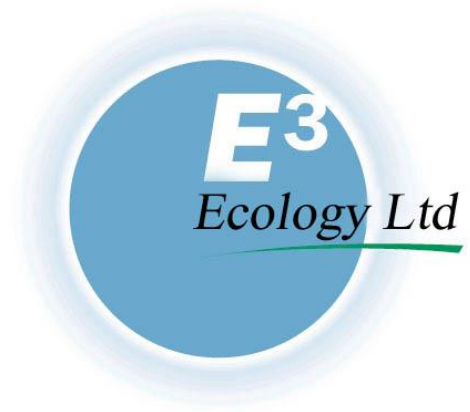




AN ECOLOGICAL ASSESSMENT OF LAND WEST OF INGFIELD FARM, WEST YORKSHIRE



By

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A EXECUTIVE SUMMARY

E³ Ecology Ltd was commissioned by AAH Planning Ltd to undertake an extended phase 1 habitat and protected species survey of agricultural land west of Ingfield Farm, Penistone, West Yorkshire to support a planning application. A bird risk assessment was also carried out as part of this survey work.

It is proposed to construct a single turbine (76m to blade tip) and associated infrastructure within a moderately sized arable field, currently sown with beans.

Boundaries are all demarked by dry stone walls with 1-2m semi improved grassland field margins present. Small immature tree and shrub specimens are present on the boundary. The access track will utilise an existing track area, comprising semi improved grassland as well as passing through an improved grassland campsite.

The surrounding land is dominated by agricultural fields with both arable and pastoral fields surrounding the site. The fields within this area are bounded by drystone walling. The farm buildings are present approximately 360m to the north east. Tree cover is limited within the area surrounding the site, with sporadic copses and field trees present. A semi-mature line of broadleaf trees is present at the western edge of the campsite. There are no watercourses or waterbodies present within the site or immediately adjacent; however three large reservoirs are present within 700m of the site, the closest, approximately 250m to the south.

Site access will be gained through the use of an existing track and the construction of an additional section through a field currently used as a camping and caravan site. No hedgerow or trees will be lost under these proposals.

Habitats within the site boundary provide suitable foraging habitat for badgers, with areas of scattered trees and woodland within the locale supporting suitable habitat for sett creation. No evidence of the species was recorded during survey.

The arable and pastoral land within which it is proposed to locate the turbine will provide only poor quality foraging habitat for bats. There are no potential roost sites within 50m of the proposed turbine location, the closest potential roost sites being provided by the farm buildings to the northeast. The turbine will be within 50m of the well-sealed semi mature trees and dry stonewall to the northwest, but these are considered sub optimal for supporting bats. The dry stonewalls within the area provide low quality commuting routes through this landscape and will link areas of higher quality foraging, in this case areas of woodland and the reservoirs, in the wider area. The buffer between the turbine blade tip and two of the field boundaries will be greater than 50m.

There are no waterbodies or watercourses within 200m of the proposed development site, therefore no impacts on great crested newt, otter or water vole are anticipated.

The habitat where the turbine is to be located is of low quality for reptiles, lacking suitable basking and hibernacula features. The nature of the cropping within the field is also likely to limit its suitability and therefore the risk of impacting on these taxa is considered to be negligible.

The proposed development site, inclusive of immediately adjacent habitat, is considered to be of low ornithological value for both its breeding and wintering population. As the

construction footprint makes up a very small proportion of the broader area, which is dominated by similar habitats, it is likely that the land within and adjacent to the proposed development will constitute only a small proportion of the land utilised by these species.

The number of birds nesting within the development footprint is likely to be very low, due to the small size of the footprint and the nature of the cropping within the field. No potential nesting species were recorded within the field during the survey, with the majority of passerines recorded foraging within neighbouring fields. The majority of nesting opportunities are associated with the areas of tree cover in the wider area. In addition the drystone walls are likely to provide nesting opportunities for a limited range of species.

Although the risk assessment identified a small number of Annex 1 and Schedule 1 raptors as likely to forage in the vicinity on occasion, it is considered unlikely that any of these species will breed within the immediate vicinity of the site and impacts on local populations are considered unlikely.

With three waterbodies present within 500m of the site it is likely that wildfowl and wader species will utilise the area for both breeding and wintering, with mallard and greylag geese recorded during the survey, both over flying and foraging within the adjacent field. However, the field in which it is proposed to locate the turbine is moderately sized and currently sown with a crop and has poor sightlines for geese due to its aspect and the presence of drystone walls. These factors, coupled by the small development footprint and an abundance of better terrestrial habitat in the local area, reduce the risk of proposals having any effect on local populations.

Construction works will cause short-term disturbance of the development area and this is likely to have a minor short-term impact on wildlife using the site and adjacent land, namely:

- Loss of a limited area of habitat of low ecological value.
- Disturbance and displacement/harm of very small numbers of nesting, foraging and/or loafing birds, species typical of pastoral land and hedgerow habitat.
- Potential for badger, if present, to fall into any trenches that are left open overnight.

However, given the limited construction footprint and extent of similar habitat in the surrounding landscape it is not considered that the above disturbance and displacement would have a significant impact on local populations.

