

Scout Bridge Farm, Penistone

Ecological Appraisal

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1 Introduction and Background

This report presents the results of an ecological appraisal of an agricultural land parcel near Scout Bridge Farm, Halifax Road, Penistone, South Yorkshire. The appraisal was commissioned in relation to the proposal installation and operation of a single Endurance 50kW wind turbine with 19 metres diameter blades on a 25 metres monopole mast.

The turbine is proposed to be sited within an arable field at grid reference SE 23987 04789. Pasture and arable land dominates the immediate and wider area. Scout Dike Reservoir is located 450 metres to the west of the proposed turbine placement.

The site survey was conducted on 2nd November 2012 by Ryan Knight AIEEM of Quants Environmental. A desk-based study was also undertaken to obtain existing ecological information on the site and the surrounding area. This report was completed to support planning decisions in relation to the development.

Figure 1: Proposed location for the Endurance 50kW turbine



2 Survey Methodology

2.0 *Desk study*

A full ecological data search was commissioned from Barnsley Biological Records Centre (BBRC) in order to identify any existing records of protected / notable species and protected sites within 1.5 km of the site.

As part of the study, Geoff Carr of Barnsley Bird Study Group (BBSG) was contacted with regard to the identification of bird interests within the area.

Aerial photography and Ordnance Survey mapping were analysed in order to identify any notable habitat features within relevant proximity to the proposed turbine.

2.1 *Field survey*

An extended phase 1 habitat survey of the site was undertaken on 2nd November 2012 by Ryan Knight AIEEM of Quants Environmental (Natural England great crested newt & bat licensee – CV available on request) in accordance with the standard methodology¹. The site was searched for evidence of protected/notable species and the habitats present were assessed in terms of their potential to support protected/notable species. The survey was undertaken outside of the optimum season for phase 1 habitat survey (May to September). Nonetheless, during the survey it was possible to identify a significant proportion of plant species to provide an accurate representation of the habitats present. The weather conditions at the time of the survey were dry, moderate breeze (Beaufort Scale – 2/3) and 5°C with good visibility.

¹ JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7.¹

3 Survey Results

3.0 Desk study

Barnsley Biological Records Centre (BBRC)

There are no internationally or nationally designated sites within 5km of the site.

The following four non-statutory Natural Heritage Sites (NHS) / Local Nature Reserves (LNR) / Local Wildlife Sites (LWS) have been identified within 1.5 km of the site:

- Scout Dike Reservoir is located approximately 450 metres to the west of the proposed turbine.
- Royd Moor Reservoir is located approximately 1.4km to the west of the proposed turbine.
- Gunthwaite Dam and Clough Wood is located approximately 1.3km to the north of the proposed turbine.
- Daking Brook is located approximately 1.4km to the north of the proposed turbine.

Species Records

The ecological data records provided by BBRC could not be fully transposed within this report and are available on request. The key records are summarised as follows:

- Water vole approximately 400m south-east.
- White-clawed crayfish approximately 1.4km north.
- Common pipistrelle approximately 760m south, noctule, Daubenton's and Chiroptera bats approx. 1.3km south-west, whiskered and Brandt's bat approx. 1.3km south-east and soprano and brown long-eared bats approx. 1.3km north.
- Numerous records of badger with the closest being approx. 800m north.
- BBRC holds numerous bird records within the 1.5km radius of the site. UK BAP priority species birds lapwing approx. 200m south-west of the site; common scoter, yellowhammer, reed bunting, skylark and linnet approximately 400m west of the site; curlew approximately 800m south-west and north-west from the site; and twite, lesser spotted woodpecker, red grouse, corn bunting, bullfinch, starling, song thrush, grass warbler, tree sparrow, grey partridge, wood warbler, turtle dove, ring ouzel, yellow wagtail, cuckoo, spotted flycatcher and house sparrow >800m from the site. Additional notable records also include merlin, little ringed plover, pink footed geese and short eared owl.
- There are numerous records of hedgehog and brown hare, the closest record for hedgehog being 500m east of the site and brown hare 470m south.

