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Preliminary Ecological Appraisal

New Hall Farm,

Wakefield, West Yorkshire

October 2022

A report by

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Report details

Site address:	New Hall Farm, New Hall Lane, Overton, Wakefield, West Yorks WF4 4RP
Grid reference:	SE 259 161
Survey date:	17th October 2022
Report date:	11th November 2022
Report author:	James Gilroy BSc (Hons), MSc
Report reviewer:	Colin Hicks BSc (Hons), MCIEEM

Report no: WOR-3191

Declaration of compliance

BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of practice for planning and development.

Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Validity of survey data and report

The findings of this report are valid for 12 months from the date of survey. If work has not commenced within this period, an updated survey by a suitably qualified ecologist will be required.

Revisions

Date	Report no:	Approved by:	Comment
11/11/2022	WOR-3191	CDH	Initial report
30/11/2022	WOR-3191.1	CDH	Updated with final layout

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Non-technical summary

Western Ecology has been commissioned to complete a preliminary ecological appraisal of an area of agricultural land that forms part of New Hall Farm, located to the south of the village of Overton, near Wakefield in Yorkshire. A solar farm with associated infrastructure is proposed.

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to habitats:

Native hedgerows and semi-natural broadleaved woodland

All hedgerows and woodland habitat should be protected from accidental damage during the construction phase by a suitable buffer zone. This protection zone should be delineated by a suitable fence and maintained for the duration of the works, and there should be no access, storage of materials, ground disturbance, burning or contamination within the fenced areas. These buffers should be retained and remain undeveloped for the operational period of the development.

If any hedgerow removal is required, mitigation should involve the replanting of at least an equal extent of hedgerow using a native species mix.

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to Species:

Amphibians

There is potential for Great Crested Newt to be utilise terrestrial habitats associated with the Site and construction activities have potential to impact individual GCN.

The Site lies within an area covered by a Natural England-led district level licensing scheme, and it is recommended that this development should join the Yorkshire DLL scheme in order to mitigate against the temporary impacts associated with the construction phase.

Badgers and other mammals

There is potential that Badgers, Hedgehogs and Brown Hare may become trapped within the construction site during the development phase, while any permanent security fencing may also prevent animals from dispersing through the Site. Simple mitigation to allow movement through the Site and to provide excavations with a means of escape is recommended.

Birds

The footprint of the proposed development largely concerns the arable compartments, which have some very limited potential for ground nesting species such as Skylark. To prevent the risk of damaging or destroying any potentially active nests within the field compartments, all construction activities should be initially planned to avoid the breeding season (March to August, inclusive). If this is not possible and works will take place during the accepted nesting season, ground nesting bird surveys should be completed prior to any construction activities within these areas. A nesting bird check should also be undertaken ahead of any works

likely to impact other nesting habitats such as hedgerows, stone walls and scrub/woodland during the nesting period. Further details are contained within Section 5.3 – Birds.

Reptiles

Hedgerows, scrub and woodland habitats provide some low potential for reptiles. Sympathetic site clearance involving RAMS should also be implemented to avoid killing or injuring individual reptiles. Further details are contained within Section 5.3 – Reptiles.

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to Non-statutory Nature Conservation Sites:

It is recommended that a Construction Environmental Management Plan (CEMP) should be produced prior to, and adopted during, the construction phase of the development. Adoption of this CEMP will ensure that this development is unlikely to impact the interest features for which Stony Cliffe Wood LWS and Wakefield Wildlife Habitat Network been selected.

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to Statutory Nature Conservation Sites:

Adoption of the CEMP detailed above will ensure that this development will not result in any adverse impacts to the GCN breeding population and terrestrial/aquatic habitats for which this Denby Grange Colliery Ponds SSSI/SAC has been selected.

There is also requirement for planning authority to consult Natural England on the potential impact on this SSSI/SAC.

Further survey work

No other survey work is recommended for this site

1. Introduction

Western Ecology has been commissioned to complete a preliminary ecological appraisal of an area of agricultural land that forms part of New Hall Farm, located to the south of the village of Overton, near Wakefield in Yorkshire. A solar farm with associated infrastructure is proposed.

1.1. Survey aims

The survey and this report identify features of conservation importance that could constitute a constraint to the proposals for this site. Where appropriate, recommendations for impact avoidance, mitigation and post-development enhancement are made to ensure compliance with wildlife legislation and relevant planning policy.

This survey has been prepared in accordance with the 'Guidelines for Preliminary Ecological Appraisal' produced by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017).

1.2. Site location

The development footprint concerns four field compartments located within agricultural land approximately 700m to the south of the village of Overton, and approximately 7.8km to the southwest of the town of Wakefield.

The site is located within a rural area with immediate surroundings predominantly comprised of agricultural land interspersed with tracts of woodland. Residential areas associated with the village of Overton extend beyond the site to the north and north-west, while the site is bounded to the west by a minor road.

2. Survey methodology

2.1. Desktop survey

A desktop survey collated existing biological records for the site and adjacent areas and identified any nature conservation sites that may be affected by the proposals. This comprises an important part of the assessment process, providing information on ecological issues that may not be apparent during the site survey.

Consultees for the data search included:

- West Yorkshire Ecology Service provided biological records for protected/notable species and non-statutory sites within 2km of the site.
- Natural England - GIS dataset of SSSI Impact Risk Zones, statutory nature conservation sites, priority habitats and granted European Protected Species license applications.
- Wakefield Council – Local Plan interactive map – locations of ancient woodland

Species data was examined for protected and notable species records. An assessment was then made, based on known habitat preferences, as to whether these species might be present within the site and how they might be affected by the proposal.

The location of nature conservation sites was examined to determine their ecological and landscape relationships with the proposed site. An assessment was then made of how the sites may be affected by the proposal, taking into account these relationships, and the species and/or habitat types for which the nature conservation site was chosen.

SSSI Impact Risk Zones are areas where the change to the environment could either create significant damage to a local SSSI, or might require additional planning and consultation in order to avoid impacting such sites. The assessments are made according to the particular sensitivities of the features for which the SSSI is notified, and specifies the types of development that have the potential for adverse impacts.

In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided within this report.

2.2. Field survey

A Preliminary Ecological Appraisal of the site was completed by James Gilroy BSc (Hons), MSc.

The survey was undertaken on 17th October 2022 between 15:00 and 18:30, with sunny, dry and blustery conditions, an air temperature of 17°C and <10% cloud.

