

THE TYRER PARTNERSHIP



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Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

Prepared for:

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Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX
Ecological Scoping Survey

Table of Contents

1. Introduction and Reasons for Survey	1
2. Discussion: Bats, Birds and Wind Turbines	2
3. Survey Methodology	3
4. Constraints	4
5. Results	5
6. Conclusions	6
7. Recommendations & Implications	7

APPENDIX I - Site photographs

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

1.0 Introduction & Reason for Survey

1.1 As part of a Planning Application at Old House Farm, Preston, an Ecological Scoping Survey was undertaken, ML Planning Ltd commissioned the survey and report on behalf of the site owner. It is understood that the application involves the installation of one domestic wind turbine and associated service trench to the south east of Old House Farm buildings. As part of the Local Authority's Planning Policies ecological surveys are generally required, particularly where a specially protected species/habitat is or may be present and could be affected by the proposals for which the Application seeks consent.

1.2 The basic objective of the survey was to ascertain the nature of the land and where possible obtain information on any sensitive wildlife habitats or species that may be present and if so if ascertain if they will be affected by the proposed wind turbine. To achieve this objective the survey aimed to identify/assess any of the following:

The presence of species with non-statutory protection

The presence or potential presence of species that are protected under the Wildlife and Countryside Act 1981, (as amended) or the Conservation of Habitats & Species Regulations 2010. (as amended)

Identify any species or habitats that require special consideration during the work.

1.3 If the landscape at or near to the proposed site was found to be suitable for any particular species or habitat was of ecological significance then more detailed surveys would be recommended e.g. if the installation of the turbine may impact upon bat foraging/commuting habitat then nocturnal activity surveys would be recommended. The additional surveys would aim to establish if the wind turbine would have an adverse impact upon those species/habitats. If a specially protected species was subsequently found during those detailed surveys and may be affected by the installation then alternative locations for the turbine or/and mitigation would need to be considered.

2.0 Discussion: Bats, Birds and Wind Turbines

2.1 The effect upon bats by wind turbines, particularly the small domestic type, within the UK has not been fully researched but evidence from American and European sites suggests that adverse impact is occurring; notably on migratory species, by large turbine farms; however there appears to be anecdotal evidence that bats have been harmed by inappropriate location of domestic turbines in the UK. However, recent studies that have been undertaken by the University of Stirling concluded:-

Latest research indicates that small wind turbines ('micro turbines') can have a significant impact on bats in the vicinity. Researchers from the University of Stirling compared bat and bird activity (such as flying and hunting) at UK sites with moving and stationary turbine blades. They found that, while bird activity was not significantly affected at these sites, bat activity was 54% lower close to operational micro turbines.

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

- 2.2 The following extract is taken from the Bat Conservation Trust (BCT) website:-

It is imperative that the possible harmful effects on bats and other wildlife (both direct and indirect) are taken into account before deciding on the siting of wind turbines, large and small. The discovery of dead bats and birds underneath wind turbines in the US and in mainland Europe has led to concerns that research into the siting of these structures is not sufficiently rigorous, and that some have been erected on migration routes of bats and birds.

The siting of turbines may be an issue for bats in the UK, not only because of the risk of direct collision if turbines are placed on migration or commuting routes, but also because of displacement from foraging habitat. The positioning of mid-sized wind turbines in hedgerows is also a concern.

- 2.3 The work of the Royal Society for the Protection of Birds (RSPB) has similarly been focussed on large onshore and offshore projects; due to the obvious choice of upland sites for turbines the potential impact upon upland species, such as large slow flying raptors, is the major concern.
- 2.4 Both BCT and the RSPB recognize the need the need for sustainable energy and less reliance upon fossil fuels but also endorse the approach that prior to turbine installation the potential impacts upon wildlife are taken into account and if adverse impact is likely to result then alternative locations should be considered. Recent Surveys have been undertaken by the RSPB and British Trust for Ornithology; the results of those surveys are outlined below:-

Extract from the BBC Science & Environment Web Site 12.4.2012, their findings are published in the Journal of Applied Ecology:-

Many bird species are unaffected by wind farms, concludes a study carried out by UK bird charities. Scientists with the British Trust for Ornithology (BTO) and RSPB found that building the turbines was more disruptive than operating them. Impacts varied between species, with red grouse numbers recovering after construction, curlews declining and not recovering, and skylarks increasing.

"There's certainly no indication in the species we covered in this study that collision mortality is causing a big problem, but we need to bear in mind that it didn't cover the bigger raptors where we know collisions tend to happen," said Jeremy Wilson, head of science at RSPB Scotland.

"Where we are concerned is with two species, curlew and snipe, where we saw the density drop during construction and not recover afterwards. The overall picture is perhaps more positive than some of the wilder headlines have suggested; but that doesn't suggest there's no problem."