Wildfowl, waders and raptors are the key bird groups considered at particular risk of collision with operational turbines. Although migratory swans and geese are likely to move around the area in small numbers during winter, potentially passing over the site, such movements are generally at height, and much above the height of the turbine proposed in this case (76m to blade tip).

These species are much more vulnerable when turbines are located in close proximity to feeding areas as individuals then pass through the collision risk height band on both landing and take-off. The reservoirs in the area support a resident population of greylag geese, which are likely to regularly move between the waterbodies and forage within the fields. In this case, the nature of the development field within which it is proposed to locate the turbine is likely to preclude use by wildfowl and waders, which favour areas with long sightlines when feeding, they are therefore unlikely to utilise the land surrounding the turbine location.

A range of common raptors and owls, are likely to be present in the area. The site may also support scarcer raptors that may pass over the site infrequently. It is likely that all these species will have only low levels of activity over the site due to the limited availability of prey in an intensively managed site such as this.

Site design has ensured a 50m buffer is maintained between the turbine blade tips and two of the dry stonewalls that form the field boundaries, though two are within 50m. As the field boundaries are low dry stone wall they are considered to be suboptimal commuting features for bats in this exposed landscape. This, combined with the lack of potential bat roost sites within 50m of the proposed turbine (man-made structures or mature trees) and the location within an intensively managed arable field (low quality habitat for foraging bats), leads to the conclusion that the risk of potential long term impacts on local bat populations of the operational turbines, through direct collision mortality and indirect effects such as barotrauma, is likely to be low.

Further survey is not considered necessary, though it is recommended that consultation with Natural England be undertaken.

If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.

B INTRODUCTION

E³ Ecology Ltd was commissioned by AAH Planning Ltd to undertake an extended phase 1 habitat and protected species survey of agricultural land west of Ingfield Farm, Penistone, West Yorkshire to support a planning application. A bird risk assessment was also carried out as part of this survey work.

B1 Background to development

The site is situated to the south of Ingbirchworth at an approximate central grid reference of SE 221 052; the precise turbine location is SE22035 05235. Site location is illustrated below in Figure 1.

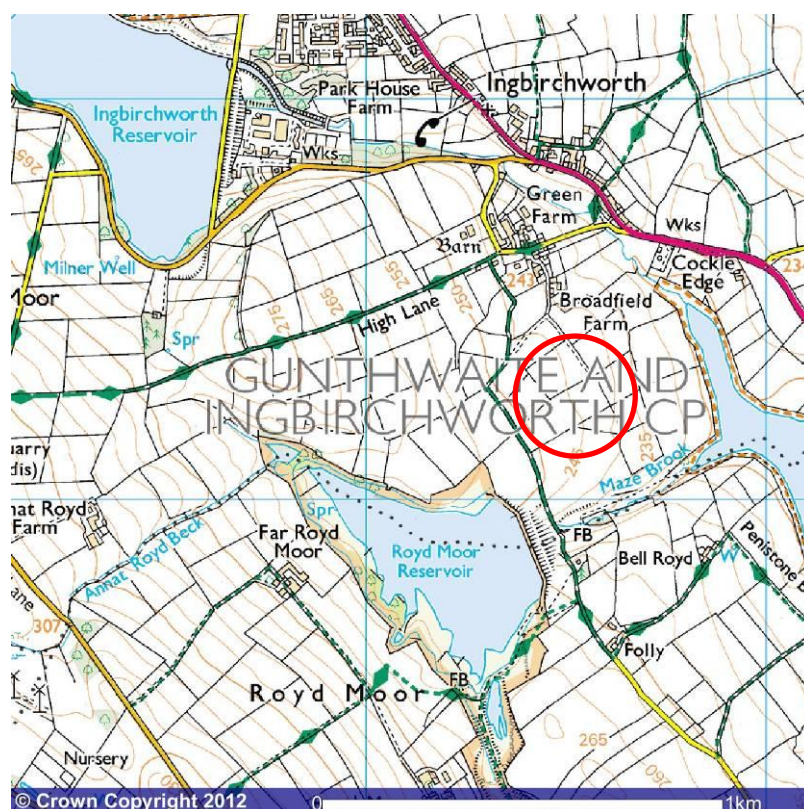


Figure 1

Site location (reproduced from the ordnance survey map with the permission of the controller of Her Majesty's stationery office. CJ Crown Copyright reserved. Licence number 100039392.)

It is proposed to construct a single turbine (76m to blade tip) and associated infrastructure within an arable field, currently sown with beans.

The turbine will be accessed for construction via a newly constructed track through a campsite leading to an existing track.

Figure 2, below, illustrates the adjacent land use with the circle delineating a 500m radius from the proposed turbine location.



Figure 2: Aerial Photo – Wider Area (Reproduced under licence from Google Earth Pro)

C SURVEY AND SITE ASSESSMENT

C1 Consultation/Pre-existing Information

Nature on the Map Website (Natural England)

There are no protected areas or areas designated and protected for their nature conservation interest within approximately 2km of the survey area.