Habitats were classified using the Phase 1 Habitat Survey methodology developed by the Joint Nature Conservation Committee (JNCC, 2010) and modified by the Institute of Environmental Assessment (IEA, 1995). The main plant species were recorded and broad habitat types mapped. Habitats encountered are described within the Results section, with a map included within this report. Plant species were identified according to Stace (1997).

All accessible waterbodies within the site were evaluated for their potential to support Great Crested Newt by calculating a habitat suitability index (HSI) as per ARG UK Advice Note 5.

2.3. Method for valuation of habitats

The ecological value of habitats present is provided in line with Guidelines for Ecological Impact Assessment (CIEEM, 2016), and those which are important in terms of legislation or policy are identified.

The nature conservation value, or potential value, of the habitat is determined within the following geographic context:

- International importance (e.g. internationally designated sites such as Special Areas of Conservation, Special Protection Areas, Ramsar sites);
- National importance (e.g. nationally designated sites such as Sites of Special Scientific Interest or species populations of importance in the UK context);
- County importance (e.g. SNCI, habitats and species populations of importance in the context of Yorkshire);
- Local importance (e.g. important ecological features such as old hedges, woodlands, ponds);
- Site importance (e.g. habitat mosaic of grassland and scrub which may support a diversity of common wildlife species);
- Negligible importance. Usually applied to areas such as built development or areas of intensive agricultural land.

The examples are not exclusive and are subject to further professional ecological judgment.

2.4. Survey constraints

All areas of the site were readily accessible. Although some plant species would have not been visible during the survey period, within a site comprising common and widespread habitat types, the timing of this survey is not a significant constraint to a robust initial site assessment.

It should be noted that habitats, and the species they may support, change over time due to natural processes and because of human influence. In line with current guidelines, the survey on which this report is based is valid for two years, after which time it will need updating. This report is valid until 17th October 2024.

2.5. Study area

The study area for the desktop survey is within 2km. The study area for the Preliminary Ecological Appraisal was the footprint of the proposed development, hereafter referred to as the ‘Site’, and its immediate boundaries. This is the area included within the line described as “Survey area” within the legend of Map 1.

3. Results

3.1. Site description

The Site concerns four large field compartments under arable rotation. Discrete islands of secondary broadleaved woodland or scrub were present in the interiors of most fields. Field boundaries comprised a mixture of native hedgerows, stone walls and woodland edge. An access track runs through the centre of the site and along the northern boundary, while public rights of way are associated with some internal and external hedgerow boundaries.

3.2. Phase 1 habitats

Habitats have been classified using the Phase 1 Habitat Survey methodology, and are described below and detailed in Map 1. Habitats which are important in terms of legislation or policy are identified. Plant species that characterise each of these habitats are identified, although this is for descriptive purposes, and comprehensive inventory is not provided.

Habitat photos are contained in Appendix 2.

Table 1: Habitat description, biodiversity value and extent.

Habitat	Description	Biodiversity value
Bare ground	A large area of bare compacted ground was present within one of the fields. This area also contained a large tip of waste material which supported occasional ruderal herbs such as common nettle. Access tracks of unsealed bare ground run through the centre of the site, and along the northern boundary.	Negligible
Arable	Arable habitats occupied the field compartments and comprised either monoculture crops of sugar beet or had been recently ploughed in preparation for autumn/winter sowing. The arable habitat extended to the boundaries and lacked field margins. Two plots of winter bird seed were associated with the south-eastern field, and contained a variety of seed-bearing herbs such as thistle spp., bristly oxtongue, barley, mustard spp.	Site
Species poor semi-improved grassland	Small, discrete areas of species poor grassland were associated with an overgrown compound and occasional field edges around the Site. Species generally included cock's-foot, false-oat grass, perennial rye-grass. Herbs such as common bistort, redshank, creeping buttercup and hairy bittercress were present within the areas at field edges. The compound area contained a more ruderal mix of herbs, such as broad-leaved dock, hogweed, rosebay willowherb, thistle spp., common nettle and bramble. Himalayan balsam was also frequent in the compound area.	Negligible
Tall ruderal	An area supporting dense tall ruderal vegetation was also associated with the overgrown compound. This habitat was dominated by common nettle, with other species including hogweed, rosebay willowherb and bramble.	Site
Mixed scrub	Mixed scrub generally occurred through the site as fragmented areas generally associated with mounds within fields and at boundaries. Species included native shrubs such as elder, hawthorn, blackthorn, crack willow, silver birch and occasional young trees such as English oak and sycamore. Ground flora varied from dense bramble/common nettle to sparse a cover of	Site

	grasses and herbs such as cock's-foot, creeping bent, false-oat grass, rosebay willowherb, burdock, bracken	
Semi-natural broadleaved woodland	Small discrete areas of woodland were present within field compartments. The woodland generally featured an open canopy and lacked age diversity, containing predominantly mature trees and shrubs of English oak, common ash, silver birch, sycamore, elder and hawthorn. Non-native species were occasionally present and included leylandii and laurel sp. Ground flora consisted of rank grasses and ruderals usually associated with high nutrient inputs, such as cock's-foot, bramble and common nettle. A large pheasant rearing enclosure was located within an area of woodland at a field corner.	Local: this habitat qualifies as a Habitat of Principal Important (JNCC & Defra, 2012) and as a Local Biodiversity Action Plan priority habitat.
Stone wall	Stone walls provided some of the field boundaries. Some sections of walls were in poor repair and featured gaps. Scattered shrubs and occasional trees were associated with some of the walls, consisting of mainly hawthorn, elder, sycamore and common ash. The wall structures were themselves mostly unvegetated although featured narrow margins of rank grasses and ruderals including false oat-grass, barren brome, cock's-foot, hogweed, common nettle, bramble and bracken.	Site
Earth bank	A sparsely vegetated earth bank provided a boundary to a field in the north of the Site. Vegetation along the bank had been recently cut back, but included bracken, bramble, cock's-foot, false oat-grass and occasional individual shrubs of hawthorn. A single common ash tree was also situated on the bank.	Site
Native hedgerow	Hedgerows containing mostly shrubs provided some of the field boundaries. Species largely comprised hawthorn, blackthorn, elder and hazel. Ground flora comprised common grasses, bramble and bracken. Most of these hedgerows were lightly managed, with only occasional hedgerows experiencing close management. Large gaps were also associated with some of the internal hedgerow boundaries. Most of the hedgerows featured narrow margins (~1m) of rough grasses and herbs.	Local: this habitat qualifies as a Habitat of Principal Important (JNCC & Defra, 2012) and as a Local Biodiversity Action Plan priority habitat.
Native hedgerow with trees	Hedgerows of both native shrubs and mature trees provided most of the boundaries to field compartments. Species included hawthorn, elder, field maple, hazel, while trees were mostly common ash, elm sp. and English oak. Most of the hedgerows were continuous features, however gaps were frequent between trees and which supported rough grasses and ruderal vegetation. Most of these hedgerows featured narrow margins of rough vegetation.	Local: this habitat qualifies as a Habitat of Principal Important (JNCC & Defra, 2012) and as a Local Biodiversity Action Plan priority habitat.
Fencing	Stock fencing provide some of the field boundaries and usually had a narrow margin of rank grasses and ruderals associated with it.	Site

