

# Ecological Impact Assessment Dubbers Wind Turbines November 2025

A report by

Colin Hicks BSc (Hons), MCIEEM

#### Report details

Location: Land at Dubbers, St Austell, Cornwall  
Grid Reference: SW 975 562  
Report author: Colin Hicks BSc (Hons) MCIEEM  
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#### Declaration of compliance

##### BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of Practice for Planning and Development.

##### Code of Professional Conduct

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

#### Validity of survey data and report

The findings of this report are valid for 24 months from the date of the supporting surveys.

## Table of contents

1. Introduction .....	4
1.1. Background .....	4
1.2. Purpose of this report.....	4
1.3. Site location .....	4
2. Assessment methodology .....	5
2.1. Development site and Zone of Influence .....	5
2.2. Ecological baseline .....	5
2.3. Site surveys .....	5
2.4. Limitations .....	9
3. Impact assessment method .....	11
3.1. Method for valuation of receptors.....	11
3.2. Impact Assessment Criteria .....	12
3.3. Mitigation .....	13
4. Legislation and Policy used to assess ecological receptors.....	14
4.1. Planning policy.....	14
4.2. Nature Conservation Legislation .....	14
4.3. Biodiversity strategies .....	15
5. Ecological baseline .....	16
5.1. Desktop Study .....	16
5.2. The need for an appropriate assessment.....	18
Map 1. Habitat baseline .....	21
5.4. Species of nature conservation importance .....	22
6. Assessment of ecological impacts.....	26
6.1. The development.....	26
6.2. Construction phase impacts.....	26
6.3. Operational phase impacts .....	30
7. Mitigation .....	41
7.1. Construction phase.....	41
7.2. Operational phase .....	42
8. Residual impacts.....	43
9. Cumulative effects.....	44
9.1 Breeding birds .....	44
9.2. Bats .....	45
10. Summary .....	48
References .....	50

# 1. Introduction

## 1.1. Background

Western Ecology has been commissioned to complete an Ecological Impact Assessment for an area of land at Dubbers.

The proposed development comprises the construction and operation of two Vestas 117 (4.3MW) turbines with blade tip heights of 135m and a hub height of 76.5m. Associated infrastructure includes a temporary construction compound, new access tracks and hardstanding areas.

## 1.2. Purpose of this report

A preliminary ecological walkover of the site was completed in June 2025.

Summer vantage point surveys were completed along with seasonal bat activity transects and remote monitoring.

This report presents the ecological information relating to valued ecological receptors obtained during these surveys and the desk-study, assesses the significance of the effects of the proposed development on these features, and sets out proposed mitigation measures.

This report also assesses the effect of changes in habitat management and additional plantings associated with the development.

This report is intended to be used to inform consultees of the potential ecological impacts and proposed mitigation in relation to this development.

## 1.3. Site location

The site lies within the southern periphery of the Lower Longstones area of the operational clay works associated with the Little Johns Pit, located approximately 1.25km to the east of the village of Nanpean, and approximately 5km to the north-west of St Austell in mid-Cornwall.

## 2. Assessment methodology

### 2.1. Development site and Zone of Influence

The Development Site is shown on Map 1 and includes all areas within the planning application boundary and any immediately adjacent areas that may be affected by the proposed development.

The Zone of Influence for the purpose of this assessment is immediate habitats that will be potentially impacted by these proposals, non-statutory nature conservation sites within 2km, and statutory designated sites within 5km unless they have been designated for species at risk of wind turbines, which have been considered within 10km.

Biological records for protected/notable species were also considered.

### 2.2. Ecological baseline

The ecological baseline for the development site are:

- desktop survey;
- preliminary ecological appraisal;
- bird vantage point surveys; and
- bat activity surveys.

### 2.3. Site surveys

#### Desktop survey

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

The desktop survey identified any statutory nature conservation sites that may be affected by the proposals. This comprises an important part of the assessment process, providing information on ecological issues that may not be apparent during the site survey.

Consultees for the data search included:

- The Environmental Records Centre for Cornwall & the Isle of Scilly provided biological records for protected/notable species within 1km of the site.
- Natural England - GIS dataset of SSSI Impact Risk Zones and statutory nature conservation sites within 5km

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

SSSI Impact Risk Zones are areas where the proposed planned change to the environment could either create significant damage to a local SSSI, or might require additional planning and consultation in order to avoid impacting such sites. The assessments are made

according to the particular sensitivities of the features for which the SSSI is notified, and specifies the types of development that have the potential for adverse impacts.

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

#### Preliminary Ecological Appraisal

A Preliminary Ecological Appraisal of the site was completed by Yolande Knight, PhD, MRSB, on 11<sup>th</sup> June 2025 in suitable weather conditions.

The existing habitats were classified using the UKHabs methodology developed by the Joint Nature Conservation Committee (JNCC, 2010) and modified by the Institute of Environmental Assessment (IEA, 1995). The main plant species were recorded, and broad habitat types mapped according to the UK Habitats Classification v2.0 definitions (UKHab Ltd., 2023), using quadrats where appropriate. Plant species were identified according to Stace (1997).

#### Bird surveys

##### Vantage point

A breeding season Vantage Point Survey (VPS) have been completed between March to August 2025, to capture bird movements during the accepted passage & wintering and summer periods. The survey methodology followed that given by Scottish Natural Heritage (SNH, 2000) in their guidance 'Recommended bird survey methods to inform impact assessment of onshore wind farms'.

The surveys were completed by Martin Rule (MR) and Oscar Bates, both experienced ecologists with experience of wind turbine developments and bird surveys. Surveys were undertaken from a single location, designed to provide sufficient coverage of the turbine envelopes and scheduled to capture a variety of times and weather conditions. Surveys lasted for 3hrs each.

During each VPS, the surveyor recorded the species, number of individuals, duration and direction for each flight. The height of each flight was recorded at 15 second intervals using a system of four height bands:

- Band A – 0-10m – below blade sweep;
- Band B – 11-50m –blade sweep for smaller turbines;
- Band C – 51-130m – blade sweep for taller turbines; and
- Band D - >130m – above blade sweep.

The survey area of the VPS included the proposed turbine locations and visible land to all sides within a prescribed buffer (blade length + 500m).

#### Breeding bird surveys

Breeding Bird Surveys (BBS) were completed by Martin Rule in April, May and June 2025, with full survey details contained in the relevant report. The survey methodology was based on a combination of the standard Common Bird Census (CBC) methodology (Bibby et al. 2000), and the breeding bird survey methodology published by the Bird Survey &

Assessment Steering Group (BSAG) (2025)<sup>1</sup>. CBC is a territory mapping approach used to estimate the quantity and distribution of the breeding territories of each species encountered within the survey area – in this case, land inside the red line boundary and within a 50 m buffer area around it. The breeding bird survey methodology is intended for the purpose of assessing ornithological impacts from development proposals.

The conservation status of each species recorded was determined based on the following criteria:

#### Birds of Conservation Concern 5

Commonly referred to as the UK Red List for birds, this is the fourth review of the status of birds in the UK, Channel Islands and Isle of Man, and updates the last assessment in 2009. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird NGOs and assigned to the Red, Amber or Green lists of conservation concern.

Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.

Amber list species are those with an unfavourable conservation status in Europe.

Species on the Green List fulfil none of the above criteria and are of least conservation concern.

#### Schedule 1 of the Wildlife and Countryside Act (1981)

The Wildlife and Countryside Act 1981 (as amended) affords greater protection to certain breeding species and are as such listed as specially protected under Schedule 1 of the Act.

#### Biodiversity Action Plan species

Species of bird are listed as Local Biodiversity Action Plan Priority Species and species are listed as species of principal importance (Section 7 of the Environment (Wales) Act 2016).

#### Classification of breeding status

The results of the breeding bird surveys were assessed against the European Ornithological Atlas Committee (EOAC) criteria for breeding bird status as follows:

##### Non-breeding

- Flying over
- Species observed but suspected to be still on Migration
- Species observed but suspected to be summering non-breeder

##### Possible breeder

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<sup>1</sup> Bird Survey & Assessment Steering Group. (2025). Bird Survey Guidelines for assessing ecological impacts

- Species observed in breeding season in suitable nesting habitat
- Singing male present (or breeding calls heard) in breeding season in suitable breeding habitat

#### Probable breeding

- Pair observed in suitable nesting habitat in breeding season
- Permanent Territory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more part at the same place or many individuals on one day
- Courtship and Display (judged to be in or near potential breeding habitat; be cautious with wildfowl)
- Visiting probable Nest site
- Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby
- Brood patch on adult examined in the hand, suggesting Incubation
- Nest Building or excavating nest-hole

#### Confirmed breeding

- Distraction-Display or injury feigning
- Used Nest or eggshells found (occupied or laid within period of survey)
- Recently Fledged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g. feeding) is helpful. Be cautious, even if the record comes from suitable habitats
- Adults entering or leaving nest-site in circumstances indicating Occupied Nest (including high nests or nest holes, the contents of which cannot be seen) or adults seen incubating Adult carrying Faecal sac or Food for young
- Nest containing Eggs
- Nest with Young seen or heard.

#### Nightjar surveys

A walked transect was conducted across the site and immediate surroundings. This transect route gave optimal coverage of the Site, allowing any potential Nightjar to be clearly seen displaying or heard churring.

Following standard RSPB guidelines, three surveys were carried out by Martin Rule in the period mid-May to late July, between 30 mins before sunset to 1.5 hours after sunset and in suitable weather conditions (dry and wind less than Beaufort 3).

#### Bat activity surveys

##### Transects

Three 2-hour bat activity transects were completed in Spring, Summer and Autumn 2025 by a suitably experienced ecologist walking a pre-planned route through this site, with attention being paid to bat activity along boundary features. The survey began about 15 minutes before sunset. At locations along the route the surveyor paused to record bat activity in that area making a note of any bat species encountered, number of passes and any other pertinent information.