The following statutory sites of ornithological interest are situated within 20km of the proposed development site:

South Pennine Moors SPA (Approx. 6km):

The South Pennine Moors SPA (including the proposed extension to encompass Eastern Peak District Moors SSSI) includes the major moorland blocks of the South Pennines from Ilkley in the north to Leek and Matlock in the south. It covers extensive tracts of semi-natural moorland habitats including upland heath and blanket mire. The site is of European importance for several upland breeding species, including birds of prey and waders. Both merlin and golden plover spend some of their time feeding outside the SPA on adjacent areas of in-bye land. The northern end of the South Pennine Moors SPA is within 10 km of the North Pennine Moors SPA which supports a similar assemblage of upland breeding species.

This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:		
<i>During the breeding season:</i>		
Species	Percentage of population	Date of population estimate
Golden Plover	752 pairs representing at least 3.3% of the breeding population in Great Britain	1990
Merlin	77 pairs representing at least 5.9% of the breeding population in Great Britain	-
Peregrine	16 pairs representing at least 1.4% of the breeding population in Great Britain	-
Short-eared Owl	25 pairs representing at least 2.5% of the breeding population in Great Britain	-
This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:		
Dunlin	140 pairs representing at least 1.3% of the breeding Baltic/UK/Ireland population	-

Non-Statutory Protected Areas

Consultation is awaited.

C2 Legal Status of protected species

Planning Policy

The Government's National Planning Policy Framework (NPPF) states the following:

- Plan policies and planning decisions should be based upon up-to-date information about the natural environment (Paragraph 158 and 165).
- Plan policies should promote the preservation, restoration and recreation of priority habitats, ecological networks and the recovery of priority species (Paragraph 117).
- Local planning authorities should set out a strategic approach in their Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure. (Paragraph 117).
- When determining planning applications in accordance with the Local Plan and the presumption in favour of sustainable development local planning authorities should aim to conserve and enhance biodiversity by applying a number of principles, including if significant harm resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused. (Paragraph 118).

Certain species have been identified as requiring conservation action as species of principal importance for the conservation of biodiversity in England. Local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents. Planning authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. Planning authorities should refuse permission where harm to the species or their habitats would result unless the need for, and benefits of, the development clearly outweigh that harm (Paragraph 14).

The following protected species may be present on a site such as this:

Species	Relevant Legislation	Level of Protection
Bats (All species)	- Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended - Classified as European protected species under Conservation of Habitats and Species Regulations 2010 - Bats are also protected by the Wild Mammals (Protection) Act 1996	The WCA (1981) and Habitat Regulations (2010) make it an offence to: - Intentionally kill, injure, or take any species of bat - Intentionally or recklessly disturb bats - Intentionally or recklessly damage destroy or obstruct access to bat roosts
Birds	Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act	The WCA (1981) makes it an offence to (with exceptions for certain species): - Intentionally kill, injure or take any wild bird - Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) - Intentionally take, damage or destroy eggs - Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests
Badger	- Protection of Badgers Act 1992 - Badgers are also protected by the Wild Mammals (Protection) Act 1996	The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly: - Damage a badger sett or any part of it - Destroy a badger sett - Obstruct access to, or any entrance of a badger sett - Disturb a badger whilst it is occupying a badger sett
Common reptiles (Slow-worm, Adder, Grass Snake, Common Lizard)	Partially protected by the Wildlife and Countryside Act	The WCA (1981) makes it an offence to: - intentionally kill or injure these animals - Sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals
<i>Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of damaging a place of shelter or disturbing those species given full protection under the act is extended to cover reckless damage or disturbance.</i>		

C3 Objective(s) of survey

The aims of the study are: -

- to ascertain the types of habitat within the study area through consultation and extended Phase 1 field survey;
- to provide provisional indications of the conservation value of the identified habitats;
- to assess the species likely to be present and the risk of adversely affecting protected species;
- to assess the sensitivity of the habitats and species in relation to the proposed scheme and the effect the development would have on them;
- to undertake a bird risk assessment to identify the sites suitability for a range of species.
- to identify any further specialist studies that may be required to complete a reliable and robust ecological assessment and subsequently develop mitigation proposals that will allow development to proceed without significant adverse ecological effect.

C4 Survey area

Figures 1 and 2 (B1) illustrate the broad habitats present in the wider area.

Figure 4 (C7) illustrates the survey area and results.

C5 Personnel their qualifications and experience

Survey work, site assessment and reporting were undertaken by Mark Osborne BTech (Hons) MIEEM of E³ Ecology Ltd. Details of experience and qualifications are available at www.e3ecology.co.uk.

C6 Field survey

C6.1 Phase I Habitat Survey

The field survey of the proposed site was conducted using the methodology of Natural England's Phase 1 survey, as outlined in their habitat-mapping manual¹. Each habitat was assessed by a trained surveyor and then mapped with target notes where appropriate.

Extended phase 1 survey was undertaken on the 14th September 2012.

The quality of field data will be affected by the season of the survey, with some plant species only being evident or identifiable at certain seasons; however, it is considered that the period in which the work was undertaken would have enabled a full assessment of the site.