3.3. Desktop survey

The biological records search returned records of notable species within the geographical parameters of the search (2km). Due to the broad scale of many records, it is not possible to determine if they relate to the Site. Details are contained in Table 2 below.

Table 2. Notable species records within 2km

Taxon	Species	Number of records	Comment
Amphibians	Common Frog	57	Local BAP[1] species
	Common Toad	51	UK[2] and Local BAP species
	Great Crested Newt	128	UK and Local BAP species. WCA Schedule 5[3] species. No records from within this site. Majority of these records relate to nearby statutory sites.
	Palmate Newt	43	Local BAP species
	Smooth Newt	45	Local BAP species
Bats	Brown Long-eared bat	3	UK and Local BAP species. WCA Schedule 5 species
	Common Pipistrelle bat	1	Local BAP species. WCA Schedule 5 species
	Daubenton's bat	2	Local BAP species. WCA Schedule 5 species
	Noctule	5	UK and Local BAP species. WCA Schedule 5 species
	Pipistrelle bat species (*Pipistrellus sp.)*	15	Local BAP species. WCA Schedule 5 species
	Soprano Pipistrelle	1	UK and Local BAP species. WCA Schedule 5 species
	Vesper bat species (*Vespertilionidae sp.)*	13	WCA Schedule 5 species
Terrestrial mammals	European Hedgehog	1	UK and Local BAP species.
Birds	Barn Owl	1	Local BAP and WCA Schedule 1 species[4]
	Brambling	1	WCA Schedule 1 species
	Cuckoo	1	UK and Local BAP species; Red conservation status[5]
	Fieldfare	1	Red conservation status; WCA Schedule 1 species
	Green Woodpecker	4	Amber conservation status[6]
	Grey Wagtail	1	Amber conservation concern
	House Martin	1	Local BAP species; Red conservation concern
	House Sparrow	1	UK and Local BAP species; Red conservation status
	Kingfisher	1	WCA Schedule 1 species; Amber conservation status
	Lapwing	1	UK and Local BAP species; Red conservation status
	Mallard	2	Amber conservation status
	Redpoll	1	Amber conservation status
	Redwing	1	WCA Schedule 1 species; Amber conservation concern
	Sparrowhawk	1	Amber conservation status

[1] Local Biodiversity Action Plan: West Yorkshire BAP; Bradford BAP; Calderdale BAP; Kirklees BAP; Leeds BAP; Wakefield BAP

[2] UK BAP: UK wide Biodiversity Action Plan

[3] Listed under Schedule 5 of the Wildlife and Countryside Act 1981

[4] Listed under Schedule 1 of the Wildlife and Countryside Act 1981

[5] Appears on Red list of Birds of Conservation Concern 2021 – High conservation concern

[6] Appears on Amber list of Birds of Conservation Concern 2021 – Medium conservation concern

	Spotted Flycatcher	1	UK and Local BAP species; Red conservation status
	Starling	1	UK and Local BAP species; Red conservation status
	Swallow	2	Local BAP species
	Swift	1	Local BAP species; Red conservation status
	Tawny Owl	2	Amber conservation status
	Tree Pipit	1	UK and Local BAP species; Red conservation status
	Whitethroat	1	Amber conservation status
	Willow Warbler	2	Amber conservation status
	Woodcock	1	Red conservation status
	Woodpigeon	1	Amber conservation status
	Wren	2	Amber conservation status
	Yellow Wagtail	1	UK and Local BAP species; Red conservation status
Invertebrates	Forester	1	UK BAP species
	Wall (Lasiommata megera)	3	UK and Local BAP species.
Plants	Bluebell	6	WCA Schedule 8 species

Non-statutory Nature Conservation Sites (NNCS)

A Total of three NNCS are located within 1km of the Site, with details of these sites designations contained within Table 3 below.

Site name	Description	Distance and orientation from proposed development site (at the closest point)
Stony Cliffe Wood Local Wildlife Site (LWS)	An area of ancient semi-natural woodland containing a variety of woodland communities which would qualify as BAP habitats.	~50m – this site lies immediately adjacent to the south-eastern boundary
Stocksmoor Common LWS	An area of mixed habitats supporting a good population of Great Crested Newt (GCN), and located close to Denby Grange Colliery Ponds SSSI/SAC – designated for its GCN population.	770m to the south-east
Emroyd Common LWS	A predominantly woodland site with a, a pond and a minor watercourse. There are historic GCN records associated with this site.	800m to the north

Ancient Woodland

The area of woodland associated with Stonycliffe Wood LWS is also an area of Ancient Semi-Natural Woodland. A separate area of woodland located immediately adjacent to the southern boundary (and surrounding the nearby HM Prison and Young Offenders Institute) is an area of Ancient Replanted Woodland.

The two blocks of woodland in the east of the site are identified as Ancient Woodland in Wakefield Council's local policy plan, forming part of the wider Dial Woodland (AW6), which is located adjacent to part of Site's southern boundary.

Wildlife Habitat Networks

The Wildlife Habitat Network aims to meet the requirements of paragraph 114 of the National Planning Policy Framework for Conserving and enhancing the natural environment - Local planning authorities 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".

Much of the land immediately to the south the Site forms part of the Wakefield Habitat Network.

Yorkshire GCN District Level Licensing (DLL) Risk Zones

The majority of the Site lies within a Green Zone. The southern section lies within an Amber zone, while an area within the south-east of the Site lies within a Red zone.