### Remote monitoring

Four Wildlife Acoustics remote bat monitors (SM Minibat) were deployed onto site for 5 days each month in April, May, June, July/Aug, September and October 2025. Two were placed at the proposed turbine locations with two remotes on nearby habitats suitable for bats.

Following deployment, calls were analysed with Kaleidoscope Pro with calls for rarer species, such as barbastelle, visually checked for correct identification. Auto ID classifiers was set to 'Balanced' and Bats of Europe 5.4.0. The minimum number of pulses for a pass was set to 2. Remote monitor data was uploaded to EcoBat for analysis.

Two activity transects were also completed, one in Summer and one in Autumn 2025, by a suitably experienced ecologist walking a pre-planned route through this site, with attention being paid to bat activity along boundary features. The survey began around sunset. At locations along the route the surveyor paused to record bat activity in that area making a note of any bat species encountered, number of passes and any other pertinent information.

## 2.4. Limitations

### Preliminary ecological appraisal

All areas of the assessment site were readily accessible during the survey. However, it must be realized that surveys only provide a snapshot of a site at a given time.

Although some plant species would have not been visible during the preliminary ecological appraisal in October, this is not considered a significant constraint as the site comprises managed agricultural land of little botanical value whilst numerous site visits were made throughout 2024 during which time the grassland was informally assessed.

### Bat activity surveys

No data was recorded at remote 4 during September due to unit failure. This is not considered to be a significant constraint as there is at least 40 nights of data available throughout the bat active season at each remote location.

No spring transect was completed due to mining operations and health and safety. This is not considered to be a significant constraint as the two bat activity transects were completed, as well as a full season of remote monitoring data.

It is assumed that Long-eared bat activity is Brown Long-eared bats (*Plecotus auritus*) rather than the rarer Grey Long-eared (*Plecotus austriacus*). The site lies outside of the expected UK distribution for Grey Long-eared bat<sup>2</sup>. *Myotis* spp. were assessed as a group due to limitations associated with identifying these species from sonograms.

These limitations are accepted and not judged to be a constraint to making a full and robust assessment of bat activity at this small site.

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<sup>2</sup> Bat Conservation Trust; Grey Long-eared bat at <https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/grey-long-eared-bat>

## Bird surveys

### Vantage point survey

The survey effort covered a total period of 36hrs per period, which meets the minimum survey effort required for seasonal vantage point surveys. A robust assessment of bird activity has been made, based on the variety of data sources used.

Weather conditions were suitable for all VP surveys, with sufficient visibility for adequate coverage of the survey area.

The collision risk model used here is based on a variety of standardised assumptions such as biometric data and turbine parameters and therefore provides a mathematical estimate of likely collision, rather than predicting factual scenarios. These estimates must then be used as a tool to inform impact assessments, while associated errors and limitations are recognised.

All areas of the site were readily accessible for the BBS and nightjar surveys. During the first nightjar survey rain showers were encountered approximately 45 minutes into the survey. Although the RSPB survey guidelines for nightjar surveys recommend to avoid prolonged periods of rainfall, nightjar activity was still recorded during this survey so the decision was made to continue with the survey despite the sub-optimal weather conditions.

### Breeding bird surveys

These were carried out at suitable times and during favourable weather conditions. Although the current guidelines recommend six visits which is considered necessary for complex habitats such as woodland, the three visits undertaken here provide a sound representation of bird activity at this site given the relatively simple habitat composition.

There are no significant constraints to the results of this survey.

### 3. Impact assessment method

The assessment of impacts has been carried out in accordance with the principles described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018<sup>3</sup>).

The ecological feature or resource that is affected by an impact is referred to as the receptor. Impacts are considered in terms of the value of the receptor in the context of nature conservation, and the character of the impact. From these the significance of the impact is determined.

As part of the impact assessment, the available means to avoid, minimise or mitigate for adverse impacts are incorporated into the design, so that the final impact assessment identifies the residual (net) impacts that are predicted. The consequences for development control, policy guidance and legislative compliance can then be identified.

#### 3.1. Method for valuation of receptors

The ecological value of habitats present is provided in line with Guidelines for Ecological Impact Assessment (CIEEM, 2018), and those which are important in terms of legislation or policy are identified. Table 1 summarises this information and details the extent of each habitat recorded here.

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

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

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

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<sup>3</sup> CIEEM, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, 43 Southgate Street, Winchester, Hampshire.

### 3.2. Impact Assessment Criteria

The assessment of potential impacts arising due to the development considers on-site impacts (i.e. within the footprint of the works) and those that may occur to adjacent and more distant ecological features.

Potential effects on valued receptors, adverse or positive, are identified for both the construction and operational phases. The effects are then assessed and characterised according to the following criteria:

- Direction (positive, adverse, or neutral)
- Magnitude of impact
- Spatial extent over which the impact would occur
- The temporal duration of the impact
- Permanence
- Frequency and timing
- Potential for cumulative effects.

The assessment identifies any information gaps and any uncertainties that may be material in the confidence of predicting effects. Confidence in predictions is given as:

- Certain/near-Certain: probability estimated at 95% chance or higher.
- Probable: probability estimated above 50% but below 95%.
- Unlikely: probability estimated above 5% but less than 50%.
- Extremely Unlikely: probability estimated at less than 5%.

The precautionary principle is applied whenever there is substantial doubt. The impact timescale is given as:

- Acute, immediate, and discrete;
- Short-term: 0-3 years;
- Medium term 3-10 years; and
- Long term: 10 years +.

Effects include, but are not restricted to:

- loss or change of habitat;
- disturbance during construction, operation, and decommissioning;
- chemical effects from airborne pollutants
- contravention of legal status or protection (including where the receptor would not meet or exceed the value threshold).

Ecological significance is assessed in line with '*Guidelines for Ecological Impact Assessment in the UK and Ireland*<sup>4</sup>', that states:

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<sup>4</sup> <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf>

“Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EclA, ‘significant effect’ is an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.

**A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project.** A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring. A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects have been lawfully permitted following EIA procedures.”

#### European Protected Sites– definition of significance of effect

For a European Protected Site the integrity of a site is:

‘the coherence of the ecological structure and function across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.’

Disturbance should not have a significant effect on the integrity of a European Protected Site.

### 3.3. Mitigation

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

- Avoidance –significant harm to wildlife species and habitats should be avoided through design.
- Mitigation – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations.
- Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity. 4.

## 4. Legislation and Policy used to assess ecological receptors

### 4.1. Planning policy

#### National Planning Policy Framework, 2024

The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. It contains a number of policies relating to ecology including "minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".

#### National Planning Practice Guidance

This online resource provides guidance on the Natural Environment and its place in the planning process.

### 4.2. Nature Conservation Legislation

#### European Habitats and Species Directive (CEC, 1992)

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

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

This Act is the primary legislation that protects animals, plants and certain habitats in the UK. This includes the designation and protection of some of the best areas of natural environment as Sites of Special Scientific Interest (SSSI).

#### The Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

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

#### Protection of Badgers Act 1992

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

#### The Hedgerow Regulations 1997

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

#### [The Countryside and Rights of Way \(CROW\) Act 2000](#)

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

#### [Circular 06/2005 Biodiversity and geological conservation – statutory obligations and their impact within the planning system](#)

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

#### [Natural Environment and Rural Communities Act 2006](#)

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

#### [Environment Act 2021](#)

This Bill makes provision about targets, plans and policies for improving the natural environment; for statements and reports about environmental protection; for the Office for Environmental Protection; about waste and resource efficiency; about air quality; for the recall of products that fail to meet environmental standards; about water; about nature and biodiversity; for conservation covenants; about the regulation of chemicals; and for connected purpose.

### 4.3. Biodiversity strategies

#### [UK Post-2010 Biodiversity Framework, 2012](#)

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

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

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

#### [Biodiversity 2020](#)

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

## 5. Ecological baseline

### 5.1. Desktop Study

The biological records search identified several notable species. Due to the broad scale of many records, it is not possible to determine if they relate to the Site. Records for notable species (excluding bat and birds) are detailed in Table 1.

Table 1. Biological records within 1km

Species Group	Taxonomic name	Common name	UK protection	Status	Count
Amphibian	<i>Bufo bufo</i>	Common Toad	WCA5 <sup>5</sup>	NERC S.41 <sup>6</sup> ; UKBAP <sup>7</sup>	1
	<i>Rana temporaria</i>	Common frog	WCA5		1
Bird	<i>Cuculus canorus</i>	Cuckoo	NERC S.41	Red; UKBAP	1
	<i>Carduelis carduelis</i>	Goldfinch			1
	<i>Larus fuscus</i>	Lesser Black-backed Gull		Amber	1
	<i>Pica pica</i>	Magpie			1
	<i>Tadorna tadorna</i>	Sand Martin		Cornwall RDB <sup>8</sup>	2
	<i>Riparia riparia</i>	Skyhawk	NERC 41		3
	<i>Hirundo rustica</i>	Swallow			1
Invertebrates	<i>Ceramica pisi</i>	Broom Moth	NERC 41	UKBAP	1
	<i>Erynnis tages</i>	Dingy Skipper	NERC 41	UKBAP	3
	<i>Ischnura pumilio</i>	Scarce Blue-tailed Damselfly			1
	<i>Coenonympha pamphilus</i>	Small Heath	NERC 41	UKBAP	1
Liverwort	<i>Marsipella profunda</i>	Western Rustwort	WCA8 <sup>9</sup>	UKBAP	5

<sup>5</sup> Wildlife and Countryside Act (1981) Schedule 5: Animals which are protected

<sup>6</sup> Species listed under Section 41 of the Natural Environment and Rural Communities Act (2006). These are the species found in England which have been identified as requiring action under the UK BAP. All local authorities and other public authorities in England and Wales have a duty to promote and enhance biodiversity in all of their functions.

