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C/O R E PHILLIPS AND PARTNERS

LAND AT LLWYNHAID FARM, BETTWS, NEWPORT

EXTENDED PHASE 1 HABITAT SURVEY

13 December 2010



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SUMMARY

Soltys Brewster Ecology were commissioned to undertake an ecological appraisal of an area of farmland to the southwest of the settlement of Bettws in July 2010. The land in question – Llwynhaid farm - has been proposed for residential development as a candidate site under the Newport Local Development Plan (LDP) process.

Desk based consultation confirmed that the site did not hold any conservation designations, although the site formed boundaries with up to five Planted Ancient Woodland Sites (PAWS). There are two records of Otter *Lutra lutra* recorded alongside Bettws Brook running through the western half of the site. Further records of Otter continue along this watercourse and feature along similar watercourses in the surrounding area. The woodland to the west of the site boundary holds numerous records of foraging Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *P. pygmaeus*, and Noctule bats *Nyctalis noctula*. A small tributary of the Bettws brook 800m to the west of the boundary holds a record of foraging Daubentons bats *Myotis daubentonii*.

An Extended Phase I Habitat survey revealed that the site consisted mainly of improved grassland enclosed by a network of species-rich hedgerows. The site shares many of its boundaries with coniferous plantations (desk study indicates these as PAWS) fringed with a broadleaved tree and scrub community. The site also supports the Bettws Brook in its western half, with the stream corridor representing a locally valuable resource for wildlife. The farm buildings on site were not surveyed in detail but the main farmhouse in particular was considered to have some potential for roosting bats.

Hedgerows were noted as a prominent habitat type on the site and many of the constituent trees and shrubs appeared to be of considerable age, particularly those laid in the traditional method. The hedgerows formed a network across the farm and surrounding landscape, linking to woodland and other habitats. Some of the hedgerows were found to be 'important' in terms of the Hedgerow Regulations (1997).

The development potential of the site is primarily associated with the large areas of improved agricultural grasslands, which were considered of little or no ecological interest. As part of any future development, consideration should be given to the retention of key hedgerow features as far as practicable together with all woodland areas and the Bettws Brook corridor. Targeted surveys for associated species (e.g. birds, bats, Dormouse and Otter) would also be appropriate to inform any future planning submission.

1.0 INTRODUCTION

- 1.1. Soltys Brewster Ecology were commissioned to undertake an ecological appraisal of land at Llwynhaid Farm in Bettws, Newport. The land-holding is being proposed as a candidate site for residential development as part of the Newport Local Development Plan (LDP) process (see plan in Appendix I).
- 1.2. The land at Llwynhaid farm occupies an area of 15.6 hectares and is located southwest of the settlement of Bettws, centred at grid reference ST 282901. The site is mainly pastoral farmland and is classified as 'Countryside' as currently defined within the Newport Unitary Development Plan 1996-2011.
- 1.3. This report presents the findings of an ecological desk study and Extended Phase I Habitat survey undertaken over July 2010 to advise on the development potential and likely ecological constraints/opportunities associated with the site.

2.0 METHODOLOGY

2.1. In order to establish the baseline ecological conditions on site and in the adjoining habitats, a combination of desk-based consultation and Extended Phase I Habitat survey were undertaken in July 2010.

Desk study

- 2.2. This element of the work primarily involved consultation with the South East Wales Biodiversity Records Centre (SEWBRc) to identify any records of rare, protected or notable flora and fauna within the proposed development boundary and surrounding 1 km area. The search criteria also included information relating to the location and citation details (where available) for any sites designated for their nature conservation interest such as Sites of Special Scientific Interest (SSSIs) or Sites of Importance for Nature Conservation (SINCs).
- 2.3. A search for relevant information available via the internet, and other sources, such as the Phase I Survey of Wales (CCW 2005), was undertaken.

Extended Phase I Habitat Survey

- 2.4. The fieldwork was undertaken on 16 July 2010 by two experienced ecologists and followed standard Phase 1 Habitat Survey protocol (JNCC 1990) as amended by the Institute of Environmental Assessment (1995). All habitats within the proposed development site were classified and mapped as accurately as possible. Target notes were used to identify features of particular ecological interest.
- 2.5. Wherever possible, vegetation units were classified by eye according to their species composition and cross-referenced to any UK BAP Priority Habitats or local habitats included in the local Biodiversity Action Plan¹.
- 2.6. All habitats considered to have potential to support rare, protected or otherwise notable species of flora and fauna was noted, as were any direct signs of these species (e.g. Badger *Meles meles* setts and dung-pits). The survey also included a ground-based check (using binoculars as

¹ Newport Local Biodiversity Action Plan
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[Extended Phase 1 Habitat Survey Report](#)

appropriate) of buildings and mature trees for their potential to support roosting bats. Of the buildings and trees checked, each was assigned a subjective potential value from No/Low up to High. This valuation was based on a combination of the presence of suitable features, location and surveyor experience and is based on best practice survey guidelines described by the Bat Conservation Trust (2007).