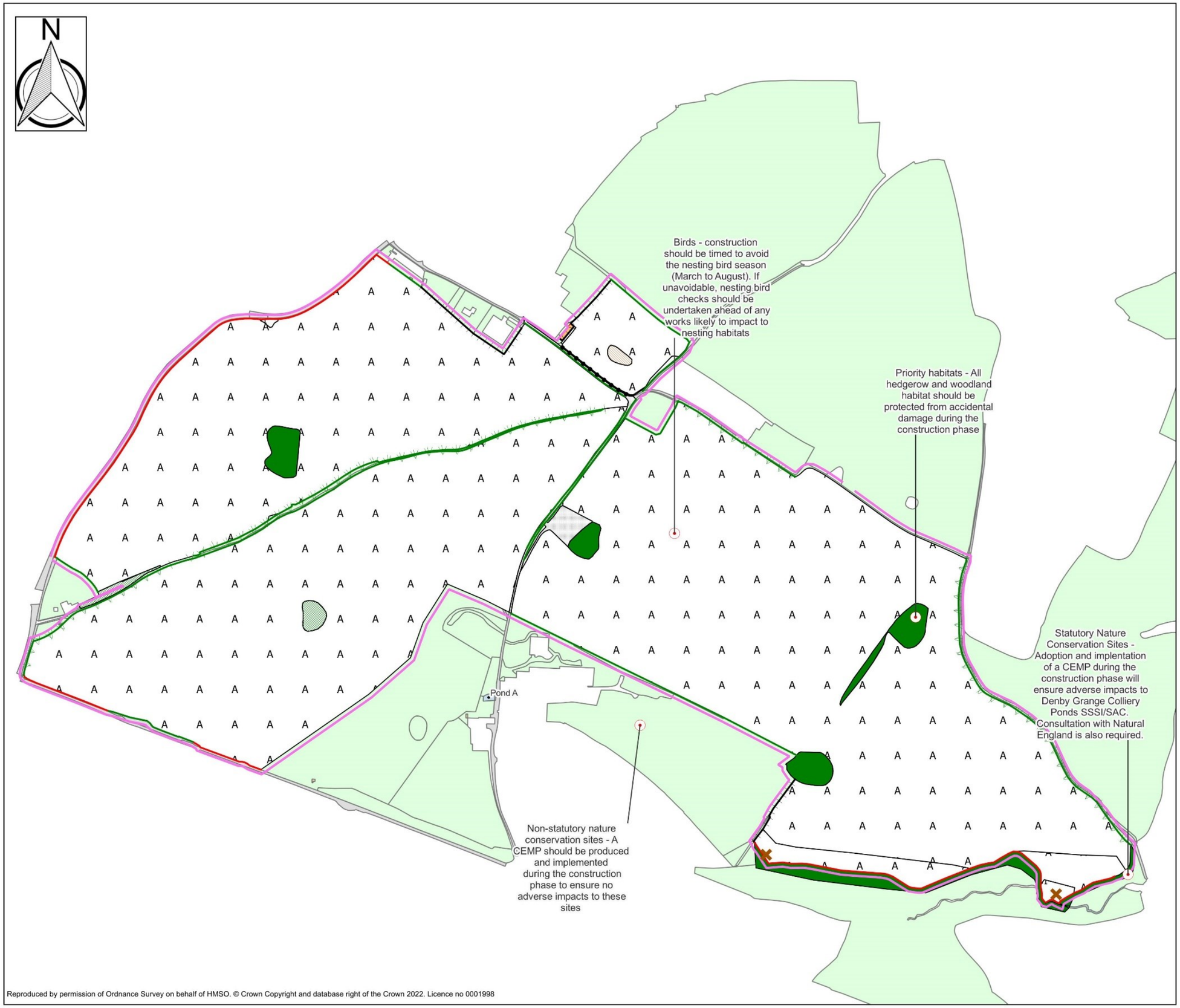
Statutory Nature Conservation Sites (SNCS)

Denby Grange Colliery Ponds Site of Special Scientific Interest (SSSI)/Special Area of Conservation (SAC) is located immediately adjacent to a section of the south-eastern boundary of the Site. This SSSI/SAC has been designated for its regionally significant populations of Great Crested Newt (GCN). It contains two areas of open water and associated ancient semi-natural/replanted woodland. The site supports the largest known breeding colony of GCN in West Yorkshire. Historic counts have indicated that this site has the sixth highest recorded count of GCN in Great Britain.

SSSI Impact Risk Zones

The proposed development lies within area identified as a SSSI Impact Risk Zone for solar developments:

"*All planning applications - except for householder applications*"



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Legend

- Target note
- Non-native invasive species - Himalyan balsam
- Survey area (Approximate)
- Native hedgerow with trees
- Native hedgerow
- Earth bank
- Wall
- Fence
- Arable
- Improved grassland
- Species poor semi-improved grassland
- Tall ruderal
- Scrub
- Bare ground
- Semi-natural broadleaved woodland

Title: Map 1. Phase 1 Habitat Survey

Project: New Hall Farm, Wakefield, Yorkshire

Checked by: CDH Version: 01
Date: 07th November 2022

3.4. Potential for species of nature conservation importance

Habitats have been assessed from the results of the field survey for their potential to support protected species (Table 5). Where there is no potential for a species or species group to be present within the site, or where habitats with the potential to support this species or species group will not be impacted by the proposals, they may be scoped out at this stage.

Table 5. Potential for species of nature conservation importance

Species	Assessment	Likely value
Amphibians	There are 128 records for GCN within 2km of the Site – the majority of these are associated with the nearby Denby Grange Colliery Ponds SSSI/SAC. There are 2 records associated with the Wakefield Wildlife Habitat Network, immediately to the south of the Site. Areas of the Site are located within Amber and Red risk zones for the Yorkshire DLL scheme. There are no waterbodies located within the Site. There are a number of waterbodies located within 500m of the Site. Great Crested Newt Habitat Suitability Index (HSI) has been calculated for ponds outside of the Site boundary, where access was available. Assessments are based on ARG UK Advice Note 5 and were undertaken during the field visit. Scores are as follows: Pond A (see Map 1) = 0.54 – below average The arable habitat that accounts for the majority of the terrestrial habitat within the site will provide only very limited opportunities for GCN. Areas containing semi-natural vegetation such as rough grassland, tall ruderal, scrub, woodland and hedgerows provide opportunities for foraging, shelter and hibernation. There is potential for GCN and other common amphibians to be present within the terrestrial habitats associated with the Site.	Unknown
Badgers	There are no active setts located within the Site. A disused sett (no recent sign of use) and well worn mammal pathways were recorded within the Site. The managed agricultural habitats that account for most of the Site are of limited value to Badgers, however scrub/ woodland habitat located within and around the site provide foraging opportunities, and it is likely they will forage in these areas and disperse through the wider site.	Moderate
Bats	Individual mature trees associated with scrub/woodland and hedgerows boundaries may provide potential for roosting bats. The intensive agricultural habitats contained within the Sites provide very little value for foraging and commuting bats. Semi-natural habitats such as woodland, waterbodies and hedgerows are likely to provide some opportunities for foraging and commuting and it is likely a variety of bat species utilise these areas, particularly at the margins of the sites.	Unknown Moderate
Birds	Given the extent of the site and its agricultural management, the site is likely to support typical farmland bird assemblages with hedgerows, stone walls and woodland providing suitable nesting habitat. The open arable habitats provide very limited opportunities for ground nesting bird species due to intensive management and undulating topography.	Moderate
Brown Hare	Two individual animals were observed during the survey, and it is likely the arable and semi-natural habitats provide some foraging opportunities.	Present
Common Dormice	Potentially suitable habitats are limited to hedgerows and woodland habitats. Hedgerows in particular are largely suboptimal due to a lack of sufficient	Negligible

