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Ecological Impact Assessment

Land at Higher Biscovillack, St Austell

Cornwall

November 2025

A report by

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Report details

Site name:	Land at Higher Biscovillack, St Austell, Cornwall
Site address:	Land at Higher Biscovillack, Trenance Downs, Saint Austell PL25 5RH
Central Grid reference:	SW997544
Report date:	10th November 2025
Report author:	Emily Andrew BSc (Hons), MSc
Report reviewer:	Colin Hicks BSc (Hons), MCIEEM
Report no:	WOR - 5666

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 based on the dates of the supporting surveys.

Table of contents

1. Introduction

1.1. Background

Western Ecology has been commissioned to complete an Ecological Impact Assessment of land at Higher Biscovillack, St Austell in Cornwall. The proposed development concerns the installation of a wind turbine.

1.2. Purpose of this report

A Preliminary Ecological Appraisal was completed in September 2025.

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

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 wind turbine is located in an existing agricultural field located approximately 1.3km to the east of Blackpool pit, and approximately 2km to the north of the town of St Austell.

2. Ecological 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 and designated sites within the local landscape.

Records for notable species were searched for within 2km, as most species likely to be active here will have a restricted range.

2.2. Ecological baseline

The ecological baseline for the development site comprises:

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

Preliminary Ecological Appraisal

A Preliminary Ecological Appraisal of the site was completed by Emily Andrew BSc (Hons) MSc MRSB. The survey was undertaken on 30th September 2025 in suitable weather conditions.

The main plant species were recorded and broad habitat types mapped according to the UK Habitats Classification definitions (UK Habitat Classification Working Group v2, 2023). Habitats encountered are described within the Results section, with a map included within the report. Plant species were identified according to Stace (1997).

Desktop survey

Consultees for the data search included:

- Natural England - GIS dataset of SSSI Impact Risk Zones, statutory nature conservation sites.
- Multi-Agency Geographic Information for the Countryside map (MAGIC Map)
- Cornwall County Council- Interactive Map
- The Environmental Records Centre for Cornwall & the Isle of Scilly.

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

The location of nature conservation sites was examined to determine their ecological and landscape relationships with the proposed works. An assessment was then made of how the sites may be affected by the proposed works, 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 works 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.

Bird surveys (Western Ecology report no: WOR-5746)

Vantage Point Survey

Breeding season and wintering Vantage Point Surveys (VPS) are currently under way. 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).

Full survey details are contained in the accompanying bird survey report (report no: 5746).

Collision risk modelling

Wind turbine collision risk for target species has been estimated using the method outlined by NatureScot (2024), based on the report by Band (2024). Collision risk estimates have been made based on the turbine parameters of the existing turbine and the proposed turbine to enable a comparison between to the two scenarios.

Species that are not included in the collision risk analysis are either not of conservation concern or are at low collision risk due to their flight behaviour, and/or are species which are infrequently present within the study area.

The model estimates the number of collisions through a process of five stages:

- *Stage A* uses bird survey data to establish the density of flying birds in the vicinity of the turbines, and the proportion flying at a risk height, between the lowest and highest points of the rotors;
- *Stage B* provides an estimate, based on the bird density and proportion at risk height, of the potential number of bird passages through rotors in the period in question;
- *Stage C* calculates the probability of collision during a single bird rotor transit;
- *Stage D* estimates the potential collision rate for a bird species, assuming current levels of bird use of the site, allowing for the proportion of time that turbines are not operational;
- *Stage E* takes account of the proportion of birds likely to avoid the wind farm or its turbines, either because they have been displaced from the site or because they take evasive action or are attracted to the wind farm, e.g. in response to changing habitats.

This approach is undertaken using a standardised 'master' spreadsheet into which all required data is entered and which presents the collision risk output.

Full details of this method and the master spreadsheet are available at: https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms.

Bird species biometric data for inputting into the master spreadsheet was obtained from BTO BirdFacts website (available at https://www.bto.org/learn/about-birds/birdfacts). Flight speed data was obtained using published sources, or where unavailable, using published data for comparable species. Hours of daylight during the survey periods were calculated by the master spreadsheet using the latitude of the proposed turbine.