- 2.7. Hazel *Corylus avellana* was a frequent component of the on-site hedgerows– any fallen nuts found were examined for characteristic gnaw marks of mammals such as Grey Squirrel *Sciurus carolinensis*, Woodmouse *Apodemus sylvaticus* and Common Dormouse *Muscardinus avellanarius*.
- 2.8. Given the frequency of Japanese Knotweed in South Wales, any colonies seen during the survey were also noted. Japanese Knotweed *Fallopia japonica*, together with other invasive non-native species such as Himalayan Balsam *Impatiens glandulifera*, is listed as a pernicious weed under Schedule 9, Section 14 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to plant or otherwise cause the species to grow in the wild. Disposal of knotweed from a site is controlled by the Environmental Protection Act 1990, which classifies it as ‘controlled waste’ to be disposed of safely at a licensed landfill site according to the EPA (Duty of Care) Regulations 1991.

3.0 RESULTS

Desk Study

- 3.1 The data provided by SEWBReC (Appendix II) confirmed that the site did not hold any statutory or conservation designations (i.e. SSSI), nor was it in close proximity to any such site. The Bettws Brook runs through the western half of the site and is listed as a Site of Importance to Nature Conservation (SINC) by Newport City Council. The SINC is designated for potentially supporting protected riverine species including Otter *Lutra lutra* and White Clawed Crayfish *Austropotamobius pallipes*. The site formed boundaries with up to five Planted Ancient Woodland Sites (PAWS) including Garth Fawr, Garth Fach, Mescoed Bach, Coed Garw and Gwern-y-Ceffyla, all of which are Candidate SINCS. Species records on the site include two records of Otter *Lutra lutra* recorded alongside Bettws Brook and further records continue along this watercourse and feature along similar watercourses in the surrounding area. The woodland to the west of the site boundary (Mescoed Mawr) holds numerous records of foraging Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *P. pygmaeus*, and Noctule bats *Nyctalis noctula*. A small tributary of the Bettws brook 800m to the west of the boundary holds a record of foraging Daubentons *Myotis daubentonii*. Other bat species recorded in the area include Noctule *Nyctalis noctula* and Natterers Bat *Myotis nattereri*.
- 3.2 The Ynys Fro Reservoir and surrounds lie 600m to the south of the site and supports numerous records of priority bird species including Skylark *Aluada arvensis*, Common Goldeneye *Bucephala clangula*, and Green Sandpiper *Tringa ochropus*. The Allt-yr-Yn Local Nature Reserve was within 1km of the southeastern site boundary and supports a mosaic of species-rich meadow, woodland, canal and ponds. Other protected species recorded in the surrounding area included Great Crested Newt *Triturus cristatus* and Water Vole *Arvicola terrestris*, although these were beyond 1km of the site boundary and were not considered of particular ecological relevance.
- 3.3 The Phase I data of Wales (2005) indicated that the site consisted of improved grassland with blocks of Coniferous plantation woodland fringed by semi-natural broadleaved woodland.

Extended Phase 1 Habitat Survey

- 3.4 The distribution and extent of habitats within and adjacent to the site is illustrated in Figure 1 with accompanying target notes in Appendix III.



client/project
 Land at Llwynhaid
 R E Phillips and Partners

drawing
 Phase 1 Habitat Map
 Figure 1

soltysbrewster
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drawing no.
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3.5 The site was characterised by a series of improved pastures that were grazed to varying extents by Cattle (and in one field, Horses). The pastures were separated by network of native hedgerows, plantation and semi-natural woodland blocks and wooded stream corridors. The site also supported a series of seasonal field ditches and two small streams (including Bettws Brook).

Buildings

3.6 The only buildings on the site were those associated with the Llwynhaid farmyard and consisted of eight farm sheds, a small stable block, and two traditional stone-built farmhouse buildings. The farm sheds were functional and most were built with steel frames, breezeblock or timber clad walls and corrugated steel or asbestos panel roofs (Plate 1). Many of these larger animal sheds with open access through open doors or venting supported a number of active Swallow nests. A population of House Sparrows was also noted around the farmyard, suggesting nesting in the buildings.

Plate 1. Character of farm sheds in Llwynhaid farmyard.



3.7 The stable block was a wooden clad building with corrugated asbestos panel roof. The traditional farmhouse buildings were stone built with slate roofs. The main (largest) farmhouse was occupied

(in residence) and included a garage/storage annex. The smaller farmhouse was not occupied but used for storage with mesh over open windows (Plate 2). Although these buildings were not assessed externally in detail, the traditional farmhouse buildings were considered likely to support features that could support roosting bats (i.e. access points under roof tiles, chimney stacks and eaves, gaps in masonry etc).

Plate 2. Traditional farmhouse buildings in Llwynhaid farmyard



Improved Grassland

3.8 Of the eight grazing pastures on the survey area, six of these were agriculturally improved, all subject to cattle grazing either currently or in the recent past (Plate 3). The grassland sward was generally species poor with species consistent with improved pastures and included Perennial Ryegrass *Lolium perenne*, Annual Meadow Grass *Poa annua*, Crested Dogs Tail *Cynosurus cristatus*, Timothy *Phleum pratense* and Yorkshire Fog *Holcus lanatus*. The grass was grazed short and contained few herbs including White Clover *Trifolium repens*, Dandelion *Taraxicum officinale*, Ribwort Plantain *Plantago lanceolata*, Creeping and Meadow Buttercup *Ranunculus repens/acris* and Broadleaved Dock *Rumex obtusifolium*. This grassland mix is likely to be of high agricultural value but of poor botanical diversity.