	structure or diversity of woody, fruiting shrubs. There are no records or known populations of the species in the local area and it is highly unlikely that Dormice are present in the Site and they do not need to be considered further.	
Hedgehog	There is one record for hedgehog within 2km of the Site, however habitats such as woodland and hedgerows may provide some foraging opportunities within the site.	Low
Reptiles	There are no records for reptiles within 2km of the Site. The intensive agricultural habitats provide negligible potential for reptiles. Most of the suitability for reptiles within the site is associated with the boundary habitats, such as hedgerows, stone walls and scrub/woodland. If present, reptiles of common species such as Slow Worm and Grass Snake are likely to exist at very low densities.	Low
Otter	No suitable water bodies/courses associated with the Site.	Low
Water Vole	There is no suitable habitat associated with the Site.	Negligible
Notable invertebrates	The habitats associated with the Site provide limited potential for notable invertebrate species.	Negligible
Notable plants	Habitats within the Site provide little potential for notable or rare plants and they do not need to be considered further.	Negligible
Invasive non-native plants	Himalayan Balsam was recorded within two areas around the site (see Map 1), associated with field boundaries. Himalayan Balsam is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as invasive non-native with respect to England and Wales.	Present

4. Evaluation of ecological features and potential impacts

4.1. Introduction

Ecological features that have the potential to be present have been assessed in light of current nature conservation policy, planning policy and wildlife legislation by an experienced ecologist (see Appendix 1). Where necessary, the ecological value of an ecological feature is given along with the potential effect of the proposed development.

If it is considered that the proposed development is likely to have no effect on features that have been identified as present, or potentially present, they may be scoped out at this stage.

4.2. Habitats of nature conservation importance

Protected habitats

Habitats are protected under international and national legislation including The Conservation of Habitats and Species Regulations 2017, and Wildlife and Countryside Act 1981 (as amended). These have been formulated into policy measures, with many examples protected under formal site designations such as SSSIs and SACs.

No habitats of European Community Importance as defined within The Conservation of Habitats and Species Regulations 2017 were present within this site. Protected habitats of this type are not a consideration for this project.

Notable habitats

Sixty five habitats are listed as being of principal importance, in the Secretary of State's opinion, for the purposes of conserving biodiversity. Under section 41 (England) of the NERC Act (2006) there is a need for these habitats to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity. These habitats are the subject of National and Local Biodiversity Action Plans.

Hedgerows are given particular protection under the Protection of Hedgerows Act 1997.

Native hedgerows

The native hedgerows would qualify as a Habitat of Principal Importance. Any loss in extent would be a material consideration to a planning application. The current proposals do not indicate that there will be any necessity for hedgerow removal. However, construction activities have potential to cause temporary adverse impacts to this habitat and precautionary mitigation is therefore recommended.

Semi-natural broadleaved woodland

The areas of woodland located within and adjacent to the Site would qualify as a Habitat of Principal Importance. Any loss in extent or impact would be a material consideration to a planning application. The current proposals do not indicate that there will be any removal/loss of any woodland habitat. As with hedgerows, construction activities have

potential to cause temporary adverse impacts to woodland habitat and precautionary mitigation is therefore recommended.

4.3. Species of nature conservation importance

Overview

Many native wild plants and animals are protected by law with the two main legal instruments being the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017. The latter consolidates amendments to the Conservation (Natural Habitats, &c) Regulations 1994 which transposed into UK Law the EU Habitats Directive.

One thousand, one hundred and fifty species of fungi, plant or animal are listed as being of principal importance, in the Secretary of State's opinion, for the purposes of conserving biodiversity. Under section 41 (England) of the NERC Act (2006) there is a need for these species to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity. These species are the subject of National and Local Biodiversity Action Plans.

Amphibians

The four native widespread amphibians (Common Frog, Common Toad, Common Newt and Palmate Newt) are given limited protection from trade under the Wildlife and Countryside Act 1981 (as amended).

Great Crested Newt and Natterjack Toad and their breeding sites and resting places (during all parts of their lifecycle) are fully protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017. They are identified as European Protected Species. Under these laws it is an offence to:

- capture, kill, disturb of injure Great Crested Newts and Natterjack Toads (on purpose, or by not taking enough care);
- damage or destroy a breeding or resting place (even accidentally);
- obstruct access to their resting or sheltering places (on purpose, or by not taking enough care);
- possess, sell, control or transport live or dead newts, or parts of them;
- take Great Crested Newt or Natterjack Toad eggs.

The very rare Pool Frog, only recently recognised as a native amphibian, is fully protected under the Wildlife and Countryside Act 1981 (as amended) from killing, injury, trade and disturbance, whilst their habitats are also protected.

Great Crested Newt, Natterjack Toad, Common Toad and Pool Frog are listed as species 'of principal importance for the purpose of conserving biodiversity'.

There are no waterbodies located within the Site, however there are a number of ponds located within 500m, as well as known breeding populations. The Site is located within Amber and Red risk zones for GCN District Level Licensing.

As such, hedgerows, woodland and any rough semi-natural vegetation within the Site may support GCN during their terrestrial phase and the hibernation period.

The operation of the proposed development will not result in the loss of any terrestrial/breeding habitat, while the creation of grassland underneath the solar arrays would likely provide an enhancement for the species. However there is potential for construction activities to result in the capture, killing, disturbance or injury of a Great Crested Newt, and the loss/damage of a resting place. Mitigation is therefore required for Great Crested Newt.