The study is unlikely to change the charities' existing approach to onshore wind farms, which is generally to favour development because of the damage that climate change threatens to bring to wildlife worldwide, but to oppose it in areas where birds are likely to suffer,

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

- 2.4 Whilst most of the above studies relate to the larger onshore wind farms there appears to be growing concern and evidence that smaller turbines can have an adverse impact upon bats, if inappropriately located.
- 2.5 Natural England has published Technical Note TIN059 which deals with large single turbines over 250 kW but is not intended to cover micro-turbines nor multi-turbine wind-farm developments. However in the absence of additional guidelines or studies at small turbines the principal of TIN059 should be adopted. TIN059 essentially recommends that:-

A bat survey should normally be recommended for applications for turbines that will be located within 50 m of the following features:

- Buildings or other features or structures that provide potential as bat roosts, including bridges, mines etc;
 - Woodland
 - Hedgerows
 - Rivers or lake; and within or adjacent to a site designated for bats (SSSI or SAC) (but please note more extensive work will be required at such sites than is recommended in this document).
- 2.6 Notwithstanding that the above guidance relates to larger turbines the principal should be adopted where smaller turbines are proposed and also take into consideration the potential presence/absence of bat roost opportunities in built structures or trees that are in close proximity to the proposed site. Additionally although Guidelines have been produced the level of survey effort should be determined by use of surveyor experience and knowledge of bat/bird ecology and species that could be anticipated to be present within their geographical range and, if required obtaining information gathered thorough data searches of local wildlife records.

Where surveys indicate that the level of risk may be towards the higher end of the spectrum, planning authorities may wish to consider the following options:

- Asking for the turbine to be re-sited
- Imposing conditions limiting the times when the turbine may be operated at particular times of day or seasonally.
- Imposing post development monitoring conditions with possible subsequent conditions limiting operating times if casualties are detected

3.0 Survey Methodology

- 3.1 The survey was conducted on the 15th August 2012 by an employee of the Tyrer Partnership i.e. by Mr Jamie Ian Thomson who is employed as a junior ecologist by the Tyrer Partnership and is currently training as a bat surveyor; he has had extensive nocturnal and daytime survey experience before and over the full 2011/12 active season of bats including habitat surveys in North Wales. He is also a university graduate in Science, Ecology and Conservation Management, and is currently studying for additional qualification in the subject of Rural Resource Management. The report contents, conclusions and recommendations have been checked, verified and agreed with by Mr S. Irwin who is the proprietor of the Tyrer Partnership and has 28 years experience in the field of bat conservation and surveying.

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

- 3.2 The location of the proposed wind turbine was investigated to assess its potential to support foraging or commuting bats and if roost potential exists in close proximity to either the turbine or any identified foraging/commuting habitat; additionally the wider habitat was assessed to ascertain its value to bats and if there were any connecting linear features that may link the wider habitat to the proposed site. A site 'walkover' was conducted to survey vegetation for any notable species of singular or community value and an assessment made for use of the site by breeding birds, mammals or use by specially protected amphibians.
- 3.3 The internet sites NBN Gateway & Magic Map were accessed for species and habitat inventories of notable importance.

4.0 Constraints

- 4.1 Despite the survey being conducted outside of the primary breeding season of breeding birds a full investigation and appraisal of the site and its immediate environs was achievable. August is however a period when the undertaking of vegetation surveys can result in a definitive assessment in the context of the sites floristic significance and therefore it's ecological value relative to animal species. Consequently, taking into account the above, it is considered that there were no significant survey constraints to prevent the gathering of information on which to base conclusions and recommendations.

5.0 Results

- 5.1 The internet/BAP search revealed that the land is not within or in close proximity to a designated site. However an area of mature broadleaved woodland located along the parcels southern boundary would meet the criteria of the LCC BAP Habitat, 'Broadleaved and Mixed Woodland'.
- 5.2 Within the proposed wind turbine site there is little potential for true ground nesting bird species for which the survey took into consideration. The sites relatively steep incline diminishes its suitability to support nesting Lapwing as it is a species that tends to select relatively flat tracts of land for nesting; which will provide all round vision for the presence of predators. Currently there is insufficient ground cover for other species such as Curlew (*Numenius arquata*) or Skylark (*Alauda arvensis*). However, the NBN Gateway search revealed records of Curlew, Lapwing (*Vanellus vanellus*) and Skylark within a 2 km grid square which, given the nature of the landscape that surrounds Old House Farm is not unsurprising.
- 5.3 Old House Farm, at which it is proposed to site the single domestic turbine, is located within an extensive rural landscape, just off Birks Brow approximately 1.7 kilometres north east of Longridge, which is a small rural town 13 kilometres north east of Preston; several buildings and further sporadic farm and residential structures are evident within the vicinity of the farm. The site is fully operational with the land being managed solely for the grazing of livestock, including a small dairy herd and sheep.