Plate 3. Improved grassland field enclosed by a network of hedgerows*Semi-improved grassland*

- 3.9 Two of the pastures in the east of the survey area were considered to have greater diversity than the improved fields. The northernmost pasture (Target Note 1) was cattle grazed and considered to be poor semi-improved and supported a community co-dominated by Perennial Rye Grass and Yorkshire Fog with Common Bent *Agrostis capillaris*. Herbs in the sward included Creeping Buttercup, Meadow Buttercup and White Clover.
- 3.10 The southernmost pasture was horse grazed (Plate 4) and supported a longer sward of Yorkshire Fog, Common Bent, Sweet Vernal Grass *Anthoxanthum odoratum* and Cocksfoot *Dactylis glomerata*. Herbs included Common Sorrel *Rumex acetosa*, Common Mouse Ear *Cerastium fontanum* and in the southeastern corner, Yellow Rattle *Rhinanthus minor*, suggesting this grassland had been subject to less agricultural improvement than others across the land holding. This pasture was considered to be representative of a semi-improved neutral grassland. .

Plate 4. Horse grazed semi-improved grassland*Tall Ruderal*

3.11 A band of tall ruderal vegetation was common between the edges of pastures and hedgerows or woodland. Species include Broadleaved Willowherb *Epilobium montanum*, Common Nettle *Urtica dioica* and other tall species such as Bracken *Pteridium aquilinum*, Yorkshire Fog and Soft Rush *Juncus effusus*.

Important or notable habitats

3.12 In the context of this report, *important or notable habitats* are considered to be those which are of a sustainable size and which meet any of the following criteria:

- Habitats which have a high intrinsic ecological value i.e. they support a diverse range of vascular plant and/or faunal species;
- Mature or semi-natural habitats in built-up areas;
- Any UK BAP Priority Habitats;
- Local BAP Habitats considered to have significant extent and/or ecological interest.

Streams

- 3.13 There was a wide shallow stream (Bettws Brook) running through the centre of the western side of Parc-Y-Brain Road. The streambed was up to 5m wide in places and rocky (Plate 5) and was wooded on both banks by a broadleaved community including Alder *Alnus glutinosa*. The banks were low and heavily poached in places where livestock were able to cross into adjoining fields.

Plate 5. Bettws Brook in the western section of the site



- 3.14 A smaller stream was present in a small wooded valley along the northern boundary of the horse grazed pasture on the eastern side of the site. This stream is likely to be seasonal as very little water was present during the survey in July 2010.

Broad-leaved woodland

- 3.15 A fringe of broadleaved woodland habitat was present along the edges of the coniferous plantation blocks offsite. These fringes of broadleaved woodland supported a diverse community including main canopy species as Ash *Fraxinus excelsior*, Oak *Quercus robur* and Sycamore *Acer pseudoplatanus*. The mid-storey species included Yew *Taxus baccata*, Alder, Hazel *Corylus avellana*, Holly *Ilex aquifolium* and Hawthorn *Crataegus monogyna* (Plate 6). Honeysuckle *Lonicera*

periclymenum was also frequent. The fringes were generally narrow – approximately 10 – 20m wide - before the broad-leaf community was replaced by coniferous plantation.

Plate 6. Mid-storey layer in broadleaved woodland edge



3.16 The candidate site also supported two narrow belts of woodland along the banks of the stream corridors. Alder was the principal canopy species with Ash, Oak, and Sycamore. The understorey consisted of Hawthorn, Holly, Hazel and Field Maple *A. campestre* although the understorey was either absent or degraded in areas where cattle were able to access.

3.17 The main ground cover in the wet woodland to the west along the Bettws Brook was Bramble with small levels of Himalayan Balsam. The woodland corridor along the seasonal stream in the eastern part of the site supported a ground flora suggestive of old woodland, with several characteristic indicator species recorded including Bluebell *Hyacinthoides non-scripta*, Wood Avens *Geum urbanum*, Greater Stitchwort *Stellaria holostea* and Yellow Archangel *Lamium galeobdolon*. Ivy was also prevalent in more heavily shaded sections along the seasonal stream corridor.

Hedgerows

3.18 The hedgerows on the site were a distinctive feature in the landscape, forming a network between the woodland patches as well as a barrier to the housing estate to the north. The hedgerows were

generally in good condition managed by mechanical flailing, resulting in an intact, low and dense structure (Plate 7). A number of the hedgerows supported fruiting Hazel, which suggests that the management occurs on a biannual cycle.