It is also likely that occasional common and widespread amphibians are associated with ponds and field boundaries. These areas should be protected during the construction and operational phases and no adverse effect is predicted for this group.

Badgers

Badgers are protected from persecution or ill-treatment under the Protection of Badgers Act 1992. Under the Act, it is an offence to:

- wilfully kill, injure or take, or attempt to kill, injure or take, a badger;
- damage a badger sett or any part of it;
- destroy a badger sett;
- obstruct access to, or any entrance of, a badger sett;
- cause a dog to enter a badger sett; or
- disturb a badger when it is occupying a badger sett.

Badger populations are likely to be present in the nearby surroundings.

Although the development will not result in any loss of foraging habitat and no Badger sett will be impacted, the proposals have potential to impact local Badger populations by restricting movement across the Site during the operation. There is also potential for individual animals to be harmed during the construction phase. Precautionary mitigation against these impacts recommended.

Bats

Bat species and their breeding or resting places (roosts) are protected under the Wildlife and Countryside Act 1981 (as amended), and The Conservation of Habitats and Species Regulations 2017. They are identified as European Protected Species. Under these laws it is an offence to:

- capture, kill, disturb or injure bats (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (even accidentally);
- obstruct access to their resting or sheltering places (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead bats, or parts of them.

Seven species of bat are listed as species “of principal importance for the purpose of conserving biodiversity”.

Roosting

Mature trees associated with scrub/woodland and hedgerows have an unknown potential to support roosting bats. Current plans do not indicate removal or works to areas containing mature trees and therefore no impact upon roosting bats is predicted. If plans change and works to any mature tree(s) is required, then further mitigation would be necessary prior to the commencement of these works.

Foraging and commuting

The intensively managed agricultural habitats which account for the majority of the Site provide very poor foraging habitat due to a lack of supported insect prey. Semi-natural habitats (such as hedgerows, and woodland edge) which are mainly present at boundaries are likely to provide some foraging and commuting opportunities. There are records for a variety of bats in the local area, including light-averse species (such as Long-eared & Myotids) and it is likely that they are active around the Site margins.

There is currently little evidence to suggest either way whether solar farms can impact foraging and commuting bat populations through land use changes such as habitat loss, fragmentation or barrier effect (Harrison *et al.* 2017; Taylor *et al.* 2019). However, the loss of very low value intensive agricultural habitats to this development is considered to be unlikely to impact local bat populations.

Lighting is often a concern for foraging and commuting bat populations associated with other types of development. However, this proposed development will be unlit during the operational phase, whilst construction will be limited to daylight hours during the bat active period. Any emergency flood lighting associated with the proposed substation will not impact foraging and commuting bats, given its temporary nature.

No mitigation for foraging and commuting bats is required.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) from being killed, injured or captured whilst their nests and eggs are protected from being damaged, destroyed or taken. Birds which are listed under Schedule 1 of the Act are given additional protection against disturbance.

Fifty-nine species of bird are listed as species “of principal importance for the purpose of conserving biodiversity”.

Areas containing semi-natural vegetation (such as scrub/woodland, stone walls and hedgerows) will support widespread and common nesting bird species. The Site is likely to support an assemblage of birds typical of a rural environment.

The arable farmland associated with the Site provides very limited potential for ground nesting species which favour open vista habitats, such as Skylark or Lapwing. The fields mostly contain autumn/winter sown cereal crops which provide limited value for nesting due to the resultant tall & dense sward. Skylark are likely to be active within the local area given the rural setting, and it is possible that territories are located within the Site. A study into the impacts of Solar farms on ground nesting bird species (Montag *et al.* 2016) found that solar

farms did not result in a decrease in number of Skylark territories, while increasing foraging opportunities. Therefore, the proposed development is unlikely to negatively impact local Skylark populations in the local area, given the variable suitability of the Site under its current land use. The proposed development also has potential to increase food availability, which would serve to benefit a broad variety of species that likely to be active here.

The topography of the Site is also likely to constrain the suitability for open vista species as the land features undulating gradients which results in broken lines of sight, while the presence of tall hedgerows/woodland around the fields create an enclosed nature. Lapwing have been shown to avoid enclosed areas smaller than 5ha due to poorer nest 'security' (Cramp & Simmons, 1983). The Site is therefore unlikely to represent an important area for open vista species and the change in land use to a solar farm is unlikely to impact local populations.

Construction activities have potential to damage or destroy active birds nests (such as vegetation clearance or ground works) which would be considered an offence under current legislation. Mitigation is therefore recommended.

Brown Hare

Brown Hare are protected by a closed season for hunting under the Wildlife and Countryside Act 1981 (as amended). They are listed as species "of principal importance for the purpose of conserving biodiversity".

Brown Hare are active across the Site. It is likely that changes in habitat management associated with the operation of proposed solar PV farm (grassland creation under arrays) would benefit Brown Hare. However, the proposal also has potential to restrict movement across the Site and precautionary mitigation is therefore recommended.

Hedgehog

Hedgehogs are partially protected under the Wildlife & Countryside Act and may not be trapped without a licence from Natural England. Hedgehogs are listed as a species "of principal importance for the purpose of conserving biodiversity".

There is potential that Hedgehogs are active within Site habitats and the proposed development has potential to fragment foraging habitat or create a barrier to dispersal. Precautionary mitigation is therefore recommended.

Reptiles

All native reptiles are protected to some degree under the Wildlife and Countryside Act 1981 (as amended), whilst our two rarest species, the Sand Lizard and Smooth Snake, are given full protection under the Act, and also identified as European Protected Species.

The four common species (Slow Worm, Adder, Grass Snake and Common (Viviparous) Lizard) are protected from deliberate killing, injury and trade.

All six native reptiles are listed as species "of principal importance for the purpose of conserving biodiversity".

There is some limited potential for common reptile species such as Slow Worm to be active within the stonewalls, hedgerows and woodland that are associated with the Site.

As these semi-natural habitats are generally in existence at the margins of the Site, it is considered unlikely that they would be lost to the development, which will occupy the open field compartments. The loss of agricultural habitats to the development is therefore unlikely to impact local reptile populations.

However, site clearance or construction activities could result in the killing or injury of individuals which may be deemed an offence under the Wildlife and Countryside Act 1981 (as amended). If construction activities are to impact any hedgerows, stone walls or rough vegetation, mitigation may be required.