Barnsley Bird Study Group (BBSG)

Geoff Carr (BBSG) stated that the nearby Scout Dike Reservoir (located approximately 450 metres west of the proposed turbine) has limited bird interest and that the bird interest on this reservoir has declined in recent years since it has become popular with anglers. Mr Carr stated that the reservoir supports mallard, gadwall, Canada goose and possible teal. Reed bunting, yellowhammer and possibly grasshopper warbler occur in the area (all are UK Biodiversity Action Plan priority species). Little owl and dipper are also known from the area. Mr Carr also stated that skylark, curlew and snipe are all likely to occur in the general area.

3.1 *Field survey*

Habitats

Arable / semi-improved

The turbine is proposed to be sited on the eastern fringe of an arable field; adjacent to the stonewall field boundary. The field comprised a cereal crop stubble at the time of survey; however, much of the field was interspersed with semi-improved Yorkshire fog *Holcus lanatus* / rough meadow *Poa trivialis* dominated grassland with an occasional covering of forbs including creeping buttercup *Ranunculus repens*, ribwort plantain *Plantago lanceolata*, greater plantain *Plantago major*, chickweed *Stellaria media*, creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare* and rushes including toad rush *Juncus bufonius* agg and soft rush *Juncus effusus*. The species present indicate prolonged damp field conditions. The field boundaries comprise dry stone walls and timber / wire fences.

The fields surrounding the site comprised grazed and improved perennial rye grass *Lolium perenne* dominated grassland.

Woodland

A semi-mature (< 30 years) broadleaved plantation woodland that is situated within an outdoor education centre is located approximately 250 metres to the west of the proposed turbine location. The plantation includes pedunculate oak *Quercus robur*, silver birch *Betula pendula* and sycamore *Acer pseudoplatanus*.

Waterbodies

A pond measuring approximately 10 x 5 metres is located 250 metres from the turbine location (see great crested newt section below).

Fauna

Bats

The location of the proposed turbine and surrounding land use is dominated by exposed arable / pastoral land with stonewall and timber / wire fenced boundaries; habitats considered of low value to bats. The nearest typical foraging feature i.e., plantation woodland is located 250 metres from the proposed turbine location. Stonewalls can provide acoustic markers for bats when commuting, however, the proposed turbine does not appear to be on a flyway between bat feeding/roosting areas. In accordance with Natural England guidance² buffer zones of at least 50 metres between the proposed turbine blade tips and any typical habitats likely to be used by bats is achieved.

Birds

Birds noted within the field during survey include skylark (x4), chaffinch (x20), yellowhammer (x2), mallard (x 35) and lapwing (x2). Additional bird observations include wood pigeon, black headed gull, carrion crow and blue tit. Skylark, lapwing and yellow hammer are all UK Biodiversity Action Plan (UK BAP) priority bird species³ and included on the red list of birds of conservation concern (BoCC)⁴.

The arable field in which the turbine will be positioned is considered to be suitable for ground nesting birds such as meadow pipit, skylark and possibly lapwing. The prevalence of ground

² Natural England Technical Information Note TIN051, Bats and onshore wind turbines Interim guidance. First edition 11 February 2009.

³ UK Biodiversity Action Plan (UKBAP) priority bird species status based on: <http://jncc.defra.gov.uk/page-5163>

⁴ Eaton MA, Brown AF, Noble DG, Musgrove AJ, Hearn R, Aebischer NJ, Gibbons DW, Evans A and Gregory RD (2009) Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man. British Birds 102, pp296–341.

nesting birds is highly dependent on the field cultivation regime, particularly with regards to timing and the field conditions within the breeding season (March to August).

Declining bird populations sensitive to the effects of wind turbines such as curlew are expected to use the more favourable habitats such as open moorland and less-disturbed open fields of tussock-forming, rough grassland located in the wider area for breeding. However, curlew may occasionally use the site for passage and or feeding. Given the high amount of wildfowl droppings noted, birds such as Canada and greylag are also using the field for feeding.

Great crested newts

A pond is located in the far north-west corner of the turbine field site; approximately 250 metres from the turbine location (see Photo 6 – Appendix 2). The pond may be suitable in supporting breeding great crested newt populations.