- 3.19 The main species present in the hedges were Hawthorn, Blackthorn *Prunus spinosa* and Hazel with Elder *Sambucus nigra*, Holly, Field Rose *Rosa canina* and occasional Dogwood *Cornus sanguinea*. Oak and Ash were also present as standard trees in some of the hedgerows (Figure 1). The ground flora was generally species-poor, and often dominated by Bracken, Nettle and Bramble and grasses/herbs associated with the adjacent pastures.

Plate 7. Intact Hedgerows enclosing grazing pasture



- 3.20 The majority of hedgerows were diverse enough to meet the criteria of the UK BAP *Ancient and/or Species-rich Hedgerows* Priority Habitat type (i.e. containing an average of at least five woody species per 30 metres). With associated features such as banks, ditches and connections to other hedgerows and woodlands, some would also be likely to qualify as biologically important under the criteria of the Hedgerow Regulations (1997).

Mature broad-leaved trees

3.21 There were several mature standard trees within the hedgerows and woodlands, particularly along Bettws Brook. Individual Oak standards were also present within several of the grazing pastures (Figure 1) and these are likely to be among the oldest in the survey area, and were considered to have some intrinsic ecological value.

Fauna

3.22 In the course of the survey, a search of field signs for protected or notable species was undertaken and the potential of the habitats to support these species considered. In the context of this report, these species meet any of the following criteria:

- Species protected by British or international law;
- UK BAP Priority Species or local BAP species;
- Nationally rare or nationally scarce species;
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists);

Common Dormouse

3.23 The network of hedgerows with fruiting Hazel and a diversity of other species linking to nearby woodland were considered to have potential value for Dormice *Muscardinus avellanarius*. However, examination of Hazel nuts of the numerous ones examined did not reveal any signs of being opened by this species. It was evident that Grey Squirrel *Sciurus carolinensis* had opened the vast majority of fallen hazel nuts found. Desk study information did not identify any known records of Dormice in close proximity to the site or within the wider area included in the desk study (see map in Appendix II).

Bats

3.24 The stone-built farm buildings were considered to offer potential to roosting bats with features such as large chimney stacks, large attics and pitched slate roofs etc as well as the opportunities associated with old age (e.g. gaps and holes in the masonry, door frames and window lintels and slipped and raised roof tiles. The buildings were not assessed in any detail and were not inspected internally, although further survey would be recommended as part of a planning submission.

- 3.25 It is likely that a range of bats would find good foraging habitat along the Bettws Brook, seasonal stream and woodland edges within the surveyed area. Hedgerows across the site are also likely to provide foraging/flight corridors for bats moving to and from feeding sites.
- 3.26 Several of the mature trees in the hedgerows, woodland edges and in the pastures had features that could be of value to roosting bats, such as cracks, dense ivy covering and loose bark or rot holes (see e.g. target notes 3, 7, 9, 12, 15, 17, 25). These trees would require checking prior to any clearance or maintenance works.

Badgers

- 3.27 There was no evidence to suggest the presence of Badgers on the site, although numerous mammal paths were identified along the southern site periphery and woodland edges.

Herpetofauna

- 3.28 Much of the site was considered largely unsuitable for use by either common reptiles or amphibians. The grassland was too short and heavily grazed and no ponds or areas of standing water were identified within the survey area or immediately adjacent to it.

Birds

- 3.29 During the survey, a total of 14 different species were noted (Appendix III) including Long Tailed Tit *Aegithalos caudatus*, House Martin, Song Thrush *Turdus philomelos*, House Sparrow *Passer domesticus* and Swallow *Hirundo rustica*. A pair of Kingfishers *Alcedo atthis* was also noted along Bettws Brook. Kingfishers are protected under Schedule 1 of the Wildlife and Countryside Act 1981 and are listed with House Sparrow, and Song Thrush as priority species within the UK and Local (Newport) BAP. Several species are also highlighted as being of some conservation concern (Eaton et al. 2009).
- 3.30 Further survey maybe required to establish the presence of Barn Owl *Tyto alba* in the farmyard buildings although no desk study records for this species were identified within the surrounding 1km area and no field signs (e.g. pellets around farm buildings) were noted during the course of the survey.

Otter

- 3.31 There was no evidence (i.e. spraints, lie up spots etc) to suggest the presence of Otter, although Bettws Brook would be considered to offer suitable habitat and supports a number of recent records to suggest a regular, albeit transitory Otter presence.

Invertebrates

- 3.32 Over the course of the survey, a range of common invertebrates were noted on the site. These included Meadow Brown *Maniola jurtina* and Common Blue *Polyommatus icarus* butterflies, Meadow Grasshopper *Chorthippus parallelus*, Common Blue Damselfly *Enallagma cyathigerum*, Emperor Dragonfly *Anax imperator* (Plate 8) and various Bumblebees *Bombus sp.* These species would not be considered particularly rare or endangered.

Plate 8. Emperor Dragonfly alongside one of the seasonal field ditches



Other species

- 3.33 The invasive plant species Himalayan Balsam *Impatiens glandulifera* was present in varying levels across the site, particularly associated with the corridor of the Bettws Brook. No stands of Japanese Knotweed were noted over the course of the survey.