C6.2 Protected Species

As part of the extended Phase 1 survey, the risk of protected species being present was assessed from the consultation responses, field signs and local knowledge. If present, any trackways regularly used by badger and deer were mapped, and any badger sett usage assessed by the presence of freshly dug earth and/or bedding at the entrance. Habitats were surveyed for potential to support reptiles. Wetlands if present were reviewed for their potential use by great crested newt, otter and water voles, with particular attention paid to possible otter sprainting sites and resting areas.

C6.3 Site Assessment

The value and significance of the habitats and species found was assessed against the following criteria developed from the Guidelines for Ecological Impact Assessment produced by the Institute of Ecology and Environmental Management².

<i>Level of Value</i>	<i>Examples</i>
International	☐ An internationally designated site or candidate site. ☐ A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. ☐ Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. ☐ Any regularly occurring, nationally significant population/number of any internationally important species.

¹ Handbook for Phase 1 habitat survey, A Technique For Environmental Audit, English Field Unit, Nature Conservancy Council, 1990

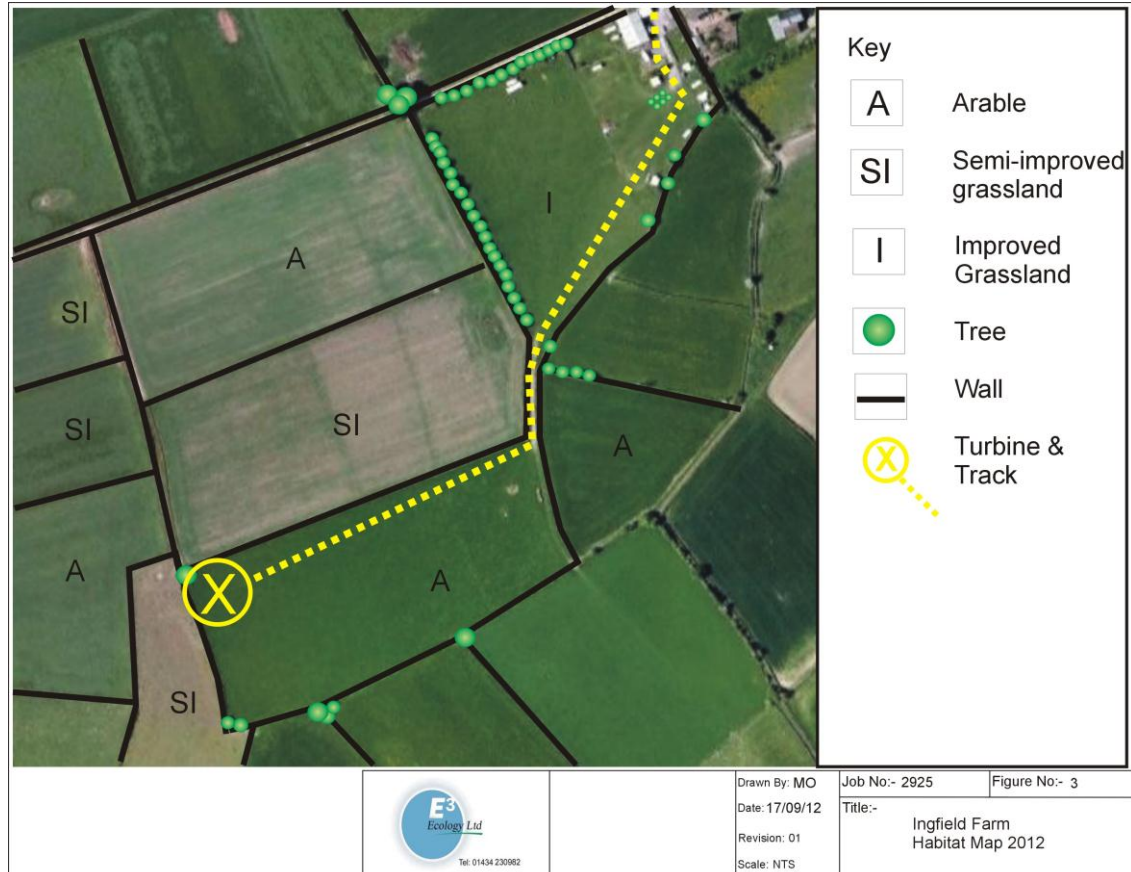
² Institute for Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in the United Kingdom (Version 7 July 2006). <http://www.ieem.org.uk/ecia/index.html>.

Level of Value	Examples
National	☐ A nationally designated site. ☐ A viable area of a priority habitat identified in the UK BAP, or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. ☐ Any regularly occurring population of a nationally important species, which is threatened or rare in the region or county. ☐ A regularly occurring regionally or county significant population/number of any nationally important species. ☐ A feature identified as of critical importance in the UK BAP.
Regional	☐ Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. ☐ A regularly occurring, locally significant number of a regionally important species.
County/ Metropolitan	☐ County/Metropolitan designated sites. ☐ A viable area of a habitat type identified in the County BAP. ☐ Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan "red data book" or BAP on account of its regional rarity or localisation. ☐ A regularly occurring, locally significant number of a species important in a County/Metropolitan context.
District/ Borough	☐ Areas of habitat identified in a District/Borough level BAP. ☐ Sites designated at a District/Borough level. ☐ Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource. ☐ A population of a species that is listed in a District/Borough BAP because of its rarity in the locality.
Parish/ Neighbourhood	☐ Area of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood. ☐ Local Nature Reserves.
Low	☐ Habitats of poor to moderate diversity such as established conifer plantations, species poor hedgerows and unintensively managed grassland that may support a range of Local BAP species but which are unexceptional, common to the local area and whose loss can generally be readily mitigated.

