

**LAND AT OAK BARN
BAGNALL, STAFFORDSHIRE**

PRELIMINARY ECOLOGICAL APPRAISAL

**Prepared for
Forefront Consulting**

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1. INTRODUCTION

- 1.1 This report has been prepared by Apex Ecology Ltd for Forefront Consulting. It presents the results of a Preliminary Ecological Appraisal carried out at Oak Barn, Bagnall, Staffordshire during October 2016.
- 1.2 A planning application is due to be submitted to Staffordshire Moorlands District Council for the development of the site.
- 1.3 The main survey area is almost rectangular in shape and approximately 30m by 35m in extent, and incorporates a large dilapidated stone barn. A long narrow strip of land to the east of the barn that links the barn with the access point off Bagnall Road was also surveyed. These areas are hereafter referred to as 'the site'. It is located to the south-west of the village of Bagnall. The busy road of Bagnall Road forms the north-eastern boundary. The rest of the site is bounded by open countryside, bordered by hedgerows and stone walls, with small areas of woodland. A small number of residential properties with substantial sized gardens occur to the north east of the site. Greenway Hall Golf Club is located 100m to the north of the site. The approximate OS grid reference for the site is SJ 9247 5043.
- 1.4 The report describes the methods used for the survey and any constraints encountered, along with the results of the survey, including a description of the habitats present, their potential to be used by protected species and any evidence of protected species found. The findings are then assessed in light of the proposals, impacts are considered and recommendations for further survey or action are given where appropriate.
- 1.5 The legislation relating to the protected species discussed in this report is given in Appendix I.

2. METHODOLOGY

Search of Existing Ecological Records

- 2.1 The local record centre, Staffordshire Ecological Record SER, was contacted for existing records of protected and notable species, as well as statutorily protected and local designated sites for nature conservation within 2km of the site.
- 2.2 The results of a record search can help to set a site into the context of its surroundings, as well as provide valuable information on the known presence of protected species in the local area.

Survey Methodology

- 2.3 The surveys were carried out on the 26th October 2016 by Rose Billings who has over 10 years of experience working in the ecology sector.

Preliminary Ecological Appraisal

- 2.4 The approach to the Preliminary Ecological Appraisal was based on *Guidelines for Preliminary Ecological Appraisal* (CIEEM Technical Guidance Series, April 2013) and follows the methods set out in *The Handbook for Phase 1 Habitat Survey* (Nature Conservancy Council (JNCC, 2010), although where relevant, mosaics of habitats were mapped in finer detail and modified habitat classifications have been used where these better describe the habitats present.
- 2.5 The surveyor walked slowly through the habitats, or around the edges of the habitats classifying, describing and mapping their extent. Instead of numbered target notes, descriptions of site features are included within the survey findings and habitats have been numbered according to their type e.g. grassland G1, G2, G3 etc or denoted by use of a name where relevant.
- 2.6 A list of plant species were produced for each of the habitats and, where these could be divided into ecologically distinct or discrete compartments (such as individual woodlands) lists were compiled separately for each numbered habitat compartment. Where habitat compartments were similar in quality, a single plant list was compiled. The distribution and abundance of plant species in each habitat or habitat compartment were recorded and classified using the DAFOR scale¹.
- 2.7 Where relevant, a note was made about important and pertinent features, such as the suitability of a feature for a protected or notable species (e.g. Biodiversity Action Plan Priority species) or presence of a notable tree or invasive plant species². The locations of significant stands of invasive plant species were mapped indicatively. Notes were made on any other apparent ecological issues

¹ DAFOR relates to the occurrence of each species on site i.e. D = dominant; A = abundant; F = frequent; O = occasional; and R = rare

² A number of non-native invasive plant species are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Due to difficulties in identifying some of these plants to species, especially during

observed incidentally as part of the survey. A record of any faunal species encountered incidentally was also taken.

- 2.8 Preliminary Ecological Appraisals provide a means to evaluate ecological features and scope for notable species or habitats. By doing so, the baseline ecological conditions and valuable, or potentially valuable, parts of a site can be identified at an early stage, enabling potential constraints to the proposals to be highlighted and recommendations for design options to be made that avoid effects on important ecological features or ecologically sensitive areas (CIEEM, 2012). Preliminary Ecological Appraisals also identify whether further, targeted surveys, such as for protected species are necessary.