<sup>7</sup> UKBAP priority species identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan.

<sup>8</sup> Cornwall Red Data Book (2009)

<sup>9</sup> Wildlife and Countryside Act (1981) Schedule 8: Plant species protected under Section 13, protected from picking and sale of plants or part of plants listed.



Mammals - Terrestrial (non-bats)	<i>Meles meles</i>	Badger	Protection of Badgers Act 1992	Cornwall RDB	1
	<i>Micomys minutus</i>	Harvest Mouse	NERC 41	UKBAP; Cornwall RDB	1
	<i>Erinaceus europaeus</i>	West European Hedgehog	NERC 41	UKBAP; Cornwall RDB	1
Mammals - Bats	<i>Plecotus auritus</i>	Brown Long-eared Bat	NERC 41, WCA5	UKBAP	1
	<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	WCA5		2
Plant	<i>Radiola linoides</i>	Allseed		Cornwall RDB	3
	<i>Centunculus minimus</i>	Chaffweed		Cornwall RDB	2
	<i>Glebionis segetum</i>	Corn Marigold		Cornwall RDB	2
	<i>Spergula arvensis</i>	Corn Spurrey		Cornwall RDB	1
	<i>Impatiens glandulifera</i>	Himalayan Balsam	WCA9		1
	<i>Cotoneaster simonsii</i>	Himalayan Cotoneaster	WCA9		1
	<i>Crocosmia pottsii</i> x <i>aurea</i> = <i>C. x crocosmiflora</i>	Montbretia	WCA9		4
	<i>Allium triquetrum</i>	Three-cornered Garlic	WCA9		1
	<i>Rhododendron ponticum</i>		WCA9		3
	<i>Cotoneaster horizontalis</i>	Wall Cotoneaster	WCA9		2

### Statutory Nature Conservation Sites (SNCS)

The following SSSI are within 5km:

- Wheal Martyn SSSI – geological interest features
- Tregargus Quarries SSSI – geological interest features
- Roche Rock SSSI – geological interest features
- St Mewan Beacon SSSI – geological interest features
- Trelavour Downs SSSI– geological interest features
- St Austell Clay Pits SSSI - designated for western rustwort *Marsupella profunda*.
- Mid Cornwall Moors SSSI - supports a diverse mosaic of semi-natural habitats, including heaths, fens, grasslands, woodlands, scrub and species-rich hedgerows, with ponds and waterways. Interest features include marsh fritillary and willow tit.

Geological SSSIs are scoped out at this stage due to a separation distance of more than 1km

St Austell Clay Pits SSSI is 1.2km away at its closest point, and can also be scoped out at this stage, as can effect on St Austell Clay Pits Special area of Conservation (SAC) which it underpins.

Mid Cornwall Moors SSSI is 2.5km away from distal end of the access track, whilst the species for which this site has been selected would not rely on habitats at the proposed turbine site. Adverse effect on this SSSI can also be scoped out at this stage.

The assessment site is not within a SSSI impact risk for the type of development proposed and this aligns with the above assessment that these statutory sites can be scoped out from further consideration.

Receptor value: These SSSIs are of National value, and the SAC is of European value. None of these receptors will be considered further.

#### Non-statutory nature conservation sites (NNCS)

There is one NNCS located within 1km of the Site: Longstone Downs County Wildlife Site (CWS) is situated ~600m to the south-east. This is an area of lowland heath situated within an area of extensive china clay works.

Receptor value: CWS are of County value.

#### 5.2. The need for an appropriate assessment

An appropriate assessment is required by Regulation 48 of the Habitats Regulations 1994 implementing Article 6(3) of the Habitats Directive (92/43/EEC) in the event that it is considered a plan or project, not connected with the management of that site, is likely to have a 'significant effect' on any European (Natura) site, i.e. Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites.

The purpose of appropriate assessment is to ensure that protection of the integrity of European sites is a part of the planning process at a regional and local level. Permission can only be granted if it can be ascertained that the plan or project will not affect the integrity of the European site.

It is appropriate to use the information assembled for this EclA when carrying out the appropriate assessment under the Habitats Regulations.

The site is not within a SSSI impact zone for a designated site that underpins a Natura 2000 designation. An appropriate assessment is not required.

### 5.3. Baseline habitats

Habitats within the development are detailed in Map 1 and described below in Table 2, along with an assessment of their biodiversity value.

The majority of the Site comprises a mosaic of habitats relating to habitat restoration work within the wider site area. Areas of lush-growth modified grassland and dense ruderal/ephemeral swards vegetate the lower flat areas, criss-crossed with tracks, banks and dry ditches. High steep banks to the north, east and south are vegetated with varied density scrub with dominant willow and frequent rhododendron. Atop the eastern bank are sections of modified grass and ruderal/ephemeral mosaic interspersed with sections of unvegetated base substrate (quarry spoil), some with manure fertiliser overlain. An area towards the centre is in operational use for reworking of rock.

Table 2: Habitat description and biodiversity value.







Baseline habitat	Description	Ecological value
g4- Grassland: modified grassland <sup>10</sup>	Several large sections of the Site comprise dense swards of modified grassland, following restoration seeding, with the species mix including abundant Yorkshire fog and rough meadow-grass, with frequent crested dog's-tail and perennial rye. Forbs were extremely scarce.	Site
Secondary code 201: young trees- planted	Scattered saplings, protected by guards, are planted within areas of the modified grassland, including hawthorn, hazel and dogwood.	
Secondary code 81: ruderal or ephemeral	Areas of dense common nettle, colt's-foot and charlock are present throughout the grassland habitat, with more mixed ruderal/ephemeral habitat, including common ragwort, oxeye daisy, marsh thistle, charlock and nettle present towards the eastern-most extent of the Site.	
Secondary code 50: dry ditch	The lower Site has a number of dry ditches heavily vegetated with grassland and ruderal/ephemeral species.  A ditch adjacent to the eastern access track had standing water puddles at the time of survey (following heavy rainfall), and limited vegetation (grass from adjacent trackside).	
g3c- Grassland: other neutral grassland	A narrow length of grassland adjacent to the eastern scrub bank has a richer mix of forbs present than the flat areas of re-seeded sward. The grass mix is as above, but with additional forbs common to sparsely vegetated ground including occasional	Site

<sup>10</sup> See Appendix 2 for modified grassland quadrat data.

	groundsel, scentless mayweed, bird's-foot trefoil, sheep's sorrel and bristly oxtongue. Scattered areas of common nettle, reed canary-grass and bramble are also present.	
h3h- Heathland and scrub: mixed scrub	Dense areas of scrub planting are present on the eastern bank and within an area to the north: species present comprise abundant willow, with frequent rhododendron, occasional European gorse and buddleia and rare hazel. Ground flora include common nettle, foxglove and a continuation of grassland species, with additional bird's-foot trefoil.	Site
Secondary code 50: dry ditch	The lower Site has a number of dry ditches heavily vegetated with grassland and ruderal/ephemeral species.  A ditch adjacent to the eastern access track had standing water puddles at the time of survey (following heavy rainfall), and limited vegetation (grass from adjacent trackside).	Site
S1- inland rock, secondary code 85: active quarry	An area to the centre of the Site comprises an operational quarry area. The majority of the area is unvegetated, but sparse forbs and common grasses are present on the less recently managed slopes, with species present including common cat's-ear, ribwort plantain, annual meadow-grass and Yorkshire fog.	Negligible
Secondary code 835: quarry spoil	Sections of unvegetated base substrate (quarry spoil), some with manure fertiliser overlain.	Negligible
u1c- Urban: artificial unvegetated – unsealed surface	Gravel tracks run through the Site, sparsely vegetated with a mix of low-growing forbs and grasses, such as sheep's sorrel, heath rush, scarlet pimpernel, Yorkshire fog and rough meadow-grass.	Negligible



