



envirotech

**Ecological Consultants
Environmental and Rural Chartered Surveyors**

Ecological Appraisal

LAND OFF LOW ROAD, WHITEHAVEN



RICS

The mark of
property professionalism worldwide

Tel: 015395 61894
Email: info@envtech.co.uk
Web: www.envtech.co.uk
Envirotech NW Ltd

The Stables, Back Lane, Hale, Milnthorpe, Cumbria, LA7 7BL
Directors: A. Gardner BSc (Hons), MSc, CEnv, MCIEEM, MRICS, Dip NDEA
H. Gardner BSc (Hons), MSc, CEnv, MRICS
Registered in England and Wales. Company Registration Number 5028111

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 Institute of Ecology and Environmental Management. (www.ieem.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.

Quality and Environmental Assurance

This report has been printed on recycled paper as part of our commitment to achieving both the ISO 9001 Quality Assurance and ISO 14001 Environmental Assurance standards. Envirotech have been awarded the Gold standard by the Cumbria Business Environmental Network for its Environmental management systems.

Author	Chris Arthur	Date	16/09/2014
Checked by	Andrew Gardner	Date	16/09/2014
Report Version	1		
Field data entered	☒		
Report Reference	2004		

Contents

1. INTRODUCTION	5
1.1 Background	5
1.2 Objectives	5
2. METHODOLOGY AND SOURCES OF INFORMATION	5
2.1 Data Search	5
2.2 Vegetation and Habitats.....	5
2.3 Timing and Constraints	6
3. PHASE 1 SURVEY RESULTS.....	6
3.1 Habitat Results	6
4. SPECIES SURVEY METHODOLOGY	13
4.1 Amphibian	13
4.2 Badger	14
4.3 Bats.....	14
4.4 Birds.....	15
4.5 Brown Hare.....	15
4.6 Invertebrates.....	15
4.7 Red Squirrel	16
4.8 Reptiles	16
4.9 Survey limitations	16
5. RESULTS	17
5.1 Data Search	17
5.2 Vegetation.....	17
5.3 Amphibian	18
5.4 Badger	19
5.5 Bats.....	19
5.6 Birds.....	23
5.7 Brown Hare.....	24
5.8 Invertebrates.....	24
5.9 Red Squirrel	25
5.10 Reptiles	26
5.11 Other	27
5.12 Statutory and Non-Statutory Sites.....	27
6. MITIGATION/RECOMMENDATIONS	27
6.1 Compensatory planting and habitat enhancement	27
6.2 Amphibians	27
6.3 Badger	28
6.4 Bats.....	28
6.5 Birds.....	28
6.6 Brown Hares.....	29
6.7 Invertebrates.....	29

6.8	Red Squirrels	29
6.9	Reptiles	29
7.	CONCLUSION	31

1. INTRODUCTION

1.1 Background

1.1.1 In September 2014 Envirotech NW Ltd were commissioned by Day Cummins Ltd to carry out an Ecological Appraisal of land off Low Road, Whitehaven, central grid reference NX 97527 16255. A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.

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

1.2 Objectives

1.2.1 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.

2. METHODOLOGY AND SOURCES OF INFORMATION

2.1 Data Search

2.1.1 The Biological Records centre for Cumbria "CBDC" 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 national, regional or local importance within a 2km radius of the site boundary.

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

2.2 Vegetation and Habitats

2.2.1 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).

2.2.2 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).

2.2.3 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, Himalayan balsam and Giant hogweed on terrestrial habitat and aquatic species such as Floating pennywort, Water Hyacinth and New Zealand pygmyweed.

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

2.3 *Timing and Constraints*

2.3.1 The site and surrounding land was visited on the 15th September 2014 by Chris Arthur BSc (Hons), MSc, Grad CIEEM. During the visit, weather conditions were suitable for the survey types undertaken, being a warm, dry and in late summer day.

3. PHASE 1 SURVEY RESULTS

3.1 *Habitat Results*

3.1.1 The site is a parcel of previously developed brownfield land comprising a mosaic of tall ruderal, scrubby vegetation and young secondary woodland. It lies at the Southern extent of the town of Whitehaven, adjoining a main road to the East, a churchyard to the North, and waste ground to the South and West.