C7 Results

C7.1 Phase I Habitat Survey

The figure below illustrates the site and approximate location of the turbine and the current access track.



Arable Fields

The main habitat within the proposed development footprint is arable field. The field is currently sown with a bean crop.



Boundaries

The boundaries in the area comprise dry stone walls and post and wire fences.



Semi improved grassland

Semi improved grassland is present at the margins of the arable field within which it is proposed to locate the turbine. In addition a section of semi-improved grassland was recorded in the narrow access strip between the proposed development field and the existing campsite. Species recorded include: perennial ryegrass *Lolium perenne*, cock's foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus*, meadow foxtail *Alopecurus pratensis*, Timothy *Phleum pratense*, meadow grass *Poa* sp, white clover *Trifolium repens*, broad leaved dock *Rumex obtusifolius*, bramble *Rubus fruticosus*, meadow cranesbill *Geranium pratense*, sow thistle *Sonchus* sp, common mouse ear *Cerastium fontanum*, bush vetch *Vicia sepium*, sun spurge *Euphorbia helioscopia*, daisy *Bellis perennis*, pineapple weed *Matricaria discoidea*, cleavers *Galium aparine*, cut leaf cranesbill *Geranium dissectum*, creeping thistle *Cirsium arvense*, yarrow *Achillea millefolium*, creeping buttercup *Ranunculus repens*, ragwort *Senecio jacobaea*, groundsel *Senecio vulgaris*, spear thistle *Cirsium vulgare*, ribwort plantain *Plantago lanceolata*, redshank, broad leaved willowherb *Epilobium montanum* and foxglove *Digitalis purpurea*.



Improved grassland

An area of improved grassland, currently used as a caravan and camping site is present to the east of the proposed development. The access track will pass through this habitat. The grassland supports a very closely mown sward, dominated by perennial rye grass with a very limited number of forbs present, including, nettle, dandelion *Taraxacum* agg, yarrow and common mouse ear.



Trees

A number of immature and semi mature trees were recorded at the edge of the field and within surrounding fields. In addition a row of semi mature broadleaved trees were recorded on the western boundary of the campsite, likely planted as a wind break. The trees are all well sealed and provide very few opportunities for bats. Species included, sycamore *Acer pseudoplatanus*, holly *Ilex aquifolium*, spruce sp *Picea* sp, elder *Sambucus nigra*, hawthorn *Crataegus monogyna*, cherry *Prunus* sp, dog rose *Rosa canina*, oak *Quercus* sp, beech *Fagus sylvatica*, rowan *Sorbus aucuparia* and poplar sp.



C7.2 Protected Species Results

Badger

Habitats within the site provide suitable foraging habitat for badger though the field is surrounded by dry stone walls and gated which will provide a potential barrier. There is no suitable habitat within the proposed development field for sett creation, though there is abundant habitat associated with areas of woodland approximately 250m to the south east. No evidence of badger activity was recorded during survey. It is likely that badger are present within the local area and it is possible that they may forage within the site from setts in the wider area. The risk of badger being adversely affected by the proposal is considered to be low.

Bats

The arable land within which it is proposed to locate the turbine will provide only poor quality foraging habitat for bats. There are no potential roost sites within 50m of the proposed turbine location, the closest potential roost sites being provided by the farm buildings over 300m to the east. Trees are present in the wider area that may provide potential roost locations, though all of these are more than 50m from the proposed turbine location. There are immature specimens within the north western corner of the proposed development field but these are considered to have a low risk of supporting bats.

The walls throughout the local area provide potential commuting routes and link areas of better quality habitat, in particular the bodies of water and woodland. Walls may be used by commuting bats for orientation and cover when light conditions are high, but in the dark the bat species that are likely to be using this arable habitat are most likely to fly direct to their destination. Walls do not provide the food resource or the quality of shelter that is provided by a good hedge and so are less likely to be associated with a focus of bat activity.

Great crested newts

There are no areas of standing water within the field in which it is proposed to site the development or within 200m. The large waterbody Royd Moor Reservoir, approximately 250m to the south is considered unsuitable for this species; due to its size and likelihood of supporting large fish as well as a population of wildfowl. The risk of harming or disturbing great crested newts during works is concluded to be negligible.

Otter and Water Vole

There are no areas of standing water or watercourses within the field and the closest waterbody is approximately 250m to the south; as such it is considered that the risk of harming or disturbing these species during works is negligible. There is considered to be a low risk that otter may commute across or around the site to forage within areas of standing water in the local area but disturbance is likely to be negligible.

Reptiles

Habitats on the edges of the site are potentially suitable for supporting small numbers of reptiles, with the walls providing a range of foraging, cover and basking opportunities. The walls may also provide good commuting features within the local area. The species most likely to be present is common lizard.

