



Longley Farm Wind Turbine – Ecological Assessment

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1. Introduction

- 1.1.1 The purpose of this report is to provide an appraisal of the ecological value of the study area (defined in Figure 1) and to assess the likelihood and nature of any impacts to this ecological value that may result from the proposed scheme. As part of this appraisal ecological surveys and data consultation was undertaken by Ecus Ltd in November 2013.
- 1.1.2 Elements of the ecological assessment detailed within the report include the following:
- data consultation with appropriate organisation(s);
 - habitat and species surveys supported by maps and descriptions of baseline conditions;
 - evaluation of ecological interest of the application area and study area as shown in Figure 1;
 - assessment of the potential ecological impacts associated with the proposed scheme, and
 - mitigation measures required in relation to the assessment.
- 1.1.3 The assessment has been carried out in line with the Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the United Kingdom (IEEM, 2006).

2. Methodology

Desk Study and Data Consultation

- 2.1.1 As part of the ecological assessment process a data consultation exercise was undertaken to determine whether any sites, habitats or species of note have previously been recorded on, or within 2.5 km of, the study area. Data requested from the consultees included:
- statutory and non-statutory designated wildlife sites, and
 - species and habitats of principle importance in England (those listed by the Secretary of State under the provisions of Section 41 of the Natural Environment and Rural Communities Act 2006).
- 2.1.2 The 2.5 km search radius is predominantly comprised of land within Kirklees Metropolitan District, although a small part of the search area lies within Barnsley Metropolitan District. West Yorkshire Ecology (WYE) is the local ecological record centre for Kirklees district and Sheffield Biological Record Centre (SBRC) hold ecological records for Barnsley district. Records were requested from these organisations in October 2013. The West Yorkshire Bat Group were also consulted for any records they hold for the area within 2.5 km of the study area.
- 2.1.3 Relevant information received from consultees is included as Appendix 1, and referred to in the report text as appropriate.

Definition of the Study Area

- 2.1.4 The ecological study area, used here as a basis for survey and assessment of ecological value, includes a group of agricultural fields immediately to the east of Dunford Road (B6106). Within this report the term 'study area' refers to the area within these agricultural fields (Figure 1). This area differs from the 'application area', which is the area of land included within the planning application, and within which all landtake associated with the proposed scheme will occur. The study area contains the application area.

Phase 1 Habitat Survey

- 2.1.5 An extended Phase 1 Habitat Survey of the study area as shown in Figure 1 was undertaken in November 2013 by Ecus Ltd. Survey methodology followed the standard approach described within the Handbook for Phase 1 Habitat Survey (JNCC, 2010). Plant species and habitat types, according to the Phase 1 classification, were identified and recorded. Botanical recording was aimed at characterising the vegetation present and was not intended to comprise a complete list of all plants occurring on the site.
- 2.1.6 The abundance of plant species recorded was classified according to the subjective yet commonly used DAFOR abundance rating. The standardised terms are as follows:
- D – Dominant;
 - A – Abundant;
 - F – Frequent;
 - O – Occasional, and

- R – Rare.

- 2.1.7 Where necessary, the abundance rating given indicates co-dominance of species (CoD) or that a particular rating is appropriate only within a localised area (rating category preceded by L).
- 2.1.8 Notable, rare or scarce plants were highlighted if present. The information collected is presented using Target Notes (TN), the locations of which are shown in Figure 1.
- 2.1.9 All field boundaries within and surrounding the study area are dry stone walls, therefore no hedgerow survey was undertaken.

Protected Species Survey

- 2.1.10 Any evidence of protected species or groups encountered during the survey was recorded. This included observations of field signs and an assessment of the suitability of the habitats present to support protected species. Based on the habitats present within the application area, survey for the following protected and key species was included in the site visit.

Bats

- 2.1.11 The site did not contain any buildings. All trees present on site were inspected during the Phase 1 walkover for any features, such as cracks, cavities or holes that may support roosting bats.
- 2.1.12 An individual tree or building may have several features of potential interest to roosting bats associated with it. It is not always possible to confirm usage of a feature by bats as often the animals may be present on one day and no evidence of occupation may be found on the next. Consequently trees and specific features of buildings inspected are assigned a category of roosting potential as follows:

Negligible: This category is usually used where a tree or building feature appears initially to have significant bat roost potential but is considered on closer inspection to have low or negligible potential to support roosting bats. It is usually used during surveys to confirm that inspection of a feature has been carried out and has found that the feature is not considered to comprise suitable habitat for roosting bats.

Low: This category is used to describe a tree or building feature that may have some superficial interest to roosting bats, but is considered suboptimal to the extent that bats are not considered likely to use the feature for shelter. A cavity that is open at the top allowing access to wind and rain may be considered to be of low bat roost potential.

Moderate: This category is used to describe a tree or building feature that has some potential to support roosting bats, but is considered to be less than ideal in some way. For example the feature may be occupied by other animals, such as birds or squirrels, it may be subject to disturbance or have sub-optimal connectivity with navigational features. A surveyor would be neither surprised nor expect to find a bat using such a feature. Features considered to be of moderate roosting potential would not automatically be subject to an activity survey unless otherwise highlighted.