Constraints

- 2.9 Preliminary Ecological Appraisals are not intended to provide comprehensive assessment of use of a site by protected or notable species and follow-up surveys targeted at specific species and groups of species may be necessary to fully assess a site and evaluate impacts.
- 2.10 The stone barn was severely dilapidated and entirely enclosed by heras fencing and was deemed unsafe to enter making it difficult to fully access its ecological value.

3. SURVEY FINDINGS & INTERPRETATION

Review of Existing Ecological Records

- 3.1 Staffordshire Ecological Record provided information on statutorily protected and locally designated sites, as well as protected and notable species, such as Priority Biodiversity Action Plan species that have been recorded previously in the local area.
- 3.2 There are two statutorily designated sites (Site of Special Scientific Interest SSSI and Local Nature Reserves LNR), fifteen non-statutory wildlife sites (Local Wildlife Site LWS) and three ancient woodlands identified in the search area.
- 3.3 Wetley Moor SSSI is comprises one of the largest areas of lowland heathland remaining in Staffordshire. Dry heathland predominates on the higher, steeper slopes, whilst wet heath and small areas of mire occur on the lower, flatter ground. These wetland communities are more extensive than on any of the other lowland heathland sites in the county. Bagnall Road Wood LNR is designated for its assemblage of ancient woodland indicator species, an important habitat in Staffordshire.
- 3.4 The closest of the sixteen LWS are listed in the table below. The remainder of the LWS are located above 1km away from the site.

Site Name	Site Type	Location and Distance from site (approximate)
Greenhay Wood	Ancient Woodland	500m northwest
Bagnall Springs	LWS	800m northeast
Greenway Hall Golf Club	LWS	900m northwest
Hough Wood	LWS	825m north
Windy Croft	LWS	850m northeast

- 3.5 Greenhay Wood is an area of ancient semi-natural broad-leaved woodland, Bagnall Springs is an area of wet and marshy meadows. Greenway Golf Club supports a variety of habitats including ancient semi-natural broad-leaved woodland, marshy grassland, acid grassland and dry dwarf shrub heath. Houghwood is an area of semi-improved grassland with pockets of woodland and ancient woodland in the old quarry pits. Windycroft is a large steeply sloping, west facing field with large expanses of acidic grassland. All of these habitats and consequent assemblage of plants and animals are important within Staffordshire.
- 3.6 The proposals should not have any impact on the LNR, LWS or ancient woodlands as these are all located at some distance away from the development site.
- 3.7 No species records were identified by the record search from the site itself, although a number of records from the areas around the site were returned.

- 3.8 Bats have been recorded on 94 occasions, with three species known to be present: common pipistrelle *Pipistrellus*, brown long-eared *Plecotus auritus*, and whiskered/Brants *Myotis*, (some of the records have not been identified to species). Bats have been recorded in all directions around the site but with particular clusters of records to the west, north-west and north-east of the site, these records correspond to the location of the villages of Bagnall and Stockton Brook, where a large number of roosts and maternity roosts have been recorded. A large roost with a peak count of 178 pipistrelle bats was recorded as part of the national bat monitoring programme from a property in the village of Bagnall 701m to the north-east of the site. The open countryside around the site provides ideal foraging opportunities for a variety of species of bat.
- 3.9 Great crested newts *Triturus cristatus* have been recorded on just one occasions. This is a record from 2000 and is from Jackhayes Pool some 780m to the south-east of the site.
- 3.10 Badgers *Meles meles* are known to be present in the local area and have been recorded on a number of occasions. Due to restrictions with use of the data, in particular making them public, reference to individual records is not made in this report. The search results have revealed that badgers are known to inhabit the local area, with badgers recorded from sites nearby, including dead individuals due to road traffic collisions on local roads.
- 3.11 Birds highlighted in the record search that are known to occur in the area are redwing *Turdus iliacus*, fieldfare *Turdus pilaris*, brambling *Fringilla montifringilla*, peregrine falcon, *Falco peregrinus*, hobby *Falco subbuteo*, golden plover *Pluvialis apricaria*, green sandpiper *Tringa ochropus* and song thrush *Turdus philomelos*. Barn owl *Tyto alba* are also known to occur in the very local area. Again however, due to restrictions with use of the data, in particular making them public, reference to individual records cannot be made in this report. These birds are 'red' listed species of conservation concern whose populations have declined significantly in recent years (Eaton *et. al*, 2015).