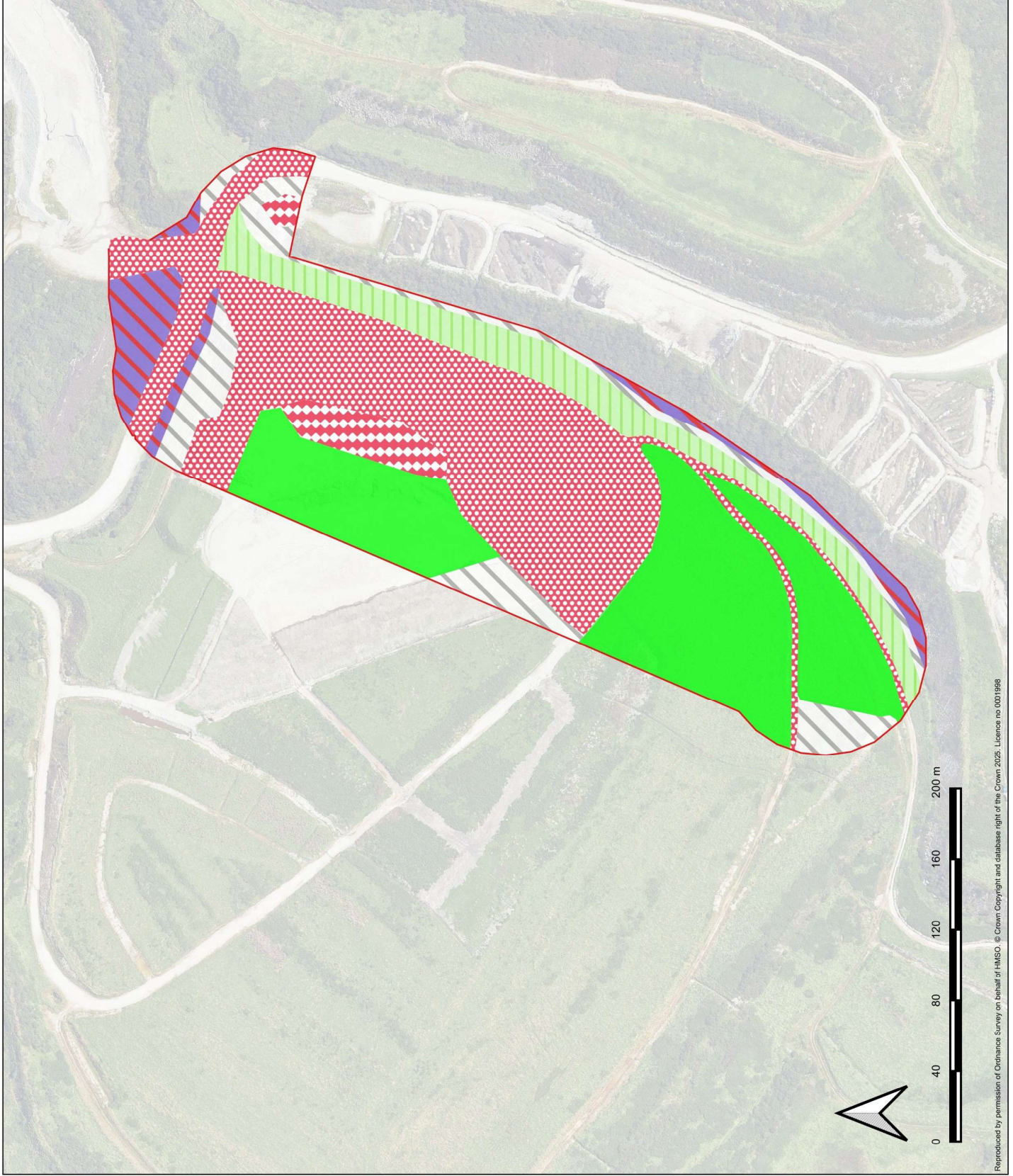
# Legend

- RLB
- UK Habs polygons**
-  u1c - artificial unvegetated unsealed surface
-  u1b6 - vacant/derelict land
-  g3c - other neutral grassland
-  g4 - modified grassland
-  g4 (81) - modified grassland (with ruderals/ephemerals)
-  h3h - mixed scrub

Title: Map 1. Baseline habitats

Project: Dubbers Turbines, Dubbers  
Restoration Area, Cornwall

Checked by: CDH    Version: 01  
Date: 30/10/2025



## 5.4. Species of nature conservation importance

Habitats have been assessed from the results of the field survey for their potential to support protected species (Table 3). Where there is no potential for a species or species group to be present within the Assessment Site they may be scoped out at this stage.

Table 3. Potential for species of nature conservation importance

Species	Assessment	Receptor Value
Amphibians (common and widespread)	The mosaic of habitats provides terrestrial opportunities for common amphibians such as common frog and palmate newt, while the surrounding habitats also provide foraging resources and hibernacula. It is likely that a variety of common amphibians are present within the Site, particularly in association with ditches and grassland/scrub edges.	Site
Badgers	The local area is likely to support badger populations. No badger setts or other field signs (such as latrines, snuffle holes or footprints) were observed in the Site. Depending on wider fencing, although the mosaic of habitats will likely provide some foraging opportunities, there may be limited access to the Site.	Site
Bats (roosting)	There is no potential roosting habitat associated with the Site.	Negligible
Bats (foraging and commuting)	<p>Bat activity was low, with no nights recording Exceptional or High activity.</p> <p>Activity levels (percentile in Ecobat) were Low for common pipistrelle (Reference Range (RR) = 1549306), Noctule (RR=68486) and brown long-eared (RR=23451), and Low to Moderate for Nathusius' pipistrelle (RR=3239).</p> <p>The assessment site is considered to be of Site value for these four species.</p> <p>The remaining bats recorded here: barbastelle, serotine, Myotis spp. Soprano pipistrelle were seldom recorded and the site is considered of negligible value for these bats.</p>	Site for common pipistrelle, Nathusius's pipistrelle, brown long-eared and noctule
Breeding birds	<p>A total of 26 species of birds were recorded during the three breeding bird transects in April, May and June 2025. Of the 26 species recorded, 14 species are declining and included in the BoCC5 Red or Amber lists, whilst seven are also species of principal importance.</p> <p>The results indicate that the wider Assessment Site and surrounding land supports a good breeding bird assemblage, but one that is typical of the local china clay pits. The areas associated with the proposed turbine footings and construction areas supported little activity. Most of the bird activity was associated with the continuous/scattered scrub around the margins of the Assessment Site and consisted of common passerines such as chaffinch, blackbird, robin, willow warbler and wren. The open grassland areas also supported probable breeding activity from skylark and meadow pipit. Notable species such as grasshopper warbler and reed bunting were occasionally active within the tall grassland habitat, however no breeding territories were recorded. Non-breeding species such as carrion crow, pheasant, magpie, wood pigeon and two gull species were also recorded.</p>	Site



	<p>Breeding period VP surveys have been undertaken to inform collision risk modelling. These surveys recorded the following target species:</p> <ul style="list-style-type: none"> <li>- buzzard;</li> <li>- common gull;</li> <li>- greater black-backed gull;</li> <li>- green sand piper</li> <li>- herring gull;</li> <li>- kestrel;</li> <li>- lesser black-backed gull;</li> <li>- peregrine</li> <li>- mallard and</li> <li>- sparrowhawk</li> </ul> <p>The predicted number of collisions were: buzzard (0.6 per breeding season), herring gull (0.6) and kestrel (1.9).</p> <p>For all other species the estimated number of collisions per annum was &lt;0.05.</p>	
Nightjar	<p>The breeding activity associated with the Assessment Site is considered to be of Site value.</p> <p>Nightjar is Red listed<sup>11</sup> and Priority Species<sup>12</sup> and is also afforded additional protection against disturbance<sup>13</sup>. The Assessment Site does not provide optimal habitat given the lack of heathland and conifer woodland which this species is typically associated with.</p> <p>However, nightjar activity was recorded within the wider survey area on two of the three survey visits. A presumed pair was recorded with observed breeding behaviour (such as display flights). A suspected nest site is located on the periphery of the Assessment Site, approximately 220m to the southwest of Turbine 2. Foraging activity was also recorded within the wider survey area. A different individual was also recorded churring in a far-off location (at least 500m) beyond the survey area.</p>	Local
Wintering birds	<p>Given the presence of a suspected nest site, the Assessment Site is of Local value to nightjar.</p> <p>Due to the open, flat nature of the Assessment Site as well as the low levels of recreational disturbance, there is potential for notable wintering species to be active here. Passage/wintering VP surveys are currently on-going and this receptor will be valued once this survey has been completed.</p>	Unknown

<sup>11</sup> Red listed under Birds of Conservation Concern (BoCC) 5

<sup>12</sup> Listed under Section 41 of NERC Act (2006) as Priority Species

<sup>13</sup> Listed under Schedule 1 of Wildlife & Countryside Act (1981) as amended

Common Dormouse	Suitable habitat is limited to species-poor mixed scrub with no hazel present. This is very isolated from other suitable habitat in the local area, while also lacking a good diversity of woody fruiting shrubs. It is considered unlikely that dormice are active here, and they do not need to be considered further.	Negligible
Hedgehog	Grassland and scrub habitats provide foraging, dispersal and hibernation opportunities.	Site
Reptiles	The majority newly seeded/lush grassland habitat provides negligible potential for foraging or hibernating reptiles. The grassland edge habitats and scrub habitat provide opportunities for foraging, dispersal and hibernation for reptile species such as slow worm, common lizard, grass snake and adder.	Site
Otter	No suitable watercourses are associated with this site. This species does not need to be considered further.	Negligible
Water Vole	No suitable watercourses are associated with this site. This species does not need to be considered further.	Negligible
Notable invertebrates	Habitats at this Site are likely to support common and widespread invertebrates, although priority invertebrate habitats such as flushes, suitable brown-field land, and soft rock cliffs are absent from the Site. These species do not need to be considered further.	Negligible
Notable plants	The nationally rare liverwort Western Rustwort is present within the wider area, however no suitable habitat (such as bare granite faces and exposed china clay spoil) is associated with the survey Site.	Negligible
Invasive non-native Species	Rhododendron <i>R. ponticum</i> is present within scrub habitats within the Site.	Present

The ecological receptors to be considered for significant effects are given in Table 5. These are of local or higher value; those ecological receptors that have less than local value are not considered further unless they are European Protected Species and there is potential for them to be present (in which case the regulatory context i.e. the Habitats Regulations 2010 is considered), or they are the subject of national legislation (i.e. Wildlife and Countryside Act 1981).

Table 4. Table of ecological receptors to be considered for significant effects

Receptor	Relevant legislation/policy	Value
Longstone Downs County Wildlife Site (CWS)	Local plan	County
Amphibians	Wildlife and Countryside Act 1981 (limited protection), Priority BAP species (common toad)	Site
Badger	Protection of Badgers Act 1992	Site
Bat assemblage – foraging and commuting	European Protected Species, Species of Principal Importance	Site for common pipistrelle, brown long-eared and noctule.
Dormice	European Protected Species, Species of Principal Importance	Site
Hedgehog	Wildlife and Countryside Act 1981 (limited protection), Priority BAP species	Site
Breeding birds	Wildlife and Countryside Act 1981, Priority BAP species	Site



Nightjar	Wildlife and Countryside Act 1981 (schedule 1), Priority BAP species	Local
Wintering birds	Wildlife and Countryside Act 1981, Priority BAP species	Unknown
Reptiles	Wildlife and Countryside Act 1981, Priority BAP species	Site
Invasive non-native plants	Wildlife and Countryside Act 1981	Present

## 6. Assessment of ecological impacts

### 6.1. The development

The proposed development concerns construction and operation of two Vestas 117 (4.3MW) turbines with blade tip heights of 135m and a hub height of 76.5m. Associated infrastructure includes a temporary construction compound, new access tracks and hardstanding areas.