High: This category is used to describe an optimal tree or building feature considered to be ideally suitable for use by roosting bats where no evidence of occupation by bats has been found. Features considered to be of high bat roost potential may include upwards-leading cavities of appropriate dimensions and height from the ground, with no obstructions below the cavity entrance. The tree or structure may be particularly prominent within the landscape and is likely to have good connectivity with navigational features and sufficient suitable foraging habitat in the vicinity. Features with high bat roost potential are likely to be subject to activity surveys to assist confirmation of their status, and may be subject to a watching brief during works that may disturb them.

Confirmed: This category is used where positive evidence of bats usage has been recorded from a tree or building feature. For example, bats or bat droppings may be present, or existing bat records may be associated with the feature. A European Protected Species Licence (EPSL) from Natural England is likely to be required if the bat roost is to be disturbed by the development.

Birds

- 2.1.13 Due to the small size of the proposed scheme, and in particular the limited size of the swept area of the proposed single turbine, it is not considered to be necessary or proportionate to undertake detailed ornithological surveys in respect of this application. However, whilst on site the opportunity was taken to record all species of birds encountered.

Badgers

- 2.1.14 Signs of badger (*Meles meles*) activity were searched for within the study area as part of the Phase 1 survey. Survey followed a standard methodology (SNH, 2013). This included survey for badger setts, along with survey of linear features and boundaries for signs of badger activity including dung pits, foraging marks, feeding signs and pathways.

Amphibians

- 2.1.15 A 1:25,000 scale Ordnance Survey map of the area was used to search for waterbodies within 500 m of the study area. Two waterbodies were identified within 100 m of the boundary of the study area, the locations of which are shown on Figure 1. The waterbody located approximately 50 m to the west of the study area (TN4; Figure 1) is located on the opposite side of the busy B6106, which is considered to be a significant barrier to the dispersal of amphibians. The waterbody to the northeast of the application area is not separated by a significant barrier to amphibian dispersal and was therefore assessed for its potential to support great crested newts (*Triturus cristatus*) using a Habitat Suitability Index (HSI) (Oldham *et al*, 2000). A third waterbody, Boshaw Whams Reservoir, is located approximately 360 m south of the study area. However this large reservoir is not considered to be suitable habitat for supporting breeding great crested newt due the likely presence of fish.
- 2.1.16 The Habitat Suitability Index approach uses readily observable habitat features in an objective model, which provides an informed view of the value of a site for great crested newt. This species is a habitat specialist and its status in a given waterbody is influenced by the existence of particular features (e.g. fish, heavy shading) and/or the absence of others (e.g. suitable terrestrial habitat within 500 m). The HSI provides a numerical value (ranging from 0 to 1) that indicates the suitability of a waterbody for great crested newts. The higher the

HSI score, the more suitable (or closer to optimum habitat conditions) the waterbody may be considered for great crested newts. Habitat Suitability Index scores are provided in the text as appropriate.

Other Protected and Key Species

- 2.1.17 The 1:25,000 scale Ordnance Survey map of the area was also used to search for watercourses within 30 m of the study area. No watercourses were identified within this area and therefore white-clawed crayfish (*Austropotamobius pallipes*), water vole (*Arvicola amphibious*) and otter (*Lutra lutra*) are not considered receptors in respect of the proposed scheme, and specific survey for these species has not been undertaken.
- 2.1.18 The study area does not include any mosaic of tall, dense vegetation and open habitat, which is a requirement for all British reptile species. As such, reptile species are not considered to be receptors in respect of the proposed scheme and specific survey for these species has not been undertaken.

Invasive Species

- 2.1.19 During the extended Phase 1 habitat survey, the opportunity was also taken to record the presence of any invasive plant or animal species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), where seen.

Assessment Methodology

- 2.1.20 The value and sensitivity of ecological features present on site were determined based on the guidance given in Guidelines on Ecological Impact Assessment (IEEM, 2006). Individual ecological receptors (habitats and species that could be affected by the development) for the scheme were assigned levels of importance for nature conservation. The highest level is international, then decreasing in order of importance through UK, national, county, district, local to lastly, zone of immediate influence only.

Survey limitations

- 2.1.21 Whilst the extended Phase 1 habitat survey was undertaken at a sub-optimal time of year for vegetation survey, it is considered that sufficient information was obtained to characterise the majority of habitats present and enable a robust evaluation of their importance to nature conservation.

3. Planning Policy and Relevant Legislation

- 3.1.1 Both the habitats and species assessments have taken account of the relevant domestic legislation, and in particular the transcriptions of international legislation into domestic law. National and local policy and guidance has also been considered, and the most relevant statutes and guidance has been summarised below.

International Legislation

The Birds Directive – Directive 2009/147/EC of The European Parliament and of The Council of 30 November 2009 on the conservation of wild birds (codified version)

- 3.1.2 The Birds Directive is the means by which the European Union meets some of its obligations under the Bern Convention and Bonn Convention, and provides a framework for the conservation and management of all bird species and their habitats within the EU member states. In particular, it requires special protection for a range of species (listed in Annex I of the Directive) and requires member states to establish Special Protection Areas (SPAs) for the protection of internationally important bird habitats. The Birds Directive is transcribed into domestic legislation in England through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010.

