



# **Park House Farm Wind Farm, Lowca, Cumbria**

## **Ecological Appraisal**



**For Cannock Wind Farm Services  
Limited**

**February 2020**

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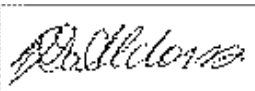
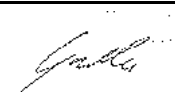

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## Executive Summary

Contents	Summary
<b>Site Location</b>	The 'site' is located on land at Park House Farm, to the north of the village of Lowca, in Cumbria - Ordnance Survey National Grid Reference NX 98376 23260. The site comprises seven wind turbines set within grassland habitat.
<b>Proposals</b>	The planning application seeks to extend the life of the seven existing turbines on site until 2030.
<b>Existing Site Information</b>	The existing planning permission was granted consent in 1998 following a successful appeal against a refusal of planning permission by Copeland Borough Council - reference no: 4/98/0486/0. Construction commenced in 1999 and the existing wind turbines are currently consented to be operational until the end of March 2020.
<b>Scope of this Survey(s)</b>	The scope of works included a desk study and field survey to record habitat types and dominant vegetation (including any invasive species), and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species.
<b>Results</b>	<p><i>Designated Sites</i></p> <p>The Solway Firth pSPA is located 242m west of the site.</p> <p>The closest County Wildlife Sites are Cunning Point and Cat Gill (which are partly within the site) and Andrew's Gill, which is immediately south of the site.</p> <p><i>Habitats</i></p> <p>The following habitats were recorded within and adjacent to the site: semi-improved acid grassland, semi-improved neutral grassland, improved grassland, marshy grassland, scattered scrub, dense scrub, bracken, tall ruderal, intact species-poor hedgerows, running water, open water, a building and bare ground.</p> <p><i>Protected and Notable Species</i></p> <p>Habitats within and adjacent to the site have suitability to support: amphibians (including GCN), reptiles, foraging and commuting bats, otter, birds, invertebrates, brown hare and hedgehog.</p>
<b>Recommendations</b>	<p><i>Habitats and Designated Sites</i></p> <p>A Stage 1 Habitats Regulations Assessment is recommended to identify if there will be any significant effects upon the Solway Firth pSPA, either alone or in combination with other plans or projects.</p> <p>It is recommended that a Construction and Environmental Management Plan (CEMP) is prepared prior to decommissioning to protect sensitive habitats within and adjacent to the site.</p> <p>It is recommended that a Habitat Management Plan (HMP) is prepared in the year prior to decommissioning informed by the necessary protected species surveys as recommended below. The HMP will inform habitat restoration post-decommissioning, aiming to achieve a net gain in biodiversity.</p> <p><i>Amphibians.</i></p>



	<p>An update HSI assessment of ponds within 500m and GCN eDNA surveys are recommended a year prior to decommissioning to confirm presence / likely absence of GCN .</p> <p><i>Reptiles</i></p> <p>It is recommended that reptile surveys are undertaken to confirm presence / likely absence in the year prior to decommissioning.</p> <p><i>Bats</i></p> <p>The building within the site currently has 'negligible' suitability for roosting bats and no further surveys are recommended at present.</p> <p>As changes to the fabric of the building could occur over time, it is recommended that an updated assessment is undertaken the year prior to decommissioning.</p> <p>Habitats within the site are open and exposed, and considered to provide 'low' suitability for foraging and commuting bats.</p> <p>Bat activity surveys have been instructed and the results will be presented in a separate bat survey report.</p> <p><i>Badger</i></p> <p>Although no evidence of badger was noted during the survey, there is potential for badger to colonise the area while the wind farm remains in operation. An update walkover survey is recommended in the year prior to decommissioning to identify any badger setts or signs.</p> <p><i>Otter</i></p> <p>The undisturbed areas of dense bankside vegetation within the site provide suitable habitat for otter. Otter may also forage along coastal habitats hydrologically linked to the site. A survey for otter is recommended in the year prior to decommissioning to confirm presence or absence of holts / couches.</p> <p><i>Birds</i></p> <p>Habitats within and adjacent to the site may be used by breeding, wintering or passage birds.</p> <p>Bird surveys have been instructed and the results will be presented in a separate bird survey report.</p> <p>If scrub management is required, this should be completed outside of the nesting bird season (which is between March and September in any given year).</p> <p><i>Invertebrates</i></p> <p>The wind farm extension of life / decommissioning process is unlikely to impact upon the invertebrate assemblage and no further surveys are recommended.</p> <p><i>European hedgehog and Brown Hare</i></p> <p>During decommissioning, it is recommended that any areas of dense vegetation are checked for hedgehog prior to removal. Brown hare would likely be temporarily displaced to habitats in the wider area during decommissioning. Habitats would be available to both brown hare and hedgehog post decommissioning.</p>
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## Glossary

Badger Act	Protection of Badgers Act 1992
BCT	Bat Conservation Trust
BoCC	Bird(s) of Conservation Concern
BSI	British Standard Institute
BTO	British Trust for Ornithology
CBDC	Cumbria Biodiversity Data Centre
CC	Creative Commons
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
CRoW Act	Countryside and Rights of Way Act 2000
CWS	County Wildlife Site
DEFRA	Department for the Environment, Food and Rural Affairs
EcIA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EMP	Ecological Management Plan
EPS	European Protected Species
EPSL	European Protected Species Licence
GCN	Great Crested Newt
Habitat Regulations	Conservation of Habitats and Species Regulations 2017 (as amended)
HAP	Habitat Action Plan
Hedgerow Regulations	Hedgerow Regulations 1997
HPI	Habitat(s) of Principal Importance
HRA	Habitats Regulations Assessment
HSI	Habitat Suitability Index
JNCC	Join Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
LGS	Local Geological Site
LNR	Local Nature Reserve
LPA	Local Planning Authority
LWS	Local Wildlife Site
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
NE	Natural England
NERC Act	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
SPA	Special Protection Area
pSPA	Potential Special Protection Area
SPI	Species of Principal Importance
SRV	Special Roadside Verge
SSSI	Site(s) of Special Scientific Interest
TPO	Tree Preservation Order



TN  
W&CA

Target Note  
Wildlife & Countryside Act 1981 (as amended)





## 1.0 Introduction

### 1.1 Background

WYG was commissioned by Cannock Wind Farm Services Ltd in September 2019 to undertake an Ecological Appraisal of the site known as Park House Farm Wind Farm, in Lowca, Cumbria.

This report has been prepared by WYG Principal Ecologist Kirstin Aldous MCIEEM and the conditions pertinent to it are provided in Appendix A.

### 1.2 Site Location

The 'site' is located on land at Park House Farm, to the north of Lowca, in Cumbria – see Figure 1. The site is centred at Ordnance Survey National Grid Reference (OSNGR) NX 98376 23260 and comprises seven wind turbines set within grassland habitat. The west coast railway line forms the western boundary of the site, separating the site from coastal habitats and the Solway Firth. In the wider area there are arable and grassland habitats to the north, south and east.

### 1.3 Planning Application

The section 73 planning application seeks to vary the planning condition which requires the wind farm to cease operating at the end of March 2020 with the effect of extending the life of the seven existing turbines on site until 2030.

The existing planning permission was granted consent in 1998 following a successful appeal against a refusal of planning permission by Copeland Borough Council - reference no: 4/98/0486/0. Construction commenced in 1999 and the existing wind turbines are currently consented to be operational until the end of March 2020.

### 1.4 Purpose of the Report

The purpose of this report is to complete:

- A desk study to obtain existing information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/notable species within the site and its zone of influence;
- An extended Phase 1 Habitat Survey, involving a walkover of the site to record habitat types and dominant vegetation, including any invasive species, and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species;
- An assessment of the likely ecological receptors present on site, identify any potential constraints they may pose to the ongoing operation and (where necessary) provide recommendations for further surveys, avoidance, mitigation or enhancement measures that are needed (as appropriate) during operation and to inform decommissioning proposals.

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

A summary of the key legislation is also provided in Appendix B.



## 2.0 Methodology

### 2.1 Desk Study

#### 2.1.1 Previous Reports

An EIA was undertaken for the wind farm in March 1995 (existing planning permission reference: 4/98/0486/0<sup>1</sup> - Copeland Borough Council). This application was refused planning permission in September 1995. The refusal was subsequently appealed and a public inquiry was held in March 1997.

In January 1997, an ES Supplementary Statement was produced for the revised scheme to support the modified proposals submitted to the public inquiry. The appeal was successful and consent issued by the Secretary of State on 6 October 1997.

Construction commenced in 1999 and the existing wind turbines are currently consented to be operational until the end of March 2020 (WYG, 2019).

#### 2.1.2 Consultation

WYG consulted Natural England regarding the scope of surveys required to support the planning application. The consultation response is provided in Appendix C.

#### 2.1.3 Local Ecological Records Centre

Information was requested from Cumbria Biodiversity Data Centre (CBDC) on the 8<sup>th</sup> March 2019 for records of nature conservation designations and protected or notable species within 5 km of the site.

The data search covered:

- Statutory designated sites for nature conservation, namely SACs, SPAs, pSPAs, Ramsar sites, SSSIs, NNRs and LNRs;
- Non-statutory designated sites for nature conservation, namely LWS;
- Legally protected species, such as great crested newts *Triturus cristatus*, badger *Meles meles* and bats;
- Notable habitats and species, such as those listed as Habitats or Species of Principal Importance (HPIs or SPIs); and,
- Priority habitats or species within the Cumbria LBAP.

The data search did not cover:

- Tree Preservation Orders (TPOs); or
- Conservation Areas designated for their special architectural and historic interest.

#### 2.1.4 Online Resources

A search for relevant information was also made on the following websites:

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<sup>1</sup> Planning Inspectorate Appeal Reference T/APP/Z0923/A/98/301037/P2



- MAGIC [www.magic.gov.uk](http://www.magic.gov.uk) - DEFRA's interactive, web-based database for statutory designations within 10 km and information on any EPSL applications that have been granted in the local area since 2015.
- NBN Atlas <https://nbnatlas.org/> - for records of protected and notable species.

Note that the use of some NBN Atlas data is limited (e.g. commercial use of data provided under a Creative Commons CC BY-NC licence is not possible) therefore we may not be able to report full details of those records in such cases.

## 2.2 Field Surveys

The following methodologies have been used to identify likely ecological receptors present on or near the site, which are relevant to the proposed extension of operational life application.

### 2.2.1 Habitats

An extended Phase 1 habitat survey was undertaken on the site on the 23<sup>rd</sup> September 2019 by WYG Principal Ecologist Kirstin Aldous MCIEEM. The weather conditions were dry, 17°C with a light breeze and 70% cloud cover.

The vegetation and broad habitat types within the site were noted during the survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (JNCC, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (2019). The site was also appraised for its suitability to support notable flora, with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017).

### 2.2.2 Protected & Notable Species

The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations, Schedule 5 of the W&CA, the CRoW Act, those given extra protection under the NERC Act, and species included in the Cumbria LBAP.

#### Great Crested Newt

The site was appraised for its suitability to support GCN. The assessment was based on Guidance outlined in the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Becket & Foster, 2001).

#### Habitat Suitability Index

Habitat Suitability Index Scores (HSI) were calculated for accessible ponds within 500m of the site. The HSI provides an objective method for assessing the suitability of a pond as habitat for GCN (Oldham et al., 2000; Herpetological Conservation Trust, 2008). The system provides an index between 0 and 1, with 0 indicating unsuitable habitat and 1 optimal habitat. Ten suitability indices are used to calculate the index score, each representing a factor considered to affect GCN. These factors are listed and briefly explained below:

1. *Location*: i.e. where the pond is located in the British Isles. Lowlands are generally thought to be most suitable; suitability declines with increases in altitude



2. *Pond area*: i.e., the water surface area of a pond. Suitability peaks at approximately 800m<sup>2</sup>;
3. *Pond drying*: how often a particular pond dries out. Ponds which dry out more frequently are less suitable;
4. *Water quality*: an indication of water quality based on the invertebrate diversity present. High invertebrate diversity indicates high water quality and suitability;
5. *Shade*: an estimate of the total shaded perimeter of a pond. Shoreline shade below 60% is optimal;
6. *Fowl*: indication of impact by waterfowl. High waterfowl numbers are generally considered detrimental;
7. *Fish*: indication of fish abundance. High fish numbers are generally considered detrimental;
8. *Pond count*: based on the density of ponds occurring within 1km of a particular pond. Suitability is positively correlated with pond density;
9. *Terrestrial habitat*: based on the availability of suitable habitat in the pond vicinity, e.g. rough grassland, scrub and woodland. For this assessment, the categories provided in the NARRS Survey Pack (Herpetological Conservation Trust, 2008) were used. This differs from the assessment criteria by Oldham et al. (2000), and is based on work by Lee Brady (unpublished); and
10. *Macrophytes*: based on an estimate of the percentage cover by emergent and aquatic vegetation. Suitability peaks at between 70% and 80% cover.

The results are also compared against a categorical scale developed by Lee Brady (unpublished). Results from individual water bodies are categorised as follows:

- <0.5 = poor
- 0.5 – 0.59 = below average
- 0.6 – 0.69 = average
- 0.7 – 0.79 = good
- >0.8 = excellent

## Bats

### Roosting Bats – Buildings / Structures / Trees

Any suitable buildings, structures or trees on site were assessed from the ground for their suitability to support breeding, resting and hibernating bats using survey methods based on the BCT *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016) – hereafter referred to as the 'BCT Guidelines'. The following system has therefore been used to categorise the bat roost suitability of any features found:



**Table 1 Categories of Bat Roost Suitability (BCT Guidelines)**

Suitability	Typical Roosting Features
<b>Negligible</b>	Negligible habitat feature on site likely to be used by roosting bats.
<b>Low</b>	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
<b>Moderate</b>	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
<b>High</b>	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Foraging/commuting Bats

The BCT Guidelines use the following criteria to categorise the potential value of habitats and features for use by foraging and commuting bats and these have been used to characterise the value of this site:

**Table 2 Categories of Habitat Suitability (BCT Guidelines)**

Suitability	Typical Foraging & Commuting Features
<b>Negligible</b>	Negligible habitat features on site likely to be used by commuting or foraging bats.
<b>Low</b>	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
<b>Moderate</b>	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
<b>High</b>	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.



## Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003).

## Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1989).

## Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians, birds and invertebrates with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and *BS42020:2013 Biodiversity – Code of Practice for Planning and Development* (BSI, 2013). Evidence of any current or historical presence of such species was recorded.

### 2.2.3 Invasive Species

The site was searched for evidence of invasive plant species, such as Japanese knotweed *Reynoutria japonica* (formerly *Fallopia japonica*), Indian (Himalayan) balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhododendron ponticum* × *Rhododendron maximum*. A full list of all invasive plant species is provided in Appendix B.

## 2.3 Limitations

The optimal period to undertake an extended Phase 1 habitat survey is April-September. The survey was completed in late September which is within the optimal survey window (although some botanical species were starting to die back). This is not considered to be a significant limitation to the accurate assessment of the habitats as the dominant species of the respective vegetation types were visible and identifiable.