Survey Findings

Preliminary Ecological Appraisal

- 3.12 Descriptions of the habitats and buildings present are given below and Table 1 provides a list of the plant species recorded. The site is shown on Figure 1 and features of the site are depicted in the Plates.
- 3.13 The site consists of an area approximately 30m by 35m in extent, with a narrow strip of land approximately 100m by 5m due east of the building. The site is level in the main with a raised area of ground to the west of the barn. The narrow strip of ground tracks across and is a part of a larger open grassland field and here there is no defined site boundary. The field in which the site is present is relatively homogenous in its composition being dominated by perennial rye-grass with a scattering of other typical improved grassland plants including broad-leaved dock, dandelion and creeping buttercup. The field had recently been used for cattle grazing and an area of poached ground was evident around a water bowser.

- 3.14 At the time of survey the immediate area around the barn was fenced off and is dominated by tall ruderal species including common nettle, rosebay willowherb and hogweed. Two small sycamore trees are present adjacent the southern gable end of the barn, one approximately 2.5m tall while the other is approximately 6m tall. Small areas around the barn particularly around the northern gable end have been cleared of some tall herb vegetation. The area of raised ground to the west of the barn was also dominated by extensive patches of tall ruderal species including common nettle and hogweed, with a dense area of bramble scrub adjacent the western perimeter. However, this area showed some disturbance by grazing cattle and other grassland species were present including Yorkshire fog, cow parsley and false-oat grass with a small patch of wavy-hair grass adjacent to the stone wall on the western perimeter of the site.
- 3.15 Rubble is present in the northern edge of this area, and consisted of pieces of old concrete and stone. A hawthorn tree was growing in this rubble was approximately 3m tall. The site boundary was clearly defined on the western perimeter and along part of the south-eastern perimeter only. This was marked by a stone wall approximately 0.5m tall by 0.75m wide which was covered by a variety of lichens and mosses. A post and wire fence ran along both faces of the wall.
- 3.14 The barn itself is c. 6m high by 18m long and 8m wide. The barn is a single-storey stone built and in a very poor state of repair. A large proportion of the stone walls have been lost and the building has no roof. The roof has a number of rotten timbers and has slipped off the western wall and is now leaning against the east facing wall. The roof is constructed out of thick timbers in an a-frame design, the sheeting that was below the roof tiles although torn is still largely attached and held in place by wooden laths, these are however gradually rotting away and large areas of sheeting are now missing. No roof tiles were present.
- 3.15 The barn walls are thick stone c. 50cm, faced in solid stone with a rubble fill. The two gable ends are almost entirely intact with a small section of stone around where the wooden roof trusses would have been located being lost on the eastern edge of the northern gable. The northern gable has a large open window with a thick stone lintel and window-sill, the window-sill showed some wear which suggests the building previously had a void or upper floor. The south facing gable has a large upper floor window which has been in-filled by bricks; a number of gaps are evident between the bricks and the surrounding stonework.
- 3.16 The east face of the building shows the most amount of decay, the positioning of the roof against this wall has caused the wall to weaken in a number of areas and parts of the stonework are leaning outwards. The wall is at ground-level just to the left of centre although part of this appears to have been used as a doorway into the barn. The western face of the building is in a more complete state and is at full height adjacent to the northern gable. However approximately half of the stonework is missing towards the southern gable. A doorway on the eastern face and a doorway on the western face have been in-filled with blockwork walls.
- 3.17 Mortar between the stonework was missing and hence a large number of both internal and external gaps were evident in the walls. The barn showed evidence

of an upper floor being present in the past this would have potentially been used as a hay loft storing winter feed for farm animals, the higher window on the southern and northern gable ends would support this evidence. The presence of several square holes inset within all four walls of the barn has created opportunities for nesting birds.