The Habitats Directive – Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

- 3.1.3 The Habitats Directive is the means by which the European Union meets part of its obligation under the Bern Convention. The aim of the Directive is to promote the maintenance of biodiversity within the EU member states by establishing a network of Special Areas of Conservation (SACs). Special Areas of Conservation are designated to protect the habitats and species of nature conservation importance in Europe, which are listed in Annex I and Annex II of the Directive respectively. Together, the network of SACs and SPAs are called the Natura 2000 network. The Habitats Directive is implemented in England through the Conservation of Habitats and Species Regulations 2010.

Ramsar Convention on Wetlands

- 3.1.4 The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 168 Contracting Parties to the Convention, with 2,168 wetland sites, totalling over 206 million ha, designated for inclusion in the Ramsar List of Wetlands of International Importance.

UK Legislation

Wildlife and Countryside Act 1981 (as Amended)

- 3.1.5 The habitats and species protection provided within the EU Birds Directive is transcribed into UK legislation through the Wildlife and Countryside Act 1981, and its amendments.
- 3.1.6 The 1981 Act allows for the designation of National Nature Reserves (NNRs) and SSSIs to protect areas that support habitats and species of national or international importance. The network of SSSIs forms the basis for selection of the sites of the Natura 2000 network within the UK.

- 3.1.7 All bird species, including eggs, young and nests while in use, are protected under the Wildlife and Countryside 1981 Act as amended. These include a number of specially protected birds (listed in Schedule 1). Other animals that are afforded protection are listed in Schedule 5 and a number of protected plant species are included in Schedule 8. The nests of certain bird species that re-use their nests are also protected while no longer in use as a result of an amendment made under the Natural Environment and Rural Communities Act (NERC) 2006.
- 3.1.8 Key amendments to the 1981 Act are made through the Countryside and Rights of Way (CRoW) Act 2000, which applies to England and Wales only. Relevant amendments include the strengthening of legislation to protect sites designated for nature conservation by imposing heavier penalties on offenders. The NERC Act 2006 also adds intentional or reckless damage, destruction or disturbance of designated flora or fauna within a SSSI as an offence.

Conservation of Habitats and Species Regulations 2010

- 3.1.9 The habitats and species protection provided within the EU Habitats Directive is transcribed into UK legislation through the Conservation of Habitats and Species Regulations 2010 (The Habitats Regulations). The Habitats Regulations 2010 is a consolidation of the Conservation (Natural Habitats, & c.) Regulations 1994 and its several amendments, which provided the original transcription of Habitats Directive into UK legislation. Natura 2000 sites are currently designated in the UK under these regulations.
- 3.1.10 The Regulations make provisions through which Natural England can enforce the management of Natura 2000 sites for the benefit of nature conservation, particularly in respect of features for which the sites have been designated, and prevent actions that would otherwise damage the nature conservation value of these sites. The Regulations also require Natural England to consider planning permissions and, subject to certain exceptions, restrict those permissions where the integrity of a Natura 2000 site would be adversely affected.
- 3.1.11 The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5. However, these actions may be permitted through licenses granted by Natural England. Licenses may be granted for a number of purposes, such as science and education, conservation, preserving public health and safety, but only after Natural England is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned. Schedule 2 and Schedule 5 are comprised of the list of species included in Annex II of the EU Habitats Directive and that occur within the UK. These species are termed European Protected Species (EPSs) and are afforded the highest level of protection in the UK.

Natural Environment and Rural Communities Act 2006.

- 3.1.12 The NERC Act 2006 defines the roles of the various statutory conservation organisations throughout the UK countries to reflect devolved powers.
- 3.1.13 The NERC Act 2006 imposes a 'duty to conserve biodiversity' through fulfilment of their functions on all public authorities. Under the Act (2006) the Secretary of State for England and the National Assembly for Wales must compile and maintain a list of species and habitats that they consider to be of principal

importance for the purpose of conserving biodiversity, these are referred to at the Section 41 and Section 42 lists respectively.

- 3.1.14 Enforcement powers in relation to wildlife have been strengthened and the possession of certain pesticides harmful to wildlife has been made an offence. In addition, codes of practice in connection with invasive non-native species must now be approved by the Secretary of State.

Protection of Badgers Act 1992

- 3.1.15 Under the Protection of Badgers Act 1992 it is an offence to kill or injure badgers, to damage, destroy or obstruct access to an active badger sett, or to disturb badgers while they are occupying a sett. The Act does however include provisions to allow Natural England to grant licences permitting interference with a badger sett in the course of development. Such a licence will normally incorporate conditions to ensure that undue disturbance and suffering to badgers is avoided in the course of the development works.