### 6.2. Construction phase impacts

During the construction phase, there is predictable adverse effects which are generally unavoidable; many are short term and can be minimised as part of the construction management, but some have the potential for more lasting effect.

The potential for adverse effects are largely short term impacts associated with noise and vibration, airborne and waterborne, pollutants, short term habitat loss or disturbance. The potential for adverse impacts would be minimised as far as possible through the application of good practice techniques and adherence to well-designed method statements; these would be managed through a Construction Environmental Management Plan (CEMP).

### Non-statutory nature conservation sites

#### Longstone Down CWS

This CSW is of County value and is located approximately 600m to the south-east of the assessment site.

It is unlikely that waterborne pollution from the assessment would reach this CWS. In addition, there is little potential for airborne pollutants, such as dust, to be created during the construction phase.

Assessment: It is near-certain that unmitigated construction would have no adverse effect on this non-statutory nature conservation site.

### Species

#### Amphibians (common and widespread)

The Assessment Site is a Site value for foraging amphibians, and they may be present in ditches and margins. There is potential for construction activities to result in accidental harm.

Assessment: Unmitigated construction is near certain to have a minor, temporary adverse effect on common and widespread amphibians.

Intentional killing or injuring would be considered an offence under relevant wildlife legislation.

### Badgers

No badger setts or evidence of badger use was observed within the Assessment Site, or its immediate surroundings. However, foraging badgers are likely in the area, and habitats present onsite are suitable for foraging badgers. The assessment site is Site value for badgers.

There is potential for adverse effects during the construction phase associated with badgers becoming trapped within the construction site or any trenches left open at night.

Assessment: It is unlikely that unmitigated construction would have an effect on badgers. An effect, were it to occur, would be associated with becoming trapped within the site and would be short term, minor, adverse.

There is negligible potential to impact badger in a way that could be considered an offence under relevant wildlife legislation.

### Bats – foraging and commuting

The assessment site is of Site value for common pipistrelle, brown long-eared and noctule.

The primary pathway of effect during the construction phase would be through impacts to habitat features used by foraging bats, such as direct habitat loss and damage. There will be a temporary loss of a limited area of habitat associated with construction due to storage areas/compounds. This habitat is widespread in the local area and loss of this limited extent in context to the wider area is unlikely to impact local populations.

No night-time works are planned during the construction phase. Short term disturbance to these habitats is unlikely to affect local bat populations.

Assessment: Unmitigated construction is near certain to have a negligible effect on foraging and commuting bats.

### Hedgehog

The assessment site is Site value for hedgehog. There is potential for adverse effects during the construction phase associated with hedgehog becoming trapped within the construction site or any trenches left open at night.

Assessment: It is unlikely that unmitigated construction would have an effect on hedgehog. An effect, were it to occur, would be associated with becoming trapped within the site and would be temporary, minor, adverse.

### Breeding birds

The construction phase is proposed to extend over a 6 to 9 month period during daylight hours and will involve the construction of a temporary compound, blade lay down and crane pad areas, installation of the Vestas 117 turbines, followed by reinstatement of these temporary construction areas.

The Assessment Site is of Site value for breeding birds. The construction phase has potential to impact breeding birds through disturbance/displacement and direct harm to nests.

The majority of breeding activity was recorded within scrub located at the edges of Assessment Site which would be unimpacted during the construction phase.

The construction phase would involve clearance of limited extents of modified grassland and ruderal/ephemeral habitats associated with the development footprint. Although very little breeding activity was recorded here during the survey, should any active nests be present here in the future there is potential for construction works here to damage or destroy them. This impact is considered to be minor adverse and temporary and could also be an offence under the Wildlife and Countryside Act (1981) as amended.

Breeding territories associated with the grassland areas would be likely to be more susceptible to disturbance given the open nature of these areas, where single linnet, meadow pipit and skylark territories were recorded within 250m of the proposed construction areas. Long-term monitoring of skylark and meadow pipit at a large wind farm in Scotland has found both species to be largely unaffected by both construction and operational phases<sup>14</sup>. Given the extent of available retained grassland habitat in the immediate area, and the temporary nature of any displacement or disturbance that may occur, this impact is considered to be negligible.

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<sup>14</sup> Ecology Consulting (2021). Report to Renewable Energy Systems Ltd: Kelburn Windfarm: Post Construction Phase Breeding Bird Surveys 2021 (Operational Year 10).

Assessment: Any accidental damage to active nests that may be present within the construction areas would be a temporary, minor adverse impact to breeding birds. This could also be considered an offence under the Wildlife & Countryside Act (1981) as amended.

### Nightjar

Nightjar have been recorded within the wider Assessment Site, and as breeding behaviour was observed, it is assumed the species is breeding here. The Assessment Site does not provide optimal habitat, and it is quite unusual that activity has been recorded here, given the species' strong association with heathland and conifer/plantation woodland (which are both absent from the Assessment Site).

During the construction phase, pathways of impact would mostly concern increased levels of noise, vibration, machinery movements and human presence which would likely cause disturbance or displacement of breeding nightjar. In updated SNH guidance (Goodship & Furness, 2022) a minimum buffer zone of 150m from the nest site is recommended to protect breeding nightjar. At the Assessment Site, the location of the suspected nest site is approximately 220m from the nearest construction area, while it is also very well screened by a large spoil tip/embankment which obscures all the construction areas from view. The foraging areas have greater separation distance and it is anticipated that nightjar would continue foraging in the wider area. In addition to this, the construction period would only take place during daylight hours. Taking the above factors into consideration, it is near-certain that unmitigated construction activities would not adversely affect breeding nightjar.

Assessment: Unmitigated construction activities would have a negligible effect on breeding nightjar.

### Wintering birds

The wintering VP surveys are currently on-going and the value of the Assessment Site in relation to this receptor will be updated once the survey effort is complete.

The construction phase would involve increased levels of disturbance, mainly through noise and increased vehicle movements and human presence.

Construction related disturbance is not anticipated to displace winter flight activity given that the Assessment Site is located within an operational mining area and species regularly flying within and around here will be largely normalised to higher levels of noise, machinery movements and human presence.

Assessment: An assessment of the likely impact on winter/passage birds cannot be made at this stage.

## Reptiles

The assessment site is Site value for reptiles species. The primary pathway of effect would be during vegetation clearance and accidental damage to areas where they may be present. The temporary loss of habitat associated with construction works would not affect foraging reptiles, or reptile populations, due to its low level of suitability.

Assessment: It is probable that unmitigated construction would have an adverse effect on individual reptiles were they to be present. Any effect that would occur would be adverse, minor and short term.

Intentional killing for injuring of reptiles would be considered an offence under relevant wildlife legislation.

## Invasive non-native plants

Rhododendron is present onsite and there is potential to cause it to spread (further) during unmitigated construction.

Assessment: It is probable that unmitigated construction would result in the spread of this plant. Any effect would be adverse and long-term. However, against the background distribution of this plant within the mining areas, any impact would be trivial.

Causing rhododendron to spread in the wild could be considered an offence under relevant wildlife legislation.

## 6.3. Operational phase impacts

### Overview

During the operational phase, there are predictable adverse effects including the permanent loss of habitat under the development, disturbance during maintenance, and barrier effects and displacement of birds.

There is also the potential for effects on bird and bat populations due to collision with the moving blades of the turbines.

### Statutory nature conservation sites

#### Longstone Down CWS

This CWS is of County value and is located approximately 600m to the south-east of the assessment site.

There will be no habitat loss within this CWS whilst the features for which this site has been selected are not susceptible to other operational effects associated with the proposed development.

Assessment: It is certain that the operational phase would have a negligible effect on this non-statutory nature conservation site.

#### **Amphibians (common and widespread)**

The Assessment Site is a Site value for foraging amphibians, and they may be present in ditches and margins.

These habitats will be retained and no impact is predicted.

Assessment: It is certain that the operational phase would have a negligible effect on amphibians.

#### **Badgers**

No badger setts or evidence of badger use was observed within the Assessment Site, or its immediate surroundings. However, foraging badgers are likely in the area, and habitats present onsite are suitable for foraging badgers.

There is no realistic ecological pathway of effect for impact to badgers during the operational phase, other than those associated with enhancements to meet biodiversity net gain, although this is likely to be trivial when assessed against the area of a typical badger territory.

Assessment: It is certain that the operational phase would have a negligible effect on badgers.

#### **Bats (foraging and commuting)**

No suitable features for roosting bats were within 200 metres of the Assessment Site.

The primary pathway of effect would be through permanent habitat loss associated with the development and collision with moving blades.

The proposed development will lead to the loss of a very limited area of modified grassland. This loss of this limited extent, when viewed in context against the extent of retained habitat that will remain viable for foraging bats is trivial and would have a negligible effect.

Collision assessment is derived from available research, recorded activity levels, published collision risks and population vulnerability<sup>10</sup>, and professional judgement.



The assessment site is of Negligible value for barbastelle, serotine, Myotis spp. Soprano pipistrelle, and Site value for common pipistrelle, Nathusius' pipistrelle, noctule and brown long-eared.

Due to their extremely low levels of activity during walked transects and remote monitoring, no realistic ecological pathway of effect exists for barbastelle, serotine, Myotis spp. and Soprano pipistrelle.

#### Nathusius' pipistrelle

Nathusius' pipistrelle bats are considered to be at high risk of collision with wind turbines.

At this site, remote monitoring calls for Nathusius' pipistrelle returned a median percentile of 14, with a 95% CI<sup>15</sup> of 8-28. Higher activity levels were recorded at Locations 3 and 4 close to linear features (Location 3 is also the southern turbine site (T2)), with the lowest level at Location 1, in the position of the northern turbine (T1).

The current level of activity is Low to Moderate and likely to reflect the habitat types at this location, which appear to be largely unsuitable for flying invertebrates, probably due to soil characteristics and the mineralised nature of any waterbodies.