4.4. Invasive Non-native Species

Invasive non-native plant species are listed on Schedule 9 of the Wildlife & Countryside Act and it is an offence to spread or to cause the spread of these species in the wild.

Himalayan balsam is growing within two locations around the Site. Based on current plans, these are outside of the development footprint and therefore unlikely to be disturbed. No specific mitigation is recommended.

However, if this plant naturally spreads into the development area, there would be potential to cause further spread and mitigation involving eradication be necessary.

4.5. Non-statutory Nature Conservation Sites

Stony Cliffe Wood LWS is located immediately adjacent to a section of the south-east boundary and features direct connectivity with the Site as it is located downslope. An area of Ancient Replanted Woodland and Wakefield Wildlife Habitat Network is also located immediately to south of the Site. Construction activities pose some potential to adversely impact these areas through indirect impacts such as pollution. Precautionary mitigation is therefore recommended

Emroyd Common and Stocksmoor Common feature sufficient separation distance and lack direct impact pathways with the Site. It is considered very unlikely that the proposed development would adversely impact the habitats and/or species associated with these areas. Not mitigation is recommended for these two NNCS.

4.6. Statutory Nature Conservation Sites

Denby Grange Colliery Ponds SSSI/SAC is located immediately adjacent to a section of the south-east boundary. The proposed development would not directly impact either the GCN populations or any of the terrestrial/aquatic habitats associated with this site. However, there is potential for indirect impacts to aquatic/terrestrial habitats through pollution during the construction phase. Mitigation is therefore recommended.

Natural England has assessed the potential for various development types to impact nearby statutory nature conservation sites when they created SSSI Impact Risk Zones. The

proposed development type is of a type that Natural England judges to be a risk to statutory nature conservation sites and there is a requirement for the planning authority to consult Natural England on the potential impact on these sites.

5. Recommendations for mitigation and further surveys

5.1. Mitigation

Where there is potential that the proposed development will have a significant[7] effect on a valued ecological feature of nature conservation interest, recommendations for mitigation are made based on the mitigation hierarchy suggested in Paragraph: 018 Reference ID: 8-018-20140306 of National Planning Practice Guidance;

> Avoidance –significant harm to wildlife species and habitats should be avoided through design.
> Mitigation – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations.
> Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity.

Where the detail of a proposal is unknown, such as in outline planning applications, general mitigation will be suggested. This should be re-addressed once final plans are known.

Further survey work

Where further survey work is not recommended, this is because it is the professional judgement of the ecologist that adequate information is already available and further surveys would not make any material difference to the assessment provided.

Where the information within this report is insufficient to allow a full description of the nature conservation features of the site along with a robust assessment of the potential effects on these features, further survey work will be recommended.

5.2. Habitats of nature conservation importance

Native hedgerow

Current plans do not indicate the loss of any hedgerow habitat. All hedgerows should be protected from accidental damage during the construction phase by a suitable buffer zone of 5 metres. This protection zone should be delineated by a suitable fence and maintained for the duration of the works, and there should be no access, storage of materials, ground disturbance, burning or contamination within the fenced areas. These buffers should also be retained and remain undeveloped for the operational period of the development.

[7] For the purposes of this report, a practical approach has been taken to define the term 'significant'. If an effect is sufficiently important to be given weight in the planning process or to warrant the imposition of a planning condition, it is likely to be 'significant' in the context of the level under consideration (BSI, 2013).

If plans change, and any hedgerow removal is required, mitigation should involve the replanting of at least an equal extent of hedgerow using a native species mix.

Semi-natural broadleaved woodland

Current plans do not indicate the loss of any woodland habitat. All woodland habitat within the Site should be protected from accidental damage during the construction phase by a suitable buffer zone informed by the arboricultural survey. This protection zone should be delineated by a suitable fence, demarcated by signage and maintained for the duration of the works. There should be no access, storage of materials, ground disturbance, burning or other contamination within the fenced areas. These buffers should be remain undeveloped for the operational period of the development.

5.3. Protected species and species of nature conservation importance

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to species:

Amphibians

There is potential for Great Crested Newt to be utilise terrestrial habitats associated with the Site and construction activities have potential to impact individual GCN.

The Site lies within an area covered by a Natural England-led district level licensing scheme, and it is recommended that this development should join the Yorkshire DLL scheme in order to mitigate against the temporary impacts associated with the construction phase.

Badgers and other mammals

There is potential that Badgers and other mammals (such as Hedgehog and/or Brown Hare) may become trapped within site during the construction and operation phases. To prevent this, the following is recommended:

- Temporary construction fencing along the boundaries should leave a gap of at least 5 metres wide between the fence and any woodland, hedgerow or wall boundary;
- Any security fences should have a gap at each corner sufficient to allow mammals to exit the Site should they gain entry.
- Any trenches left open at night should have some means of escape for Badgers and other mammals, such as the placement of a scaffolding board at one end; and
- All permanent fencing should be fitted with suitable means of access to allow Badgers and other mammals to continue to use the Site during the operational phase.

Birds

The footprint of the proposed development largely concerns the arable compartments, which have some very limited potential for ground nesting species such as Skylark. To prevent the risk of damaging or destroying any potentially active nests within the field compartments, all construction activities should be initially planned to avoid the breeding season (March to

August, inclusive). If this is not possible and works will take place during the accepted nesting season, ground nesting bird surveys should be completed prior to any construction activities within these areas. The ground nesting bird surveys will need to be completed by a suitable experienced Ecological Clerk or Works (ECoW). If ground nesting birds are detected, works in that area will need to stop until bird have fledged. The buffer to the nest will depend on the species present and will be decided by the ECoW.

Potential bird nesting habitats associated with field boundaries such as hedgerows, stone walls and woodland that will not be directly impacted by the development should be protected from accidental damage during the construction phase by a suitable buffer zone (see 5.2 above). If construction activities are also likely to impact any of these areas during the nesting season, a pre-works nesting bird check of these areas will also be required.

Reptiles

Habitats such as hedgerows, stone walls and scrub/woodland provide some low suitability for common reptiles such as Slow Worm and Grass Snake. It is not anticipated that these areas will be lost to the development, however, site preparation may involve clearance of a limited extent of some of these habitats. Any risk of harm or injury to individuals during construction can be avoided through the implementation of the 2 metre protection zone for hedgerows and woodland (as detailed in Section 5.2), as well as the adoption of Reasonable Avoidance Measures (RAMS). By adopting sympathetic clearance methods, any adverse impact to reptiles within these habitats can be avoided.