Hedgerow Regulations 1997

- 3.1.16 Under the Hedgerow Regulations 1997, provision is made for the notification of “important” hedgerows. To qualify for notification, hedgerows must fulfil a range of criteria relating to their historical, landscape or wildlife character. In accordance with the Regulations, the intention to remove any hedgerow should be notified to the Local Planning Authority (LPA) via a hedgerow removal notice. The planning authority may issue a Hedgerow Retention Notice to prevent the loss of an “important” hedgerow. Where permission is granted to remove an “important” hedgerow, the LPA may impose conditions to mitigate the loss.

Central Government Policy, Strategic Plans and Development Control

National Planning Policy Framework

- 3.1.17 The National Planning Policy Framework (NPPF) (Department for Communities and Local Government, 2012) sets out the Government’s planning policies for England and how these are expected to be applied and was brought into force on the 27th March 2012. Section 11 of the NPPF deals with Conserving and enhancing the natural environment through 15 paragraphs and the most relevant to the proposed development are given below.
- 3.1.18 Paragraph 9 states that *“Pursuing sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people’s quality of life, including (but not limited to)[...]moving from a net loss of bio-diversity to achieving net gains for nature[...].”*
- 3.1.19 Paragraph 109 states that *“The planning system should contribute to and enhance the natural and local environment by:*
- *protecting and enhancing valued landscapes, geological conservation interests and soils;*
 - *recognising the wider benefits of ecosystem services;*
 - *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s*

commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;[...]

3.1.20 Paragraph 113 states that *“Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks”*.

3.1.21 Paragraph 114 states that LPAs should *“set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure”*.

3.1.22 Paragraph 116 states *“Planning permission should be refused for major developments in these designated areas except in exceptional circumstances and where it can be demonstrated they are in the public interest. Consideration of such applications should include an assessment of:*

- *the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;*
- *the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way; and*
- *any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated”*.

3.1.23 Paragraph 118 *“When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:*

- *if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;*
- *development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
- *opportunities to incorporate biodiversity in and around developments should be encouraged;*

- *planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and*
- *the following wildlife sites should be given the same protection as European sites:*
 - *potential Special Protection Areas and possible Special Areas of Conservation;*
 - *listed or proposed Ramsar sites; and*
 - *sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”*

3.1.24 Paragraph 119 states that *“The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined”*.

Biodiversity Action Plans

3.1.25 *Biodiversity: The UK Action Plan was published in 1994 (JNCC, 1994) and contains the initial UK Biodiversity Action Plan (UK BAP), this constituted the first transcription of the UK Government’s obligations following the Earth Summit in Rio de Janeiro in 1991 and the signing of the Convention on Biological Diversity (CBD). The UK was the first country to produce a national biodiversity action plan.*

3.1.26 *The UK Post-2010 Biodiversity Framework (Four Countries’ Biodiversity Group, 2012) describes the current ecosystem approach to the conservation of biodiversity as an integral part of the environment. The purpose of this publication is to set broad enabling structure for action across the UK between now and 2020. The current policy framework for England is described in Biodiversity 2020: A strategy for England’s Wildlife and Ecosystem Services (Defra, 2012).*

3.1.27 The UK BAP Partnership, which previously administered the UK BAP, no longer operates. However many of the tools and resources developed by the Partnership still remain in use. This includes the list of priority species and habitats and the descriptions used to define these, which was used to compile the list of habitats and species of principle importance maintained by the Secretary of State under Section 41 of the NERC Act 2006. The actions described within the original UK BAP were disseminated at a smaller scale through Local Biodiversity Action Plans (LBAPs), which were typically prepared by partnership organisations at a county level. Many of these plans have been retained or updated and may still be relevant to development within the boundary of a particular administration.

3.1.28 The application area is located within Kirklees Metropolitan District and Kirklees Council have maintained a LBAP for the district. The Kirklees Biodiversity Action Plan (Kirklees Council Environment Unit, 2010) includes lists of habitats and species of principle importance that occur in the district. Due to the nature

of the habitats that occur within the study area, none of these priority habitats or species are considered to be relevant to this assessment.

Local Planning Policy

3.1.29 Under the provisions of the Planning and Compulsory Purchase Act 2004, the Local Development Framework (LDF) system was introduced, consisting of a series of local development documents which will replace the Kirklees Unitary Development Plan (UDP) and relevant parts of the Regional Strategy for Yorkshire and the Humber. The Regional Strategy for Yorkshire and the Humber was revoked in respect of all parts that applied to the district in February 2013. The Kirklees LDF is in preparation and until such time that policies relating to nature conservation are developed, a number 'saved' policies of the UDP remain in force. Saved UDP policies relating to nature conservation, and of potential relevance to the assessment of this scheme, include:

NE3: Development proposals within or in the vicinity of a site of scientific interest will not normally be permitted unless there is an exceptional requirement for the development and measures will be taken to minimise any detriment to the site.

NE4: Development proposals which would affect a site of wildlife significance will not normally be permitted unless provision can be made to maintain the site's role for nature conservation.

NE5: Development proposals involving land identified on the proposals map as part of a wildlife corridor should make provision for the retention of the corridor and the protection of the wildlife value of the land.

4. Baseline Conditions

4.1.1 The findings of the ecological survey and desk study are described in this section of the report, which aims to identify and evaluate the importance of ecological receptors in respect of the proposed scheme. The assessment of the potential impacts to these receptors is presented in the following section.