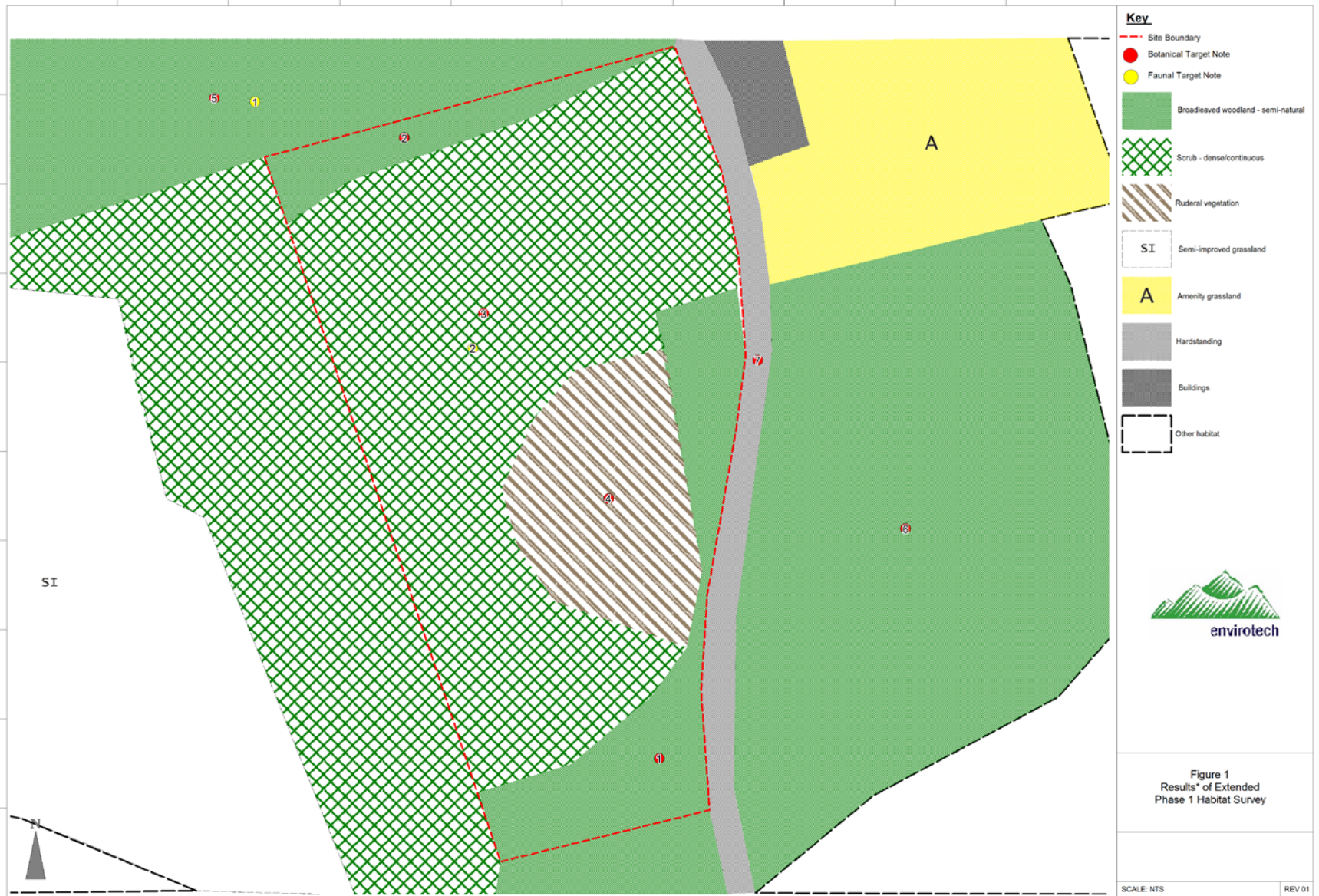
3.1.2 The wider landscape comprises urban mosaic in all directions, graduating into agricultural land to the South and East, and the North Sea to the West.