However, due to the arable nature of the proposed development field and given the small development footprint and the nature of the habitats to be directly affected, the risk of works harming or disturbing reptiles is concluded to be negligible.

Other

Brown hare and hedgehog are likely to be present within the locale and may forage within the development footprint. These species are listed as UK Biodiversity Action Plan priority species. Other protected species are considered to be absent.

Birds

The proposed development area and adjacent land are likely to support an assemblage typical of an upland agricultural landscape in this area of Yorkshire.

During the walkover survey, a total of 13 species were recorded from either the proposed development site, or the immediate area. These species were: woodpigeon, magpie,

rook, jackdaw, starling, linnet, chaffinch, meadow pipit, greylag goose, mallard, mistle thrush, blackbird and little owl.

In addition to species nesting within the site, there is a low risk that the site may host a range of species at times out with the breeding season, though it is considered unlikely to provide a foraging resource for geese and wader species. The reservoirs within the locale support a resident population of greylag geese. They may utilise the field at times, though this is greatly limited by the cropping regime. They are more likely to utilise the pasture fields in the area with good sightlines. A flock of 46 were recorded foraging within the large pasture field directly to the south. They are likely to be largely unaffected by the development, as the proposed development lies in between the reservoirs.

In terms of species at an elevated risk of collision with turbines the local area is also likely to support a range of common raptors, including kestrel, buzzard and sparrowhawk and potentially scarcer raptors such as merlin and peregrine that may pass over the site less frequently. In addition to little owl, recorded during the survey, barn owl and tawny owl are also likely to be resident in the local area, and may forage within the site at times. Short eared owl may also forage in the area at times, though it is considered unlikely to breed.

The table below provides a full list of species that would be expected to occur either on site or within the immediate surrounding area.

Species	Recorded during survey (S) or through risk assessment (RA):		
	Status on study site/immediate area	S	RA
Kestrel	Non-breeding resident, hunting within the site		✓
Buzzard	Non-breeding resident, foraging within the site		✓
Sparrowhawk	Non-breeding resident, hunting within the site		✓
Peregrine	Non-breeding resident, foraging over the site		✓
Merlin	Over flying the site foraging over the site		✓
Barn Owl	Non-breeding resident, foraging within the site		✓
Tawny Owl	Non-breeding resident, foraging within the site		✓
Little Owl	Breeding resident	✓	
Short Eared Owl	Non-breeding resident, foraging within the site		✓
Mallard	Breeding resident	✓	
Whooper Swan	Winter foraging, passage bird autumn and spring		✓
Pink Footed Goose	Winter foraging in fields, passage bird autumn and spring		✓
Greylag Goose	Breeding resident, foraging within waterbodies	✓	
Grey Heron	Breeding resident		✓
Golden Plover	Winter foraging in fields, passage bird autumn and spring		✓
Lapwing	Winter foraging in fields, passage bird autumn and spring		✓
Curlew	Winter foraging in fields, passage bird autumn and spring		✓
Oystercatcher	Non-breeding resident, foraging within the site		✓
Swift	Non-breeding summer visitor, feeding over the site		✓
Swallow	Non-breeding summer visitor, feeding over the site		✓
House Martin	Non-breeding summer visitor, feeding over the site		✓
Sand Martin	Non-breeding summer visitor, feeding over the site		✓
Carrion Crow	Breeding resident		✓
Rook	Breeding resident	✓	
Jackdaw	Breeding resident	✓	
Magpie	Breeding resident	✓	
Blackbird	Breeding resident	✓	
Blue Tit	Breeding resident		✓
Great Tit	Breeding resident		✓
Linnet	Breeding resident	✓	
Woodpigeon	Breeding resident	✓	
Collard Dove	Breeding resident		✓
Duncock	Breeding resident		✓
Wren	Breeding resident		✓

Species	Recorded during survey (S) or through risk assessment (RA):		
	Status on study site/immediate area	S	RA
Robin	Breeding resident		✓
Mistle Thrush	Breeding resident	✓	
Song Thrush	Breeding resident, within hedges		✓
Fieldfare	Winter flocks foraging within hedges		✓
Redwing	Winter flocks foraging in fields, within hedges		✓
Black headed gull	Non-breeding resident, foraging within the site		✓
Herring Gull	Non-breeding resident, foraging within the site		✓
Lesser Black Backed Gull	Non-breeding resident, foraging within the site		✓
Common Gull	Non-breeding resident, foraging within the site		✓
Starling	Breeding resident within trees/hedgerow	✓	
Chaffinch	Breeding resident	✓	
Goldfinch	Breeding resident		✓
Reed Bunting	Breeding resident within fields and near waterbodies		✓
Meadow Pipit	Breeding resident/Passage bird	✓	
Skylark	Possible summer breeder within fields		✓

The list above identifies a range of species that may be present within the wider area and utilising similar habitats as those present. The actual number recorded was limited due to the heavily grazed nature of the development footprint.

D CONCLUSIONS AND RECOMMENDATIONS

D1 Habitat Assessment

- The proposed development field is of low ecological value comprising arable land bordered by semi improved grass margins. This habitat has low species diversity and is common throughout the surrounding landscape.
- Field boundaries are formed by dry stone walls.