Designated Sites

4.1.2 No part of the study area is designated for its nature conservation value, however an area of land approximately 1.8 km to the southwest of the study area is subject to three separate statutory nature conservation designations. There are also several areas within 2.5 km of study area that are subject to non-statutory designation for nature conservation. These are listed in Table 1 in descending order of importance together with their proximity to the site and a brief description of the ecological interest.

Table 1: Description of statutory and non-statutory designated wildlife sites within 2.5 km of the study area.

Designated Site	Proximity to Application Area	Designated Ecological Features	Value Level
Peak District Moors (South Pennine Moors Phase 1) SPA	Approx. 1.8 km to the southwest	The presence of the following breeding species are qualifying features: <ul style="list-style-type: none"> • Merlin (<i>Falco columbarius</i>); • European golden plover (<i>Pluvialis apricaria</i>); • Short-eared owl (<i>Asio flammeus</i>); • Peregrine falcon (<i>Falco peregrinus</i>); • Dunlin (<i>Calidris alpina schinzii</i>). 	International
South Pennine Moors SAC	Approx. 1.8 km to the southwest	Annex I habitats that are a primary reason for selection: <ul style="list-style-type: none"> • European dry heaths • Blanket bogs • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles Annex I habitats present as a qualifying feature, but not a primary reason for selection: <ul style="list-style-type: none"> • Northern Atlantic wet heaths with <i>Erica tetralix</i> • Transition mires and quaking bogs 	International
Dark Peak SSSI	Approx. 1.8 km to the southwest (SSSI underpinning Peak District Moors SPA and South	<ul style="list-style-type: none"> • The blanket peats of the Dark Peak show the full range of blanket bog and soligenous mire mesotopes found in the region. • Below the watersheds, the vegetation of the lower moorland areas largely 	National

Designated Site	Proximity to Application Area	Designated Ecological Features	Value Level
	Pennine Moors SAC)	<p>consists of heathland dominated by heather, with areas of acidic grassland, and these areas display the full range of acidophilous dwarf shrub heath and acid grassland found in the region.</p> <ul style="list-style-type: none"> • Nationally important assemblage of birds. • Divers invertebrate assemblage, including several nationally scarce species. 	
Holme Styes Heathland SSI	Approx. 800 m to the south west	<p>This site is a typical example of H12 heathland with some acid grassland and a thin strip of woodland.</p> <p>The main ecological interest is the presence of a large colony of green hairstreak butterfly.</p>	County
Morton Wood SSI	Approx. 850 m to the east	<p>Morton Wood is an excellent example of an oak/birch woodland with the upland W16 type on upper slopes and lowland W10 type on deeper soils along the valley sides. Associated with this are diverse streamside flushes and wet woodland communities. The diversity value of the site is increased by the presence of open water and grassland communities.</p> <p>The herb layer is diverse in places and includes some ancient woodland indicators, such as <i>Lamiasstrum galeobdolon</i> and <i>Anemone nemorosa</i>. The presence of less common species such as <i>Melampyrum pratense</i>, <i>Vaccinium vitis-idaea</i> and <i>Carex laevigata</i> adds further rarity value to the site.</p> <p>There is good regeneration of the canopy species and a significant amount of dead wood.</p>	County
Wild Boar Clough SSI	Approx. 850 m to the southeast	<p>Wild Boar Clough shows a good range of plant communities. The site supports a good population of the regionally rare <i>Dactylorhiza ericetorum</i> within a species rich grassland.</p>	County
Yateholme Reservoirs &	Approx. 2 km to the	This site is probably the best example of south Pennine upland	County

Designated Site	Proximity to Application Area	Designated Ecological Features	Value Level
Planation SSI	southwest	habitats for breeding birds outside the extensive South Pennine Moors and Dark Peak SSSI/SPA's. This lies adjacent to the SPA and provides an excellent buffer to the internationally important bird breeding grounds. The site displays a good range of upland habitats including woodlands, grassland, heath, open water, mires and flushes and these, although they support only a typical range of species, help support a regionally important bird assemblage with over 50 regular breeding species. The site supports a variety of upland and woodland bird species. Woodland species known to breed include great spotted woodpecker, long-eared owl, woodcock, chiffchaff, willow tit, crossbill and siskin. Notable breeding species on more open ground include skylark, curlew, snipe, lapwing, dipper, common sandpiper and reed bunting.	
Boshaw Whams Reservoir SWS	Approx. 360 m to the southeast	Detailed information is not available for this site.	District
Malkin House Wood SWS	Approx. 1.75 km to the northwest	Detailed information is not available for this site.	District

4.1.3 In addition to the specific designated sites described in **Table 1**, the boundary of the Peak District National Park begins approximately 1.8 km to the southwest of the study area. The Peak District National Park is a statutory designated area managed by the Peak District National Park Authority. National Park Authorities, under Section 61 of the Environment Act 1995, are charged with two statutory purposes:

1. Conserving and enhancing the natural beauty, wildlife and cultural heritage of the National Park.
2. Promoting opportunities for the understanding and enjoyment of the special qualities of areas by the public.