4.0. POLICIES AND PLANS

4.1. The following local and national planning policy relating to nature conservation and biodiversity are considered of relevance to the area surveyed and to any future development proposals.

National Planning Policy

4.2. In terms of planning policy, a number of over-arching policies are of relevance not least of which are those described within Planning Policy Wales (PPW), which sets out land use planning policies of the Welsh Assembly Government with Chapter 5 dealing with Conserving and Improving Natural Heritage and Coast. The advice contained within PPW is supplemented for some subjects by Technical Advice Notes (TAN's), with TAN 5 addressing Nature Conservation.

Technical Advice Note 5 (2009)

- 4.3. TAN 5 identifies a number of key principles, which the town and country planning system in Wales should incorporate those relevant are detailed below:
- work to achieve nature conservation objectives through a partnership between local planning authorities, CCW, the Environment Agency, voluntary organisations, developers, landowners and other key stakeholders (PPW 5.1.5 and 5.2.5);
 - integrate nature conservation into all planning decisions looking for development to deliver social, economic and environmental objectives together over time (PPW 5.1.3 and 5.1.4);
 - ensure that the UK's international obligations for site, species and habitat protection are fully met in all planning decisions (PPW 5.3.8-10);
 - look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally (PPW 5.1).

Adopted Newport Unitary Development Plan 1996-2011

4.4. Planning policy in Newport is currently guided by the Adopted Unitary Development Plan, which will be replaced by the Local Development Plan following 2011. The Local Development Plan will contain policies that will be used in the assessment of all planning applications that come before the council to 2026.

- 4.5. A number of other policies within the current UDP were considered of relevance to the site in the light of the features noted during the desk and field surveys. These policies include:
- Policy SP6 Conservation of the Countryside.
 - Policy SP7 Conservation of the Natural Environment.
- 4.6. The following Policies are also considered of some relevance to any proposed development on the Llwynhaid site:
- CE 9 Species Protected by European Legislation
 - CE 10 Species Protected by United Kingdom Legislation
 - CE 11 Ancient Woodland
 - CE 12 Secondary Woodland
 - CE13 Trees and Hedgerows on Development Sites
- 4.7. Policy CE 9 and CE 10 make reference to species protected by European and UK legislation such as those detailed in section 3.22- 3.31. One of the habitats on the application site that these policies may apply to include the Bettws Brook that may have importance to Otters, White Clawed Crayfish, nesting birds (i.e. Kingfisher) and foraging bats. Other habitats include the main farmhouse and the mature broadleaved trees across the site that have the potential to support roosting bats.
- 4.8. Policy CE 11 aims to protect ancient woodland such as those listed in section 3.1.

5.0 CONCLUSIONS AND RECOMMENDATIONS

- 5.1. The survey area comprised a mosaic of habitat types representing a wide spectrum of ecological value. In terms of the site's development potential, the large areas of improved grassland are of little or no ecological interest and represent the most suitable areas to support development with the network of hedgerows and woodland areas largely retained and used to frame the development footprint and contribute to a green infrastructure network. Further survey work as identified in subsequent sections would be recommended to inform any emerging development footprint and to establish likely presence/absence of protected or notable species across the site.
- 5.2. Any subsequent development proposals at the site subject to a planning submission should consider the likely use of protected species such as nesting birds, bats, Otters and Dormice. The buildings on the farmland were noted as supporting nesting Swallows, House Sparrows and may have the potential to support Barn Owls, although the grazed nature of much of the surrounding grassland would limit the potential of the area to support this species (i.e. short grazed pasture would be unlikely to support sufficient small mammals as prey species). Further survey for Barn Owls is recommended should these buildings require demolition as part of the proposed development. Similarly potential for roosting bats was associated with these buildings and further survey would be required to establish their likely presence/absence.
- 5.3. As a general consideration, building demolition and vegetation clearance should be undertaken outside the bird breeding season and ideally in the period when bats would be least likely to be present (i.e. between October and March inclusive).
- 5.4. In the event that trees identified as of Medium potential or above would be affected by proposed development, surveys to establish likely presence/absence of bats would be required prior to any works to demolish/fell. Such surveys could be combined with a series of evening surveys to establish general levels of bat activity across the site.
- 5.5. It is likely that the hedgerows provide a valuable resource to a wide range of breeding birds and any work affecting the hedgerows should be conducted outside the breeding season. Bettws Brook and the woodland on its banks would be considered a locally important habitat for riverine birds (such as Kingfishers), bats and potentially Otters. Further surveys are likely to be required to establish the importance of this watercourse for these groups to inform any future planning submission.

- 5.6. No definitive evidence to indicate use of the site by Dormice was recorded although survey (either a comprehensive nut search or a nest tube survey) would be recommended to address any potential licensing/mitigation requirements as part of any scheme submitted for planning.
- 5.7. Other considerations for site development would include a programme to treat/eradicate existing stands of Himalayan Balsam from the banks of Bettws Brook. Enhancement measures that could be adopted as part of any new development would include the provision of bird or bat boxes on retained trees and/or as part of the building scheme. A range of products are now available (e.g. bat bricks at <http://www.ibstock.com/sustainability.asp>) that do not compromise the integrity of new building and require little, if any maintenance. Bird boxes for species such as House Sparrow and House Martin which were confirmed to be present at or adjacent to the site, are also available commercially that could be integrated into building design (for example see <http://www.alanaecology.com>).