All areas of the site were accessible including a 50m buffer (with the exception of the west coast railway line along the western boundary of the site).

To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under UK or European wildlife legislation. This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day the site was visited and highlights areas where further survey work may be recommended.

The details of this report will remain valid for a period of **18 months** from the date of the survey, after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or application which this report was based on.



### 3.0 Baseline Conditions

#### 3.1 Previous Reports

The ES associated with the original application outlined a habitat survey undertaken of the site in 1994 and minimal impacts on nature conservation were reported. It was concluded that the development would not impact the nature conservation interest of Duddon Estuary SPA, interfere with recorded flight lines or result in any impacts associated with bird collisions (WYG, 2019).

There have been no known ecological studies whilst the wind farm has been operational.

#### 3.2 Designated Sites

The following designated sites of ecological importance have been identified within 5 km of the site. Local geological sites (LGS) are designated for their geological rather than ecological attributes, and are therefore not included in the table below.

**Table 3 Designated Sites Within 5 km**

Site Name	Designation	Distance & Direction	Summary of features
Solway Firth	pSPA	242 m west	<p>A large estuarine / marine site (1,393.39 km<sup>2</sup>) of international importance that includes existing Upper Solway Flats and Marshes SPA. The designation extends along the Cumbrian coast to Whitehaven and the Scottish extension of the site extends along to the Isle of Whithorn.</p> <p>The area qualifies under Article 4.2 of the Directive (79/409/EEC) by <b>regularly supporting at least 20,000 waterfowl.</b></p> <p>This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of <b>over-wintering</b> species listed on Annex I of the Directive including red throated diver <i>Gavia stellate</i>, bar-tailed godwit <i>Limosa lapponica</i>, barnacle goose <i>Branta leucopsis</i>, golden Plover <i>Pluvialis apricaria</i> and whooper swan <i>Cygnus Cygnus</i>.</p> <p>This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the <b>migratory</b> species including but not limited to pink footed goose <i>Anser brachyrhynchus</i>, shelduck <i>Tadorna tadorna</i>, teal <i>Anas crecca</i>,</p>



Site Name	Designation	Distance & Direction	Summary of features
			<p>pintail <i>Anas acuta</i>, shoveler <i>Anas clypeata</i>, scaup <i>Aythya marila</i>, common scoter <i>Melanitta nigra</i>, goldeneye <i>Bucephala clangula</i>, goosander <i>Mergus merganser</i>, oystercatcher <i>Haematopus ostralegus</i>, knot <i>Calidris canutus</i>, ringed plover <i>Charadrius hiaticula</i>, grey plover <i>Pluvialis squatarola</i>, lapwing <i>Vanellus vanellus</i>, dunlin <i>Calidris alpina</i>, sanderling <i>Calidris alba</i>, redshank <i>Tringa tetanus</i>, turnstone <i>Arenaria interpres</i>, curlew <i>Numenius arquata</i> and cormorant <i>Phalacrocorax carbo</i>.</p>
Harrington Reservoir	LNR	2.38 km north-east	<p>A large pond within a sheltered valley. Habitats include still and running water, fen communities, willow carr, damp meadow, damp meadow grasslands, pasture, tall herb and scrub communities. The site also hosts high quality rich neutral grassland that is seasonally flooded.</p> <p>It supports a diversity of plant species including (but not limited) to Common spotted orchid <i>Dactylorhiza fuchsii</i>, devil's bit scabious <i>Succisa pratensis</i>, heath spotted orchid <i>Dactylorhiza maculata</i>, lesser butterfly orchid <i>Platanthera bifolia</i> and hemlock water dropwort <i>Oenanthe crocata</i>.</p> <p>Confirmed breeding birds include willow warbler <i>Phylloscopus trochilus</i>, sedge warbler <i>Acrocephalus schoenobaenus</i> and grasshopper warbler <i>Locustella naevia</i>, redpoll <i>Carduelis flammea</i>, linnet <i>Linaria cannabina</i>, reed bunting <i>Emberiza schoeniclus</i>, dipper <i>Cinclus cinclus</i>, moorhen <i>Gallinula chloropus</i> and mute swan <i>Cygnus olor</i>.</p>
Cunning Point and Cat Gill	CWS	On site (some parts of CWS boundary intersect with the site boundary)	No details
Andrew's Gill	CWS	20 m south	No details





Site Name	Designation	Distance & Direction	Summary of features
Lowca	Site of Invertebrate Significance	81 m west	No details
Hayes Castle Meadows	CWS	1.6 km east	No details
Parton	Site of Invertebrate Significance	1.6 km south	No details
Harrington	Site of Invertebrate Significance	1.7 km north	No details
Harrington Railway Line	CWS	2 km north east	No details
Beck Green Meadows	CWS	2.3 km east	No details
Redness Point	CWS	2.8 km south	No details
Redness Point	CWS	2.8 km south	No details
B5 A4 (1)	Special Roadside Verge (SRV)	2.8 km south east	No details
Moresby Moss	CWS	2.9 km south east	No details
Alcan Wildlife Area	CWS	3 km north east	No details
Bonnywood	CWS	3.4 km south-east	No details
MP K3 (3)	SRV	3.7 km north east	No details
MP K3 (4)	SRV	3.7 km north east	No details
Hope Mission Pond	CWS	4 km south-east	No details
Moresby	Site of Invertebrate Significance	4.2 km south-east	No details
Sandbeds Meadows	CWS	4.5 km south-east	No details



Site Name	Designation	Distance & Direction	Summary of features
Wilson Park verge and field	CWS	4.7 km east	No details
Cumbria Coast	MCZ	4.8 km south-west	The Solway Firth MCZ is an inshore site that covers an area of approximately 45 km <sup>2</sup> . It is designated for smelt <i>Osmerus eperlanus</i> .

In addition to the above, the following European (Natura 2000) designated sites are within 10km of the site:

**Table 4 European Designated sites within 5-10 km of the site**

Site Name	Designation	Distance & Direction	Summary of features
River Derwent and Bassenthwaite Lake	SAC	6.1 km north and 7.8 km east of the site.	<p>An example of a mesotrophic waterbody. Annex I habitats present as a qualifying feature, but not a primary reason for selection:</p> <ul style="list-style-type: none"> <li>- Watercourses of plain to montane levels with the <i>Ranunculion fluitantuis</i> and Callitricho-batrachion vegetation.</li> </ul> <p>Annex II species that are a primary reason for selection:</p> <ul style="list-style-type: none"> <li>- Marsh fritillary butterfly <i>Euphydryas (Eurodryas, Hypodryas) aurinia</i>;</li> <li>- Sea lamprey <i>Petromyzon marinus</i>;</li> <li>- Brook lamprey <i>Lampetra planeri</i>;</li> <li>- River lamprey <i>Lampetra fluviatilis</i>;</li> <li>- Atlantic salmon <i>Salmo salar</i>,</li> <li>- Otter <i>Lutra lutra</i>, and</li> <li>- Floating water-plantain <i>Luronium natans</i>.</li> </ul>
River Ehen	SAC	10 km south-east	The River Ehen supports the largest freshwater pearl mussel <i>Margaritifera margaritifera</i> population in England.

The locations of statutory designated sites within 10 km of the site are shown in Figure 2.



### 3.3 Habitats

The following habitats have been identified through our assessment and are shown in Figure 3, with detailed Target Notes (TN) included in Appendix E, as appropriate.

#### 3.3.1 Semi-Improved Acid Grassland

The southern half of the site comprised semi-improved acid grassland (TN1 and TN6) with species including crested dog's tail *Cynosurus cristatus*, Yorkshire fog *holcus lanatus*, soft rush *Juncus effusus*, dandelion *Taraxacum* agg., creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, common mouse-ear *Cerastium fontanum*, jointed rush *Juncus articulatus* and tormentil *Potentilla erecta*. As land slopes westwards towards the coast the acid grassland grades into marshy grassland (see 3.3.2).

#### 3.3.2 Semi-improved Neutral Grassland

The grassland showed signs of agricultural improvement in the north of the site (although some acid grassland indicator species were still present). Species included spear thistle *Cirsium vulgare*, tormentil, Yorkshire fog, crested dog's tail, common bent *Agrostis capillaris* and perennial rye grass *Lolium perenne*. The land was grazed by cattle at the time of survey (TN8).

#### 3.3.3 Improved Grassland

The northernmost field showed the greatest amount of agricultural improvement. Dominant species included perennial rye grass and annual meadow grass *Poa annua* with pineapple weed *Matricaria discoidea*, greater plantain *Plantago major*, white clover, creeping buttercup, crested dog's tail, creeping thistle *Cirsium arvense*, spear thistle and common nettle *Urtica dioica*. There were occasional patches of gorse, soft rush and hard rush *Juncus inflexus* (TN10 and TN15).

#### 3.3.4 Marshy Grassland

Where the semi-improved acid grassland transitioned into marshy grassland, species included jointed rush, soft rush, lesser spearwort *Ranunculus flamula*, crested dog's tail, mat grass *Nardus stricta*, Yorkshire fog, self-heal *Prunella vulgaris*, common knapweed *Centaurea nigra*, meadowsweet *Filipendula ulmaria*, sneezewort *Achillea ptarmica*, field scabious *Knautia arvensis* and tormentil (TN4).

#### 3.3.5 Scattered Scrub

There were areas of scattered gorse scrub *Ulex europaeus* present throughout the site (TN2 and TN5).

#### 3.3.6 Dense scrub

There were areas of dense scrub within the site dominated by gorse. Bramble *Rubus fruticosus*, hawthorn *Crataegus monogyna*, soft rush and goat willow *Salix caprea* were also present (TN9).

#### 3.3.7 Bracken

Bracken *Pteridium aquilinum* was present on the steeply sloping banks of the watercourse in the south of the site (TN3).



### 3.3.8 Tall ruderal

Tall ruderal vegetation was noted near TN5 with species including creeping thistle, bracken and common nettle.

### 3.3.9 Intact Species-Poor Hedgerow

There was an intact species poor hedgerow without trees which formed the eastern boundary of the site (TN16). The hedgerow was approximately 2 m high and 1 m wide with species including hawthorn, ash *Fraxinus excelsior*, gorse, bramble and dog rose *Rosa canina*. The ground flora included field horsetail *Equisetum arvense*, cock's-foot *Dactylis glomerata*, hard rush, creeping buttercup, creeping thistle, meadow vetchling *Lathyrus pratensis* and false oat grass *Arrhenatherum elatius*.

### 3.3.10 Running Water

Andrew's Gill was adjacent to the southern boundary of the site and drained westwards towards the coast. The banks of the watercourse were steeply sloping and covered with dense scrub and bracken.

There was a small un-named watercourse which flows westwards through the site (TN7). The watercourse was approximately 0.5 m wide with steep bank sides flowing through gorse, hawthorn, bracken and rushes.

Cat Gill flowed through the northern half of the site. The bank sides were steep and covered with dense scrub (TN11).

### 3.3.11 Open Water

Two ponds were identified within 500m of the site (refer to table 5 below).

**Table 5: Pond Descriptions**

Pond Reference	OS grid Reference	Approximate Size	Approximate distance and direction from site	Description
<b>Pond 1</b> (TN12)	NX 98594 23821	The pond is approximately 40 m x 28 m, depth unknown.	Approximately 160 m north of the site.	The pond is unshaded, set within grassland habitat. Vegetation on the margins included hard rush and gorse. Waterfowl including mallards <i>Anas platyrhynchos</i> and a grey heron <i>Ardea cinerea</i> were present at the time of survey.
<b>Pond 2</b> (TN18)	NX 99127 23739	The pond is approximately 35m x 12m, depth unknown.	The pond was approximately 15 m south of the access track into the site.	The pond is unshaded, set within grassland habitat. No waterfowl were visible at the time of survey.



**3.3.12 Building**

There was one single storey building within the site (TN13). The building had pebbledash walls and a cement tiled roof.

**3.3.13 Bare Ground**

There were crushed hardcore tracks between the turbines (TN17).

**3.4 Protected & Notable Species**

**3.4.1 Amphibians**

The desk study returned records of natterjack toad *Epidalea calamita* within 5 km of the site. The closest records of natterjack toad were approximately 3.9 km north of the site in Workington, recorded between 1981 – 1987. These records are considered to be historic and no longer relevant.

The NBN database identified a GCN record approximately 650m north of the site, recorded in 2014.

There were no European Protected Species Licenses (EPSL) for amphibians granted within 5 km of the site.

The closest record of common toad *Bufo bufo* was 1.8 km north of the site, associated with Moss Bay, Workington and was a count of 6-20 adults toads recorded in 1988. However, the record was over 10 years old and therefore considered to be historic.

The field survey identified two ponds within 500m of the site (refer to section 3.3.11 above).

WYG has incidental records for common toad along the wind farm access track; these include two individuals at OSNGR NX986234 and NX 98585 23373. These were observed during bat transect on the 11<sup>th</sup> September 2019.

Habitat Suitability Index

The HSI survey results for the ponds are summarised in Table 6.

**Table 6: Habitat Suitability Index**

HSI Index	Pond 1	Pond 2
SI1 – Location	1	1
SI2 – Pond Area	0.92	0.80
SI3 – Pond Drying	1	0.5
SI4 – Water Quality	0.67	0.67
SI5 – Shade	1	1
SI6 – Fowl	0.67	1
SI7 – Fish	1	1
SI8 – Ponds	0.4	0.4



HSI Index	Pond 1	Pond 2
SI9 – Terrestrial Habitat	1	0.67
SI10 – Macrophytes	0.3	0.3
<b>HSI Score</b>	<b>0.74</b>	<b>0.68</b>
<b>Pond Suitability</b>	<b>Good</b>	<b>Average</b>

The HSI scores indicate that pond 1 has ‘good’ suitability for GCN and pond 2 has ‘average’ suitability for GCN. The semi-improved grassland, marshy grassland and scrub habitat within the site provides suitable terrestrial habitat for GCN. Hedgerows within the site provide moderate habitat suitability for GCN and provide suitable habitat links throughout the site. The ponds were situated within improved grassland which had been grazed by cattle. This habitat is considered to be suboptimal for GCN.

### 3.4.2 Reptiles

The NBN atlas indicated a record for adder *Vipera berus* within the 5 km grid square for the site.

The data from CBDC found that the closest reptile record was for common lizard *Zootoca vivipara* recorded 1.1 km south of the site in 2004. The closest record of slow worm was for an adult recorded 1.4 km south of the site in 2012. There were also two records of adder recorded at Distington Moss (3 km south-east) and Walkmill Community Woodland, Moresby (4.4 km south-east). The most recent record was from 2010.

The scrub and grassland habitats within the site have suitability for reptiles such as slow worm and common lizard.

### 3.4.3 Bats

The NBN atlas indicated two records for common pipistrelle *Pipistrellus pipistrellus* within the 5 km grid square for the site.