4.1.4 This statutory requirement effectively supersedes the need for non-statutory wildlife designation within National Parks, as all areas are protected to a similar degree through the policy of the National Park Authority.

- 4.1.5 The study area does not contain any watercourses or hedgerow network that might otherwise provide connectivity with the protected areas within the vicinity, and no designated habitats occur within the study area.

Habitats

- 4.1.6 The study area comprises a group of pasture fields surrounded by dry stone walls within a setting of similar land use. Descriptions of all habitats recorded within the study area are provided below. Target notes (TN) are used to indicate the location of habitat features described in the text (see Figure 1).

Improved Grassland

- 4.1.7 Improved grassland is the predominant habitat within the study area (Figure 1) and was recorded in various forms during the survey. The most abundant vegetation form (TN1; Figure 1) is found in the grazed fields, which are surrounded by intact dry stone walls with some derelict internal dry stone wall boundaries. The grass component here is dominated by perennial rye-grass (*Lolium perenne*), with abundant common bent (*Agrostis capillaris*), frequent cock's-foot (*Dactylis glomerata*) and locally frequent Yorkshire-fog (*Holcus lanatus*). The herb flora is characterised by occasional white clover (*Trifolium repens*), broad-leaved dock (*Rumex obtusifolius*) and creeping buttercup (*Ranunculus repens*), with locally abundant common chickweed (*Stellaria media*).
- 4.1.8 A rank version of the improved grassland in TN1 has developed on the steep slope (over 45°), which falls away to the west and the B6106 (TN2; Figure 1). Cock's-foot is beginning to become dominant in this area. Creeping thistle (*Cirsium arvense*) and broad-leaved dock are also frequent components of this vegetation.
- 4.1.9 An absence of grazing has caused the improved grassland to develop into a rank form on more or less level ground in the southern part of the study area (TN3; Figure 1). Common bent is dominant, with locally dominant cock's-foot and frequent perennial rye-grass. The herb component is similar to that recorded at TN1, although it includes locally abundant rosebay willowherb (*Chamerion angustifolium*) in addition.
- 4.1.10 Improved grassland is a common habitat within the immediate area, and within the UK as a whole. This habitat is also of low botanical diversity, with a low degree of naturalness. The improved grassland within the study area is not considered to be of value to nature conservation outwith its zone of immediate influence.

Occasional Trees

- 4.1.11 The study area also includes occasional elder (*Sambucus nigra*). All examples are small and stunted, although these trees did appear to support a diverse lichen flora.
- 4.1.12 The study area is low in structural diversity, and while elder is a common species these trees contribute to the nature conservation value of the site. However, due to their small size, these trees could be readily replaced and are considered to be of value to nature conservation within the zone of immediate effect only.

Species

Bats

- 4.1.13 A total of 34 records of bats and bat roosts have been supplied by West Yorkshire Ecology for the area within 2.5 km of the study area, with an additional 32 records supplied by West Yorkshire Bat Group. These records are included in Appendix 1. The closest record is a field record of a Daubenton's bat (*Myotis daubentonii*) approximately 1.1 km northwest of the site. Records were returned for roosting and flying bats, and included the species Daubenton's bats, common pipistrelle (*Pipistrellus pipistrellus*), a single Leisler's bat (*Nyctalus leisleri*) record and several records of unidentified bat species. No bat records were returned for the area to the south of the site by any of the three consultees.
- 4.1.14 The site does not support any structures or mature trees that could otherwise include features of potential interest to roosting bats. Therefore roosting bats are not considered to be a receptor in respect of any landtake within the boundary of the study area.
- 4.1.15 The study area and the immediate surrounding area do not include any hedgerows or watercourses which could provide linear features used by bats for navigation and a foraging resource in the form of diverse or abundant invertebrate communities. However, the eastern boundary of the study area comprises a non-adopted road providing access to the housing at the north and south of the study area. The field boundaries on either side of this road are dry stone walls, and whilst this is a linear feature in the landscape, dry stone walls are not typically associated with diverse or abundant invertebrate communities and as such are considered to be of lower value for commuting bats than hedgerows or watercourses. The study area is not considered to be of value to commuting bats outwith the study area.
- 4.1.16 The habitats within the study area are low in botanical and structural diversity, and are considered to be suboptimal as bat foraging habitat as habitats of this type support only a limited diversity or abundance of invertebrates.
- 4.1.17 Due to the low quality of the habitats within the study area, in terms of their potential to provide a foraging resource for bats, the exposed nature of the site and the availability of optimal foraging habitats, such as waterbodies, woodland and streams, within the wider landscape, the study area is considered to be of value to foraging bats within the zone of immediate influence only.

Birds

- 4.1.18 A total of 20 records of birds have been supplied by West Yorkshire Ecology, with a total of 324 records supplied by SBRC. These records are included in Appendix 1.
- 4.1.19 Birds are highly mobile and therefore likely to use habitats within the site from time to time. However, the habitats within the site are common within the immediate vicinity and nationally, and not considered to be important for maintaining the conservation status of any species of bird. The habitats within the study area are considered to be of value to foraging birds within the zone of immediate influence only.
- 4.1.20 The study area does not include any dense vegetation with the potential to be used by nesting birds, and the grassland habitats are in an exposed location

and grazed by cattle and therefor not considered to be suitable for ground nesting birds. Nesting birds are not considered to be a receptor in respect of the scheme.