Assessment: It is probable that the operational phase will have a negligible adverse effect on populations of Nathusius' pipistrelle. Any effect, were it to occur, would be at an individual level due to collision mortality and would be unlikely, minor, and permanent adverse.

#### Common pipistrelle

Common pipistrelle bats are considered to be at high risk of collision with wind turbines.

At this site, remote monitoring calls for common pipistrelle returned a median percentile of 1, with a 95% CI of 7-17. Higher activity levels were recorded at Locations 2 and 4 close to linear features (Location 2 is also the northern turbine site), with the lowest level at Location 3, in open habitat at the position of the southern turbine.

The current level of activity is Low and likely to reflect the habitat types at this location, which appear to be largely unsuitable for flying invertebrates, probably due to soil characteristics and the mineralised nature of any waterbodies.

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<sup>15</sup> CI = confidence interval



Assessment: It is near certain that the operational phase will have a negligible adverse effect on populations of common pipistrelle. Any effect, were it to occur, would be at an individual level due to collision mortality and would be unlikely, minor, permanent adverse.

#### Noctule

Noctule bats are considered to be at high risk from collision wind turbines.

At this site, remote monitoring calls for noctule returned a median percentile of 1, with a 95% CI<sup>16</sup> of 4.5-22. Higher activity levels were recorded at Locations 3, although recorded activity levels were almost flat across the site, as would be expected of a high-flying bat.

This is a bat of open spaces which regularly flies and forages at the heights swept by large wind turbines. Studies in German coastal areas found that greater than 70% of noctule bats avoided turbines at a local scale<sup>17</sup>, although they admit that their sample sizes are small and close to roosts, this bat tends to fly towards turbines. This is a bat with high amplitude calls (Noctule can be recorded at distances of 100 metres); only 12 calls were recorded per night. If this bat was foraging here on a regular basis for prolonged periods, many more calls would have been recorded.

Levels of Noctule activity at the turbine site were Low.

Assessment: It is near-certain that the operational phase will have a negligible adverse effect on the populations of the noctule. Any effect, were it to occur, would be at an individual level due to collision mortality and would be minor adverse.

#### Brown Long-eared

Brown Long-eared bats are considered to be at low risk from turbines.

At this site, remote monitoring calls for noctule returned a median percentile of 4, with a 95% CI of 8.5-13. This bat is not considered at risk from turbines due to its foraging ecology; it flies close to the ground.

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<sup>16</sup> CI = confidence interval

<sup>17</sup> Christine Reusch, Maja Lozar, Stephanie Kramer-Schadt, Christian C. Voigt. Coastal onshore wind turbines lead to habitat loss for bats in Northern Germany. Journal of Environmental Management 310 (2022) 114715

Assessment: It is near-certain that the operational phase will have a negligible adverse effect on populations or individual brown long-eared.

#### Other bats recorded here

Low numbers of passes were recorded from barbastelle, serotine, *Myotis* spp. and Soprano pipistrelle.

None of these species are active within the vicinity of the turbine on a regular basis. An operational turbine at this site would pose a negligible risk of collision to these bats and no risk to their local populations.

Assessment: It is near certain that the operational phase would have a negligible impact on barbastelle, serotine, *Myotis* spp. and Soprano pipistrelle.

#### Hedgehog

The assessment site is the Site value for the hedgehog.

There will be no loss of suitable habitat and no adverse effect is predicted. Habitat creation would provide additional habitat, but this would not be significant.

Assessment: It is certain that the operational phase would have a negligible effect on hedgehog.

#### Breeding birds

##### Habitat loss

Direct habitat loss associated with the operational phase concerns limited extents of modified grassland and ruderal/ephemeral habitats. These areas typically supported very little breeding bird activity, with large availability of similar habitat in the immediate area. Therefore, direct habitat loss is unlikely to adversely affect breeding bird populations at the Assessment Site.

##### Disturbance/displacement

Indirect habitat loss through displacement and disturbance is not considered likely to impact the species recorded breeding within and around the Assessment Site. Displacement distances for birds such as Meadow Pipits (Hötter *et al.* 2005; RSPB, 2009) have been shown to be between 41-100m from wind turbines, while other studies (Devereux *et al.* 2008; Percival, 2005) suggest wind turbines to cause little disturbance to passerines. Long-term monitoring at Kelburn Wind Farm have also shown that species such as meadow pipit and skylark have

not been displaced by either turbine structures or access tracks. Areas of retained habitat across the immediate area are therefore likely to remain viable for the species that are already present. No adverse effect arising from disturbance or displacement is likely.

#### Barrier effect

The proposed turbines are considered unlikely to disrupt flight paths used by birds that are active in the area. The turbines would be situated in the lee of an adjacent large spoil heap (immediately to the east) which would remain at a greater height than the proposed maximum blade height of 135m. Therefore natural flight lines of birds transiting through the airspace to the east of the turbines would be above blade height in order to clear the spoil heap. The presence of the spoil heap also naturally encourages flight routes at lower heights to transit the area of flat open ground within 500m to the west of the proposed turbines. It is therefore considered unlikely that the presence of the turbines would create any barrier to birds transiting either north-south or east-west through the turbine envelopes.

Gull flight activity involved a variety of soaring and transiting in all directions within the turbine envelope, while flight heights were generally at blade height and above. Gulls were frequently observed flying higher than blade height and it is anticipated that the presence of the two turbines here would not serve as a barrier.

Kestrel flight activity was broadly associated with two areas; the vegetated slopes of large spoil tip to the east and the flat open plateau to the west of the turbines. The majority of kestrel flight activity involved foraging and there was little transiting between these two areas. It is therefore unlikely that the presence of the two turbines would act as a barrier between these two foraging areas, while there is also extensive foraging habitat in the immediate area. It is not anticipated that presence of the two turbines here would prevent kestrel from accessing hunting grounds in the local area.

Buzzard flights consisted of soaring on thermals associated with steeper topography, some foraging activity and transiting flights. Flight heights were blade height and above and it is therefore anticipated buzzards would still be able to forage and transit through the area whilst the proposed turbines are operational.

For other species, the recorded flight activity suggests they are seldom active in the area and therefore the two turbines would not act as a significant barrier on transiting routes.

The species recorded here are largely similar to those recorded during VP survey work for other turbines in the area (such as Wheal Martyn, East Karslake, Longstones, Burngullow and Goonamarth) and are likely to be from the same local populations. It is anticipated that populations

which are active in the area will quickly become adapted to the presence of two new turbines in this landscape, given the frequency of turbines in this local area.

Barrier effect is not considered likely to impact the species recorded here.

### Collision risk

Cumulative collision estimates for target species during the breeding season have been provided for the proposed turbine and five other turbines in the local area<sup>18</sup>. Collision estimates are provided in Table 5 below.

Table 5. Total estimated collisions from proposed turbine

Species	Total collisions per annum from 5 permissioned turbines	Total collisions from Dubbers turbines <sup>19</sup>	Cumulative number of collisions per annum
Buzzard	0.81	0.6	1.41
Common gull	<0.001	0.04	0.041
Great black-backed gull	0.075	Not recorded	0.075
Green sandpiper	Not recorded	<0.001	<0.001
Herring Gull	2.08	0.6	2.68
Kestrel	0.88	1.9	2.78

<sup>18</sup>

PA20/09318 – single wind turbine with maximum blade tip height of 135m, Lower Longstones;  
 PA21/07216 – single wind turbine with maximum blade tip height of 135m, Land NW of Carthew Farm;  
 PA21/12493 – single wind turbine with maximum blade tip height of 135m, East Karslake;  
 PA23/09937 – single wind turbine with maximum blade tip height of 135m, Burngullow; and  
 PA23/10069 - single wind turbine with maximum blade tip height of 135m, Higher Goonamarth

<sup>19</sup> The calculated number of collisions for the Dubbers turbines is based on estimates from the breeding season data. This will be updated once the full passage/winter survey effort has been completed.

Lesser black-backed gull	0.107	<0.001	0.108
Peregrine	0.007	<0.001	0.008
Mallard	0.031	<0.001	0.032
Sparrowhawk	0.008	<0.001	0.009

For the majority of target species recorded the predicted number of collisions is >1 individual per annum, which is considered to be a negligible impact on local populations. Buzzard, herring gull and kestrel were the only species for which there were estimated to be >1 mortalities per annum.

Herring Gull is a widespread species in the local area and is likely to be highly normalised to the existing wind turbines within the landscape around the survey area. The modelled cumulative collision rates of 2.68 birds per summer season would have a negligible effect on local populations, especially when viewed against annual survival rates which approach 83%<sup>20</sup>. It should be noted that Herring Gull are not a species that Natural England consider to at risk from turbines, whilst their declines are thought to relate to reduced fish stocks in coastal areas.

A cumulative impact of an estimated one buzzard and three kestrels per season is considered to represent a permanent adverse impact to local raptor populations. Cumulative impacts are formally assessed in Chapter 9.

Assessment: Unmitigated operation of the proposed turbines delivers collision estimates of 2 kestrels per breeding season which is considered to represent a long-term, moderate adverse effect on breeding birds.

### Nightjar

Nightjar are assumed to have bred at the survey site this season as breeding activity was recorded during the survey visits. Foraging activity was typically associated with a flat area of extensive grassland the extends to the west, approximately 200m to the west of the proposed location for Turbine 2 (T2). The main impacts arising from the operation of the two turbines would be displacement and collision.

In updated SNH guidance (Goodship & Furness, 2022) a minimum buffer zone of 150m from the nest site is recommended to protect breeding nightjar. At the Assessment Site, the location of the suspected nest site is approximately 220m from the nearest turbine, while it is also very

<sup>20</sup> BTO Bird facts – Herring Gull – Survival and Longevity. [Available at: <https://bto.org/understanding-birds/birdfacts/herring-gull>]

well screened by a large spoil tip/embankment which would obscure the turbine from view. The foraging areas have greater separation distance and there are extensive areas supporting the same habitats >250m from the proposed turbine location. Displacement is during the operational phase is therefore unlikely.