CBDC returned the following records of bats within the 5 km search radius. The species of bats recorded and the closest records are summarised below:

- Daubenton’s Bat *Myotis daubentonii* – a count of 14 bats were observed at Rosehill Theatre Barn, 3.1 km south east in 2012. Recorded during an emergence survey.
- Natterer’s Bat *Myotis nattereri* – two individuals were also recorded at Rosehill Theatre Barn, 3.1 km south east in 2012 during an emergence survey.
- Common pipistrelle – two individuals were recorded at the same emergence survey of Rosehill Theatre Barn, in 2012. An additional common pipistrelle roost was noted at Stoneyheugh, Workington in 2013, 4.7 km north east of the site.
- Soprano pipistrelle *Pipistrellus pygmaeus* – there were two records, from Rosehill Theatre Barn and StoneyHeugh, as noted above.
- Brown long-eared bat *Plecotus auritus* – A single roost record at Stoneyheugh, as noted above.



In addition to the above records there were six records of maternity roosts of unidentified bat species or pipistrelle bats. The closest to the site was at Woodbank, Common End, Distington, in 2005, 2.2 km east of the site.

There were two records of EPSLs for common pipistrelle within 5 km of the site.

- 2017-31499-EPS-MIT: located approximately 4.8 km south of the site, relating to the destruction of a common pipistrelle resting place between 28.07.2017 and 31.03.2018.
- EPSM2011-3654: located approximately 2.6 km north of the site, relating to the destruction of a common pipistrelle resting place between 11.10.2011 and 30.01.2012.

### *Roosting Bats*

The building within the site was in good condition with no potential roost features noted. The soffit boxes were tight to the walls and no gaps under roof tiles were noted. The building is considered to have 'negligible' suitability for roosting bats.

### *Foraging and Commuting Bats*

The species-poor hedgerow on site creates linear feature and provides some shelter for bats to forage and commute along. The cattle grazed pasture may provide a source of invertebrates for foraging bats. However overall, habitats within the site are open and exposed and are considered to be of 'low' suitability for foraging and commuting bats.

#### **3.4.4 Badger**

The NBN atlas indicated that there were two records for badger within the 5 km grid square for the site.

CBDC records showed that the closest record for badger was 1.6 km east of the site, recorded in 2003.

Grassland and scrub habitats within the site have suitability for foraging and sett building. However, no badger setts or signs were identified on site during the survey.

#### **3.4.5 Otter & Water Vole**

The NBN atlas indicated that there were 12 records for otter *Lutra lutra* and no records of water vole *Arvicola amphibius* within the 5 km grid square for the site.

CBDC returned records for both otter and European water vole within 5 km of the site. The closest record of otter was of a spraint found at Lowca beck, 1.5 km south of site in 2004. There were two records of water vole droppings found 4.6 km away at Distington Moss in 1999. There were no records of EPSL granted for otter or water vole within 5 km of the site.

Andrew's Gill, Cat Gill and the un-named watercourse within the site flow through steep vegetated valleys and are likely to have rapid flow when in spate. During normal flow conditions, the watercourses are likely to be too shallow to support water voles (water voles prefer water at least 15cm deep to drop into). The dense scrub vegetation on the bank sides minimises the availability suitable food sources such as grasses and rushes in the immediate vicinity of the watercourses. CBDC data indicates that there are no known populations of water vole in west Cumbria (CBDC, 2010),



therefore water vole are considered unlikely to be present on site and are not discussed further in this report.

Andrew's Gill, Cat Gill and the unnamed watercourse within the site could provide suitable habitat for otter. The coastal habitats to the west are suitable for foraging otter, however otter also need a source of fresh water to keep their fur in good condition and for drinking. The watercourses are unlikely to provide a significant food source, but may provide a means for otters to navigate through the landscape. The dense scrub adjacent to the watercourses could provide places of shelter.

### 3.4.6 Birds

The NBN atlas returned records for 158 species of bird within the 5 km grid square for the site.

CBDC returned 5975 records of 147 bird species within 5 km of the site, including 13 sensitive species records. Of these a total of 29 are legally protected bird species listed under Schedule 1 of the W&CA.

329 records of 59 bird species (including 3 unlisted sensitive species) were recorded to tetrad level and are located within NX92W. As the exact location of these records is unknown, it is possible that they may fall within the site. However, only 23 of these have a location of 'Lowca'. Of these 14 are designated as either red or amber Birds of Conservation Concern (BoCC) including gannet *Morus bassanus*, oystercatcher *Haematopus ostralegus*, ringed plover *Charadrius hiaticula*, curlew *Numenius arquata*, herring gull *Larus argentatus*, great black-backed gull *Larus marinus*, tawny owl *Strix aluco*, willow warbler *Phylloscopus trochilus*, skylark *Alauda arvensis*, meadow pipit *Anthus pratensis*, dunnock *Prunella modularis*, starling *Sturnus vulgaris*, linnet *Linaria cannabina* and reed bunting *Emberiza schoeniclus*.

Meadow pipits and a snipe *Gallinago gallinago* were recorded on site during the Ecological Appraisal, and mallards and a grey heron were recorded at the pond to the north (TN14). The grassland and scrub habitats within the site are suitable for breeding and wintering birds, and the coastal habitats to the west will also support a range of breeding and wintering bird species.

### 3.4.7 Invertebrates

The NBN atlas returned records for 314 species of insect within the 5 km grid square for the site.

CBDC data found that the closest invertebrate records were from Andrew's Gill (immediately south of the site). The records were for wall butterfly *Lasiommata megera* and the beetle *Agriotes sputator* recorded in 2006. Records of small blue butterfly *Cupido minimus*, a Cumbrian LBAP species are located approximately 0.4 km south of the site at the former Micklam brickworks site in 2016. Dingy skipper *Erynnis tages*, and small heath *Coenonympha pamphilus* were also recorded at the former Micklam brickwork sites in 2016. Grayling *Hipparchia semele* was recorded 0.5 km south of the site in 2012.

The site could support notable butterfly species such as wall, which favour short open grassland and coastal habitats. Grayling also occur in coastal habitats, however they prefer soils which are dry and well-drained, with sparse vegetation and plenty of bare ground in open positions. No obvious areas of kidney vetch (the larval food plant of small blue butterfly) were noted on site during the survey. The site which is grazed and shows signs of agricultural improvement, is less likely to support the above notable butterfly species.





### 3.4.8 Other Species

The NBN atlas indicated that there were records for west European hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, red squirrel *Sciurus vulgaris*, grey seal *Halichoerus grypus* and common porpoise *Phocoena phocoena* within the 5 km grid square for the site. Grey seal and common porpoise are highly unlikely to be affected by the ongoing operation of the windfarm as they are associated with the coastal habitat to the west, which is separated from the site by cliffs and the west coast railway line.

CBDC returned 352 records of red squirrel within 5 km of the site. The closest record was 1 km north of the site at Workington and was recorded in 2011. Red squirrel are an arboreal mammal and due to the lack of trees or woodland on site, are unlikely to be present.

CBDC returned one return of Polecat *Mustela putorius* 1.9 km east of the site, recorded in Distington in 2016. Polecat dens are commonly found in rabbit burrows, especially in summer, but they frequently move into farmyards in winter, when they may den in hay bales, under sheds and in rubbish tips. Polecats have territories that vary in size according to habitat and food availability. It is considered unlikely that polecat would have a permanent presence on site.

The closest record for west European hedgehog *Erinaceus europaeus* was located 1.7 km east and was a count of an individual dead on road on the Distington bypass. The grassland habitats within the site have some suitability for foraging hedgehog.

The closest record of brown hare was located 1.6 km south of the site, at Lowca in 2012. The grassland habitats within the site are suitable for brown hare.

### 3.4.9 Invasive Plant Species

No invasive plant species were noted on site during the survey.

## 3.5 Importance of Ecological Features

In line with the CIEEM PEA Guidelines, and based on the above baseline information, each ecological feature recorded within the study area is considered to have the following importance, using the Methodology as defined in Section 4 of the CIEEM EcIA Guidelines (2018).

**Table 7 Importance of Ecological Features**

Feature	Importance	Rationale
Solway Firth pSPA River Derwent and Bassenthwaite Lake SAC River Ehen SAC Cumbria Coast MCZ	International	Designated at an international level for their habitats / species assemblages.
Harrington Reservoir LNR	County	Designated for its habitats, notable plant species and breeding bird assemblage.
CWS, Site of Invertebrate Significance, SRV.	County	Designated at a county level of their habitats or species assemblages.



Feature	Importance	Rationale
Semi-improved acid grassland	Negligible	Not a HPI or priority habitat within the LBAP. However may support notable species.
Marshy grassland	Negligible	Not a HPI or priority habitat within the LBAP. However may support notable species.
Semi-improved neutral grassland	Negligible	Not a HPI or priority habitat within the LBAP. However may support notable species.
Improved grassland	Negligible	Not a HPI or priority habitat within the LBAP. Habitat common and widespread in the locale.
Scattered scrub, dense scrub, bracken, tall ruderal.	Negligible	Habitats common and widespread in the locale. May support nesting birds and reptiles.
Intact species-poor hedgerow	Local	Hedgerows are a HPI within the LBAP.
Running water	County	Cat Gill and Andrew's Gill are designated as CWS.
Open water	Local	Ponds are a HPI within the LBAP.
Building	Negligible	No intrinsic ecological value.
Amphibians	Unknown	Ponds present within 500m may support notable amphibians (including GCN).
Reptiles	Unknown	Habitats within the site may support reptiles species such as slow worm and common lizard.
Bats	Unknown	The site has low suitability for foraging and commuting bats.
Badger	Negligible	Unlikely to be present on site.
Otter	Local	Otter may pass through the site, utilising Cat Gill and Andrew's Gill.
Water vole	Negligible	Unlikely to be present on site.
Birds	Unknown	Site is likely to support breeding and wintering birds.
Invertebrates	Local	Site is likely to support a wide variety of invertebrate species.
Red squirrel and polecat	Negligible	Unlikely to be present on site.
Hedgehog	Local	May use habitats on site. A SPI.
Brown hare	Local	May use habitats on site. A SPI.
Invasive plant species	Negligible	No invasive plant species were noted on site.
<p><b>Either:</b> International (incl. European) / National / Regional / County / Local / Negligible  <b>Or:</b> Unknown (i.e. further surveys/information needed)</p>		

The potential for the proposals to have adverse or beneficial impacts on these features, along with the need for any mitigation or enhancement measures are discussed in detail below.



## 4.0 Relevant Planning Policy & Legislation

### 4.1 Revised National Planning Policy Framework

A revised NPPF was issued on 19<sup>th</sup> February 2019 (Ministry of Housing Communities and Local Government, 2019) and currently supplements government Circular 06/2005, *Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System* (Office of the Deputy Prime Minister, 2005).

Circular 06/2005 states that the presence of protected species is a material consideration in the planning process. Paragraph 170 of the NPPF also states that:

*Planning policies and decisions should contribute to and enhance the natural environment by:*

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

Paragraph 174 then goes on to confirmed that:

*When determining planning applications, local planning authorities should apply the following principles:*

- a) if significant harm to biodiversity 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;*
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact 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;*



- c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.*

Regarding EcIA's and HRA's – any sites identified, or required, as compensatory measures for adverse effects on any Natura 2000/habitats site should also be given the same level as protection as the pSPA's and cSAC's themselves. In addition, when an application is being determined, Paragraph 177 clarifies that:

*"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats on site."*

Paragraph 180 is also relevant as;

*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:...*

- c) *limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.*

## **4.2 Biodiversity 2020: A strategy for England's Wildlife & Ecosystem Services**

Biodiversity 2020 (DEFRA, 2011) replaces the previous UK Biodiversity Action Plan and sets national targets to be achieved. The intent of Biodiversity 2020, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are the SPI & HPI detailed under NERC Act (see Appendix B for further details).

## **4.3 Local Biodiversity Action Plan**

Local Biodiversity Action Plans (LBAPs) identify habitat and species conservation priorities at a local level (typically County by County) and are usually drawn up by a consortium of local Government organisations and conservation charities. Although they are no-longer managed at a national level many are still reviewed and updated at a local level.

The Cumbria Biodiversity Action Plan (CBAP) was launched in 2001; SAPs were drawn up for 21 species and HAPs were drawn up for 19 habitats. Following the UKBAP review in 2007, the CBAP was



reviewed in 2009 and it was decided to include all habitats and species which are listed as HPI and SPI under the NERC Act 2006. A list of all 268 SPI which occur in Cumbria is provided at:

<https://www.cumbriawildlifetrust.org.uk/sites/default/files/cumbria%20bap%20species%20updated%20list%202009%20web.pdf>

The original action plans for Cumbria were further reviewed as part of the Cumbria Biodiversity Evidence Base (CBEB) and detailed statements have been prepared for 11 species/species groups (Table 8) and 21 habitats (Table 9). For the purposes of this report, the species and habitats listed in the following tables are considered to represent the current CBAP.

**Table 8: LBAP SAPs**

Species Action Plans	
Barn Owl, <i>Tyto alba</i>	Red Squirrel
Bats, <i>Chiroptera</i>	Reptiles
Great Crested Newt	Small Blue butterfly
Hen Harrier, <i>Circus cyaneus</i>	Water Vole
Natterjack Toad	Wintering Geese and Swans
Otter	-

**Table 9: LBAP HAPs**

Habitats Action Plans	
Bogs	Hedgerows
Calaminarian Grasslands	Lakes, <b>Ponds</b> and Tarns
Calcareous Grassland	Lowland Dry Acid Grassland
Coastal and Floodplain Grazing Marsh	Montane Habitats
Coastal Habitats Above High Water	Open Mosaic Habitats on Previously Developed Land
Coastal Intertidal Habitats	Rivers
Coastal Subtidal Habitats	Rock Habitats
Fen, Marsh and Swamp	Saline Lagoons
Hay Meadows and Pastures	Semi-Natural Woodland
Heathland	Traditional Orchards
Wood-Pasture and Parkland	-

It should be noted that the existence of a SAP or HAP does not always infer an elevated level importance for those features. These plans may be designed to encourage an increase in these habitats/species, rather than to protect a county-scarce feature (for example).



## 4.4 Local Plan

The site lies within Copeland Borough. Chapter 7 of the adopted Local Plan for Copeland (LPC) (2013-2028) *Environmental Protection and Enhancement* incorporates one policy covering Biodiversity and Geodiversity.

### **Policy ENV3 – Biodiversity and Geodiversity**

*The Council will contribute to the implementation of the UK and Cumbria Biodiversity Action Plan within the plan area by seeking to:*

- A. Improve the condition of internationally, nationally and locally designated sites*
- B. Ensure that development incorporates measures to protect and enhance any biodiversity interest*
- C. Enhance, extend and restore priority habitats and look for opportunities to create new habitat*
- D. Protect and strengthen populations of priority or other protected species*
- E. Boost the biodiversity value of existing wildlife corridors and create new corridors, and stepping stones that connect them, to develop a functional Ecological Network*
- F. Restrict access and usage where appropriate and necessary in order to conserve an area's biodiversity value*

**Policy DM25** supports this policy, setting out the detailed approach towards managing development proposals that are likely to have an effect on nature conservation sites, habitats and protected species.