It is preferable to undertake clearance works during the period September to October inclusive, a time when nesting birds are absent, while reptiles are still active and able to disperse freely.

Clearance in period late March to October

If any vegetation/stone wall clearance is to occur during the active reptile season (late March to October) areas to be affected by construction activities, should first be checked for the presence of any active birds' nests, by a suitably qualified person. Areas which do not support any active birds should then be de-vegetated/dismantled under the supervision of a suitably qualified ecologist, as detailed below.

Vegetation should initially be cut to a height of no more than 10cm and work in a direction towards retained habitat. This will encourage any reptiles present to disperse naturally. After at least 48hrs, a second cut will be made as close to ground level as possible. This should ensure that any reptiles, if present, are displaced from the works area. Once cleared, vegetation within the works area should be maintained below 10cm for the duration of the works to prevent attracting reptiles back into the area.

Construction during the period November to mid-March:

Clearance of areas that may provide hibernacula (such as logs, wood piles, debris piles) should be avoided during these periods as there is unknown potential for hibernating reptiles to be present. If this is planned but unavoidable, it is recommended that vegetation is cut back to bank level during September and October and kept close-managed to deter hibernating reptiles.

5.4. Non-statutory Nature Conservation Sites

Stony Cliffe Wood LWS is located immediately adjacent to a section of the south-east boundary (approximately 50m downslope) and features direct connectivity with the Site. An area of Ancient Replanted Woodland and Wakefield Wildlife Habitat Network is also located immediately to south of the Site (<10m at the closest point). In order to prevent indirect impacts to these areas (such as pollution), it is recommended that a Construction Environmental Management Plan (CEMP) should be produced prior to, and adopted during, the construction phase of the development. This should be carried out following the BSI Standards Publication: Biodiversity- code of practice for planning and development BS 42020:2013.

Mitigation for the potential adverse effects from construction practices should include:

- Consideration of the sloping gradient between the Site and Stone Cliffe Wood LWS;
- ensuring no contamination of soil or water by hazardous substances, with the use of bunds and/or oil traps to prevent surface water run-off during construction into the stream;
- ensuring no sediment is deposited beyond the works areas, in particular in relation to the use of site vehicles;
- undertake appropriate storage and transport of any hazardous materials, including vehicle fuel, or any waste materials. Any hazardous waste to be kept secure in accordance with the Environment Agency Pollution Prevention Guidelines – PPG2 and PPG3;
- ensure no spills, or leaks of fluids, fuels or oils from vehicles or plant; and
- ensure vehicles and plant are parked an appropriate distance from sensitive environmental areas when not in use.

Adoption of this CEMP will ensure that this development is unlikely to impact the interest features for which this NNCS has been selected.

5.5. Statutory Nature Conservation Sites

Denby Grange Colliery Ponds SSSI/SAC is located adjacent to a section of the south-east boundary (approximately 50m downslope at the closest point). Adoption of the CEMP detailed above will ensure that this development will not result in any adverse impacts to the GCN breeding population and terrestrial/aquatic habitats for which this SNCS has been selected.

Although implementation of this mitigation will prevent the risk of adverse impact, there remains a requirement for planning authority to consult Natural England on the potential impact on this SSSI/SAC.

6. Further survey work

Information within this report is sufficient to allow a robust assessment of the potential effects on the ecological features associated, or potentially associated, with this site.

No other survey work is recommended for this site.

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Appendix 1:

Legislation and Policy used to assess habitats and species:

European Habitats and Species Directive (CEC, 1992)

The main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

European Red Data lists (IUCN, 2000)

International Union for Conservation of Nature (IUCN and the European Commission have been working together on an initiative to assess around 6,000 European species according to IUCN regional Red Listing Guidelines. Through this process they have produced a European Red List identifying those species which are threatened with extinction at the European level so that appropriate conservation action can be taken to improve their status.

European Council Birds Directive (CEC, 1979)

The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. An important part of this Directive is the identification and classification of Special Protected Areas (SPAs) to protected vulnerable bird species listed in Annex 1 of the Directive and regularly occurring migrating species.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

This Act is the primary legislation that protects animals, plants and certain habitats in the UK.

The Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 consolidate and update the Conservation of Habitats and Species Regulations 2010, and transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") and elements of Directive 2009/147/EC on the conservation of wild birds ("the Birds Directive") in England, Wales, and to limited extent, Scotland and Northern Ireland.

The objectives of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Directive lays down rules for the protection, management and exploitation of such habitats and species.

The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species. These sites form a network termed Natura 2000 and include Special Areas of Conservation and Special Protection Areas.

Protection of Badgers Act 1992

The Protection of Badgers Act 1992 consolidated and improved previous legislation. Under the Act it is an offence to kill, injure or take a Badger, or to damage or interfere with a sett used by a Badger unless a licence is obtained from a statutory authority.

The Hedgerow Regulations 1997

The Hedgerows Regulations 1997 protect certain hedgerows from being removed (uprooted or destroyed) if they meet certain criteria.

The Countryside and Rights of Way (CRoW) Act 2000

This Act increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation.

Circular 06/2005 Biodiversity and geological conservation – statutory obligations and their impact within the planning system

This circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements the national planning policy in the National Planning Policy Framework and the Planning Practice Guidance.

Natural Environment and Rural Communities Act 2006

The Act made amendments to the both the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way (CROW) Act 2000. For example, it extended the CROW biodiversity duty to public bodies and statutory undertakers.

UK Post-2010 Biodiversity Framework, 2012

The 'UK Post-2010 Biodiversity Framework', published in July 2012, succeeds the UK BAP and 'Conserving Biodiversity – the UK Approach', and is the result of a change in strategic thinking.

National Planning Policy Framework, 2019

The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. It contains a number of policies relating to ecology including "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".

The natural choice: securing the value of nature (2011) (Natural Environment White Paper)

This White Paper outlines the Governments vision for the future of landscape and ecosystem services.

Biodiversity 2020

This is a national strategy for England's wildlife and ecosystem services based on the White Paper.

Appendix 2:



Image 1. Arable crop in western field



Image 2. Arable field – recently ploughed



Image 3. Woodland associated with 'island' within field



Image 4. Native hedgerows along northern boundary



Image 5. Woodland area within field



Image 6. Winter bird seed plots in eastern field



Image 7. Woodland edge along SE boundaries



Image 8. Arable fields bounded by native hedgerows in E of site