Badgers

- 4.1.21 Three records of badger have been supplied by the consultees, the closest of which is a record of a badger emerging from a sett approximately 650 m outwith the study area. However, no evidence for the presence of badger was recorded during the extended Phase 1 habitat survey and there are no areas of woodland or scrub within, or immediately adjacent to, the site is considered suitable for supporting a badger sett.
- 4.1.22 The habitats within the study area provide potentially suitable foraging for badger. However, the lack of active setts or other evidence of badger activity suggests that badgers are not currently using the study area as part of a regular foraging route. However the study area supports potentially suitable badger foraging habitat and it cannot be entirely ruled out that badgers may use the study area as part of their wider foraging habitat from time to time, but due to the abundance of suitable habitat in the wider landscape it is considered to be of value to foraging badger within the zone of immediate influence only.

Amphibians

- 4.1.23 No records of amphibian species have been supplied by the consultees. However, there are three waterbodies within 500 m of the study area, therefore great crested newt have been considered. Two of these waterbodies (TN4 and TN6; Figure 1) are either unsuitable for supporting great crested newt or are separated from the study area by a significant barrier to dispersal, as described in the methodology section above. The third waterbody (TN5; Figure 1) is located approximately 85 m east of the study area and has therefore been assessed using the Habitat Suitability Index, the results of which are provided in **Table 2** below.

Table 2: Results of the Habitat Suitability Index calculation.

Pond ID	Suitability Indices										Final HSI Score	Suitability for supporting GCN
	Location	Area (sq m)	Pond Permanence	Water Quality	Shade (%)	Waterfowl	Fish	Pond Density	Terrestrial Habitat Quality	Macrophyte Cover		
TN 5	1.00	1.00	0.90	0.67	1.00	0.67	0.67	1.00	0.67	0.30	0.75	Good

- 4.1.24 The results of the HSI calculation indicate that the waterbody to the north of the study area could be suitable for supporting great crested newts. It should be noted that the HSI describes the suitability of a pond for supporting great crested newts, and not the likelihood that great crested newts are present within the vicinity.

- 4.1.25 As the boundaries of the study area are delineated by dry stone walls, which could potentially be suitable for use by hibernating great crested newts, it

cannot be entirely ruled out the great crested newts are present within the study area.

- 4.1.26 Due to the dominance of intensively managed grassland habitats within and adjacent to the site, the study area and immediate vicinity is considered to be suboptimal as terrestrial habitat for great crested newts. The study area is considered to be of value to great crested newts within the zone of immediate influence only, should they be present.

Other Protected and Key Species

- 4.1.27 Recent records have also been supplied for common lizard (*Zootoca vivipara*) as well as several records of notable moths, butterflies and beetles.
- 4.1.28 The habitats on site are not considered suitable for supporting reptiles, as they lack the dense vegetation and a mosaic of habitat types that reptiles require within their range. Reptiles are therefore not considered to be receptors in respect of the scheme, and are not considered further in this assessment.
- 4.1.29 The habitats on site are predominantly improved grassland, which is a habitat of low botanical diversity and not suitable for supporting diverse invertebrate assemblages. The habitats within the study area are considered to be of value for invertebrates within the zone of immediate influence only.

5. Assessment and Mitigation

- 5.1.1 This Section of the report aims to assess the impacts that will result from implementation of the proposed scheme (within the application area) to the baseline condition described above.
- 5.1.2 The following impacts relate to the construction and operational phases of the proposed wind turbine. It is assumed that the impacts in relation to decommissioning will be similar to those during construction, but in reverse. It is recommended that prior to decommissioning being undertaken the site is reviewed by an ecologist and any appropriate mitigation put in place to safeguard the ecological interests of the site in accordance with the legislation and policy at the time of works.

Designated Sites

- 5.1.3 There are a relatively large number of sites designated for their nature conservation value within 2.5 km of the site. The designated sites include those designated at international, national, county and district and levels. A description of these sites is included in **Table 1** above.
- 5.1.4 The wildlife sites are designated for a range of habitats, together with the species they support. None of the designated habitats exist within the application area, and the habitats within the application area are not considered to be suitable for supporting those species included within the citations. Landtake resulting from the proposed development is not anticipated to result in a reduction of the local resource of the designated habitats, or to impact on the viability of the species populations for which the designations are made.
- 5.1.5 The application area does not include any watercourses or other habitats connecting to the designated sites. No other mechanism by which the designated habitats could be impacted by the proposed development has been identified.