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

Target Note	Description	Comment
BTN1	Broad-leaved woodland	Whilst the age classes of trees within the site is generally young, there are areas where the density of stems and the ground flora present are representative of early secondary woodland. Two distinct areas are apparent within the site; along the South and South-east periphery of the site and along the Northern perimeter (BTN2). Within the South/South-eastern area, the canopy is predominantly Sycamore (<i>Acer pseudoplatanus</i>), with scattered Hawthorn (<i>Crataegus monogyna</i>) and Dogwood (<i>Cornus sanguinea</i>) present at the very Southern extent. The ground flora is typical of woodland, comprising Hart's tongue fern (<i>Asplenium scolopendrium</i>), Broad-buckler fern (<i>Dryopteris dilatata</i>), Bramble (<i>Rubus fruticosus</i> agg.), Nettle (<i>Urtica dioica</i>), Ivy (<i>Hedera helix</i>) and Herb-Robert (<i>Geranium robertianum</i>).
BTN2	Broad-leaved woodland	The second area of woodland occurs along the Northern boundary, adjacent to the more established woodland cover in the churchyard. Here Sycamore is again the dominant species, with a substantial covering of Ivy on the ground.
BTN3	Dense/continuous scrub	The majority of the site is dense scrub comprising young trees and shrubby species. Given time, it is likely that this area would graduate into secondary woodland, though at present the trees are sufficiently small and sparse to be classified as dense scrub. Tree species recorded across the site comprise Alder (<i>Alnus glutinosa</i>), Oak (<i>Quercus</i> sp.), Crack willow (<i>Salix fragilis</i>), Horse chestnut (<i>Aesculus hippocastanum</i>), Ash (<i>Fraxinus excelsior</i>), Goat willow (<i>Salix caprea</i>), Elder (<i>Sambucus nigra</i>), Holly (<i>Ilex aquifolium</i>), Elm (<i>Ulmus</i> sp.), Sycamore and Hawthorn. Shrubby species including Bramble, Nettle and Rose (<i>Rosa</i> sp.) are also frequent, intertwined with Bindweed (<i>Convolvulus</i> sp.). Ground flora comprises Hogweed (<i>Heracleum sphondylium</i>), Rosebay willowherb

		(<i>Chamerion angustifolium</i>), along with significant overlap with the area of ruderal vegetation to the East. A full species list is provided in BTN4, but is not duplicated here.
BTN4	Ruderal vegetation	In the central and Eastern part of the site is a more open area comprising tall ruderal species of vegetation and rank grassland. Rosebay willowherb, Hoary willowherb (<i>Epilobium parviflorum</i>), Bramble and Nettle are the most frequently occurring, though across the site there is a relatively high number of species. Amongst the taller vegetation is Knapweed (<i>Centaurea nigra</i>), Oxeye daisy (<i>Leucanthemum vulgare</i>), Michaelmas daisy (<i>Aster amellus</i>), Hogweed, Ragwort (<i>Senecio jacobea</i>), Ground elder (<i>Aegopodium podagraria</i>), Curled dock (<i>Rumex crispus</i>), Sorrel (<i>Rumex acetosa</i>), Silverweed (<i>Potentilla anserina</i>), Cinquefoil (<i>Potentilla reptans</i>) and Meadow buttercup (<i>Ranunculus acris</i>). Amongst the grassier areas, which are mostly located along established pathways, rank grasses include Yorkshire fog (<i>Holcus lanatus</i>), Bent (<i>Agrostis sp.</i>), Cock's foot (<i>Dactylis glomerata</i>), False oat grass (<i>Arrhenatherum elatius</i>) and Red fescue (<i>Festuca rubra agg.</i>), along with Dandelion (<i>Taraxacum officinalis</i>), Fox and cubs (<i>Pilosella aurantiaca</i>), Yarrow (<i>Achillea millefolium</i>), Creeping thistle (<i>Cirsium arvense</i>), Redshank (<i>Persicaria maculosa</i>), Meadow vetchling (<i>Lathyrus pratensis</i>), Red bartsia (<i>Odontites vernus</i>), Common vetch (<i>Vicia sativa</i>), Smooth tare (<i>Vicia tetrasperma</i>), Greater birds-foot-trefoil (<i>Lotus pedunculatus</i>), Creeping buttercup (<i>Ranunculus repens</i>) and Red clover (<i>Trifolium pratense</i>). There are small parcels of a plant species associated with wet ground conditions scattered within the ruderal vegetation, though no standing-water is present on site. These areas were associated with depressions caused by heavy machinery in the past which is likely to have created localised patches of waterlogging. Species found in these areas are Soft rush (<i>Juncus effusus</i>), Meadowsweet (<i>Filipendula ulmaria</i>), Yellow flag-iris (<i>Iris pseudacorus</i>) and Reed mace (<i>Typha latifolia</i>). Montbretia (<i>Crocasmia sp.</i>), an invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981) (as amended) was also recorded at several locations within the site.