Nightjar flight heights have been researched at several wind farms in the UK<sup>21,22,23</sup> and flight heights have been documented to be consistently below 20m. This would suggest that nightjar breeding and foraging at the Assessment Site would be largely below the lowest point of the blade sweep (18m). The location of the suspected nest site is also very well screened by local topography, while the birds accessing foraging grounds typically flew the opposite direction to the proposed turbine locations. Furthermore, it is considered to be unusual that nightjar have been recorded here, given the poor suitability of the habitat and there is a possibility that the nightjar recorded could be a one-off occurrence.

Despite there being evidence to suggest that nightjar may be at a low risk of collision, as well as a possibility that the Assessment Site may not consistently support breeding nightjar, it is not possible to confidently rule out adverse impact.

Assessment: Displacement or mortality due to collision caused by the unmitigated operation of the turbines would represent a long-term moderate adverse effect.

#### Wintering birds

The wintering VP surveys are currently on-going and the value of the Assessment Site in relation to this receptor will be updated once the survey effort is complete.

#### *Habitat loss*

Direct habitat loss associated with the operational phase concerns limited extents of modified grassland and ruderal/ephemeral habitats. These areas are typically unlikely to support notable wintering foraging due to a lack of food sources. Therefore, direct habitat loss is considered to be unlikely to adversely affect wintering birds at the Assessment Site.

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<sup>21</sup> Calbrade N.A., and Henderson I. (2009) A Survey of Nightjar Flight Heights in Clocaenog Forest in 2009, British Trust for Ornithology.

<sup>22</sup> Morrison C. 2007 Project Alaska Windfarm Nightjar Activity Survey report, RPS report for Infinergy

<sup>23</sup> Natural Power (2010) Pen y Cymoedd Wind Energy Project Supplementary Environmental Information



### *Disturbance/displacement*

The operation of the turbines would involve tall structures (135m tip height) which may result in an increase in displacement. Analysis of wintering bird activity at other wind farms (Hötter *et al.* 2006) suggests that turbines can lead to greater disturbance distances, with lapwing in particular being negatively impacted. In the same study, a mean displacement distance for non-breeding lapwing was calculated to be 260m. The proposed turbines are located at the edge of a large open plateau supporting mostly grassland habitats. There is extensive habitat located beyond 260m from the turbines which would remain available to any wintering species that may active here. It is therefore predicted that disturbance/displacement would not adversely impact wintering birds, however this will be updated on the winter VP surveys have been completed.

### *Barrier effect*

The proposed turbines are considered unlikely to disrupt flight paths used by birds that are active in the area. The turbines would be situated in the lee of an adjacent large spoil heap (approx. 340m above sea level, immediately to the east) which would remain at a greater height than the proposed maximum blade height of 135m. Therefore natural flight lines of birds transiting through the airspace to the east of the turbines would be above blade height in order to clear the spoil heap. The presence of the spoil heap also naturally encourages flight routes across the area of flat open ground to the west of the proposed turbines. It is therefore considered unlikely that the presence of the turbines would create any barrier to birds transiting either north-south or east-west through the turbine envelopes. It is therefore predicted that barrier effect would not adversely impact wintering birds.

### *Collision risk*

Gull species, kestrel and buzzard are all likely to be active within/around the Assessment Site during the winter period. It is therefore anticipated that annual collision estimates for these species will increase as a result which will contribute to the cumulative estimates. There is also potential for other notable species to be active here. This assessment will be updated once the winter VP surveys have been completed.

Assessment: An assessment of the likely impact on winter/passage birds cannot be made at this stage.

### Reptiles

The assessment site is Site value for reptile species.

There will be no loss of suitable habitat and no adverse effect is predicted. Habitat creation would provide additional habitat, but this would not be significant.

Assessment: It is certain that the operational phase would have a negligible effect on reptiles.

[Invasive non-native plants](#)

Rhododendron is present onsite and there is potential to cause it to spread (further) during habitat management.

Assessment: It is probable that unmitigated operational habitat would result in the spread of this plant. Any effect would be adverse and long-term. However, against the background distribution of this plant within the mining areas, any impact would be trivial.

Causing rhododendron to spread in the wild could be considered an offence under relevant wildlife legislation.



## 7. Mitigation

### 7.1. Construction phase

The following mitigation would be provided to minimise the unavoidable effects during the construction phase:

- Design and delivery of a Construction Environment Management Plan that incorporates ecological protections for all sensitive ecological features. This will include:
  - statement of responsibilities
  - duties of the ecological clerk of works
  - rigid control of worksite boundaries
  - control of waste
  - storage of materials
  - dust management plan
  - pollution prevention plan
  - rhododendron control plan
- Vehicle and machinery movements should follow only designated routes to help contain disturbance to the works areas.
- Prior to any incidental vegetation removal, the following methods will be adopted in relation to nesting birds:
  - Any activities affecting these habitats should be completed during the period September to February inclusive, outside the accepted bird nesting season.
  - If this is not practicable, within 24 to 48 hours prior to the start of works these habitats should be thoroughly inspected by a suitably qualified person prior to disturbance or removal.
  - If nesting birds are found, all activities likely to damage the immediate area should be delayed until chicks have fledged.
- Mitigation would be adopted for reptiles and amphibians during site clearance follows;  
Construction during the period November to mid-March:
  - Clearance of areas that may provide hibernacula (such as logs, wood piles, debris piles) should be avoided during these periods as there is unknown potential for hibernating reptiles and amphibians to be present. If this is planned but unavoidable, it is recommended that vegetation is cut back to bank level during September and October and kept close-managed to deter hibernating reptiles.

### Construction in period late March to October

- If construction is to occur during the active reptile or amphibian season (late March to October), areas to be affected by construction activities should be de-vegetated prior to any site activities under the supervision of a suitably qualified ecologist. Any grassland, or ecotone between grassland and shrub or bank to be removed or realigned, will initially be strimmed to a height of no more than 20 cm, having first used an ecologist to walk and beat the habitat. This will encourage animals to disperse naturally into the neighbouring uncut vegetation. After at least 24 hours, a second cut will be made as close to ground/bank level as possible. This should ensure that any reptiles, if present, are displaced from the construction site onto adjacent intact habitats.
- Any trenches left open overnight would have a means of escape for mammals such as a scaffolding plank set at an angle of 45 degrees or less

### 7.2. Operational phase

- Birds (breeding, wintering and nightjar) - Mitigation is required to avoid effects during the operational phase on breeding birds, wintering birds and nightjar. This would involve a bird mitigation strategy with measures such as habitat manipulation to minimise prey items (small mammals, amphibians and reptiles) and encourage bird activity away from turbines, while enhancing existing habitat with sufficient separation distance from the turbines. Monitoring will also likely be required to ensure habitat manipulation has been successful. The details of mitigation will be determined once the winter bird survey effort has been completed, allowing a focused approach.
- Rhododendron – a rhododendron management plan should be adopted detailing control in habitats managed for Biodiversity Net Gain during the operational period.

## 8. Residual impacts

Residual impacts on valued ecological receptors during the construction and operational phases are minimal, with no effect being significant at the level of assessment. Detail of potential impacts and their significance at the level of assessment are given in Table 6. Where no reasonable pathway of effect exists and pre-mitigation impact has been discounted, the receptor is not considered here.

Table 6. Summary of residual impacts following mitigation

Receptor	Description of impact	Magnitude of potential impact	Level of effect (incl. adverse or beneficial, short term or permanent, medium or long term)	Mitigation	Residual impact - Significant / not significant?
Construction phase					
Badger	Becoming trapped in trenches	Minor	Short term, adverse	Any trenches left open overnight would have a means of escape for mammals.	Negligible
Hedgehog	Becoming trapped in trenches	Minor	Short term, adverse	Any trenches left open overnight would have a means of escape for mammals.	Negligible
Breeding birds	Accidental damage to nests whilst in use.	Minor	Short term, adverse	Nesting bird check prior to any incidental vegetation removal	Negligible
Wintering birds	Disturbance	Unknown	Potential for an offence Unknown	Unknown	Offence avoided Unknown
Reptiles and amphibians	Damage to suitable habitats	Minor	Short term, adverse	Adoption of a suitable CEMP with habitat manipulation and protection of retained habitat	Negligible
Invasive non-native plants	Cause to spread	Minor	Potential for an offence Short term, adverse Potential for an offence	Adoption of a suitable CEMP with an invasive plant method statement	Offence avoided Negligible Offence avoided
Operational phase					
Bats	Collision with the operational turbine	Minor	Long-term adverse	For Nathusius' pipistrelle common pipistrelle and noctule: impact is unlikely and would be at the individual level. Habitat manipulation to deter foraging birds is likely to reduce this impact, although no specific mitigation is recommended due to the nature of the impact and the low levels of activity recorded.	Minor – not significant at the level of assessment
Breeding birds	No population effects predicted Collision risk	Moderate	Long-term adverse	Habitat manipulation to deter presence with monitoring to ensure success	Minor – not significant at the level of assessment
Nightjar	Displacement and collision risk	Moderate	Long-term adverse	Habitat manipulation to deter presence with monitoring to ensure success	Minor – not significant at the level of assessment
Wintering birds	Displacement and collision risk	Unknown	Unknown	Habitat manipulation to deter presence with monitoring to ensure success	Unknown
Rhododendron	Cause spread	Minor	Long-term adverse		

## 9. Cumulative effects

Cumulative impacts are those additional changes caused by a proposed development in conjunction with similar developments, or as the combined effect of several developments taken together.

An assessment of the cumulative impact arising from the wind farm development at this site requires that the relevant information relating to the individual impact of adjacent developments is available.