Ecological Scoping Survey

- 5.4 The immediate and adjoining habitat consists of mainly improved species poor open grazing pasture, which is replicated in most directions; field boundaries are formed by a range of traditional rural methods including pole and wire fencing, dry stone wall and linear tree/scrub. Trees located along the southern perimeter of the site form a natural boundary, however as a consequence of their quantity and broader distribution they could also be categorized as semi woodland.
- 5.6 The surrounding habitat is similar albeit with a general absence of woodland, although it is noted that in adjoining pasture tree lines and hedgerow are generally broken and offer little in the way of linear continuity. However, this is not to completely dismiss their ecological value. There is no degree of connectivity from any building in the locality to the actual position of the proposed turbine.
- 5.7 The pasture at the site where the wind turbine is proposed is of a steep inclining nature, descending towards the farm building, i.e. descending from south east to north west, and in places undulating; it measures approximately 317 metres long x 143 metres wide with associated drainage running along the north and south boundaries. As a consequence of its location and sloping form the land is heavily influenced by drainage/run-off, making it generally wet and marshy especially where water flows are relatively localised. Tree line/woodland boundaries would provide typical bat foraging and commuting habitat. However, the proposed turbine is to be located over the 50 metre stand off distance, from favourable foraging bat habitat, that Natural England recommends in relation to large singular turbines. (TIN059) However, those guidelines are generic and each turbine location should be assessed on its individual circumstances as bats can be found in habitats that do not appear to fit the generally accepted criteria.
- 5.8 Around the farm buildings, where bat roost potential exists, high value foraging and commuting baits exists and forms connectivity to the habitat beyond although there is a general absence of such habitat within the area of the proposed turbines. As the buildings within the locality could be used by bats for roosting purposes, it is conceivable that species such as the Pipistrelle (*Pipistrellus*) bat could cross open the pasture to reach favourable foraging habitat but the linear tree lines would provide a more valuable resource for that purpose. Notwithstanding that some bats will cross open spaces, by positioning turbines in sub-optimum bat habitat the risk of collision can be reduced.
- 5.9 Opportunities for ground nesting bird species that are broadly associated with agricultural landscapes such as lapwing, curlew, redshank and snipe are absent within the pasture. However, use of the land by those species for feeding purposes cannot be ruled out but far more favourable nesting and feeding habitat for the aforementioned bird species is readily available in the immediate and wider landscape. Favourable hunting grounds for raptors, such as Short Eared owl (*Asio flammeus*) or Hen harrier; (*Circus cyaneus*) are absent. Currently there is insufficient ground cover for small passerines, typically Skylark but if the field is allowed to grow for silage during the breeding season then it would be of more value for nesting purposes.
- 5.10 Swallow (*Hirundo rustica*) nest annually in the main barn at Old House Farm, and are currently in situ on the day of the survey these birds are feeding over a wide area surrounding the farm buildings, including the parcel of land selected for the turbine location, although over pastures they tend to mainly feed at low level capturing emerging invertebrates.

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

- 5.11 Throughout the survey evidence that would suggest the presence of terrestrial mammals such as badgers was absent. The drainage ditches to the north and south perimeters of the land parcel were inspected for their potential to support Water voles (*Arvicola amphibius*); despite some of the banks showing some suitability for this species, evidence of use such as burrows, latrines or footprints were absent at the site; furthermore, there are no records of Water Voles within a 2 kilometre radius of Old House Farm (NBN Gateway). Ponds are notably absent within the vicinity which therefore reduces potential for Great Crested newts (*Tritus cristatus*) to be present, with the nearest records existing over 2 kilometres from the land. The possible presence of other more common amphibians such as frogs or toads at the site is considered to be low.



Approximate location of the proposed wind turbine



Location of Old House Farm

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

- 5.11 Within the field there is no vegetation of ecological significance and the dominant habitats are described below.

Species poor improved grassland

Damp, marshy in places moderately grazed improved fertile grassland dominated by perennial ryegrass (*Lolium perenne*) and rough meadow grass (*Poa trivialis*). Other identified graminoid species, which were primarily associated with marginal areas, were:-

Cock's foot	(<i>Dactylis glomerata</i>)
Crested dog's tail	(<i>Cynosurus cristatus</i>)
Creeping buttercup	(<i>Ranunculus repens</i>)
Dandelion	(<i>Taraxacum agg</i>)
White (dutch) clover	(<i>Trifolium repens</i>)
Fox glove	(<i>Purpurea digitalis</i>)
Greater plantain	(<i>Plantago major</i>)
Common nettle	(<i>Urtica dioica</i>)

Grassland areas subjected to higher levels of drainage are dominated by:-

Soft rush	(<i>Juncus effusus</i>)
Common bent	(<i>Agrostis tenuis</i>)
Jointed rush	(<i>Juncus articulatus</i>)

Indicative forb species identified in those relatively wetter areas are:-

Brooklime	(<i>Veronica beccabunga</i>)
Marsh willowherb	(<i>Epilobium parviflorum</i>)
Redshank	(<i>Persicaria maculosa</i>)

Broadleaved trees/woodland

This habitat is distributed along the north and south boundaries and features a range of mature common broadleaved tree specimens, which are accompanied by some native shrub species.