BTN5	Broad-leaved woodland	An area of more established broad-leaved woodland within a churchyard adjoins the site to the North.
BTN6	Broad-leaved woodland	There is another parcel of established woodland to the East of the site.
BTN7	Hard-standing	A main road abuts the site to the East.
FTN1	Red squirrels	Red squirrels have been recorded within the established woodland in the churchyard to the North. No indication of this species was recorded within the site, and the generally poor condition and young age classes of the trees makes their presence unlikely.
FTN2	Birds	The dense scrub covering most of the site is likely to provide foraging and nesting opportunities for common bird species.
Table 1 - <i>Details of Botanical and Faunal Target Notes</i>		



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



The site is predominantly dense scrub (BTN3) comprising immature, native tree species and shrubby plants such as Bramble.



The central/Eastern area of the suite contains a mosaic of tall ruderal species and rank grassland (BTN4)



Rosebay willowherb, Hoary willowherb and Nettle are the dominant species in this area, though diversity is high.



The ruderal vegetation forms a mosaic with rank grassland, particularly along established footpaths where ground disturbance is high.



Reed mace, Meadowsweet and Soft rush indicate areas of localised waterlogging, though there is no standing-water.

	Montbretia, and invasive species, is present at several locations within the ruderal and scrub areas on site.
	Parcels of early secondary woodland occur to the North and South/South-east of the site (BTN2 & BTN3). Tree density and ground flora distinguish these areas from the more prevalent scrub cover.
Table 2 - <i>Photographs</i>	

4. SPECIES SURVEY METHODOLOGY

4.1 *Amphibian*

- 4.1.1 Great crested newts 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.

4.2 Badger

4.2.1 Badgers 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 essentially protects Badgers from killing, injuring or disturbance. 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 carcasses

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)) 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 behavior 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 Trees within the survey area were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees on the site and an assessment of their potential to be used by bats by a licensed surveyor.

4.4 *Birds*

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

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

4.5 *Brown Hare*

4.5.1 The Brown hare is a UK BAP species.

4.5.2 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 Where 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.

- 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 *Red Squirrel*

- 4.7.1 The site was walked over and the species of any tree over 15 years old was recorded.
- 4.7.2 Along the transect at 50m intervals, a check for signs of squirrels was made and a note made of whether these are few, moderate or many. This was done by looking for feeding activity such as the remains of tree seeds, and whether or not there are dreys. Tree seed availability can vary greatly at different times of the year and from year to year. Seeds of broadleaved trees will usually be available from the autumn and the abundance of seeds will decline through winter and spring. Conifer seeds are available from summer, and often through to the following spring or summer. Thus, looking for signs of squirrel feeding activity can provide useful clues as to whether squirrels are currently resident and feeding within the wood.

4.8 *Reptiles*

- 4.8.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act (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 *Survey limitations*

- 4.9.1 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.
- 4.9.2 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.
- 4.9.3 No significant survey limitations were encountered.

5. RESULTS

5.1 Data Search

- 5.1.1 Envirotech and CBDC hold no records of protected or notable species for the site. There are however records of protected or notable species within 2km. These are discussed in the relevant sections below.
- 5.1.2 The nearest statutory protected site is St. Bees Head Site of Special Scientific Interest (SSSI), c.1200m to the West (Figure 2). This is designated for its geological interest, maritime flora and associated bird assemblages. It is isolated from the site by dense urban mosaic of the town of Whitehaven and an expanse of agricultural fields.