Assessment of Site and Potential for Protected Species

- 3.18 The habitats on site including the grassland, scrub and tall herb are low in ecological value in terms of botanical interest and support an array of common and widespread species that are tolerant of nutrient-poor conditions.
- 3.19 The stone barn is in a poor state of repair and provides little by way of potential to be used by bats. There are many gaps within the thick stone walls but many of these are wide and very open allowing high levels of wind and rain to enter. The gaps and rubble fill will also allow entry and use by rodents that would disturb and potentially prey on any bats roosting there.
- 3.20 Great crested newts are known to occur in the local area with a record known from a location some distance away (c. 800m). A search of the MAGIC website has revealed that one pond is located within 250m of the site. This pond is on the opposite side of the busy Bagnall Road. The location of Bagnall Road would adversely affect any potential GCN dispersal south of this road and as such is a barrier to dispersal, any further consideration of this species in relation to the proposals is not necessary.
- 3.21 There was no evidence of badger activity such as feeding signs, tracks, footprints and no signs of setts were found during the site visit. There is little habitat on site suitable for use by badgers to construct setts.
- 3.22 The habitats present such as tall herb and scrub and other areas of dense vegetation will be used by a number of species of bird as they provide nesting sites and food resources (such as berries and insects). Bird activity was noted whilst on site. Incidental recordings include song thrush *Turdus philomelos*, blackbird *Turdus merula*, wren *Troglodytes troglodytes*, robin *Erithacus rubecula* and pied wagtail *Motacilla alba*. Some of the species recorded are listed under the UK and Staffordshire Biodiversity Action Plans and are birds of conservation concern whose populations have declined significantly in recent years (Eaton, et al. 2015).

4. RECOMMENDATIONS

- 4.1 A planning application is due to be submitted to Staffordshire Moorlands District Council for the development of the site.

Habitats

- 4.2 The grassland, tall-herb and scrub habitats are of low ecological value in terms of the plant species they support and, in relation to their botanical interest, no further consideration or protection of them as part of the proposals would be necessary.

Bats

- 4.3 As the stone barn is in a poor state of repair and provides little by way of potential to be used by bats then further assessment via further bat surveys is not required.

Birds

- 4.4 The building on site, tall herb and scrub the site could then potentially be used by birds for nesting, and any clearance works would need to take account of the presence or potential presence of nesting birds.
- 4.5 The presence of nesting birds can be avoided as a constraint to the proposals by timing such works to avoid the bird nesting season. Should the works need to be carried out during the bird nesting season then surveys and a watching brief would need to be carried out during works to check for the presence of nesting birds. The findings of the surveys and watching brief would be used to ascertain the best method to proceed to avoid impacting upon nesting birds. The bird nesting season is generally deemed to run from March to July/August inclusive, although some species can nest outside this period.
- 4.6 To off-set loss of nesting sites, it is recommended that bird boxes be included as part of the development. It would be best to install a range of box styles to cater for a number of species and targeted at species known to be present in the area or using the site. Advice from the ecologist sought on this should boxes be installed once proposals have been finalised.
- 4.7 There are few suitable locations on site for boxes given the paucity of mature trees and the development clearing large areas of the site, hence boxes may be best installed within new build, or the gardens of the proposed property, and along the edges of the site. Boxes must not be located facing due south unless out of direct sunlight and their access points would need to be free from obstruction. It is best not to fix boxes above windows or doorways. Given that boxes and their fixings require regular maintenance, it is advised that boxes should be installed in areas where there is no risk to people should a box become loose and fall.

5. REFERENCES

CIEEM. (2013). *Guidelines for Preliminary Ecological Appraisal*. CIEEM. April 2013.

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man*. British Birds 108, 708–746.

JNCC. (2010). *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. Revised edition. JNCC, Peterborough.