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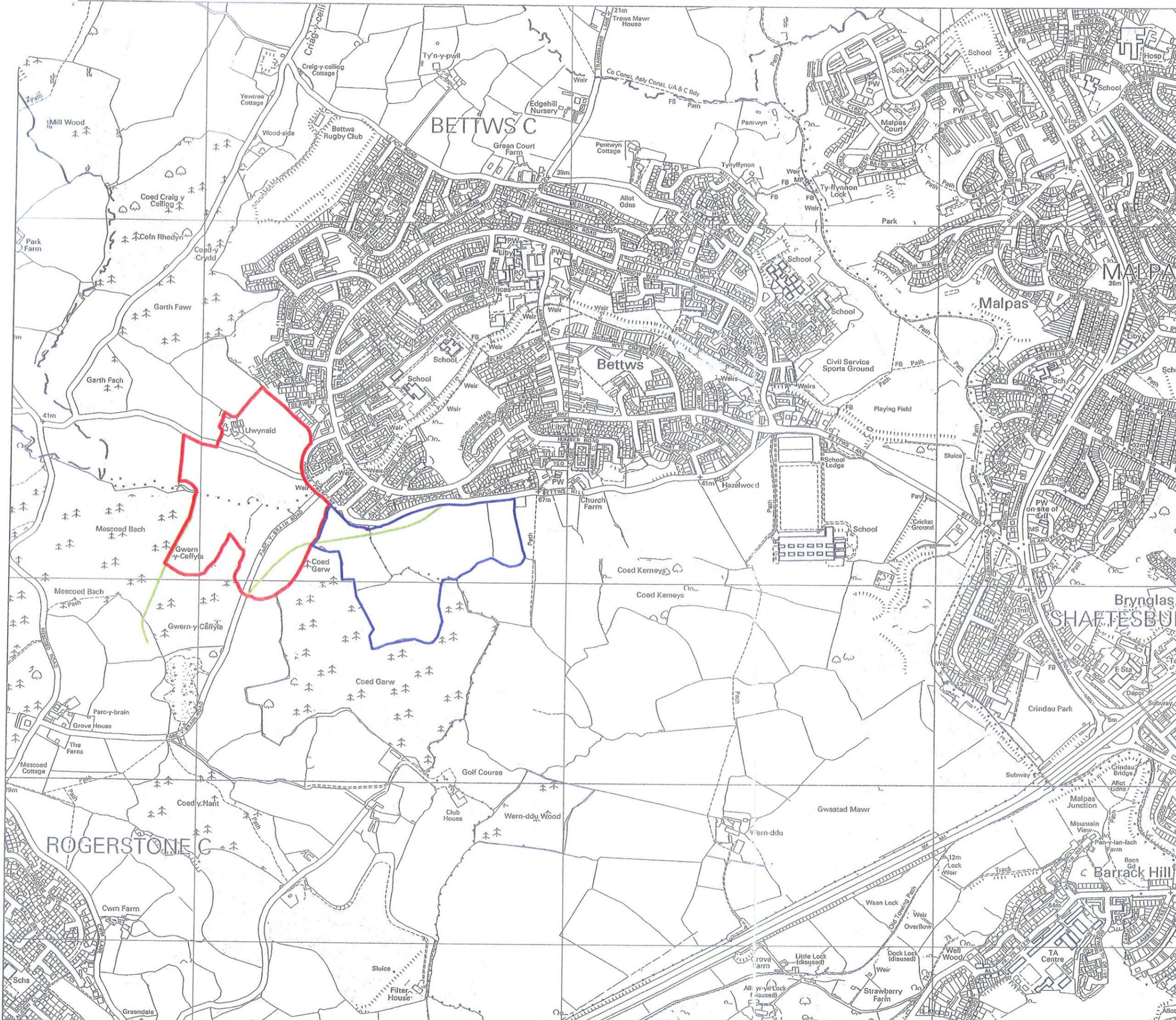
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APPENDIX I CANDIDATE SITE LOCATION