The core strategy policies are supported by Development Mitigation Policies, one of which relates to 'Nature Conservation, Habitat and Species Protection':

### **Policy DM25 – Protecting Nature Conservation Sites, Habitats and Species**

*A All development proposals should:*

- i) Protect the biodiversity value of land and buildings*
- ii) Minimise fragmentation of habitats*
- iii) Maximise opportunities for conservation, restoration, enhancement and connection of natural habitats and creation of habitats for species listed in UK and Cumbria Biodiversity Action Plans. Special consideration should also be given to those European habitats that lie outside the boundaries of European designated sites*

*B Development proposals that would cause a direct or indirect adverse effect on locally recognised sites of biodiversity and geodiversity importance, including County Wildlife Sites, Local Nature Reserves and Regionally Important Geological/Geomorphological Sites or protected species will not be permitted unless:*

- i) The benefits of the development clearly outweigh the impacts on the features of the site and the wider network of natural habitats, and;*
- ii) Prevention, mitigation and/or compensation measures are provided. An appropriate long-term management plan will be sought and arrangements to provide adequate funding will be made in accordance with a formal planning agreement or obligation*



*C Where compensatory habitat is created, it should be of equal or greater size than the area lost as a result of the development*

*D Development proposals where the principal objective is to conserve or enhance biodiversity or geodiversity interests will be supported in principle*

*E Where there is evidence to suspect the presence of protected species any planning application should be accompanied by a survey assessing their presence and, if present, the proposal must be sensitive to, and make provision for, their needs*

*F All development proposals must take into account any likely significant effects on the internationally important sites both within the Borough and within a 20 km radius of the Borough boundary as well as those that are hydrologically linked to the development plan area*

## 4.5 Legislation

Full details of the UK legislation and offences which are relevant to the ecological receptors identified are included in Appendix B. However, based on the findings of our assessment, it is considered that the proposals will need to consider the following legal provisions:

- Harm to a Natura 2000 site
- Disturbance or killing of an EPS (GCN, otter);
- Disturbance of nesting wild birds; and,
- Killing / injury of a common reptile species.



## 5.0 Discussion

### 5.1 Designated Sites

#### 5.1.1 Natura 2000 Sites

The Solway Firth pSPA is located 242 m west of the site. The Solway Firth is an estuarine / marine site of international importance, regularly supporting at least 20,000 waterfowl. The pSPA is also designated for its over-wintering and migratory bird assemblages.

The wind farm has been operational for approximately 20 years and no ecological monitoring has been undertaken. WYG is not aware of any reports of bird strike / direct mortality associated with the wind farm to date.

As the wind farm is currently operational, further habitat loss and displacement of birds (via barrier effects) are considered unlikely.

The decommissioning process could cause temporary disturbance and displacement to bird species within the site or wider area. Following decommissioning, habitats within the site would be restored which would increase the area of available habitat to birds.

Vantage point surveys have been instructed and the results will be provided in a separate bird survey report. Natural England (NE) has been consulted regarding the scope of surveys required the support the planning application. NE advised "*we have no concerns of any designated site impacts at Lowca, despite its proximity, as there is nothing that will be attract the pSPA birds inland to cause flights through the site*" (NE, via email, 26.09.2019 – Appendix C).

The River Derwent and Bassenthwaite Lake SAC is approximately 6.1 km north of the site at its closest point. Due to the separation distances between the SAC and the site no effects are anticipated during the continued operation or decommissioning of the windfarm.

The River Ahen SAC is approximately 10 km south of the site, and due to the separation distances, no effects upon the SAC are anticipated.

The Cumbria Coast MCZ is hydrologically linked to the site via the watercourses that flow through the site towards the coast. No effects are anticipated during the continued operation of the wind farm. In the absence of mitigation, pollution of the watercourses could occur during decommissioning. Therefore it is **recommended that a Construction and Environmental Management Plan (CEMP) is prepared the year prior to decommissioning to protect coastal habitats and the MCZ.**

It is **recommended that a Report to Inform HRA Screening (HRA Stage 1) is prepared** to identify any likely significant effects upon European designated sites, either alone or in combination with other plans or projects.





### 5.1.2 Local Nature Reserve

Harrington Reservoir LNR is approximately 2.38 km north east of the site, designated for its habitats, botanical species and breeding birds. Due to the distance between the site and the LNR, the continuing operation of the wind farm is unlikely to have any effects upon the habitats or breeding bird assemblage. No effects upon the LNR are anticipated during decommissioning or post decommissioning.

### 5.1.3 CWS, Sites of Invertebrate Significance and SRVs

The closest CWS are Cunning Point and Cat Gill (which are partly within the site) and Andrew's Gill, which is immediately south of the site. There will be no significant changes in land use during the continued operation of the wind farm, and no effects upon the CWS are anticipated during the operational phase of the wind farm.

In the absence of mitigation, adverse effects could occur during decommissioning. These could include damage / degradation of habitats or hydrological impacts. **It is recommended that a CEMP is prepared the year prior to decommissioning to protect sensitive habitats within and adjacent to the site.**

## 5.2 Habitats

### 5.2.1 Grassland Habitats

Grassland habitats within the site are currently grazed by cattle. The continued operation of the wind farm will not result in any changes to the grassland habitat. There could be minor changes in the habitats on site should there be changes in farming activities or the grazing regime. In the absence of site management, the grassland habitats within the site could become degraded during decommissioning (i.e. due to encroachment of machinery). Therefore, it is **recommended that a CEMP is prepared in the year prior to decommissioning and a Habitat Management Plan (HMP) is prepared to inform habitat restoration post decommissioning.** The CEMP and HMP could be secured by planning condition.

### 5.2.2 Scrub, Bracken and Tall Ruderal

The encroachment of gorse scrub, bracken and tall ruderal vegetation over time could reduce the quality of the grassland habitats on site. It is therefore recommended that gorse and bracken encroachment are monitored and removed if they are becoming over dominant. It is recommended that gorse is maintained at <10% coverage. The **timing of any management actions could be detailed within a HMP** and should consider nesting birds and reptiles (refer to sections 5.3.2 and 5.3.6 below).

### 5.2.3 Hedgerows, Running water and Open Water

No changes are anticipated to the hedgerows or ponds within 500m of the site, during either operation or decommissioning.

As noted in Section 5.1.3 above, Cat Gill and Andrew's Gill are within and adjacent to the site, and are designated as CWS. There is also an un-named watercourse within the site. No effects upon the watercourses are anticipated during the extended operation of the windfarm. It is **recommended that a CEMP is prepared the year prior to decommissioning to make sure there are no**



**adverse effects upon water quality, water flow, changes in runoff, increases in sedimentation or other hydrological impacts.**

#### 5.2.4 Building

At present, the substation building within the site is considered to have negligible ecological value. Changes to the fabric of the building could occur over time, therefore it is **recommended that an updated assessment is undertaken the year prior to decommissioning.**

### 5.3 Protected & Notable Species

#### 5.3.1 Amphibians

Ponds within 500 m of the site have suitability for amphibians including GCN. The NBN atlas indicates that GCN are present within the wider area. The continued operation of the wind farm will not require any changes to the ponds or surrounding habitat and access to the turbines will continue to be along existing tracks.

Potential impacts upon GCN could occur during decommissioning in the absence of mitigation. There is suitable terrestrial habitat surrounding the turbines and the use of machinery in these areas could result in GCN being killed or injured.

**An update HSI assessment of ponds within 500m and GCN surveys are recommended the year prior to decommissioning, to confirm the presence / likely absence of GCN within the site and to inform the decommissioning plan.** Environmental DNA (eDNA) testing is recommended and requires one site visit to take water samples between the 15th April and the 30th June in any given year (Biggs *et al.*, 2014). If areas of scrub within 500 m of ponds requires removal, or if works are required within the grassland habitats on site, GCN surveys are also recommended.

#### 5.3.2 Reptiles

Habitats within the site have suitability for reptiles, particularly the areas of scattered scrub, dense scrub and bracken. **If areas of scrub or bracken require removal, it is recommended that precautionary working methods are followed under direct supervision of an ecologist.** These could include habitat manipulation and/or appropriate timing of works.

**To inform decommissioning, it is recommended that reptile surveys are undertaken the year prior to decommissioning to confirm presence / likely absence.** The results of the reptiles surveys will feed into the habitat management plan for the site post decommissioning. Reptile surveys comprise placing reptile mats in areas of suitable habitat which are left undisturbed for at least two-weeks followed by seven visits spread throughout the optimal season (April – June and September) whereby tiles are lifted, and any reptiles present are counted. If reptiles are found to be present, then a mitigation strategy will be required.

#### 5.3.3 Bats

##### Roosting bats

The building within the site has 'negligible' suitability for roosting bats and no further surveys are recommended. As changes to the fabric of the building could occur over time, it is **recommended that an updated assessment is undertaken the year prior to decommissioning.**



### Foraging and Commuting Bats

Habitats within the site are open and exposed, and considered to provide 'low' suitability for foraging and commuting bats.

Wind farms can affect bats in the following ways:

- Collision mortality, barotrauma and other injuries;
- Loss or damage to commuting and foraging habitat, (wind farms may form barriers to commuting or seasonal movements, and can result in severance of foraging habitat); and,
- Displacement of individuals or populations (due to wind farm construction or because bats avoid the wind farm area).

As the wind farm is currently operational, it is unlikely that life extension would result in a loss of foraging or commuting habitat or result in the displacement of bat populations.

**Bat activity surveys have been instructed and the results will be presented in a separate bat survey report.**

#### 5.3.4 Badger

Although no evidence of badger was noted during the survey, there is potential for badger to colonise the area while the wind farm is operational. An **update walkover survey is recommended the year prior to decommissioning to identify any badger setts or signs.**

#### 5.3.5 Otter

The undisturbed areas of dense bankside vegetation within the site provide suitable habitat for otter. These areas will remain undisturbed during the continued operation for the wind farm.

There is potential for disturbance to occur during decommissioning, should resting places (holts or couches) be present within 200m of turbines. A wider zone of influence may need to be considered if decommissioning will cause significant noise or vibration. **A survey for otter is recommended the year prior to decommissioning to identify any potential holts or couches.** Surveys can be carried out at any time of year but should be preceded by five days of dry weather where possible. Mitigation would depend upon the nature of works and proximity to otter resting places. An EPSML from Natural England will be required if disturbance of a holt or resting place is likely.

#### 5.3.6 Birds

Habitats within and adjacent to the site may be used by breeding, wintering or passage birds. As discussed in Section 5.1.1., the operational wind farm could present a risk to birds causing death through collision or interaction with turbine blades. As the wind farm has been operational for approximately 20 years, habitat loss and displacement of birds (via barrier effects) are considered unlikely. NE have advised that "*there is nothing that will attract the pSPA birds inland to cause flights through the site*" (NE, via email, 26.09.2019 – Appendix C).

The decommissioning process could cause temporary disturbance to bird species within the site or wider area. Following decommissioning, habitats within the site would be restored which would increase the area of available habitat to birds.



**Bird surveys have been instructed and the results will be presented in a separate report.**

If scrub management is required, this should be completed outside of the nesting bird season (which is between March and September in any given year).

### **5.3.7 Invertebrates**

Habitats within the site have suitability to support a diverse variety of invertebrates. However the wind farm extension of life / decommissioning process is unlikely to affect the invertebrate assemblage and no further surveys are recommended.

### **5.3.8 Other Species**

The site has potential to support both European hedgehog and brown hare. The operational phase of the wind farm is unlikely to have any effects on either of these species. During decommissioning, it is recommended that any areas of dense vegetation are checked for hedgehog prior to removal. Brown hare would likely be temporarily displaced to habitats in the wider area during decommissioning. Habitats would be available to both brown hare and hedgehog post decommissioning.

### **5.3.9 Invasive Plant Species**

No invasive plant species were noted on site during the survey, however there is potential for invasive plants to colonise the area while the windfarm is operational. **An update walkover survey is recommended the year prior to decommissioning to identify invasive species on site.**



## 6.0 Summary

### 6.1 Designated Sites

- The Solway Firth pSPA is located 242 m west of the site.
- The River Derwent and Bassenthwaite Lake SAC, River Ehen SAC and Cumbria Coast MCZ are located within 10 km of the site.
- It is recommended that a report to inform HRA screening (HRA Stage 1) is prepared to identify any likely significant effects, either alone or in combination with other plans or projects.
- The closest CWS are Cunning Point and Cat Gill (which are partly within the site) and Andrew's Gill, which is immediately south of the site.
- It is recommended that a Construction and Environmental Management Plan (CEMP) is prepared the year prior to decommissioning to protect sensitive habitats within and adjacent to the site.

### 6.2 Habitats

- It is recommended that a HMP is prepared the year prior to decommissioning to inform habitat restoration post decommissioning.
- The encroachment of scrub, bracken and tall ruderal vegetation over time could reduce the quality of the grassland habitats on site.
- It is therefore recommended that gorse and bracken encroachment are monitored and removed if they are becoming over dominant.

### 6.3 Protected & Notable Species

#### *Amphibians*

- Ponds within 500 m of the site have suitability for amphibians including GCN.
- Potential impacts upon GCN could occur during decommissioning in the absence of mitigation.
- GCN surveys are recommended in the year prior to decommissioning.
- If areas of scrub within 500 m of ponds requires removal, or if works are required within the grassland habitats on site, GCN surveys are also recommended.

#### *Reptiles*

- Habitats within the site have suitability for reptiles.
- If areas of scrub or bracken require removal during operation, it is recommended that precautionary working methods are followed under direct supervision of an ecologist. These could include habitat manipulation and/or appropriate timing of works.
- It is recommended that reptile surveys are undertaken the year prior to decommissioning to confirm presence / likely absence.



### *Bats*

- The building within the site has 'negligible' suitability for roosting bats and no further surveys are recommended at present.
- As changes to the fabric of the building could occur over time, it is recommended that an updated assessment is undertaken the year prior to decommissioning.
- Habitats within the site are open and exposed, and considered to provide 'low' suitability for foraging and commuting bats.
- Bat surveys have been instructed and the results will be presented in a separate bat survey report.

### *Badger*

- Although no evidence of badger was noted during the survey, there is potential for badger to colonise the area while the windfarm is operational.
- An update walkover survey is recommended in the year prior to decommissioning to identify any badger setts or signs.

### *Otter*

- The undisturbed areas of dense bankside vegetation within the site provide suitable habitat for otter.
- Otter may also forage along coastal habitats hydrologically linked to the site.
- There is potential for disturbance to occur during decommissioning, should resting places (holts or couches) be present within 200m of turbines.
- A survey for otter is recommended the year prior to decommissioning.
- A EPSML from Natural England will be required if disturbance of a holt or resting place is likely.

### *Birds*

- Habitats within and adjacent to the site are likely be used by breeding, wintering or passage birds.
- Bird surveys have been instructed and the results will be presented in a separate bird survey report.
- If scrub management is required, this should be completed outside of the nesting bird season (which is between March and September in any given year).

### *Invertebrates*

- The wind farm extension of life / decommissioning process is unlikely to impact upon the invertebrate assemblage and no further surveys are recommended.

### *Other species*

- The site has potential to support both European hedgehog and brown hare.
- The operational phase of the wind farm is unlikely to have any effects on either of these species.
- During decommissioning, it is recommended that any areas of dense vegetation are checked for hedgehog prior to removal. Brown hare would likely be temporarily displaced to habitats in the wider area during decommissioning. Habitats would be available to both brown hare and hedgehog post decommissioning.