Table 1. List of Plant Species Recorded During Survey

Common name*	Scientific name*	Grassland	Scrub
Annual meadow-grass	<i>Poa annua</i>	O	R
Bramble	<i>Rubus fruticosus</i>	R	LD
Broad-leaved dock	<i>Rumex obtusifolius</i>	O	O
Cleavers	<i>Galium aparine</i>	R	O
Cock's-foot grass	<i>Dactylis glomerata</i>	R	O
Common mouse-ear	<i>Cerastium fontanum</i>	O	R
Common nettle	<i>Urtica dioica</i>	R	LD
Cow Parsley	<i>Anthriscus sylvestris</i>		R
Creeping buttercup	<i>Ranunculus repens</i>	O	O
Dandelion	<i>Taraxacum</i> sp.	O	R
False oat-grass	<i>Arrhenatherum elatius</i>	R	F
Greater plantain	<i>Plantago major</i>	R	R
Hogweed	<i>Heracleum sphondylium</i>	R	F
Perennial rye-grass	<i>Lolium perenne</i>	D	O
Rosebay Willowherb	<i>Chamerion angustifolium</i>		LD
Rough meadow-grass	<i>Poa trivialis</i>	R	O
Sycamore	<i>Acer pseudoplatanus</i>		R
Wavy hair-grass	<i>Deschampsia flexuosa</i>		R
Yorkshire fog	<i>Holcus lanatus</i>	R	O

* Nomenclature follows Stace, C. (2010) *New Flora of the British Isles*. Cambridge University Press, 3rd Edition

** DAFOR:

D - Dominant	O - Occasional
A - Abundant	R - Rare
F- Frequent	L - Locally
V - Very	

PLATES



Plate I. View of site looking towards the west.



Plate II. View of site looking towards the north-east

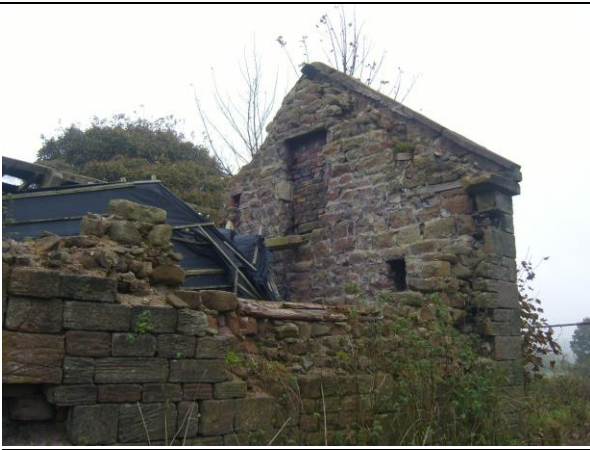


Plate III View of gaps in brickwork and stonework on southern gable of barn



Plate IV View of tall herb and scrub along western perimeter of site.