MAGIC

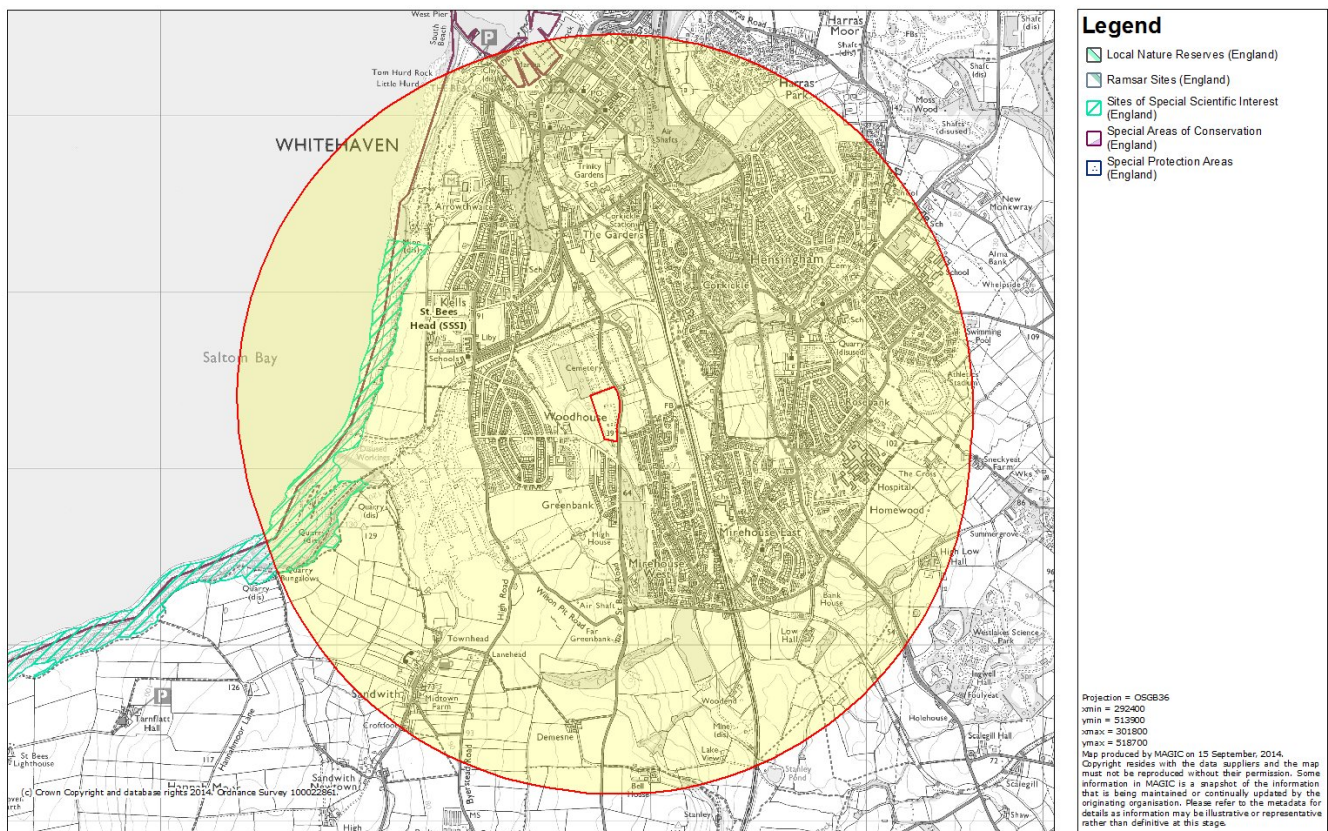


Figure 2 - Statutory designated sites 2km buffer

5.2 Vegetation

- 5.2.1 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.

- 5.2.2 There are numerous tracks and ruts from heavy machinery across the site, along with remnants of buildings that have been demolished in the past. This indicates that the habitats on site are recently established, and the prevalence of ruderal and pioneer species provides further evidence of this.
- 5.2.3 Trees within the site comprise numerous species, though all are in the young to semi-mature age range. A separate tree report was undertaken earlier in 2014 which describes the varying tree densities and species compositions. The recommendations made in this report should be adhered to, and are not reproduced in detail here.
- 5.2.4 Montbretia, an invasive weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified at several locations within the ruderal and scrubby vegetation on site.
- 5.2.5 There is no evidence of Japanese knotweed, Giant hogweed or Himalayan balsam or any other invasive or notable weed within the site or immediate surroundings.

5.3 Amphibian

- 5.3.1 There are two records for Common frog (*Rana temporaria*) within 2km of the site (Figure 3).
- 5.3.2 There are no water-bodies on, or within 250m of the site, which are suitable for use by amphibians. There are areas of the site dominated by plant species associated with wet ground conditions, though no standing water is present on site. It is considered that such areas are depressions created by heavy machinery in the past which are subject to higher water retention than the rest of the site due to ground compaction.
- 5.3.3 The site has some potential value to amphibians, particularly with the presence of scrub and rough grassland which could be utilised as refuges and/or hibernacula. There are no specific areas of log piles, though there are small rubble piles from demolished buildings that may be favourable to amphibians.
- 5.3.4 However, the lack of suitable breeding ponds in the local area make it very unlikely that amphibians would use the site. The main road to the East would also represent a significant barrier to the dispersal of this species.
- 5.3.5 The proposed development will not result in the permanent loss of or a substantial negative effect on this pond or foraging areas linked to it. Boundary areas which may provide foraging or refuge sites, are to be retained, with only a small section on the Eastern boundary being removed to create an access drive for the proposed development.