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- WYG (2019) Park House Farm Wind Farm Extension of Life: Environmental Impact Assessment Screening Request.

Please note that the legislation which is relevant to this report is not included in the list above, but details are included in Appendix B below.





## **FIGURES**

**Figure 1 – Site Location Plan**

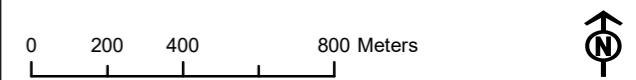
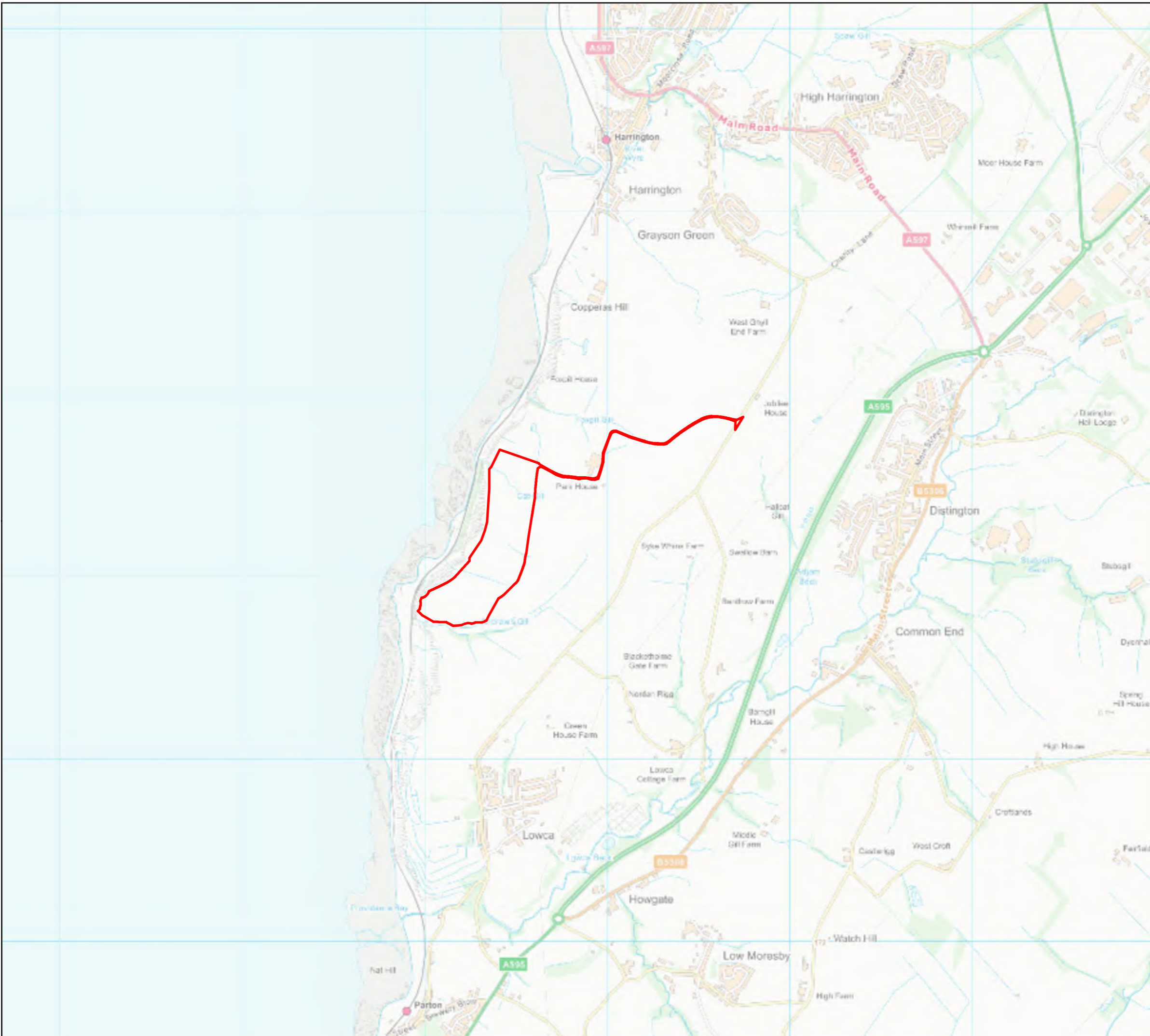
**Figure 2 – Designated Sites within  
10 km**

**Figure 3 – Phase 1 Habitat Plan**

Rev	Date	Notes
A	04/03/20	Initial map production

**Legend**

 Site boundary

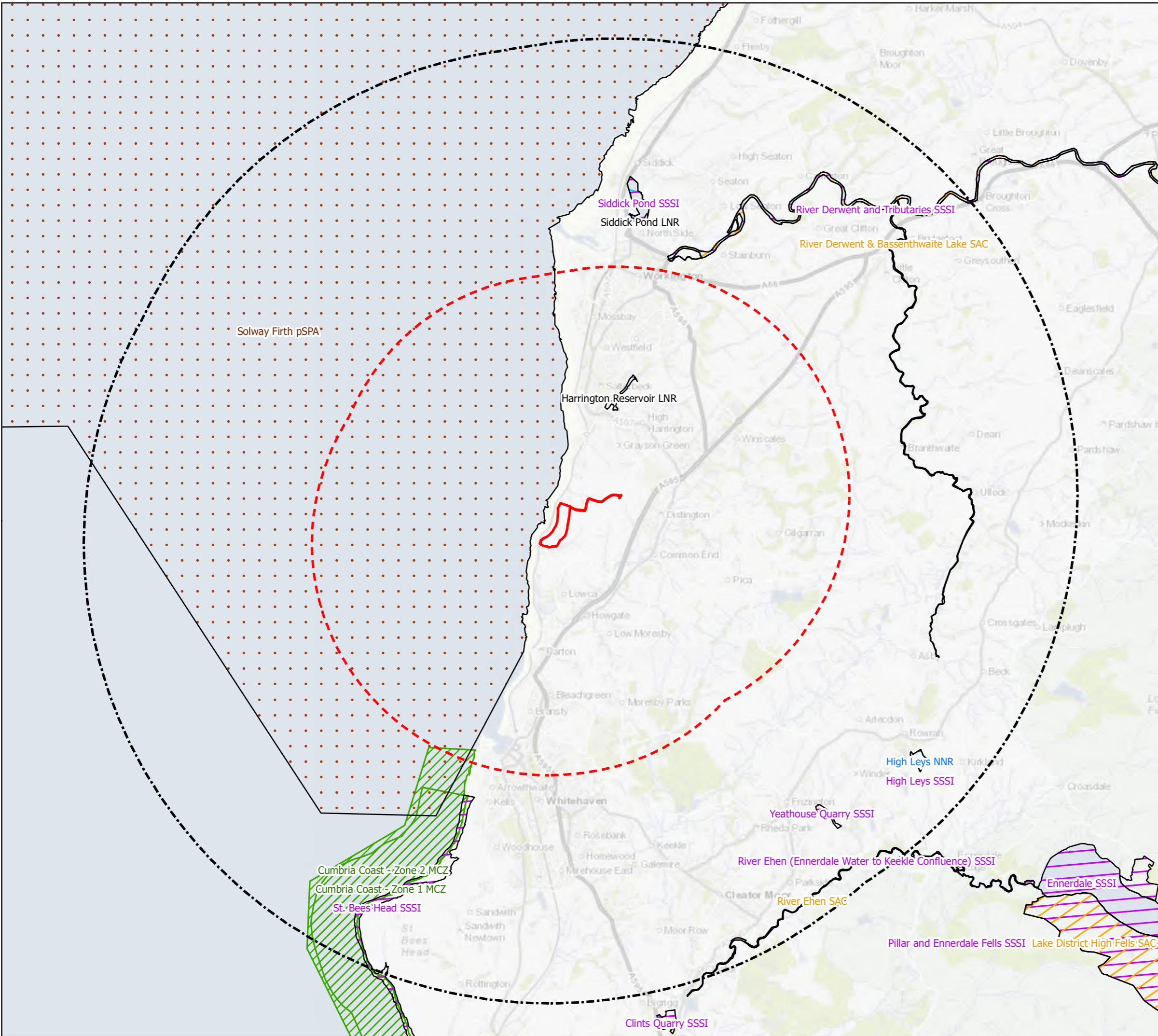


**Site Location Plan**

**Park House Farm Wind Farm  
Cannock Wind Farm Services Limited**

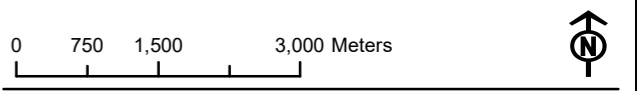
Scale at A3: 1:20,000	Project No: A108663	Drawing No: Figure 1	Revision: A
Drawn by: Maddie Errington	Drawn date: 04/03/2020	Approved by: Patryk Gruba	

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Rev	Date	Notes
A	04/03/20	Initial map production

- Legend**
- Site boundary
  - 5km search area of protected landscapes
  - 10km search area of designated sites
  - Special Areas of Conservation (SAC)
  - Sites of Special Scientific Interest (SSSI)
  - National Nature Reserves (NNR)
  - Local Nature Reserves (LNR)
  - Potential Special Protection Areas (pSPA)
- Marine Conservation Zones © JNCC
- Designated

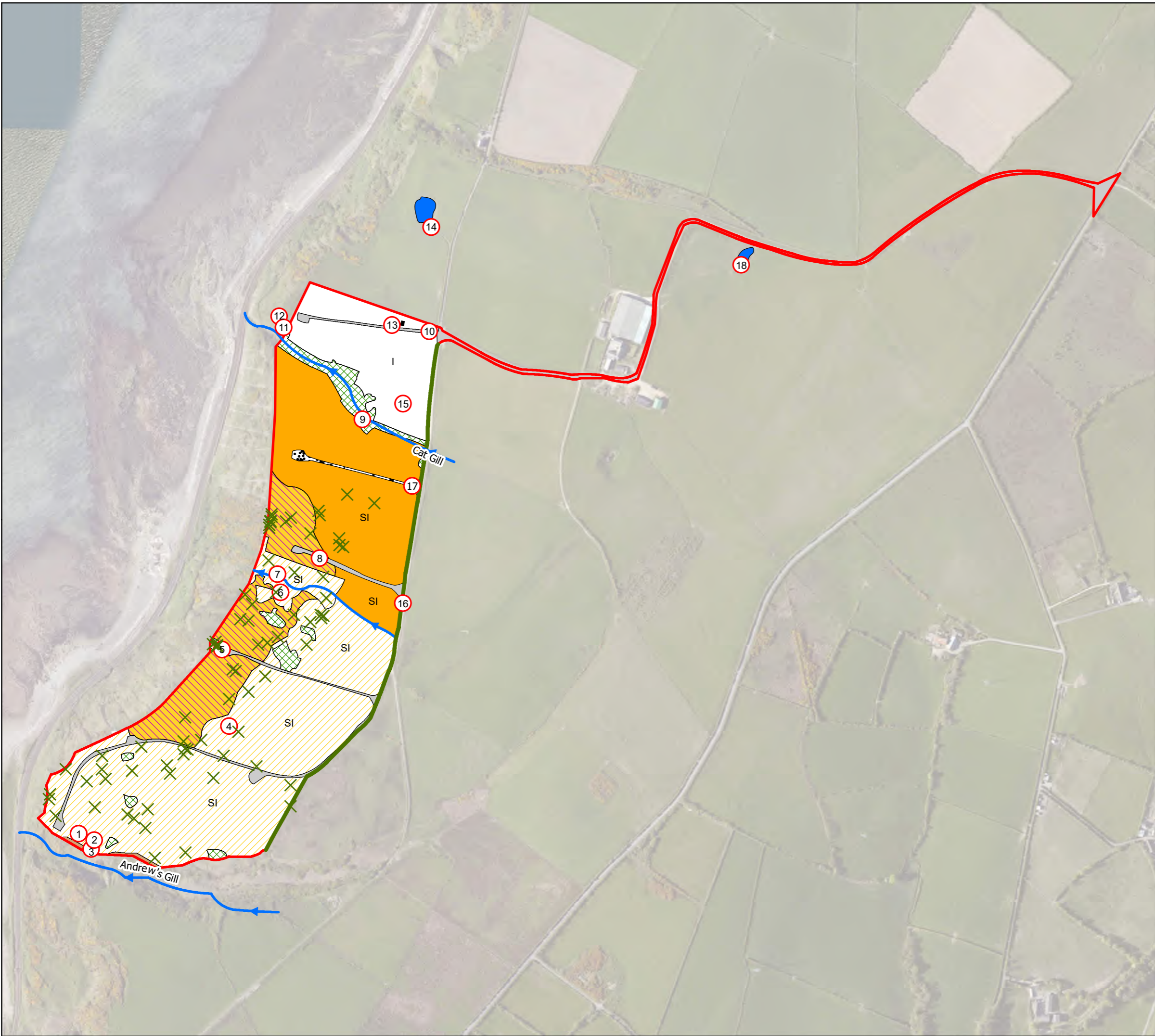


**Designated Sites within 10km of Site Location**

**Park House Farm Wind Farm  
Cannock Wind Farm Services Limited**

















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Drawn by: Maddie Errington		Drawn date: 04/03/2020	Approved by: Kirstin Aldous

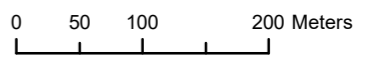
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Rev	Date	Notes
A	04/03/20	Initial map production

**Legend**

-  Site boundary
-  Scrub - dense/continuous
-  SI Acid grassland - semi-improved
-  SI Neutral grassland - semi-improved
-  I Improved grassland
-  Marshy grassland
-  Bracken - continuous
-  Tall ruderal
-  Standing water
-  Buildings
-  Hardstanding
-  Bare ground
-  Intact hedge - native species-poor
-  Running water
-  Scattered scrub
-  Target note



**Phase 1 Habitat Plan**

**Park House Farm Wind Farm  
Cannock Wind Farm Services Limited**

Scale at A3: 1:6,000	Project No: A108663	Drawing No: Figure 3	Revision: A
Drawn by: Maddie Errington	Drawn date: 04/03/2020	Approved by: Kirstin Aldous	

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## Appendix A – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of Cannock Wind Farm Services limited (“the Client”) for the proposed uses stated in the report by WYG Environment Planning Transport Limited (“WYG”). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder’s permission.

No liability is accepted or warranty given for; unconfirmed data, third party documents and information supplied to WYG or for the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report. WYG does not purport to provide specialist legal, tax or accounting advice.

The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.



## Appendix B – Key Legislation

### Bern Convention

The *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention, and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the *EC Birds Directive* (1979) and the *EC Habitats Directive* (1992 – see below). Since the Lisbon Treaty, in force since 1<sup>st</sup> December 2009, European legislation has been adopted by the European Union.

### Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985 (as amended), Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).

### Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales, and via the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland.