Approved developments that have the potential for a cumulative impact, and with sufficient data available within the public domain, are considered here.

- Cumulative impacts arising from two or more developments may be:
- Additive - effects are summed
- Antagonistic – the cumulative impacts are less than their summed values
- Synergistic – the cumulative impact is greater than the summed impact.

### 9.1 Breeding birds

The cumulative impact upon certain groups of target bird species from this proposed turbine and approved and/or proposed turbines in the local area has been calculated based on <https://www.cornwall.gov.uk/media/dhtnttc4/wind-turbine-applications-county.pdf> (dated 15/08/2025). The findings of impact assessments for birds associated with these developments are summarised below in Table 7.

Table 7 – Bird assessments associated with wind turbine developments within the local area

Site name	Distance from Assessment Site	Description	Status	Evidence base
PA20/09318 – Land at Lower Longstones	1.12km	single wind turbine with maximum blade tip height of 135m	Approved	Breeding bird and VP surveys undertaken for all these projects.
PA21/07216 – Land NW of Carthew Farm	2.44km	single wind turbine with maximum blade tip height of 135m	Approved	No significant effects to breeding birds.
PA21/12493 – Land at East Karslake	1.36km	single wind turbine with maximum blade tip height of 135m	Approved	Cumulative collision estimates per annum as follows: Buzzard = 0.81 Common gull = <0.001
PA23/09937 – Land at Burngullow	2.19km	single wind turbine with maximum blade tip height of 135m	Approved	Greater black-backed gull = 0.075 Herring gull = 2.08 Kestrel = 0.88
PA23/10069 – Land at Higher Goonamarth	1.90	single wind turbine with maximum blade tip height of 135m	Approved	Lesser black-backed gull = 0.107 Peregrine = 0.007 Mallard = 0.031 Sparrowhawk = 0.008

### Disturbance/displacement

The species recorded at the Assessment Site are largely similar to those recorded during VP survey work for other turbines in the area and are likely to be from the same local populations. It is anticipated that populations which are active in the area will quickly become adapted to the presence of two new turbine in this landscape, given the frequency of turbines in this local area.

Barrier effect is not considered likely to impact the species recorded here given the separation distance of at least 1km between all turbines.

### Collision risk

For the majority of target species recorded, the predicted number of collisions per annum is >1 individual, which is considered to be a negligible impact on local populations.

Buzzard, herring gull and kestrel were the only species for which there were estimated to be >1 mortalities per breeding season.

Herring Gull is a widespread species in the local area and is likely to be highly normalised to the existing wind turbines within the landscape around the survey area. The modelled cumulative collision rates of 2.68 birds per summer season would have a negligible effect on local populations, especially when viewed against annual survival rates which approach 83%. It should be noted that Herring Gull are not a species that Natural England consider to at risk from turbines, whilst their declines are thought to relate to reduced fish stocks in coastal areas.

A cumulative impact of an estimated one buzzard and three kestrels per season is considered to represent a permanent adverse impact to local raptor populations.

Mitigation is therefore required to avoid collision mortalities during the operational phase. The winter VP survey is currently on-going and this mitigation requirement may need to be extended for birds that are active within the turbine envelopes during the winter period. Mitigation would involve a strategy involving measures such as habitat manipulation to minimise prey items (small mammals, reptiles, amphibians) while enhancing existing habitat with sufficient separation distance from the turbines in order to encourage bird activity away from turbines. The details of mitigation will be determined once the winter bird survey effort has been completed, allowing a focused approach. Monitoring will also likely be required to ensure habitat manipulation has been successful.

## 9.2. Bats

The cumulative impact upon bats from this proposed turbine and approved and/or proposed turbines in the local area has been calculated based on <https://www.cornwall.gov.uk/media/dhtnttc4/wind-turbine-applications-county.pdf> (dated 15/08/2025) and professional knowledge of the assessment site and adjacent areas. The findings of impact assessments for bats associated with these developments are summarised below in Table 8.

Table 8 – Bat assessments associated with wind turbine developments within the local area

Site name	Distance from Assessment Site	Description	Status	Evidence base
PA20/09318 – Land at Lower Longstones	1.12km	blade tip height of 135m	Approved	Bat activity surveys undertaken which concluded: <i>The proposed turbine is within a site of very low value for bats, as illustrated by the results of the walked transects and remote monitoring. No significant effects are predicted, and no curtailment mitigation is required.</i>
PA21/07216 – Land NW of Carthew Farm	2.44km			Bat activity surveys undertaken which concluded: <i>The proposed turbine is within a site of very low value for bats, as illustrated by the results of the walked transects and remote monitoring. No significant effects are predicted, and no mitigation is required.</i>
PA21/12493 – Land at East Karslake	1.36km			Bat activity surveys undertaken which concluded: <i>Mitigation should be adopted to minimise the risk of collision to common pipistrelle, Noctule and Barbastelle bats that are foraging around scrub habitat. This involved habitat manipulation to encourage bat activity way from turbines.</i>
PA23/09937 – Land at Burngullow	2.19km			Bat activity surveys undertaken. EclA concluded: <i>It is probable that operational phase will have negligible effect on populations of common pipistrelle, noctule and brown long-eared bats. Other species are seldom active within the vicinity of the turbine on a regular basis. An operational turbine at this site would pose a negligible risk of collision to these bats and no risk to their local populations.</i>
PA23/10069 – Land at Higher Goonamarth	1.90km			Bat activity surveys undertaken. EclA concluded: <i>It is probable that the operational phase will have negligible to minor adverse effect on populations of common pipistrelle, noctule, myotis, brown long-eared or greater horseshoe bats and minor adverse. Any effect, were it to occur (common pipistrelle and noctule), would be at an individual level due to collision mortality and would be minor adverse but not significant.</i>

These other turbine developments have largely found there to be negligible to minor adverse impacts and which were likely to affect individual bats rather than the respective populations. Given the separation distance of at least 1km with the above turbine developments and presence of large areas of unsuitable habitat in between (associated with the china clay

workings) there is poor connectivity for the bat species recorded at the Assessment Site. No significant cumulative impact upon bats is predicted.

## 10. Summary

This assessment has been informed results from a variety of ecological surveys (namely desk study, PEA, bat activity, breeding birds and wintering birds (currently outstanding)). There are no notable habitats associated with the Assessment Site.

**Amphibians** - The Assessment Site is a Site value for foraging amphibians. Unmitigated construction is near certain to have a minor, temporary adverse effect on common and widespread amphibians. It is certain that the operational phase would have a negligible effect on amphibians. Embedded mitigation involves adoption of a suitable CEMP with habitat manipulation and protection of retained habitat

**Badgers** – The Assessment Site is of Site value to Badgers. It is unlikely that unmitigated construction would have an effect on badgers. An effect, were it to occur, would be associated with becoming trapped within the site and would be short term, minor, adverse. It is certain that the operational phase would have a negligible effect on badgers. Embedded mitigation will involve good construction practices.

**Bats** - There is no (potential) bat roost habitat associated with the Assessment Site. The Assessment Site is of Site value for brown long-eared, common pipistrelle, Nathusius' pipistrelle, and noctule and negligible value for other bat species recorded. Unmitigated construction is near certain to have a negligible effect on foraging and commuting bats. It is near-certain that the operational phase will have a negligible adverse effect on the populations of the common pipistrelle and noctule. It is probable that the operational phase will have a negligible adverse effect on local populations of Nathusius' pipistrelle. Any effect, were it to occur, would be at an individual level due to collision mortality and would be unlikely, minor, and permanent adverse. There are no cumulative impacts with other turbine developments in the local area.

**Hedgehog** - The Assessment Site is the Site value for the hedgehog. It is unlikely that unmitigated construction would have an effect on hedgehog. An effect, were it to occur, would be associated with becoming trapped within the site and would be temporary, minor, adverse. It is certain that the operational phase would have a negligible effect on hedgehog. Embedded mitigation involves good construction practices.

**Breeding birds** - The Assessment Site is of Site value for breeding birds. Any accidental damage to active nests that may be present within the construction areas would be a temporary, minor adverse impact to breeding birds. Operational phase is would not impact breeding birds through habitat loss, displacement or barrier effect. Unmitigated operation of the proposed turbines delivers collision estimates of 2 kestrels per breeding season which is considered to represent a long-term, moderate adverse effect on breeding birds. Embedded mitigation will involve sympathetic clearance of habitats. Additional mitigation will involve a bird strategy involving habitat manipulation and monitoring. Details will be finalised once wintering bird survey effort has been completed.

**Nightjar** - The Assessment Site is of Local value to Nightjar. It is very likely that unmitigated construction activities would have a negligible effect on breeding nightjar. Displacement or mortality due to collision caused by the unmitigated operation of the turbines would



represent a long-term moderate adverse effect. Mitigation will involve a bird strategy involving habitat manipulation and monitoring. Details will be finalised once wintering bird survey effort has been completed.

Wintering birds - The wintering VP surveys are currently on-going and the value of the Assessment Site and subsequent impact assessment upon this receptor will be updated once the survey effort is complete.

Reptiles – The Assessment Site is Site value for reptiles species. It is probable that unmitigated construction would have an adverse effect on individual reptiles were they to be present. Any effect that would occur would be adverse, minor and short term. It is certain that the operational phase would have a negligible effect on reptiles. Embedded mitigation involves adoption of a suitable CEMP with habitat manipulation and protection of retained habitat

Invasive, non-native species - Rhododendron is present onsite. It is probable that unmitigated construction would result in the spread of this plant. It is probable that unmitigated operational habitat would result in the spread of this plant. Embedded mitigation involves implementation of a CEMP which includes a rhododendron control plan.

### Conclusion

It has been determined that there will be no significant effects as a result of the Proposed Development. There will also be a minimum of 10% net gain in biodiversity as set out in the accompanying BNG Strategy.

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