Other protected / notable species

No evidence of badger was observed on the site and the proposed turbine location and cabling route are assessed as being unsuitable for badger sett excavation, i.e. absence of wooded areas and suitable sett excavation areas. The likelihood of reptiles within the immediate area of the proposals is low due to the nature of the habitats.

The area of the proposed turbines could potentially be used by brown hares and hedgehog both of which are UK BAP priority species. No further protected / notable species are considered likely to be affected by the proposed turbine.

4 Evaluation and Recommendations

4.0 Habitats

The turbine is proposed to be located within an arable field containing a mixed mosaic of typical plant species of arable / damp neutral grassland conditions. The habitats are considered to be of low ecological value e.g., not classified as local or UK biodiversity Action Plan habitats.

4.1 Bats

The turbine is proposed to be sited in a location considered to be sub-optimal for use by foraging / commuting bats. Standard guidance in relation to wind turbines in England is to provide a buffer zone of at least 50 metres between turbine blade-tip and the nearest feature likely to be used by bats e.g. a hedgerow, tree-line or built structure. In accordance with the guidance, a minimum distance significantly in excess of 50 metres has been maintained and no significant impacts on bats are predicted and no further surveys with regards to bats are recommended.

4.2 Birds

The construction and operation of wind turbines on a site can directly cause displacement, disturbance and collision impacts for particular bird groups i.e., raptors, waterfowl and waders. Recent research suggests that smaller passerine bird species such as skylark are not significantly impacted from wind farm construction and operation.^{5,6}

It is acknowledged published research relates primarily to multiple wind turbines of greater dimensions and power output and that there is currently no widely followed impact prediction guidelines / data from single medium turbine developments. However, the negative effects i.e., displacement and/or disturbance of breeding, feeding or roosting activity etc. are expected to be lower for a single turbine of 50kW output; not taking into account cumulative impacts.

Open ground nesting bird species such as skylark, meadow pipit and lapwing could potentially nest in the field of the proposed turbine and cabling route. Birds sensitive to the effects of wind turbines i.e., curlew may use the site on an occasional basis for passage and/or feeding given the habitats noted within the field at the time of survey.

Information from BBSG suggests that whilst wildfowl associated with Scout Dike Reservoir may use the site on an occasional basis, the area is not likely to be of significant value in terms of notable wildfowl populations. The turbine is not likely to significantly impact migrating populations of geese within the area given the typical flight heights and dimensions of the turbine.

Recommendations

It is recommended to undertake turbine installation works outside the breeding bird survey season of March to August. If this is not possible, the construction / impact area of the proposed turbine and cabling route should be checked for nesting birds by a suitably qualified ornithologist immediately prior to commencement of any ground works during March to August inclusive. If active nests are found to be present in the development area, these should be left undisturbed in situ until the nests are no longer active.

A Habitat Management Plan is recommended in order to apply methods of field cultivation which will sensitively manage the arable land for the benefits to ground nesting and over wintering bird species.

⁵ Pearce-Higgins, J.W., Stephen, L., Douse, A., Langston, R.H.W. (2012) Greater impacts of wind farms on bird populations during construction than subsequent operation: results of a multi-site and multi-species analysis. *Journal of Applied Ecology*, **49**, 386–394, April 2012.

⁶ Pearce-Higgins, J.W., Stephen, L., Langston, R.H.W., Bainbridge, I.P. & Bullman, R. (2009) The distribution of breeding birds around upland wind farms. *Journal of Applied Ecology*, **46**, 1323–1331.

4.3 *Great crested newts*

A pond suitable to support great crested newt populations is located 250 metres north-west from the proposed location of the turbine. The cable route is proposed to extend southwards; the intervening land use between the two areas is intensively managed and considered to be sub-optimal for great crested newt foraging or refuge habitat. BBRC does not hold any records of great crested newts within the area. Impacts from the installation of a single small turbine i.e., non-permanent access route, small cable trench, small turbine footprint etc., are considered to be relatively low. Therefore, given the distance between the development and the pond, the intervening habitats and the relatively low impact installation / construction footprint, no further survey works (presence / absence surveys) for great crested newts are considered necessary. It is advised however to maintain the 250 metres buffer zone between the pond and any development activity.