### Birds Directive

The EC Directive on the Conservation of Wild Birds (79/409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.



**Conservation of Habitats and Species Regulations 2017 (as amended)**

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the Habitats Directive respectively) to the European Commission. These sites, if ratified by the European Commission, are then designated as Special Protection Areas (SPAs) within six years. Public bodies must also help preserve, maintain and re-establish habitats for wild birds.

The 2018 amendments mainly related to the impact of the *People Over Wind* decision and some implications arising for neighbourhood plan development and a range of other planning tools including Local Development Orders and Permission in Principle – see here for full details:

<https://www.legislation.gov.uk/ukxi/2018/1307/note/made>

The Regulations make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 - see below:

Schedule 2 – European Protected Species of Animals	Schedule 5 – European Protected Species of Plants
Horseshoe bats <i>Rhinolophidae</i> - all species	Shore dock <i>Rumex rupestris</i>
Common bats <i>Vespertilionidae</i> - all species	Killarney fern <i>Trichomanes speciosum</i>
Large Blue Butterfly <i>Maculinea arion</i>	Early gentian <i>Gentianella anglica</i>
Wild cat <i>Felis sylvestris</i>	Lady’s-slipper <i>Cypripedium calceolus</i>
Dolphins, porpoises and whales <i>Cetacea</i> – all sp.	Creeping marsh-wort <i>Apium repens</i>
Dormouse <i>Muscardinus avellanarius</i>	Slender naiad <i>Najas flexilis</i>
Pool frog <i>Rana lessonae</i>	Fen orchid <i>Liparis loeselii</i>
Sand lizard <i>Lacerta agilis</i>	Floating-leaved water plantain <i>Luronium natans</i>
Fisher’s estuarine moth <i>Gortyna borelii lunata</i>	Yellow marsh saxifrage <i>Saxifraga hirculus</i>
Great crested newt <i>Triturus cristatus</i>	
Otter <i>Lutra lutra</i>	
Lesser whirlpool ram’s-horn snail <i>Anisus vorticulus</i>	
Smooth snake <i>Coronella austriaca</i>	
Sturgeon <i>Acipenser sturio</i>	
Natterjack toad <i>Epidalea calamita</i>	
Marine turtles <i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricata</i> , <i>Dermochelys coriacea</i>	

**Wildlife & Countryside Act 1981 (as amended)**

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the ‘Bern Convention’ and the Birds Directive are implemented in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use; or
- take or destroy an egg of any wild bird.

Or to intentionally do the following to a wild bird listed in Schedule 1:

- disturbs any wild bird while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird.



In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places; and
- The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to:

- intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant;
- unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; or
- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, Schedule 5 'Animals which are Protected' contains a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates. Schedule 8 'Plants which are Protected' of the Act, contains 185 species, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise cause to grow in the wild any plant which is listed in Part II of Schedule 9.

It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

**Schedule 1 - Birds which are protected by special penalties**

Avocet	<i>Recurvirostra avosetta</i>	Osprey	<i>Pandion haliaetus</i>
Bee-eater	<i>Merops apiaster</i>	Owl, Barn	<i>Tyto alba</i>
Bittern	<i>Botaurus stellaris</i>	Owl, Snowy	<i>Nyctea scandiaca</i>
Bittern, Little	<i>Ixobrychus minutus</i>	Peregrine	<i>Falco peregrinus</i>
Bluethroat	<i>Luscinia svecica</i>	Petrel, Leach's	<i>Oceanodroma leucorhoa</i>
Brambling	<i>Fringilla montifringilla</i>	Phalarope, Red-necked	<i>Phalaropus lobatus</i>
Bunting, Cirl	<i>Emberiza cirlus</i>	Plover, Kentish	<i>Charadrius alexandrinus</i>
Bunting, Lapland	<i>Calcarius lapponicus</i>	Plover, Little Ringed	<i>Charadrius dubius</i>
Bunting, Snow	<i>Plectrophenax nivalis</i>	Quail, Common	<i>Coturnix coturnix</i>
Buzzard, Honey	<i>Pernis apivorus</i>	Redstart, Black	<i>Phoenicurus ochruros</i>
Capercaillie	<i>Tetrao urogallus</i>	Redwing	<i>Turdus iliacus</i>
Chough	<i>Pyrrhocorax pyrrhocorax</i>	Rosefinch, Scarlet	<i>Carpodacus erythrinus</i>
Corncrake	<i>Crex crex</i>	Ruff	<i>Philomachus pugnax</i>
Crake, Spotted	<i>Porzana porzana</i>	Sandpiper, Green	<i>Tringa ochropus</i>
Crossbills (all species)	<i>Loxia</i>	Sandpiper, Purple	<i>Calidris maritima</i>
Curlew, Stone	<i>Burhinus oedicnemus</i>	Sandpiper, Wood	<i>Tringa glareola</i>
Divers (all species)	<i>Gavia</i>	Scaup	<i>Aythya marila</i>
Dotterel	<i>Charadrius morinellus</i>	Scoter, Common	<i>Melanitta nigra</i>
Duck, Long-tailed	<i>Clangula hyemalis</i>	Scoter, Velvet	<i>Melanitta fusca</i>
Eagle, Golden	<i>Aquila chrysaetos</i>	Serin	<i>Serinus serinus</i>
Eagle, White-tailed	<i>Haliaetus albicilla</i>	Shorelark	<i>Eremophila alpestris</i>
Falcon, Gyr	<i>Falco rusticolus</i>	Shrike, Red-backed	<i>Lanius collurio</i>
Fieldfare	<i>Turdus pilaris</i>	Spoonbill	<i>Platalea leucorodia</i>
Firecrest	<i>Regulus ignicapillus</i>	Stilt, Black-winged	<i>Himantopus himantopus</i>
Garganey	<i>Anas querquedula</i>	Stint, Temminck's	<i>Calidris temminckii</i>





Godwit, Black-tailed	<i>Limosa limosa</i>	Swan, Bewick's	<i>Cygnus bewickii</i>
Goshawk	<i>Accipiter gentilis</i>	Swan, Whooper	<i>Cygnus cygnus</i>
Grebe, Black-necked	<i>Podiceps nigricollis</i>	Tern, Black	<i>Chlidonias niger</i>
Grebe, Slavonian	<i>Podiceps auritus</i>	Tern, Little	<i>Sterna albifrons</i>
Greenshank	<i>Tringa nebularia</i>	Tern, Roseate	<i>Sterna dougallii</i>
Gull, Little	<i>Larus minutus</i>	Tit, Bearded	<i>Panurus biarmicus</i>
Gull, Mediterranean	<i>Larus melanocephalus</i>	Tit, Crested	<i>Parus cristatus</i>
Harriers (all species)	<i>Circus</i>	Tree-creeper, Short-toed	<i>Certhia brachydactyla</i>
Heron, Purple	<i>Ardea purpurea</i>	Warbler, Cetti's	<i>Cettia cetti</i>
Hobby	<i>Falco subbuteo</i>	Warbler, Dartford	<i>Sylvia undata</i>
Hoopoe	<i>Upupa epops</i>	Warbler, Marsh	<i>Acrocephalus palustris</i>
Kingfisher	<i>Alcedo atthis</i>	Warbler, Savi's	<i>Locustella luscinioides</i>
Kite, Red	<i>Milvus milvus</i>	Whimbrel	<i>Numenius phaeopus</i>
Merlin	<i>Falco columbarius</i>	Woodlark	<i>Lullula arborea</i>
Oriole, Golden	<i>Oriolus oriolus</i>	Wryneck	<i>Jynx torquilla</i>
<b>Animal (Vertebrate) Species Listed in Schedule 5 (full legal protection at all times)</b>			
Horseshoe Bats (all species)	<i>Rhinolophidae</i>	Newt – Great Crested	<i>Triturus cristatus</i>
Typical Bats (all species)	<i>Vespertilionidae</i>	Snake – Smooth	<i>Coronella austriaca</i>
Dolphin – Bottle-nosed	<i>Tursiops truncatus (tursio)</i>	Toad, Natterjack	<i>Epidalea calamita</i>
Dolphin – Common	<i>Delphinus delphis</i>	Turtles – All Species	<i>Cheloniidae &amp; Dermochelyidae</i>
Dormouse – Hazel	<i>Muscardinus avellanarius</i>	Basking Shark	<i>Cetorhinus maximus</i>
Pine Marten	<i>Martes martes</i>	Burbot	<i>Lota lota</i>
Porpoise – Harbour	<i>Phocaena phocaena</i>	Goby – Giant	<i>Gobius cobitis</i>
Otter – Eurasian	<i>Lutra lutra</i>	Goby – Couch's	<i>Gobius couchii</i>
Squirrel – Red	<i>Sciurus vulgaris</i>	Seahorse – Short-snouted <sup>2</sup>	<i>Hippocampus hippocampus</i>
Walrus	<i>Odobenus rosmarus</i>	Seahorse – Spiny	<i>Hippocampus guttulatus</i>
Water Vole	<i>Arvicola amphibia</i>	Sturgeon	<i>Acipenser sturio</i>
Whales – All Species	<i>Cetacea</i>	Vendace	<i>Coregonus albula</i>
Wildcat	<i>Felis sylvestris</i>	Whitefish	<i>Coregonus lavaretus</i>
Lizard – Sand	<i>Lacerta agilis</i>		
<b>Animal (Vertebrate) Species Protected under Section 9 (1) part: Killing and Injuring &amp; Section 9 (5) Sale</b>			
Adder	<i>Vipera berus</i>	Slow-worm	<i>Anguis fragilis</i>
Lizard – Viviparous	<i>Zootoca vivipara</i>	Snake – Grass	<i>Natrix helvetica (natrix)</i>
<b>Animals (Vertebrate) Species Protected under Section 9 (5) Sale only</b>			
Frog – common	<i>Rana temporaria</i>	Newt – Smooth	<i>Lissotriton vulgaris</i>
Newt – Palmate	<i>Lissotriton helvetica</i>	Toad – Common	<i>Bufo bufo</i>
<b>Animals (Vertebrate) Species Protected under Section 9 (1) (4)(a): Killing, Injuring &amp; Taking and Damage / Destruction of place of shelter / protection only</b>			
Allis Shad	<i>Alosa alosa</i>	Shark – Angel	<i>Squatina squatina</i>
Twaite Shad	<i>Alosa fallax</i>		
<b>Butterflies &amp; Moths – Full Protection under Schedule 5<sup>3</sup> at all times</b>			
High brown fritillary	<i>Argynnis adippe</i>	Fisher's Estuarine Moth	<i>Gortyna borelii</i>
Large Blue	<i>Maculinea arion</i>	Barberry Carpet	<i>Pareulype berberata</i>

<sup>2</sup> Both sea horse species are protected in England only.

<sup>3</sup> Viper's Bugloss Moth *Hadena irregularis* was removed from Schedule 5 in 1996 as it is believed to be extinct.



Heath Fritillary	<i>Mellicta athalea</i>	Black-veined Moth	<i>Siona lineata</i>
Marsh Fritillary	<i>Eurodryas aurinia</i>	Sussex Emerald	<i>Thalera fimbrialis</i>
Swallowtail	<i>Papilio machaon britannicus</i>	Essex Emerald	<i>Thetidia smaragdalis</i>
Large Copper	<i>Lycaena dispar</i>	Fiery Clearwing	<i>Bembecia chrysidiformis</i>
Reddish-buff Moth	<i>Acosmetia caliginosa</i>	New-Forest Burnet	<i>Zygaena viciae</i>
<b>Butterflies – Protected under Section 9 (5) Sale Only</b>			
Purple Emperor	<i>Apatura iris</i>	Adonis Blue	<i>Lysandra bellargus</i>
Northern Brown Argus	<i>Aricia artaxerxes</i>	Chalkhill Blue	<i>Lysandra coridon</i>
Pearl-bordered Fritillary	<i>Boloria euphrosyne</i>	Glanville Fritillary	<i>Melitaea cinxia</i>
Chequered Skipper	<i>Carterocephalus palaemon</i>	Large Tortoiseshell	<i>Nymphalis polychloros</i>
Large Heath	<i>Coenonympha tullia</i>	Silver-studded Blue	<i>Plebejus argus</i>
Small Blue	<i>Cupido minimus</i>	Black Hairstreak	<i>Strymonidia pruni</i>
Mountain Ringlet	<i>Erebia epiphron</i>	White-letter Hairstreak	<i>Strymonidia w-album</i>
Duke of Burgundy	<i>Hamearis lucina</i>	Brown Hairstreak	<i>Thecla betulae</i>
Silver-spotted Skipper	<i>Hesperia comma</i>	Lulworth Skipper	<i>Thymelicus acteon</i>
Wood White	<i>Leptidea sinapis</i>		
<b>Other Invertebrates – Full Protection under Schedule 5 at all times</b>			
Rainbow Leaf-beetle	<i>Chrysolina cerealis</i>	Tadpole Shrimp	<i>Triops cancriformis</i>
Spangled Diving-beetle	<i>Graphopterus zonatus</i>	Trembling Sea-mat	<i>Victorella pavidia</i>
Lesser Silver Water-beetle	<i>Hydrochara caraboides</i>	De Folin's Lagoon Snail	<i>Caecum armoricum</i>
Moccas Beetle	<i>Hypebaeus flavipes</i>	Sandbowl Snail	<i>Catinella arenaria</i>
Violet Click-beetle	<i>Limoniscus violaceus</i>	Freshwater Pearl Mussel	<i>Margaritifera margaritifera</i>
Bembridge Beetle	<i>Parcymus aeneus</i>	Glutinous Snail	<i>Myxas glutinosa</i>
New Forest Cicada	<i>Cicadetta montana</i>	Lagoon Snail	<i>Paludinella littorina</i>
Wart-Biter	<i>Decticus verrucivorus</i>	Lagoon Sea Slug	<i>Tenellia adspersa</i>
Mole-Cricket	<i>Gryllotalpa gryllotalpa</i>	Northern Hatchet-shell	<i>Thyasira gouldi</i>
Field-Cricket	<i>Gryllus campestris</i>	Tentacled Lagoon-worm	<i>Alkmaria romijni</i>
Norfolk Hawker Dragonfly	<i>Aeshna isosceles</i>	Lagoon Sand-worm	<i>Armandia cirrhosa</i>
Southern Damselfly	<i>Coenagrion mercuriale</i>	Medicinal Leech	<i>Hirudo medicinalis</i>
Fen Raft Spider	<i>Dolomedes fimbriatus</i>	Marine Hydroid	<i>Clavopsella navis</i>
Ladybird Spider	<i>Eresus niger (cinaberinus)</i>	Ivell's Sea Anemone	<i>Edwardsia ivelli</i>
Fairy Shrimp	<i>Chirocephalus diaphanus</i>	Starlet Sea Anemone	<i>Nematosella vectensis</i>
Lagoon Sand Shrimp	<i>Gammarus insensibilis</i>	Atlantic Stream (White-clawed) Crayfish	<i>Austropotamobius pallipes</i>
<b>Other Invertebrates Protected under Section 9 (1) Possession &amp; 9 (2) (5) Sale only</b>			
Stag Beetle	<i>Lucanus cervus</i>	Roman Snail <sup>4</sup>	<i>Helix pomatia</i>
Fan Mussel	<i>Atrina fragilis</i>	Pink Sea-fan	<i>Eunicella verrucosa</i>
<b>Other Invertebrates Protected under Section 9 (4) (a) Damage / Destruction of Place of Shelter / Protection only</b>			
Mire Pill Beetle	<i>Curimopsis nigrita</i>		
<b>Vascular Plant Species - Full Protection under Schedule 8 at all times (previous Scientific name in brackets)</b>			
Adder's-tongue Least	<i>Ophioglossum lusitanicum</i>	Lily – Snowdon	<i>Gagea serotina (Lloydia serotina)</i>
Alison- Small	<i>Alyssum alyssoides</i>	Marsh-mallow – Rough	<i>Malva setigera (Althaea hirsuta)</i>