Figure 3 - Amphibian records 2km buffer

5.4 Badger

- 5.4.1 No records of Badgers occur within 2km of the site.
- 5.4.2 No setts or indication of Badger feeding was found on site.
- 5.4.3 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.
- 5.4.4 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.
- 5.4.5 The design of garden fences/walls should be considerate to the passage of Badgers.

5.5 Bats

- 5.5.1 There are 33 records of a single bat species, Common pipistrelle (*Pipistrellus pipistrellus*) within 2km of the site (Figure 4).



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

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. <i>A consultant ecologist is required</i>	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' 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. <i>A consultant ecologist required</i>	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. <i>A consultant ecologist is unlikely to be required</i>	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. <i>A consultant ecologist is not required unless new evidence is found</i>	None.	No mitigation for bats required.

Figure 6 - Tree risk categories

5.6 Birds

- 5.6.1 There are 218 records of birds within 2km of the site (Figure 7). Woodpigeon (*Columba palumbus*) were noted on site during the survey.
- 5.6.2 The dense scrub within the site will provide potential nest sites for species such as Blackbirds (*Turdus merula*). No indications of such use were recorded during the survey.
- 5.6.3 Disturbance within the site is likely to be high at all times of the year. There are well established paths crossing the site, which are believed to be from dog walkers, and there is a high level of discarded refuse.
- 5.6.4 There were no rot holes or cracks in the trees within the site which would support tree hole dwelling species such as woodpeckers.
- 5.6.5 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.
- 5.6.6 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.
- 5.6.7 Precautionary mitigation would be appropriate in respect of construction activities and compensation for lost nesting and foraging opportunities will be required.

5.8.3 Tall ruderal and scrub vegetation has some value to species such as common butterflies but this is not considered to be locally significant.

5.8.4 The significance of the site to invertebrates is likely to be limited in the local context although the habitat on site will support invertebrate species. Mitigation can be incorporated into the design and landscaping scheme with the careful selection of plant species and substrates for the garden areas.

5.9 Red Squirrel

5.9.1 This species has been recorded locally, with 117 records within 2km of the site (Figure 8), including within the churchyard adjacent to the North