4.4 *Other fauna*

No significant impacts on other protected/notable species such as, badger, reptiles, hedgehog or brown hare are predicted.

Appendix 1: Legislation Context

Bats

All British bat species are fully protected through The Conservation of Habitats and Species Regulations 2010 as a European Protected Species (EPS). They also receive some protection through inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Under the legislation, it is an offence to deliberately capture, injure or kill a bat. It is an offence to damage or destroy a breeding site or resting place of a bat. It is also an offence to intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection; or obstruct access to any structure or place which it uses for that purpose.

It is also an offence to deliberately disturb a bat; in particular any disturbance which is likely (a) to impair their ability - (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or (b) to affect significantly the local distribution or abundance of the species to which they belong.

The 'appropriate authority' (Natural England in England) has powers to issue licences for various purposes including - (a) scientific or educational purposes... and (e) preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment. The appropriate authority shall not grant a licence under this regulation unless they are satisfied - (a) that there is no satisfactory alternative, and (b) that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range. It is an offence for any person authorised by virtue of a licence to which this paragraph applies to contravene or fail to comply with any condition which the licence requires him to comply with.

Several species of bat including brown long-eared and soprano pipistrelle *Pipistrellus pygmaeus* are identified as UK Biodiversity Action Plan (BAP) priority species.

Nesting birds

All wild birds in the UK are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Bird species listed in Schedule 1 of the 1981 Act, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

Great crested newt

Great crested newt is fully protected through The Conservation of Habitats and Species Regulations 2010 as a European Protected Species (EPS). This species also receives some protection through inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Under the legislation, it is an offence to deliberately capture, injure or kill a great crested newt. It is an offence to damage or destroy a breeding site or resting place of a great crested newt. It is also an offence to intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for shelter or protection; or obstruct access to any structure or place which it uses for that purpose.

It is also an offence to deliberately disturb a great crested newt; in particular any disturbance which is likely (a) to impair their ability - (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or (b) to affect significantly the local distribution or abundance of the species to which they belong.

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Appendix 2: Photographs

Photo 1: View west from the proposed turbine location



Photo 2: View south from the proposed turbine location



Photo 3: View north from the proposed turbine location



Photo 4: View east from the proposed turbine location



Photo 5: View of immediate habitat in turbine location (turbine position marked by pole)