<sup>4</sup> England only



Broomrape – Bedstraw	<i>Orobanche caryophyllacea</i>	Milk-parsley – Cambridge	<i>Selinum carvifolia</i>
Broomrape – Oxtongue	<i>Orobanche picridis</i>	Mudwort – Welsh	<i>Limosella aquatica</i>
Broomrape – Thistle	<i>Orobanche reticulata</i> <sup>5</sup>	Naiad – Holly-leaved	<i>Najas marina</i>
Cabbage – Lundy	<i>Coincya wrightii</i> ( <i>Rhynchosinapis wrightii</i> )	Orache – Stalked	<i>Atriplex pedunculata</i> ( <i>Halimione pedunculata</i> )
Calamint – Wood	<i>Clinopodium menthifolium</i> ( <i>Calamintha sylvatica</i> )	Orchid – Early Spider	<i>Ophrys sphegodes</i>
Catchfly – Alpine	<i>Silene suecica</i> ( <i>Lychnis alpina</i> )	Orchid – Ghost	<i>Epipogium aphyllum</i>
Centaury – Slender	<i>Centaureum tenuiflorum</i>	Orchid – Lapland Marsh	<i>Dactylorhiza lapponica</i>
Cinquefoil – Rock	<i>Potentilla rupestris</i>	Orchid – Late Spider	<i>Ophrys fuciflora</i>
Clary – Meadow	<i>Salvia pratensis</i>	Orchid – Lizard	<i>Himantoglossum hircinum</i>
Club-rush – Triangular	<i>Schoenoplectus triqueter</i> ( <i>Scirpus triqueter</i> )	Orchid – Military	<i>Orchis militaris</i>
Colt's-foot – Purple	<i>Homogyne alpina</i>	Orchid – Monkey	<i>Orchis simia</i>
Cotoneaster – Wild	<i>Cotoneaster cambricus</i> ( <i>C. integerrimus</i> )	Pear – Plymouth	<i>Pyrus cordata</i>
Cotton-grass – Slender	<i>Eriophorum gracile</i>	Pennycress – Perfoliate	<i>Microthlaspi perfoliatum</i> ( <i>Thlaspi perfoliatum</i> )
Cow-wheat – Field	<i>Melampyrum arvense</i>	Pennyroyal	<i>Mentha pulegium</i>
Crocus – Sand	<i>Romulus columnae</i>	Pigmyweed	<i>Crassula aquatica</i>
Cudweed – Broad-leaved	<i>Filago pyramidata</i>	Pine - Ground	<i>Ajuga chamaepitys</i>
Cudweed – Jersey	<i>Gnaphalium luteoalbum</i>	Pink – Cheddar	<i>Dianthus gratianopolitanus</i>
Cudweed – Red-tipped	<i>Filago lutescens</i>	Pink – Childing	<i>Petrorhagia nanteuillii</i>
Cut-grass	<i>Leersia oryzoides</i>	Ragwort – Fen	<i>Jacobaea paludosa</i> ( <i>Senecio paludosa</i> )
Deptford Pink	<i>Dianthus armeria</i>	Ramping-fumitory – Martin's	<i>Fumaria reuteri</i> ( <i>F. martinii</i> )
Diapensia	<i>Diapensia lapponica</i>	Rampion – Spiked	<i>Phyteuma spicata</i>
Eryngo – Field	<i>Eryngium campestre</i>	Restharrow – Small	<i>Ononis reclinata</i>
Fern – Dickie's-bladder	<i>Cystopteris dickieana</i>	Rock-cress – Alpine	<i>Arabis alpina</i>
Fleabane – Alpine	<i>Erigeron borealis</i>	Rock-cress – Bristol	<i>Arabis scabra</i>
Fleabane – Small	<i>Pulicaria vulgaris</i>	Sandwort – Norwegian	<i>Arenaria norvegica</i> <sup>6</sup>
Galingale – Brown	<i>Cyperus fuscus</i>	Sandwort – Teesdale	<i>Minuartia stricta</i>
Gentian – Alpine	<i>Gentiana nivalis</i>	Saxifrage – Drooping	<i>Saxifraga cernua</i>
Gentian - Dune	<i>Gentianella amarella</i> subsp. <i>occidentalis</i> ( <i>Gentianella uliginosa</i> )	Saxifrage – Tufted	<i>Saxifraga cespitosa</i>
Gentian – Fringed	<i>Gentianopsis ciliata</i> ( <i>Gentianella ciliata</i> )	Solomon's-seal – Whorled	<i>Polygonatum verticillatum</i>
Gentian - Spring	<i>Gentiana verna</i>	Sow-thistle – Alpine	<i>Cicerbita alpina</i>
Germander – Cut-leaved	<i>Teucrium botrys</i>	Spearwort – Adder's-tongue	<i>Ranunculus ophioglossifolius</i>
Germander – Water	<i>Teucrium scordium</i>	Speedwell – Fingered	<i>Veronica triphyllos</i>
Gladiolus – Wild	<i>Gladiolus illyricus</i>	Speedwell – Spiked	<i>Veronica spicata</i> <sup>7</sup>
Goosefoot – Stinking	<i>Chenopodium vulvaria</i>	Spike-rush – Dwarf	<i>Eleocharis parvula</i>

<sup>5</sup> The Weeds Act 1959 does not apply to thistles *Cirsium* & *Carduus* species supporting this broomrape.

<sup>6</sup> All subspecies occurring in the UK

<sup>7</sup> Both subspecies: *spicata* & *hybrida*



Grass-poly	<i>Lythrum hyssopifolia</i>	South-stack Fleawort	<i>Tephrosia integrifolia</i> <i>ssp. maritima</i>
Hare's-ear – Sickle-leaved	<i>Bupleurum falcatum</i>	Star-of-Bethlehem – Early	<i>Gagea bohemica</i>
Hare's-ear – Small	<i>Bupleurum baldense</i>	Starfruit	<i>Damasonium alisma</i>
Hawk's-beard – Stinking	<i>Crepis foetida</i>	Strapwort	<i>Corrigiola littoralis</i>
Hawkweed – Northroe	<i>Hieracium northroense</i>	Violet – Fen	<i>Viola persicifolia</i>
Hawkweed – Shetland	<i>Hieracium zetlandicum</i>	Viper's-grass	<i>Scorzonera humilis</i>
Hawkweed – Weak-leaved	<i>Hieracium attenuatifolium</i>	Water-plantain – Ribbon-leaved	<i>Alisma gramineum</i>
Heath – Blue	<i>Phylodoce caerulea</i>	Wood-sedge – Starved	<i>Carex depauperata</i>
Helleborine – Red	<i>Cephalanthera rubra</i>	Woodsia – Alpine	<i>Woodsia alpina</i>
Horsetail – Branched	<i>Equisetum ramosissimum</i>	Woodsia – Oblong	<i>Woodsia ilvensis</i>
Hound's-tongue – Green	<i>Cynoglossum germanicum</i>	Wormwood – Field	<i>Artemisia campestris</i>
Knawel – Perennial	<i>Scleranthus perennis</i> <sup>8</sup>	Woundwort - Downy	<i>Stachys germanica</i>
Knot-grass – Sea	<i>Polygonum maritimum</i>	Woundwort – Limestone	<i>Stachys alpina</i>
Leek – Round-headed	<i>Allium sphaerocephalon</i>	Yellow-rattle – Greater	<i>Rhinanthus angustifolius</i>
Lettuce – Least	<i>Lactuca saligna</i>		
<b>Vascular Plant Species – Partial Protection under Section 13 (2) Protection from commercial exploitation and sale</b>			
Bluebell	<i>Hyacinthoides non-scripta</i>		
<b>Bryophytes – Full Protection under Schedule 8 at all times</b>			
Anamodon – Long-leaved	<i>Anomodon langifolius</i>	Flamingo Moss	<i>Desmatodon cernuus</i>
Blackwort	<i>Southbya nigrella</i>	Frostwort	<i>Gymnomitrium apiculatum</i>
Crystalwort – Lizard	<i>Riccia bifurca</i>	Glaucous Beard Moss	<i>Barbula glauca</i>
Earwort – Marsh	<i>Jamesoniella undulifolia</i>	Green Shield Moss	<i>Buxbaumia viridis</i>
Feathermoss – Polar	<i>Hygrohypnum polare</i>	Hair Silk Moss	<i>Plagiothecium piliferum</i>
Flapwort – Norfolk	<i>Leiocolea rutheana</i>	Knothole Moss	<i>Zygodon forsteri</i>
Grimmia – Blunt-leaved	<i>Grimmia unicolor</i>	Large Yellow Feather Moss	<i>Scorpidium turgescens</i>
Petalwort	<i>Petalophyllum ralfsii</i>	Millimetre Moss	<i>Micromitrium tenerum</i>
Lindenberg's Leafy-Liverwort	<i>Adelanthus lindenbergianus</i>	Multi-fruited River Moss	<i>Cryphaea lamyana</i>
Feather-moss Slender Green	<i>Drepanocladus vernicosus</i>	Nowell's Limestone Moss	<i>Zygodon gracilis</i>
Alpine Copper-Moss	<i>Melichoferia melicoferia</i>	Rigid Apple Moss	<i>Bartramia stricta</i>
Baltic Bog-Moss	<i>Sphagnum balticum</i>	Round-leaved feather Moss	<i>Rhynchostegium rotundifolium</i>
Blue Dew-Moss	<i>Saelania glaucescens</i>	Schleicher's Thread Moss	<i>Bryum schleicheri</i>
Blunt-leaved bristle-Moss	<i>Orthotrichum obtusifolium</i>	Triangular Pygmy Moss	<i>Acaulon triquetrum</i>
Bright-Green Cave-Moss	<i>Cyclodictyon laetevirens</i>	Turpswort	<i>Geocalyx graveolens</i>
Cordate Beard Moss	<i>Barbula cordata</i>	Vaucher's Feather Moss	<i>Hypnum vaucheri</i>
Cornish Path Moss	<i>Ditrichum cornubicum</i>	Western Rustwort	<i>Marsupella profunda</i>
Derbyshire Feather Moss	<i>Thamnobryum angustifolium</i>		

<sup>8</sup> Includes both subspecies: *perennis* & *prostratus*



<b>Stoneworts – Full Protection under Schedule 8 at all times</b>			
Bearded Stonewort	<i>Chara canescens</i>	Foxtail Stonewort	<i>Lamprothamnium papulosum</i>
<b>Lichens – Full Protection under Schedule 8 at all times</b>			
New Forest Beech Lichen	<i>Enterographa elaborata</i>	Forked Hair Lichen	<i>Bryoria furcellata</i>
Snow Caloplaca	<i>Caloplaca nivalis</i>	Golden Hair Lichen	<i>Teloschistes flavicans</i>
Tree Catapyrenium	<i>Catapyrenium psoromoides</i>	Orange-fruited Elm Lichen	<i>Caloplaca luteoalba</i>
Laurer’s Catillaria	<i>Catillaria laurei</i>	River Jelly Lichen	<i>Collema dichotomum</i>
Convolute Cladonia	<i>Cladonia convoluta</i>	Starry Breck Lichen	<i>Buellia asterella</i>
Upright Mountain Cladonia	<i>Cladonia stricta</i>	Caledonia Pannaria	<i>Pannaria ignobilis</i>
Goblin Lights	<i>Catolechia wahlenbergii</i>	New Forest Parmelia	<i>Parmelia minarum</i>
Elm Gyalecta	<i>Gyalecta ulmi</i>	Oil Stain Parmentaria	<i>Parmentaria chilensis</i>
Tarn Lecanora	<i>Lecanora archariana</i>	Southern Grey Physcia	<i>Physcia tribacioides</i>
Copper Lecidea	<i>Lecidea inops</i>	Ragged Pseudo-cyphellaria	<i>Pseudocyphellaria lacerata</i>
Arctic Kidney Lichen	<i>Nephroma arcticum</i>	Rusty Alpine Psora	<i>Psora rubiformis</i>
Ciliate Strap Lichen	<i>Heterodermia leucomelos</i>	Rock Nail	<i>Calicium corynellum</i>
Coralloid Rosette Lichen	<i>Heterodermia propagulifera</i>	Serpentine Selanopsora	<i>Selanopsora liparina</i>
Ear-lobed Dog Lichen	<i>Peltigera lepidophora</i>	Sulphur Tresses	<i>Alectoria ochroleuca</i>
<b>Lichens – Partial Protection under Section 13 (2) Commercial Exploitation and Sale Only</b>			
Tree Lungwort	<i>Lobaria pulmonaria</i>		
<b>Fungi – Full Protection under Schedule 8 at all times</b>			
Royal Bolete	<i>Boletus regius</i>	Oak Polypore	<i>Buglossosporus pulvinus</i>
Hedgehog Fungus	<i>Hericium erinaceum</i>	Sandy Stilt Ball	<i>Battaria phalloides</i>
<b>Invasive plant species listed in Schedule 9</b>			
Australian swamp stonecrop or New Zealand pygmyweed	<i>Crassula helmsii</i>	Japanese rose	<i>Rosa rugosa</i>
Californian red seaweed	<i>Pikea californica</i>	Japanese seaweed	<i>Sargassum muticum</i>
Curly waterweed	<i>Lagarosiphon major</i>	Laver seaweeds (except native species)	<i>Porphyra</i> spp
Duck potato	<i>Sagittaria latifolia</i>	Parrot’s-feather	<i>Myriophyllum aquaticum</i>
Entire-leaved cotoneaster	<i>Cotoneaster integrifolius</i>	Perfoliate alexanders	<i>Smyrniun perfoliatum</i>
False Virginia creeper	<i>Parthenocissus inserta</i>	Pontic rhododendron	<i>Rhododendron ponticum</i>
Fanwort or Carolina water-shield	<i>Cabomba caroliniana</i>	Purple dewplant	<i>Disphyma crassifolium</i>
Few-flowered garlic	<i>Allium paradoxum</i>	Red algae	<i>Grateloupia luxurians</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Rhododendron	<i>Rhododendron ponticum</i> × <i>Rhododendron maximum</i>
Floating water primrose	<i>Ludwigia peploides</i>	Small-leaved cotoneaster	<i>Cotoneaster microphyllus</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>	Three-cornered garlic	<i>Allium triquetrum</i>
Giant kelp	<i>Macrocystis</i> spp.	Variogated yellow archangel	<i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>
Giant knotweed	<i>Fallopia sachalinensis</i>	Virginia creeper	<i>Parthenocissus quinquefolia</i>
Giant rhubarb	<i>Gunnera tinctoria</i>	Wakame	<i>Undaria pinnatifida</i>
Giant salvinia	<i>Salvinia molesta</i>	Wall cotoneaster	<i>Cotoneaster horizontalis</i>



Green seafringers	<i>Codium fragile</i>	Water fern	<i>Azolla filiculoides</i>
Himalayan cotoneaster	<i>Cotoneaster simonsii</i>	Water hyacinth	<i>Eichhornia crassipes</i>
Hollyberry cotoneaster	<i>Cotoneaster bullatus</i>	Water lettuce	<i>Pistia stratiotes</i>
Hooked asparagus seaweed	<i>Asparagopsis armata</i>	Water primrose	<i>Ludwigia grandiflora</i>
Hottentot fig	<i>Carpobrotus edulis</i>	Water primrose	<i>Ludwigia uruguayensis</i>
Hybrid knotweed	<i>Fallopia japonica</i> × <i>Fallopia sachalinensis</i>	Waterweeds	<i>Elodea</i> spp.
Indian (Himalayan) balsam	<i>Impatiens glandulifera</i>	Yellow azalea	<i>Rhododendron luteum</i>
Japanese knotweed	<i>Reynoutria japonica</i>		

**Protection of Badgers Act 1992**

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger"

**Natural Environment and Rural Communities Act 2006**

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of Habitats and Species which are of Principal Importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 Habitats of Principal Importance and 1,150 Species of Principal Importance.