D2 Protected Species Assessment

- The body of the fields are most likely used at only a very low level by foraging bats of common species such as pipistrelles and as such are considered to be of low value for bats.
- Dry stone walls in the wider area are likely to provide sub optimal commuting routes for bats throughout the area, with the hedges, tree line and lane providing better flyways between the roosts and better areas of foraging, such as the waterbodies in the area.
- Badger are most likely present in the surrounding area and may forage within the proposed development field at times, though there is no suitable habitat for sett creation within the development field. The risk of harming or disturbing this species is considered to be low.
- Due to the following evidence, the risk of great crested newts being impacted by the proposals is considered to be negligible:
 - The site footprint is small and comprised habitats of poor suitability for great crested newts;
 - The nearest waterbodies are large reservoirs, unsuitable for this species, and are at least 250m distant from the site.
- Due to the lack of suitable habitat within the site otter and water vole are considered to be absent from the development footprint and therefore the risk of the proposals affecting these species is negligible.
- Reptiles are considered likely to be present within the wider area in low numbers. As the development is to be sited within an arable field with high levels of disturbance and existing access tracks are being utilised, the risk of harming this taxa is considered to be negligible.

D3 Ornithological Assessment

The table below highlights the conservation importance of the bird populations likely to be present on or adjacent to the site.

Conservation importance of bird populations							
Species	Annex 1	Schedule 1	UK BAP	Species	Annex 1	Schedule 1	UK BAP
Kestrel				Magpie			
Buzzard				Jackdaw			
Sparrowhawk				Rook			
Peregrine	✓	✓		Blackbird			
Merlin	✓	✓		Linnet			✓
Barn Owl		✓	✓	Mistle Thrush			
Tawny Owl				Skylark			✓
Little Owl				Starling			✓
Short-eared Owl	✓	✓		Meadow Pipit			
Collard Dove				Dunnoch			✓
Woodpigeon				Wren			
Mallard				Song Thrush			✓
Greylag Goose				Blue Tit			
Whooper Swan	✓	✓		Fieldfare		✓	✓
Reed Bunting			✓	Robin			
Pink Footed Goose				Redwing		✓	✓
Grey Heron				Great Tit			
Golden Plover	✓			Black headed gull			
Lapwing			✓	Herring Gull			✓
Curlew			✓	Lesser Black Backed Gull			
Oystercatcher				Common Gull			
Swift				Goldfinch			
Swallow				Chaffinch			
House Martin							
Sand Martin							
Carrion Crow							

Key

Annex 1 = Specially protected under Annex 1 of the EC Birds Directive.

Schedule 1 = Specially protected under Schedule 1 of the Wildlife and Countryside Act 1981.

UK BAP = UK Biodiversity Action Plan priority species.

Red List Species = High National Concern

Amber List Species = Medium National Concern

The proposed development site, inclusive of immediately adjacent habitat, is considered to be of low ornithological value for both its breeding and wintering assemblage, due to the limited habitats and its heavily managed nature. The site makes up a small proportion of the broader area; an area dominated by similar habitats and unlikely to support a significant farmland assemblage.

The number of birds nesting within the development footprint is likely to be negligible, due to the density of the cropping. No nesting species were recorded at the time of survey. At present nesting opportunities are more abundant within the trees and scrub in the wider

area.

Of the species of conservation concern detailed within the table above, it is likely that only skylark (UK BAP and red list), would potentially breed within the habitat found within the development footprint.

The Annex 1 and Schedule 1 species highlighted within the risk assessment are, in general, raptors, wintering species or species on passage that may on occasion forage within or over fly the site. It is considered unlikely that any of these species will breed within the immediate vicinity of the site and impacts on local populations are considered unlikely.

The wider area will support a limited range of farmland species, a flock of 49 linnet were recorded foraging within a neighbouring field, typical to this area a number of which have, both nationally and locally, suffered population declines as a result of agricultural intensification. However, due to the small footprint of the proposed development and the habitat currently present, numbers potentially displaced will be negligible.

It is likely that wildfowl will utilise the wider area in moderate numbers, due to the presence of the reservoirs however they are likely to be largely unaffected by the proposals as the field is sub optimal for these species and does not lie on an obvious flightline.

The South Pennines SPA is present approximately 6km to the south of the site, supporting a range of species. Of these species short-eared owl, peregrine and merlin may forage in the wider area throughout the year and may at times forage over or around the site, though this is likely to be infrequent with no negative impacts anticipated. In addition golden plover may forage in this area at times, however due to the distance from the SPA and the habitats present this is likely to be infrequent again with no negative impacts anticipated.

D4 Impact Assessment

Potential impacts of the development in order of conservation significance are:

Temporary Disturbance (Construction Period)

Construction works will cause short-term disturbance of the development area and this is likely to have a minor short-term impact on wildlife using the site and adjacent land.

Given the nature of the site, this is concluded likely to be limited to the following:

- Loss of a limited area of habitat of low ecological value.
- Disturbance and displacement/harm of very small numbers of nesting, foraging and/or loafing birds, species to a pastoral and hedgerow habitat such as this.
- Potential for badger to fall into any trenches that are left open overnight.