Habitats

Improved Grassland

- 5.1.6 Improved grassland is a common habitat within the vicinity of the site and at a national scale. This type of grassland, including the example within the study area, is composed of a limited number of common plant species.
- 5.1.7 The proposed scheme will require permanent landtake to install the new turbine and crane hard standing, and temporary landtake to install the access track. Modification of the existing dry stone wall at the eastern boundary of the site, to include a new site entrance and gateway, will also be required.
- 5.1.8 The total extent of landtake will be limited when compared to its extent within the study area, the local area and nationally. The temporary access track will be constructed then re-turfed following construction and the improved grassland is expected to recover to its original condition within one or two growing seasons.
- 5.1.9 Impacts to improved grassland resulting from the proposed scheme are not considered to be significant outwith the zone of immediate effect.

Occasional Trees

- 5.1.10 A small number of elder trees were recorded during survey. None of these trees will be lost under the proposals, therefore no impacts to individual trees are anticipated.

Species

Bats

- 5.1.11 The habitats within the study area are low in structural and botanical diversity and therefore of limited value for foraging bats. As the study area is considered to be of low value in respect of its importance as a foraging resource for bats, any impacts resulting from landtake are not considered to be significant outwith the zone of immediate effect.
- 5.1.12 Impacts to bats arising during the operational phase, through collision or barotrauma, are identified as the only possible remaining source of impacts.
- 5.1.13 Due to the low bat foraging potential of the habitats and the exposed location of the site,, it is considered unlikely that the site is of importance to foraging bats. Aerial photography has been used to examine the potential for bats to use the track at the east of the site as a commuting route between roosting and foraging areas in the wider landscape.
- 5.1.14 It is not anticipated that roosting bats are present within the study area as there are no structures or mature trees within the site, and the site does not have the potential to support roosting bats. All known bat roost sites identified through the desk study are located to the north of the site, and the habitats with the greatest potential for bat foraging, within approximately 2.5 km of the site, are the wooded valleys of the River Ribble and Dean Dike to the west and east of the site respectively.
- 5.1.15 An examination of the location of linear features, in relation to the known bat roosts and high value bat foraging habitats, did not reveal any obvious bat commuting routes that incorporate any of the field boundaries within the study area. It is therefore considered unlikely that bats will pass over or immediately adjacent to the study area while commuting.
- 5.1.16 However it is not possible to state that no bat will ever be harmed by operation of the wind turbine, but due to the low potential of the site to be used by bats, as described above, the risk of bat collisions occurring as a result of erection of the single turbine is considered to be low.
- 5.1.17 It should be appreciated that almost any structure may be used by an individual or transient bat from time to time, as bats require very limited cavity space and only very small roost entry gaps and can be found in any structure which provides close shelter. Should a bat be discovered or suspected at any time works should cease in that area and a licenced bat ecologist contacted.

Birds

- 5.1.18 Due to the small size of the scheme, and in particular the limited swept area of the single proposed turbine (a turbine of maximum diameter 34 m and maximum tip height of 46 m) the potential for direct impact to birds is considered to be low.
- 5.1.19 Due to the common nature of the habitats recorded on site and their abundance

within the immediate vicinity, any displacement of individual birds caused by construction of the new turbine is considered unlikely to be significant outwith the zone of immediate effect. The site currently supports a wind turbine which will be removed and replaced. Therefore operation of the new turbine is considered unlikely to result in any additional displacement of individual birds.

5.1.20 As the site currently includes a similar sized turbine any additional impacts resulting from operation of the proposed scheme are considered to be negligible.

5.1.21 In the unlikely event that the scattered elder trees require removal potential conflict with breeding birds can be avoided by undertaking any vegetation clearance works outside the bird breeding season, which runs from March to August inclusive. Should this not be possible a pre-work nesting bird check should be undertaken on vegetation to be affected by an ecologist. Should active nests be found, works should cease in the immediate area to avoid disturbance and no works should be undertaken until young have fledged. The nest should be monitored by an ecologist to establish when the young have fledged.

Badger

5.1.22 Badgers are a widespread and active species and have been recorded in the wider area. As such any trenches should be left open over night with a means of escape (e.g. scaffold plank) to ensure badgers do not become trapped. If a mammal hole is discovered within 30 m of works then works in this area should cease and a suitably experienced ecologist should be contacted for further advice.

Amphibians

5.1.23 The proposed scheme will result in some permanent and some temporary loss of habitat and demolition of a section of dry stone wall. However, all of these works will occur over 250 m from the nearest pond considered to be suitable for supporting great crested newts and as such impacts to great crested newts, should they be present, are not anticipated to occur.

5.1.24 In the unlikely event a newt is found works should stop and an experienced licensed ecologist contacted. Should the scheme require damage of any dry stone wall within 250 m of the pond to the east of the site (TN5; Figure 1) then, prior to works commencing, an experienced ecologist should be contacted and appropriate mitigation put in place to safeguard this species.

Other Protected and Key Species

5.1.25 Any landtake of any habitat is likely to impact on the invertebrate community within the footprint of works. However, the landtake associated with the proposed scheme is of a low diversity habitat, which is of limited value for supporting invertebrate assemblages. Part of this landtake will be temporary and following removal of the access track invertebrate communities are expected to readily recolonise the affected habitats.

5.1.26 Impacts to the invertebrate communities resulting from the scheme are not considered to be significant outwith the zone of immediate effect.

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