Pedunculate oak	(<i>Quercus robur</i>)
Common alder	(<i>Alnus glutinosa</i>)
Common beech	(<i>Fagus sylvatica</i>)
Sycamore	(<i>Acer pseudoplatanus</i>)
Common ash	(<i>Fraxinus excelsior</i>)
Rowan	(<i>Sorbus aucuparia</i>)

Semi-mature tree specimens located in close proximity to the farm building:-

Grey willow	(<i>Salix cinerea agg</i>)
Cherry spp	(<i>Prunus spp</i>)
Field maple	(<i>Acer campestre</i>)
Silver birch	(<i>Betula pendula</i>)
White poplar	(<i>Populus alba</i>)

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

Ecological Scoping Survey

Identified scrub species, which are sparsely distributed along all boundaries:-

Hawthorn	(<i>Crataegus monogyna</i>)
Elder	(<i>Sambucus nigra</i>)
Hazel	(<i>Corylus avellana</i>)

6.0 Conclusions

- 6.1 From the results of the scoping survey it can be concluded that the immediate habitat, particularly around the cluster of tree line and woodland to the north and south of the proposed turbine location can be considered as being of value for foraging and commuting potential for bat species that may be present in the locality but is absent within the pasture where it is proposed to site the turbine. In close proximity to the proposed site there are dwellings that may be capable of supporting bat roosts. The presence of high flying species such as the large Noctule bat (*Nyctalus noctula*) is possible in many locations and irrespective of where turbines are located this species may be present and subsequently at risk. Similarly Common Pipistrelle bats will also forage in open environments. However, by installing turbines at sub - optimum foraging/commuting habitat the risk of bats coming into contact with turbine blades can be reduced.
- 6.2 Within the site boundaries there are no individual or plant communities of ecological significance, nor are there any features that are of high value to amphibians or terrestrial mammals, i.e. badgers.
- 6.3 The value of the pasture in relation to ground nesting birds is considered to be low but could, on occasions, be used for feeding but in the immediate locality feeding opportunities are not restricted to the pasture.

7.0 Recommendations & Implications

- 7.1 As the distance from the proposed turbine locations to favourable bat habitat concurs with the 50 metre stand off recommended by Natural England in TIN059 nocturnal activity surveys will not be recommended at the site and there are no apparent implications in relation to bats and the proposals.
- 7.2 As a precaution the construction of the turbine should be undertaken outside of the bird breeding season, which for some species is broadly March – August; if that cannot be achieved then surveys will be required to ensure that nesting birds are absent prior to the construction.
- 7.3 If future habitat improvements, such as hedgerow planting or pond creation are considered then it should not be implemented any closer to the turbine than 100 metres. Improvements, if being considered, it should aim to consolidate or/and enhance existing features away from the direction of the turbine location.

Old House Farm, Birks Brow, Preston, Lancashire, PR3 2TX

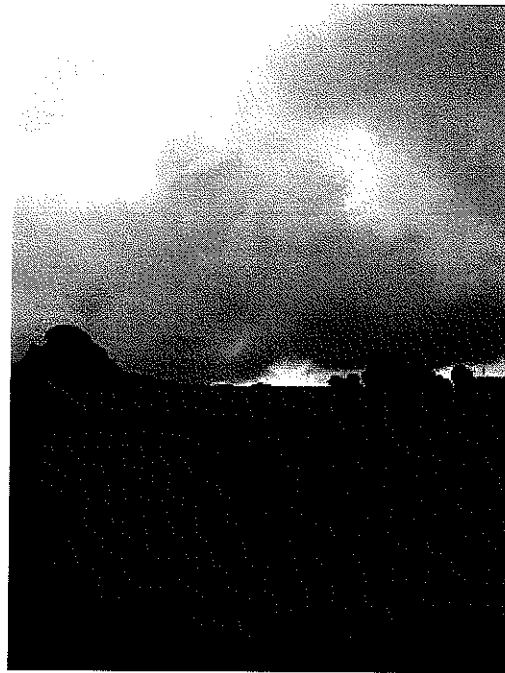
Ecological Scoping Survey

APPENIDX I

Site photographs



Looking north west towards the farm buildings



Looking south east upslope

(Each of these images are taken approximately at the proposed turbine location)