species is considered necessary.

6.12 Water vole

6.12.1 There are no records of water voles within 2km of the site.

6.12.2 No signs of water voles, such as droppings, feeding piles or footprints were present along the wet ditch.

6.12.3 It is not known if this ditch will hold water throughout the year; water levels were very low at the time of the survey, which was undertaken shortly after a period of very high rainfall.

6.12.4 We consider this species to be absent from the site and will not be affected by the proposals. Precautionary mitigation would be appropriate in respect of construction activities.

6.13 Other

6.13.1 The site may be crossed by species such as fox (*Vulpes vulpes*) and rabbit (*Oryctolagus cuniculus*) are known to occur locally.

6.14 Statutory and Non-Statutory Sites

Direct Impacts:

6.14.1 There are no statutory or non-statutory sites which are connected to the site such that site development would directly affect the dispersal of species between them or directly impact upon their integrity.

6.14.2 The habitats on site do not represent or are linked to those found in any of the statutory or non-statutory sites locally.

Indirect Impacts:

6.14.3 There are no statutory or non-statutory sites which are connected to the site such that site development would indirectly affect the dispersal of species between them or indirectly impact upon their integrity.

7. MITIGATION/RECOMMENDATIONS

7.1 Compensatory planting and habitat enhancement

7.1.1 The roots of trees on the site and its boundaries should be adequately protected during work in accordance with industry standards. Young or Semi-mature or Mature or Veteran or all trees should as far as possible be retained in the scheme.

7.1.2 The landscaping scheme should utilise plants which are native and wildlife friendly. In particular night flowering species would be beneficial to bats. Wildflower seed could be used to plant verges to enhance the ecological value of the site and continuity between the site and the wider area.

7.1.3 Hedgerows around the site should be retained or improved where possible. Any lengths of intact hedgerow to be removed to facilitate development should be transplanted and or replanted in order that there is no net negative impact on this BAP habitat due to development. The roots of hedgerow plants/trees should be adequately protected during development from compaction/ground disturbance.

7.2 Amphibians

7.2.1 There is no requirement for specific mitigation for these species. There are currently no suitable breeding sites on or near the site. However, as a precautionary measure, in the unlikely event that any signs of any amphibian activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.2.2 Consider the use of SUDS on site to provide new aquatic habitat during development. Such areas would be best placed in public open space where connectivity to the site boundaries and wider area is improved.

7.2.3 In order to further minimise impacts on amphibians the following points should also be followed;

- All work must take place during daylight hours as amphibians are more likely to be commuting over night and this will ensure the risk to any amphibians commuting through the site will be minimised.

- During the development, measures should be put in place to discourage amphibians from using the development area, the creation of any piles of earth, materials and rubble which could form potential artificial hibernacula and refuge should be avoided at all times. It is recommended that any spoil or rubble will be removed immediately to skips, or on hard standing or short grass. This will ensure that no potential amphibian hibernation or resting sites are created.

- The storage of all loose materials must be palletised or similar so they are off the ground whenever possible.

- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure amphibians are not trapped during work.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

7.3 Badger

7.3.1 Badger setts are known to occur within 2km of the site. These setts will be undisturbed by work but in order to minimise impacts on badgers passing over the site the following points should be followed;

- All work must take place during daylight hours as badgers are more likely to be commuting over the site at night and this will ensure the risk to any badgers passing through the site will be minimised.

- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure badgers are not trapped during work.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

- Boundary fences/walls should incorporate gaps at their base to facilitate the passage of badgers across the site.

7.4 Bats

7.4.1 Work at night should be restricted, new planting within the site should enhance structural diversity and light spill onto the boundary should be minimised.

7.4.2 New roosting provision for crevice dwelling bats could be incorporated into the buildings on site or bat boxes could be erected in retained trees.

7.4.3 Any trees to be felled should be re-inspected for bats to confirm they remain absent.

7.4.4 Overall it is considered there is more than sufficient scope for mitigation and compensation at the site such that there will be no adverse impact on the favourable conservation status of bats affected by the proposal.