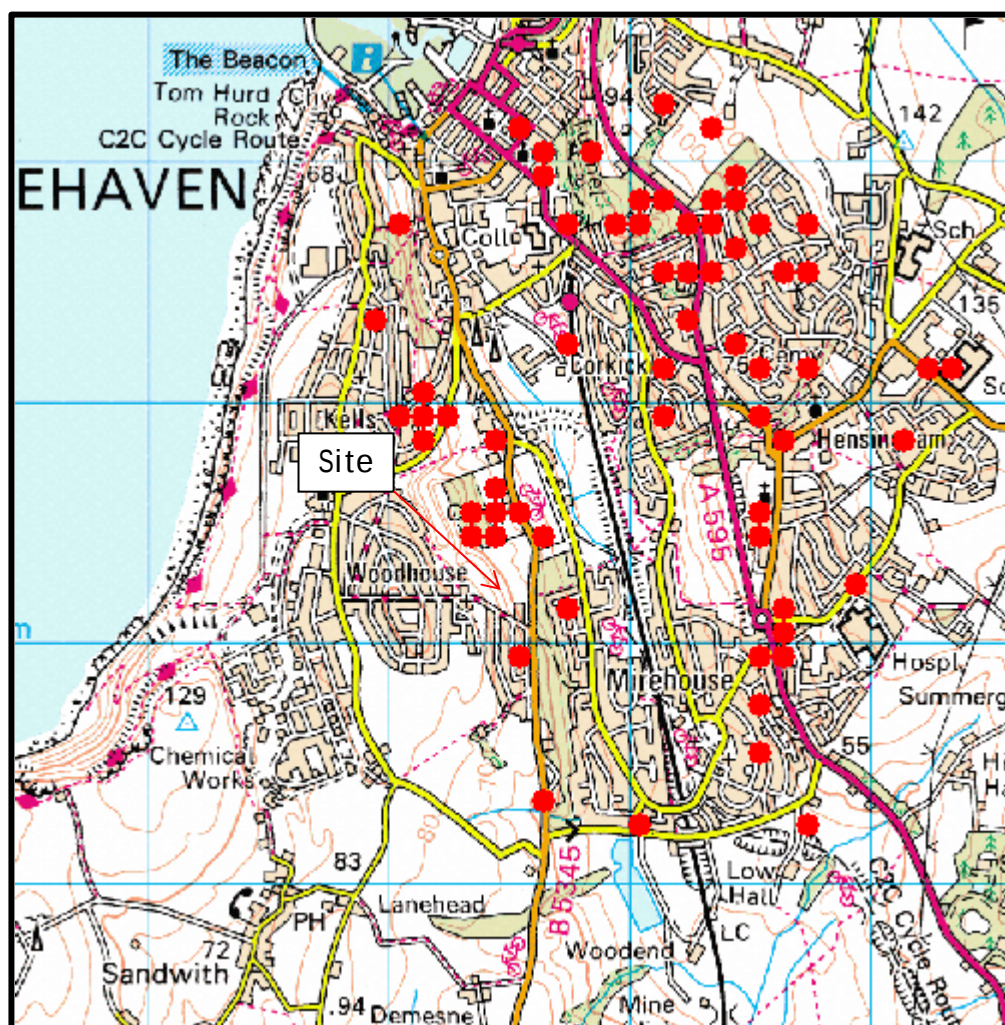


Figure 8 – Red squirrel records 2km buffer

5.9.2 No dreys or feeding signs were located within the site. The trees on site are considered to be too young and recently established to be of any value to this species; those found within the adjacent churchyard are older and of higher potential for Red squirrels.

5.10.4 Reptiles are considered unlikely to be present on site; as a consequence, precautionary mitigation would be appropriate in respect of construction activities so as to ensure reasonable avoidance measures are taken to avoid the killing or injury of these species.

5.11 Other

5.11.1 The site may be crossed by species such as Fox (*Vulpes vulpes*) and Rabbit (*Oryctolagus cuniculus*) are known to occur locally.

5.12 Statutory and Non-Statutory Sites

Direct Impacts:

5.12.1 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.

5.12.2 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:

5.12.3 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.

6. MITIGATION/RECOMMENDATIONS

6.1 Compensatory planting and habitat enhancement

6.1.1 Recommendations made in the tree report should be adhered to.

6.1.2 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.

6.1.3 Montbretia should be removed from the site and disposed of in line with best practice guidance prior to the commencement of works.

6.2 Amphibians

6.2.1 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.

- 6.2.2 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.

6.3 Badger

- 6.3.1 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 also 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.

6.4 Bats

- 6.4.1 Work at night should be restricted, new planting within the site should enhance structural diversity and light spill onto the railway line should be minimised.
- 6.4.2 New roosting provision for crevice dwelling bats could be incorporated into the buildings on site or bat boxes could be erected in retained trees.
- 6.4.3 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.

6.5 Birds

- 6.5.1 Nesting by birds within the development area is considered unlikely to occur. Birds may nest within hedges on the periphery of the site.
- 6.5.2 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.
- 6.5.3 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.

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

6.5.5 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.

6.6 *Brown Hares*

6.6.1 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.

6.6.2 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.

6.7 *Invertebrates*

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

6.8 *Red Squirrels*

6.8.1 Trees to be felled should be inspected for the presence of Red squirrel dreys immediately prior to removal. In the unlikely event that any signs of any Red Squirrel 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.

6.9 *Reptiles*

6.9.1 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.

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

New vegetation planting along site boundary

Wildlife friendly plant species to be included in landscaping scheme



New aquatic habitat created

Figure 10 - Site Plan

7. CONCLUSION

- 7.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land comprising scrub and ruderal vegetation off Low Road, Whitehaven. It is proposed new houses will be constructed on the site.
- 7.1.2 Bats and Red Squirrel are known to occur in the local area, there was however 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.
- 7.1.3 The vegetation to be cleared has a low ecological significance in the local area; the trees within development area are generally low quality.
- 7.1.4 The creation of a pond and new planting within the scheme will promote structural diversity and will encourage a wider variety of wildlife to use the site than already occurs.
- 7.1.5 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.
- 7.1.6 I certify this report has been compiled in accordance with the code of professional conduct for the 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.