**Hedgerow Regulations 1997**

The Hedgerow Regulations were made under Section 97 of the Environment Act 1995 and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.



**Birds of Conservation Concern**

This is a review of the status of all birds occurring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations, including the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The latest report was produced in 2015 (Eaton *et al*, 2015) and identified 67 red list species, 96 amber species, and 81 green species. The criteria are complex, but generally:

- **Red list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years.
- **Amber list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included, together with those whose 50% of the population is localised in 10 sites or fewer and those whose 20% of the European population is found in the UK.
- **Green list** species are all regularly occurring species that do not qualify under any of the red or amber criteria are green listed

**Global IUCN Red List**

The International Union for Conservation of Nature (IUCN) Threatened Species was devised to provide a list of those species that are most at risk of becoming extinct globally. It provides taxonomic, conservation status and distribution information about threatened taxa around the globe.

The system catalogues threatened species into groups of varying levels of threat, which are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CE), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), Not Evaluated (NE). Criteria for designation into each of the categories is complex, and consider several principles.

**Local Biodiversity Action Plan (LBAP)**

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision making process.

**Wild Mammals (Protection) Act 1996**

This Act offers protects a form of protection to all wild species of mammals, irrespective of other legislation, and focussed on animal welfare, rather than conservation.

Unless covered by one of the exceptions, a person is guilty of an offence if he mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering.

It's application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works etc.



# **Appendix C – Natural England Discretionary Advice Service Consultation Response**



**patryk.gruba**

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**Subject:** FW: Scope of surveys

**From:** Berry, Kate <[Kate.Berry@naturalengland.org.uk](mailto:Kate.Berry@naturalengland.org.uk)>

**Sent:** 26 September 2019 16:52

**To:** rachel.kerr <[rachel.kerr@wyg.com](mailto:rachel.kerr@wyg.com)>

**Subject:** RE: Scope of surveys

Hi Rachel

We have no concerns of any designated site impacts at Lowca, despite its proximity, as there is nothing that will be attract the pSPA birds inland to cause flights through the site, so these surveys are not required here.

Thanks

Kate

Kate Berry  
Adviser  
Cumbria Team

**Tel: 0208 026 2178**

**Mob: 07795 590192**

Please note I do not work Wednesdays



# Appendix D – Relevant Desk Study Data

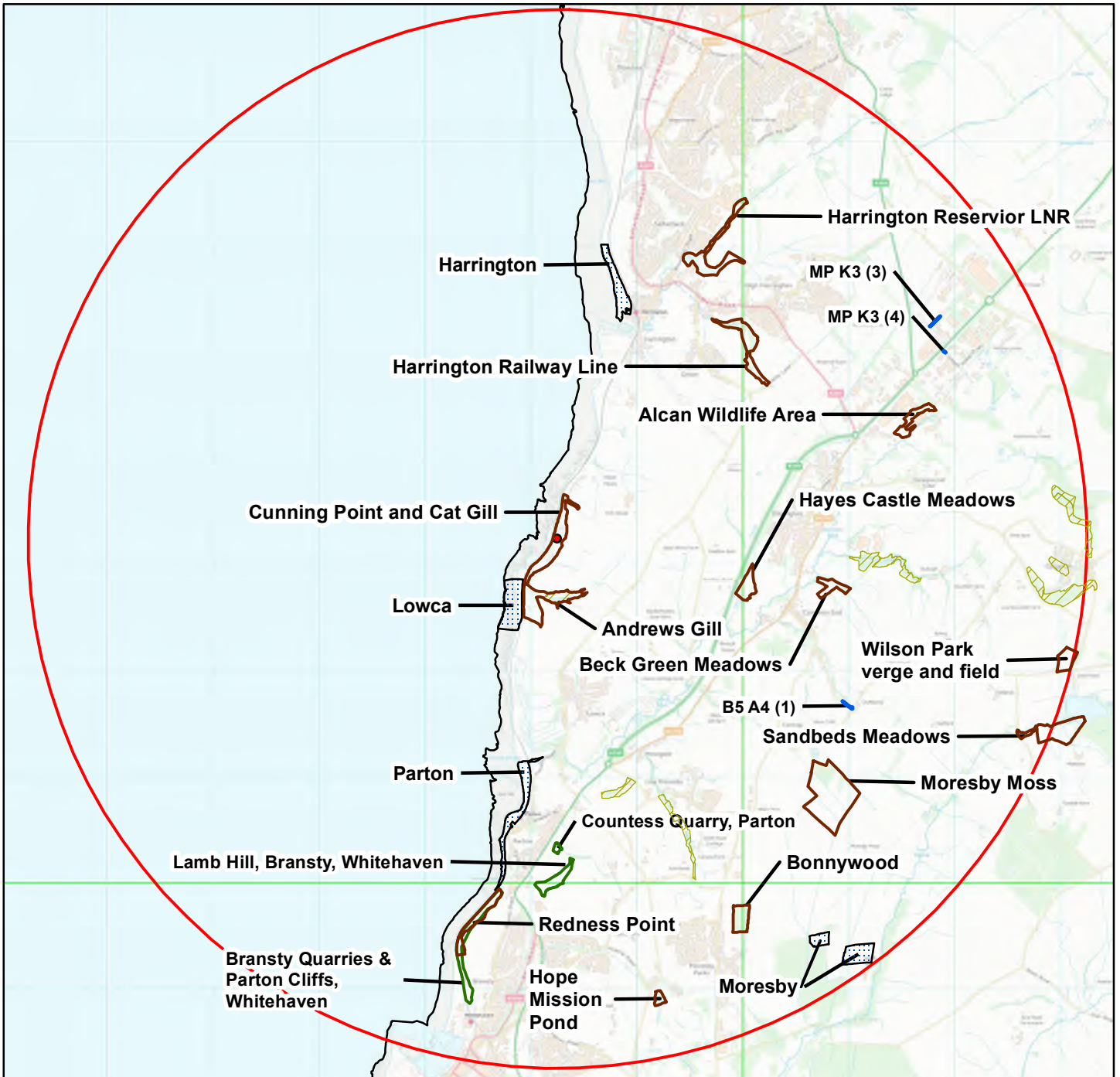
# Cumbria Biodiversity Data Centre (CBDC): Non-Statutory Sites Search



**For: Elizebeth Wilcox at WYG**

Centroid: NX 982 232  
 Site Name: A108663 Lowca  
 Search Buffer: 5km  
 Search Date: 08/03/2019

N.B. Sites are displayed only if they exist within the search area



## Key

County Wildlife Sites

Local Geological Sites

Special Roadside Verges

Site of Invertebrate Significance

Ancient Woodland

0 625 1,250 2,500 m








Any queries in the first instance contact:  
 Dr Moustafa Eweda  
 Biological Data Officer  
 Cumbria Biodiversity Data Centre (CBDC)  
 T. 01228 618770  
 E. [dataofficer@cbdc.org.uk](mailto:dataofficer@cbdc.org.uk)











## Appendix E – Target Notes

Target Note	Description (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare)	Photograph
1.	<p><b>Semi-Improved Acid Grassland.</b>                      Crested dog’s tail <i>Cynosurus cristatus</i> (A), Yorkshire fog <i>Holcus lanatus</i> (F), soft rush <i>Juncus effusus</i> (F), dandelion <i>Taraxacum</i> agg. (O), creeping buttercup <i>Ranunculus repens</i> (F), white clover <i>Trifolium repens</i> (F), common mouse ear <i>Cerastium fontanum</i> (O), jointed rush <i>Juncus articulatus</i> (O), tormentil <i>Potentilla erecta</i> (O).</p>	
2.	<p><b>Scattered scrub</b>                      Common gorse <i>Ulex europaeus</i> was dominant (D) with bramble <i>Rubus fruticosus</i> (O) and soft rush <i>Juncus effusus</i> (F).</p>	




Target Note	Description (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare)	Photograph
3.	<p><b>Bracken.</b></p> <p>There was continuous bracken <i>Pteridium aquilinum</i> (D) within the sloping valley leading down to Andrew’s Gill.</p>	
4.	<p><b>Acid Grassland / Marshy Grassland</b></p> <p>Species in this area included lesser spearwort <i>Ranunculus flammula</i> (R), crested dog’s tail <i>Cynosurus cristatus</i> (F), mat grass <i>Nardus stricta</i> (O), tufted hair grass <i>Deschampsia cespitosa</i> (F), jointed rush <i>Juncus articulatus</i> (R), Yorkshire fog <i>Holcus lanatus</i> (O), self-heal <i>Prunella vulgaris</i> (O), soft rush <i>Juncus effusus</i> (F), common knapweed <i>Centaurea nigra</i> (O), field scabious <i>Knautia arvensis</i> (R), great burnet <i>Sanguisorba officinalis</i> (R), tormentil <i>Potentilla erecta</i> (R) and creeping cinquefoil <i>Potentilla reptans</i> (O).</p>	
5.	<p><b>Scattered scrub and tall ruderal.</b></p> <p>Gorse <i>Ulex europaeus</i> (D), creeping thistle <i>Cirsium arvense</i> (F), bracken (F) <i>Pteridium aquilinum</i>, common nettle <i>Urtica dioica</i> (O).</p>	

Target Note	Description (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare)	Photograph
6.	<p><b>Acid Grassland / Marshy Grassland with Scattered Scrub</b></p> <p>Crested dogs tail <i>Cynosurus cristatus</i> (F), common bent <i>Agrostis capillaris</i> (O), gorse <i>Ulex europaeus</i> (F), marsh thistle <i>Cirsium palustre</i> (O), selfheal <i>Prunella vulgaris</i> (R), jointed rush <i>Juncus articulatus</i> (O), sneezewort <i>Achillea ptarmica</i> (R).</p>	
7.	<p><b>Running water.</b></p> <p>Flows through gorse <i>Ulex europaeus</i> (D), hawthorn <i>Crataegus monogyna</i> (F), bracken <i>Pteridium aquilinum</i> (F) and rushes (F).</p>	
8	<p><b>Semi-improved neutral Grassland</b></p> <p>Spear thistle <i>Cirsium vulgare</i> (O), tormentil <i>Potentilla erecta</i> (O), scattered gorse <i>Ulex europaeus</i> (O), Yorkshire fog <i>Holcus lanatus</i> (F), crested dog's tail <i>Cynosurus cristatus</i> (F), common bent <i>Agrostis capillaris</i> (F), perennial rye-grass <i>Lolium perenne</i> (A), grazed by cows.</p>	





Target Note	Description (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare)	Photograph
9	<p><b>Dense Scrub</b>                      Gorse <i>Ulex europaeus</i> (D), bramble <i>Rubus fruticosus</i> agg. (F), hawthorn <i>Crataegus monogyna</i> (F), soft rush <i>Juncus effusus</i> (F), goat willow <i>Salix caprea</i> (O).</p>	
10	<p><b>Improved Grassland</b>                      Perennial rye-grass <i>Lolium perenne</i> (D), annual meadow grass <i>Poa annua</i> (F), pineapple weed <i>Matricaria discoidea</i> (F), greater plantain <i>Plantago major</i> (F), white clover <i>Trifolium repens</i> (F), creeping buttercup <i>Ranunculus repens</i> (A), crested dog's tail <i>Cynosurus cristatus</i> (A), creeping thistle <i>Cirsium arvense</i> (O), spear thistle <i>Cirsium vulgare</i> (O), common nettle <i>Urtica dioica</i> (O), soft rush <i>Juncus effusus</i> (O) and hard rush <i>Juncus inflexus</i> (R).</p>	
11	<p><b>Running Water</b>                      Cat Gill leading to rocky shore.</p>	





Target Note	Description (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare)	Photograph
12	<p><b>Open Water</b> View across to coastal habitat to the west of the site. Separated from the site by the west coast railway line.</p>	
13	<p><b>Building</b> Single story, pebbledash, cement tiled roof, wooden soffit boxes tight to walls. Negligible suitability for roosting bats.</p>	
14	<p><b>Open Water (Pond)</b> The pond is approximately 40 m x 28 m, depth unknown. Located approximately 160 m north of the site, the pond is unshaded, set within grassland habitat. Vegetation on the margins includes hard rush <i>Juncus inflexus</i> (O) and gorse <i>Ulex europaeus</i> (O). Waterfowl including mallards <i>Anas platyrhynchos</i> and a grey heron <i>Ardea cinerea</i> were present at the time of survey.</p>	





Target Note	Description (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare)	Photograph
15	<p><b>Improved grassland</b> The species composition was similar to that recorded in Target Note 10.</p>	
16	<p><b>Species poor hedgerow without trees.</b> The hedgerow was approximately 2 m high and 1 m wide with species including hawthorn <i>Crataegus monogyna</i> (D), ash <i>Fraxinus excelsior</i>, gorse (F), bramble (F) and dog rose <i>Rosa canina</i> (O). The ground flora included field horsetail <i>Equisetum arvense</i> (O), cock's-foot <i>Dactylis glomerata</i> (F), hard rush (R), creeping buttercup (F), creeping thistle (F), meadow vetchling <i>Lathyrus pratensis</i> (F) and false oat grass <i>Arrhenatherum elatius</i> (F).</p>	



Target Note	Description (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare)	Photograph
17	<p><b>Bare ground</b> There are access tracks between the turbines surfaces with crushed hardcore.</p>	
18	<p><b>Open Water (Pond)</b> The pond is approximately 35m x 12m, depth unknown. Located approximately 15m south of the access track into the site. The pond is unshaded, set within grassland habitat. No waterfowl were visible at the time of survey. Margins appear poached by livestock.</p>	



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