7.5 Birds

7.5.1 Nesting by birds within the development area is considered unlikely to occur. Birds may nest within hedges on the periphery of the site.

7.5.2 Any vegetation to be trimmed or cleared should be checked for nesting birds before it is removed. Ideally this should occur outside the bird nesting period March-September. If vegetation clearance is to occur in the March-September period a check for nesting birds should be conducted first by a suitably qualified individual.

7.5.3 New planting within the site and the retention of trees and shrubs on the site boundary will maintain the ecological functionality of the site for breeding birds.

7.5.4 Artificial bird nesting sites for swallow could be incorporated into the new buildings under the eaves in suitable locations.

7.5.5 If nesting birds are found at the site all site works shall cease and further ecological advice shall be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6 Brown Hares

7.6.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any brown hare activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for badgers are also applicable to this species.

7.7 Invertebrates

7.7.1 Landscaping should include native or wildlife friendly species including night flowering plants.

7.7.2 Contaminants should not be allowed to enter the adjacent ponds during work. To effect this, spill kits should be provided on site. Re-fuelling of all plant and machinery should be undertaken away from open drains and water courses. Drip trays should be used under static machinery.

7.8 Otter

7.8.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any otter activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.8.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for amphibians are also applicable to this species which is only likely to pass through the site at night.

7.9 Reptiles

7.9.1 There is no requirement for specific mitigation for these species. However, as a precautionary measure, in the unlikely event that any signs of any reptile activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.9.2 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

7.10 Water vole

7.10.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any Water vole activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