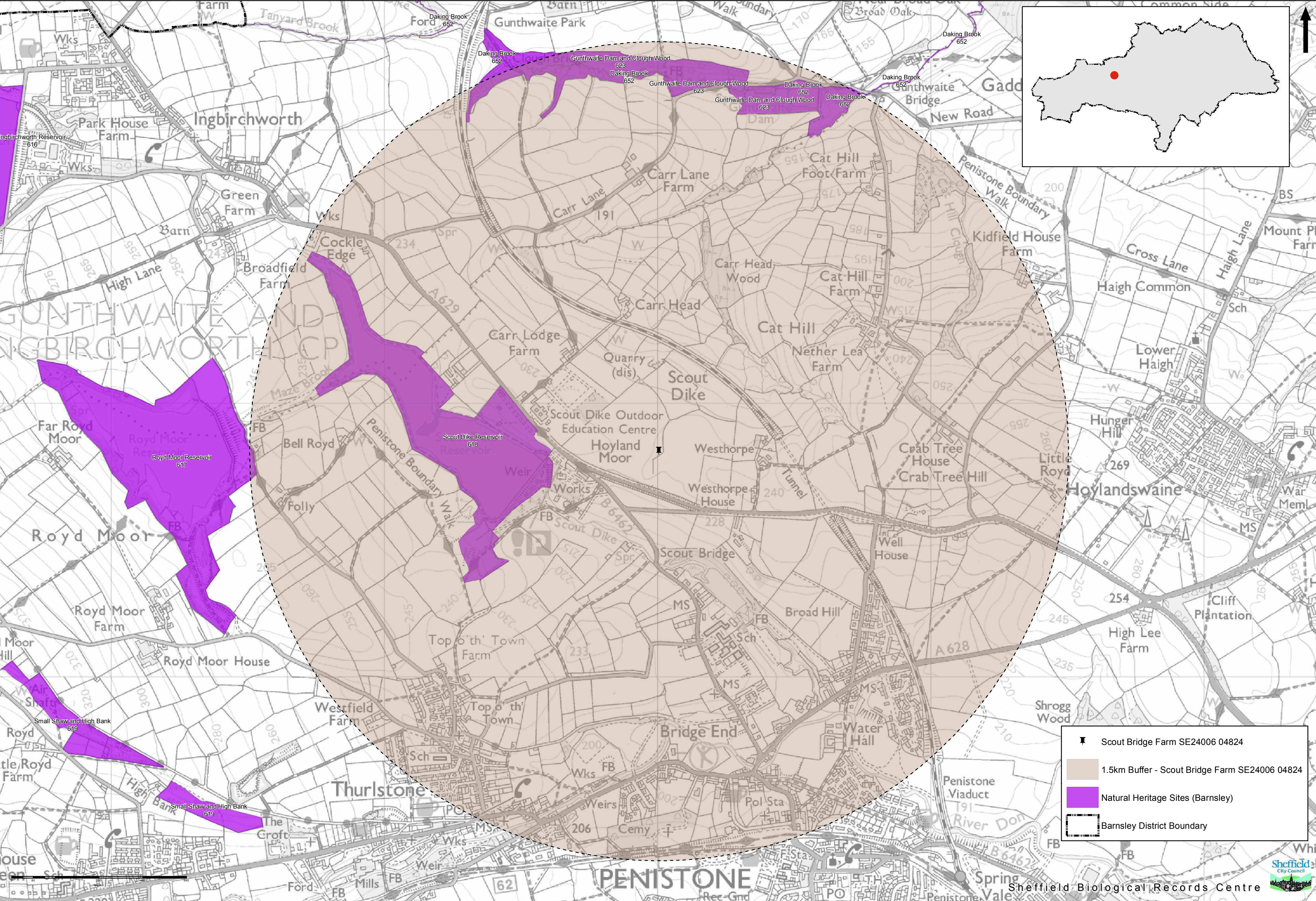
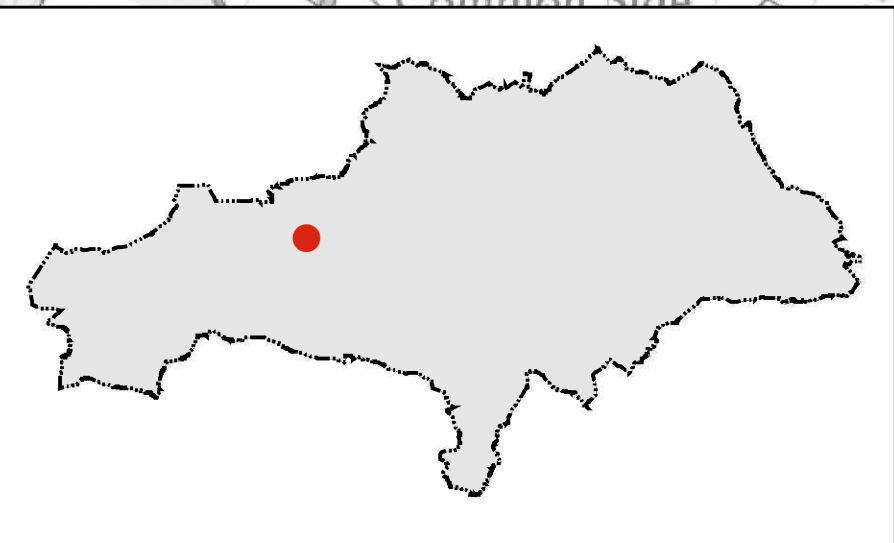
Photo 6: Pond located in north-west corner of field



Photo 7: Existing utilities development on western boundary of the turbine field



Appendix 3: Map of local designated provided by BBRC



 Scout Bridge Farm SE24006 04824

 1.5km Buffer - Scout Bridge Farm SE24006 04824

 Natural Heritage Sites (Barnsley)

 Barnsley District Boundary