- KEY**
- SITE BOUNDARY
 - PUBLIC RIGHT OF WAY
 - OTHER LAND IN OWNERSHIP



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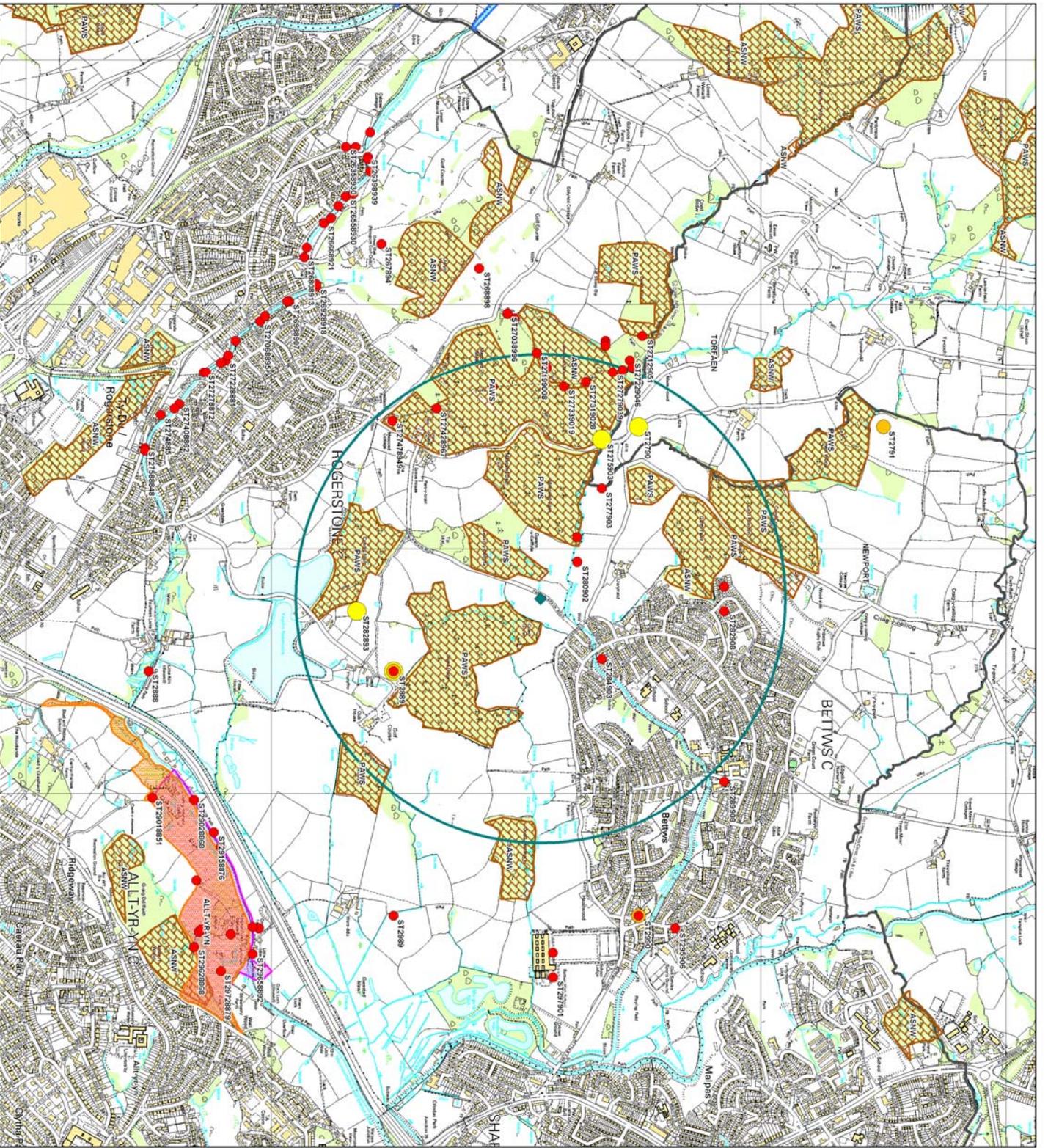
Project	LAND AT LLWYNHAID, BETTWS (2)		
Client	RICHARD HERBERT		
Drawing Title	CANDIDATE SITE LOCATION PLAN		
Number	08.853	Rev	Scale 1:10,000
Date	MAY 2009		Drawn SB

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APPENDIX II DESK-STUDY INFORMATION RECEIVED FROM SEWBREC

Mr A I Herbert, C/o R E Phillips and Partners
Llwynhaid Farm, Bettws
[Extended Phase 1 Habitat Survey Report](#)

E1023302



**BIODIVERSITY INFORMATION
SEARCH (SPECIES &
DESIGNATED SITES):**

**LLWYNHAID
ST282901**

-  Centre of Search Area
-  1km Search Buffer
-  Priority & Protected Species
-  Other Species of Conservation Concern
-  Species of Local Conservation Concern
-  Local Nature Reserve
-  Candidate Local Nature Reserve
-  Site of Importance for Nature Conservation
-  Wildlife Trust Reserve
-  Ancient Semi-Natural Woodland (ASNW)/ Planted Ancient Woodland Site (PAWS)
-  Unitary Authority Boundary

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Plot produced 21/06/2010 on behalf of Sullystrawser Ecology by:

APPENDIX III TARGET NOTES TO ACCOMPANY PHASE 1 HABITAT MAP

Target Note	Description
<i>Birds Seen/ Heard:</i> Swallow, Robin, House Sparrow, Wood Pigeon, Jackdaw, Goldfinch, Blackbird, Long Tailed Tit, Jay, Siskin, Kingfisher, House Martin, Carrion Crow, Magpie.	
1	Improved Pasture dominated by Perennial Rye grass and White Clover with Crested Dogs tail, creeping buttercup, broadleaved Dock, Creeping bent and Meadow thistle. Grazed by Cattle.
2	Intact Species-rich hedgerow with Blackthorn, Hawthorn, Hazel, Holly, Willow, Rose and Honeysuckle. Other species include cleavers, and Bracken. Hedgerow is approx 2.5 m wide and 1.25 high.
3	Mature Oak in hedgerow with splits in trunk and larger limbs. Rot holes on upper limbs. Medium potential for bats.
4	2 no. mature Oaks in hedgerow. Easternmost tree is large (2000mm diameter) and densely covered by Ivy stems along main trunk and limbs. Visible splits in standing deadwood. Medium to high potential for bats. Westernmost tree is smaller with less ivy cover on trunk. No obvious splits or damage. Low potential for bats.
5	Dry Ditch running along field edge. Fly tipped material behind the houses. Good cover for otters.
6	Farm buildings. Wood clad barn with numerous points of entry. Breezeblock barn with House Sparrows nesting under eaves. Numerous points of entry through vents on sides. Cattle within and swallow nests. Wooden stable, swallow nests inside. Main Farmhouse clearly of some age. Thick stonewalls with long sloping slate tile roof with some raised and slipped tiles. 2 Chimney stacks with visible gaps on edges at junction with roof. Ivy growing along wall and over roof. Overall medium/high bat potential. More buildings not surveyed in detail.
7	Mature Oak on driveway with dense Ivy cover on trunk and large split in upper limb. Medium potential for bats.
8	Intact hedgerow with Hawthorn, Blackthorn, Rose, Ash, Elder, Black briony and Bramble. Dogs mercury at base. Runs parallel with hedge along otherside of lane.
9	2 Mature Oaks in field. Western oak is large with diameter of 1500mm with holes and rot on trunk and standing deadwood and splits. Easternmost oak has crown die back and standing deadwood with splits. Collectively med/high potential.
10	Woodland fringe extending over stream. Bank is poached where cattle have accessed the water. Understorey consists of Hazel, Ash, Holly, Sycamore and Hawthorn with Bramble. Upper canopy consists of Ash, Oak and Alder. Himalayan Balsam on banks. Pair of Kingfishers seen. Otter potential.
11	Fringe of Broadleaved woodland with Yew, Oak, Ash, Hazel, Hawthorn, Holly, Alder and Sycamore. Ground flora on edge is dominated by Bramble and rose. Woodland turns into conifer plantation. Fringe continues around field and includes rowan.
12	Large mature Oak on woodland edge. Fire damaged trunk with half the tree dead. Splits and ivy covering medium potential for bats.
13	Improved pasture with Sweet vernal grass, annual meadow grass, Yorkshire fog, timothy, perennial rye grass, creeping buttercup,

Target Note	Description
	broadleaved dock and soft rush. Edges support black knapweed, cocksfoot, lesser chickweed and ragwort. Meadow grasshoppers and leafhoppers abundant. Meadow brown and cabbage white butterflies. Swallows and house martins foraging.
14	Intact hedgerow with dogs wood and hawthorn.
15	Mature Oak with large bulging trunk. Few splits in limbs and rot holes on main trunk. Large split on southernmost limb. Medium potential for bats.
16	Dry ditch for field drainage with creeping cinquefoil, willowherb and dogs mercury.
17	Large mature Oak with standing deadwood in upper crown. Medium potential for bats.
18	Seasonally wet drainage ditch leading to stream. Hedgerow alongside supports Alder, Elder and Hazel. Other elements include Bracken, Meadowsweet, black briony and Willowherb. Hedgerow blends into the woodland fringe with Oak, Sycamore, Rowan, Field Maple, Alder, Hazel, Ash, Hawthorn and backs into Pine plantation.
19	Area of longer grassland around a fallen Oak including False Oat Grass, Timothy, Yorkshire Fog, Creeping Buttercup and Soft Rush.
20	Plenty of fruiting hazel along woodland edge.
21	Woodland stream corridor with ground flora of bluebells, Ivy, wood avens, greater stitchwort, yellow archangel. Wood elements include bramble, yew, alder, oak, hazel. Dense bracken and willowherb on field edge. The woodland contains a number of Oaks with large splits and rots suitable for roosting bats. Blackthorn, hawthorn and silver birch present further to west.
22	Semi-improved neutral grassland grazed by horses. Species include Yorkshire Fog, sweet vernal grass, annual meadowgrass, perennial rye grass, common sorrel, creeping buttercup, common mouse ear, dock yellow rattle (in southern end).
23	Lots of fruiting hazel
24	Wooded stream corridor with Alder, holly, field maple, hawthorn, hazel and rose. 2 alder with woodpecker holes and cavities in trunks. Low/medium bat potential
25	Oak in middle of field with extensive fire damage in centre of trunk. Large scar running up centre of trunk. Low/medium potential for bats.
26	Large mature Oak on field boundary with dense ivy up trunk. Few obvious splits in limbs and standing deadwood. Low potential.
27	Mature Oak on field boundary with obvious split running up trunk and holes in deadwood. Low/medium potential for bats
28	Oak in field with some deadwood. Low potential for bats.