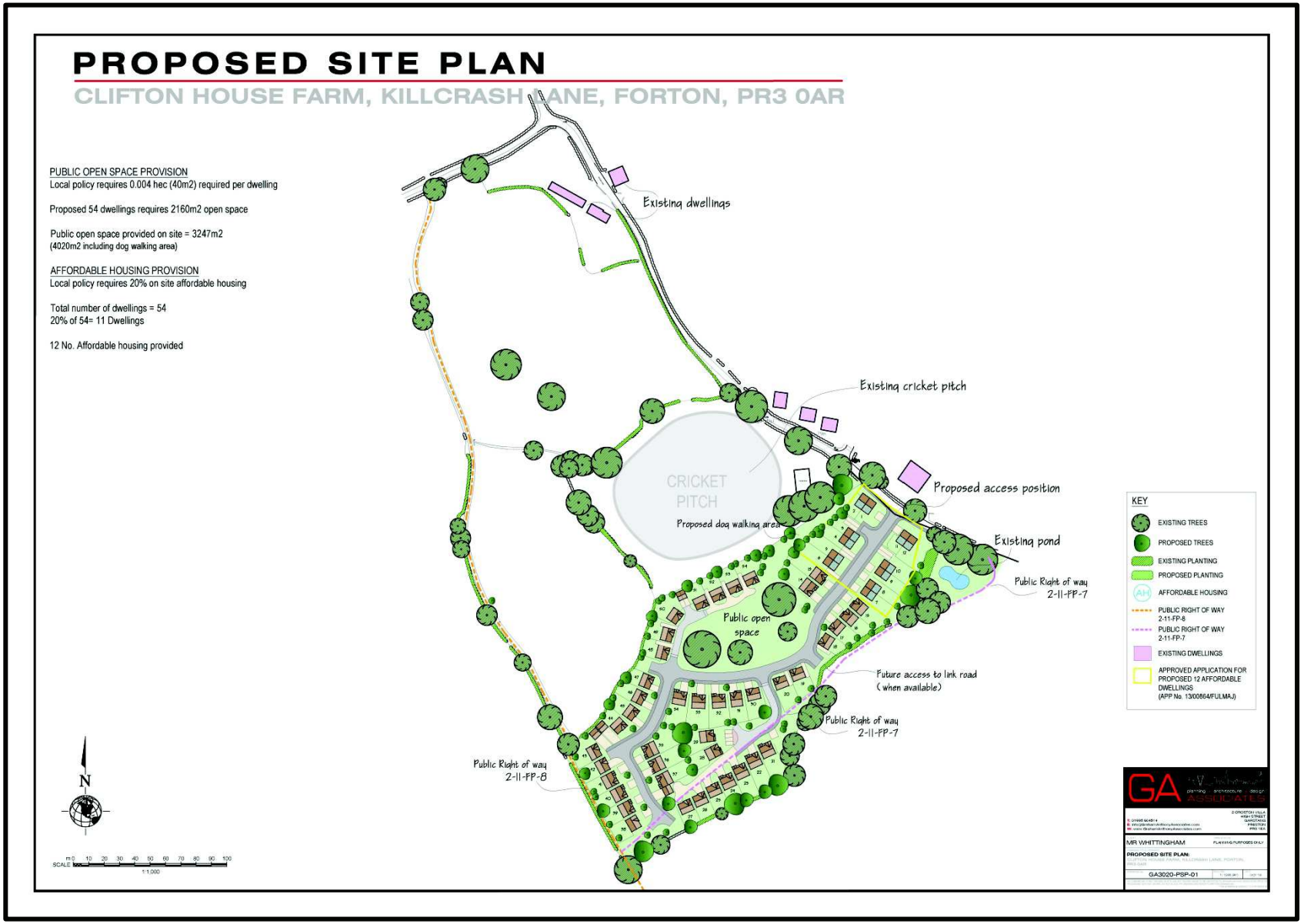

Figure 10 *Proposed site plans*

8. CONCLUSION

8.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land comprising arable fields at Clifton House Farm, Forton, Lancashire. It is proposed new houses will be constructed on the site.

8.1.2 There was no conclusive evidence of any specifically protected species regularly occurring on the site or the surrounding areas which would be negatively affected by site development following the mitigation proposed.

8.1.3 The vegetation to be cleared has a low ecological significance in the local area.

8.1.4 Trees and hedges on and around the site should be retained and protected during works.

8.1.5 The protection of trees on the site boundary and landscaping will promote structural diversity in both the canopy and at ground level and will encourage a wider variety of wildlife to use the site than already occurs.

8.1.6 Contractors will be observant for protected species and all nesting birds. Should any species be found during construction, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

8.1.7 I certify this report has been compiled in accordance with the code of professional conduct for the Chartered Institute of Ecology and Environmental Management and The Royal Institute of Chartered Surveyors and reflects my objective opinion of the facts found in relation to the instruction received and information available based upon the methodology, assumptions and constraints detailed within this report.

8 REFERENCES

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9 APPENDIX

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Appendix 1
Hedgerow Regulations Assessment

SCALE: NTS | REV 01

Feature / Hedge	Length 20m +	Hedge is not bounding the curtilage of dwelling	Hedge established more than 30years	Hedge boundary of protected or common land or land used for agriculture or forestry	ARCHAEOLOGY AND HISTORY	Archaeological feature which is included in the schedule of monuments	Situated wholly or partly within an archaeological site	Boundary of a pre-1600 AD estate	Integral part of a field system	Protected species records	FEATURES	Bank or wall	Gaps less than 10%	Standard trees	Ditch	Parallel hedge	Footpath/ Bridleway	Connection points	Woody species	Average ground flora species	HEDGE CLASSIFIED AS IMPORTANT
1	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	Yes	No	No	No	4	5	0	**No**
2	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	No	No	No	No	4	4	0	**No**
3	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	No	No	No	No	1	3	0	**No**
4	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	Yes	No	No	No	2	3	0	**No**
5	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	Yes	No	No	No	1	6	0	**No**
6	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	Yes	No	No	No	2	5	0	**No**
7	Yes	No	Yes	Yes		No*	No*	No*	No*	No		No	Yes	Yes	No	No	No	2	4	0	**No**
8	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	Yes	No	No	No	3	4	0	**No**
9	Yes	Yes	Yes	Yes		No*	No*	No*	No*	No		No	Yes	No	No	No	No	1	4	0	**No**
	No = Automatic failure					Yes = Automatic pass						7 woody species or 6 woody species + 3 features or 5 woody species + 4 features or highway + 4 woody species and 2 features									

* Historic and archaeological records have not been checked for this site.