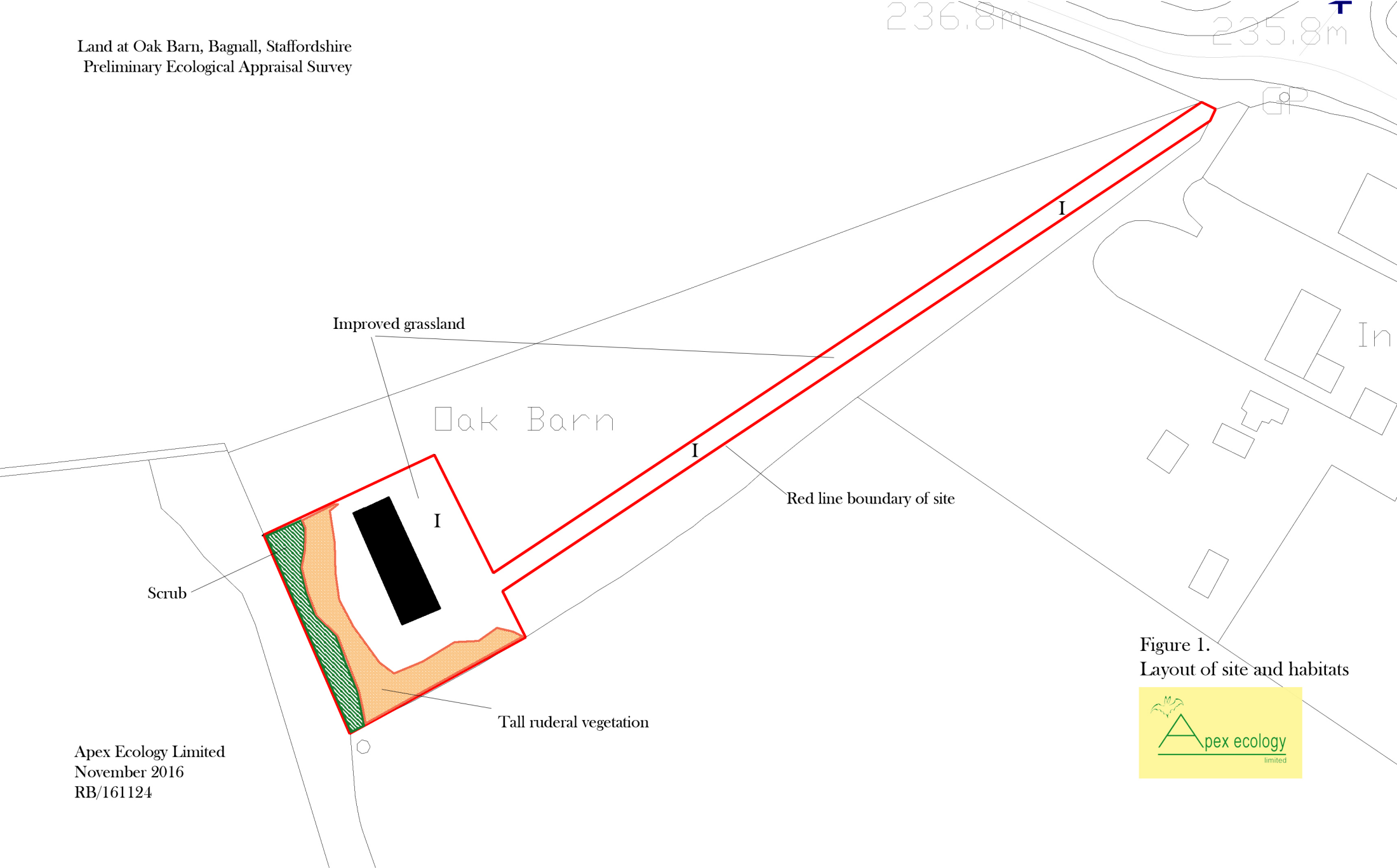
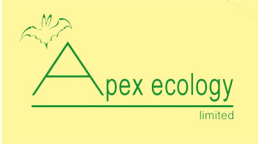


Figure 1.
Layout of site and habitats



APPENDIX 1 - LEGISLATION RELATING TO PROTECTED SPECIES DISCUSSED IN THE REPORT

The information below is intended only as guidance to the legislation relating to these species and relates solely to England and does not purport to provide legal advice. It is recommended that the legislative documents be referred to for the full legal wording and the services of a relevant specialist sought where legal advice is required.

Birds

All wild birds, their nests and eggs are protected by law under the Wildlife and Countryside Act 1981 (as amended). It is, therefore, an offence (subject to certain exceptions) to:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- take or destroy the egg of any wild bird.

In addition to the above, in accordance to amendments of the Wildlife and Countryside Act by the Countryside and Rights of Way Act 2000, it is an offence to:

- intentionally or recklessly disturb any species listed on Schedule 1 of the Wildlife and Countryside Act whilst building a nest, or whilst it is on, in or near a nest containing eggs or young; and
- disturb the dependant young of a Schedule 1 bird.

For example, barn owl is protected under Schedule 1 of the Wildlife and Countryside Act, protecting them from intentional or reckless disturbance during the breeding season (which is normally considered the time from when the female makes the first nest 'scrape' and lays the first egg until the time when the last dependent young stops returning to the nest (English Nature, 2002/3)).

NERC ACT AND BIODIVERSITY

A number of UK habitats and species are also included on the list of habitats and species which are of principal importance for the conservation of biodiversity in England as required under Section 41 of the Natural Environment and Rural Communities (NERC) Act. The NERC Act came into force on 1st Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of NERC Act to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and subtidal sands and gravels.

There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the Hen Harrier has also been included on the list because without continued conservation action it is unlikely that the Hen Harrier population will increase from its current very low levels in England. In accordance with Section 41(4) the Secretary of State will, in consultation with Natural England, keep this list under review and will publish a revised list if necessary.

The impact that this legislation has on the Planning system is also outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory obligations and their Impact within the Planning System. This states:

The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult English Nature [now Natural England] before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should also advise developers that they must comply with any statutory species' protection provisions affecting the site concerned.