However, given the limited construction footprint and extent of similar habitat in the surrounding landscape it is not considered that the above disturbance and displacement would have a significant impact on local populations.

Operational Impacts (Long term)

Wildfowl, waders and raptors are the key bird groups considered at particular risk of collision with operational turbines.

Migratory geese and swans may use the wider area on occasion, however movements in the vicinity of the site are likely to be at a much greater height than the proposed turbine, in particular due to the relatively cluttered nature of the area, with field trees, buildings and other turbines.

From a review of the wider landscape, the field within which it is proposed to locate the turbine does not lie on an obvious flightline for migratory species. It does however lie between three reservoirs that are likely to provide both roosting and/or feeding areas. This is particularly relevant for the resident wildfowl species, including both mallard and greylag geese. The field in which it is proposed to locate the turbine is currently unsuitable for foraging and roosting, due to the crop, and is likely to be sub optimal due to its size and limited sightlines, in addition the field does not lie in a direct flight path between the waterbodies therefore disturbance should be minimised.

A range of common raptors, kestrel, buzzard and sparrowhawk, are likely to be present in the area, with barn owl and tawny owl also likely to be present. Merlin and peregrine are known to be present within the wider area and may pass over the site infrequently. It is likely that all these species will have only low levels of activity over the site due to the limited availability of prey in an intensively managed site such as this.

The potential impacts on local bird populations through collisions are limited by the scale of the development, with only a single relatively small turbine. As such, no impacts significant at a population level are predicted.

Site design has ensured a 50m buffer is maintained between the turbine blade tips and two of the dry stonewalls that form the field boundaries, though two are within 50m. As the field boundaries are low dry stone wall they are considered to be suboptimal commuting features in this exposed landscape. This, combined with the lack of potential bat roost sites in the vicinity of the proposed turbine (man-made structures or mature trees) and the location within an arable field (low quality habitat for foraging bats), leads to the conclusion that the risk of potential long term impacts on local bat populations of the operational turbine through direct collision mortality and indirect effects such as barotrauma is likely to be low.

Pipistrelle bats are the most likely species to be found foraging within an area such as this, albeit at low levels, and both common and soprano pipistrelles are common within Yorkshire. These species are classed by Natural England as populations with only a low risk of being threatened due to impacts from wind turbines³.

D5 Mitigation Requirements

The following elements of mitigation will be incorporated into the proposed development:

- Arable field to remain in cultivation
- Dry stonewalls forming northern and western field boundaries to be removed.
- Hedgerow and trees to be planted along other boundaries within the site to provide better quality commuting routes, routing bats away from the proposed turbine.

³ Natural England Technical Information Note TIN059 Bats and single large wind turbines; Joint Agencies interim guidance

- Any required vegetation clearance works to be undertaken outwith the bird-nesting season (March to August inclusive), unless a checking survey by an appropriately qualified ornithologist confirms that there are no active nests.
- Any excavations that are left overnight will include a ramp of 45° or less on one face to allow badgers and other wildlife to climb out should they fall into the excavation.

D6 Potential Enhancement Measures

The proposed development provides an opportunity to contribute through habitat creation/enhancement works to local and national biodiversity targets, in line with national, regional and local planning policy. In order to achieve this, consideration should be given to the incorporation of some of the following elements into the proposed development:

- Creation of larger rough grass margins, sown with a mix of coarse native grasses and nutrient tolerant forbs, of minimum six metres width, to be cut once every three years in September. This would provide additional seed and insect food for a variety of small farmland birds, as well as additional small mammal prey for raptors such as kestrel and barn owl.
- Provision of bat and bird boxes in order to enhance nesting and roosting opportunities for a range of local and national biodiversity action plan species.

The location of any habitat enhancement/creation measures would need to be carefully considered to ensure that the new habitat features do not result in an increased risk of collision mortality for bats and birds in the vicinity of the operational turbine.

D7 Additional Survey Recommendations

Bats

Site design and turbine location has primarily followed Natural England recommendations, ensuring a buffer the blade tip and all potential roost sites and key features such as woodland edge and hedgerow habitat. As such, **no further survey with regard to bats is currently proposed.**

Great Crested Newt

No waterbodies are present within the proposed development field. Therefore the risk of the development causing a detrimental effect upon great crested newt populations, if present, without mitigation is considered to be highly unlikely.

As such, **no further survey with respect to this species is considered necessary.**

Water Vole and Otter

There is no suitable habitat for otter within the proposed development site and the risk of water vole being present within the site is considered to be negligible. **No further survey would be recommended.**

Reptiles

Due to the limited suitable habitat within the development footprint and given the limited construction footprint and the fact that habitat loss is limited to arable land, the risk of harming reptiles during works is concluded to be very low and **further survey is not required.**

Birds

The survey area is concluded to be of low ornithological value and given the small scale of the proposed development the risk of proposals impacting on local populations or key species is concluded to be negligible. **Further survey is not considered necessary though it is recommended that consultation with Natural England be undertaken.**

Badger

Although the habitats within the site boundary provide suitable foraging habitat for badgers there is no suitable habitat for sett creation on site or within 30m of the proposed development. **No further survey is considered necessary.**

E REFERENCES

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