Breeding Bird Surveys

A Breeding Bird Survey (BBS) is currently underway with a single visit completed to date. The survey visit was completed by Martin Rule in May 2025. Full survey details are contained in Table 4 below. 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)[1]. 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.

[1] Bird Survey & Assessment Steering Group. (2025). Bird Survey Guidelines for assessing ecological impacts

Table 1 – breeding bird survey timings and weather conditions

Survey no.	Date	Start time	Finish time	Weather
1	17/06/2025	05:30	07:15	Temp: 13-16°C, Wind: F0-1, Cloud cover: <10%, Precipitation: none
2	To be completed in March/April 2026			
3	To be completed in April/May 2026			

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

- 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 (Western Ecology report no: WOR-5797)

Bat activity transects

Two 2-hour bat activity transect surveys were completed on foot by a suitably experienced ecologist walking a pre-planned route through this site, with attention being paid to bat activity along boundary features (Map 1). 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. Details of the surveys are provided in Table 1.

Table 2. Bat activity transect details

Date	Surveyor	Start time	Finish time	Sunset time	Weather conditions

29th May 2025	Martin Rule	21:18	23:18	21:18	16ºC temperature. Moderate S, 80% CC and dry.
15th October 2025	Martin Rule	18:25	20:25	18:27	10ºC temperature. Light E, 100% CC and dry.

Bat activity was monitored using an Echo Meter Touch Pro connected to an Apple or Android device running the Echometer touch app. with GPS logging enabled.

Remote monitoring

Six Wildlife Acoustics remote bat monitors were deployed for seven periods from April to October 2025 (Table 3). Information of remote monitoring locations is detailed below:

- Remote 1 - placed on a hedgerow away from the turbine
- Remote 2 - adjacent to the turbine site in an open arable field

Table 3. Number of recording hours at each remote monitoring location by month.

	May	**June**	**July**	**Aug.**	**Sep.**	**Oct.**	**Total**
Location 1	26.78	95.08	64.45	83.82	72.95	97.98	441.07
Location 2	26.78	95.08	64.45	83.82	72.95	15.02	358.10
Total	53.57	190.17	128.90	167.63	145.90	113.00	**799.17**

2.3. Limitations

Preliminary ecological appraisal

All areas of the site were readily accessible. Although some plant species would have not been visible during the survey period, the habitats within the surveyed area were still readily identifiable through their main plant species. The timing of this survey is therefore not a significant constraint to a robust initial site assessment.

It should be noted that habitats, and the species they may support, change over time due to natural processes and because of human influence. In line with current guidelines, the survey on which this report is based is only valid for one year, after which time it will need updating. This report is valid until 30th September 2026.

Breeding Birds

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

The survey effort for the breeding season VP survey that has been undertaken to date provides 21hrs of survey effort out of the required 36hrs and is therefore incomplete. The collision estimates provided here are based on data representative of this shorter survey effort and give an indication of likely magnitude of impact but which may change once analysis has been conducted using the complete dataset. The remaining survey effort will be completed in March to April 2026.

Passage/wintering Birds

The passage/winter VP survey is currently on-going and will cover the period October 2025 to February 2026. Estimates of predicted collision mortality will be provided once this dataset is complete.

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. The BBS was 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.

Bat activity surveys

Data at remote location 2 in October was limited. This is not considered to be a significant constraint as there was an average of more than 5 nights of data recorded per month throughout the bat active season at each location, providing a full season of remote monitoring data.

Transect routes cover a wider area than the planning boundary due to changes in project scope (see Map 1). This is not considered to be a constraint as the transect data provides information on bat activity for the wider area.

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 excepted UK distribution for Grey Long-eared bat[2]. 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.

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

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[3]).

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 4 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.

[3] 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 form airborne pollutants
- contravention of legal status or protection (including where the receptor would not meet or exceed the value threshold).

Ecologically significance has assessed in line with '*Guidelines for Ecological Impact Assessment in the UK and Ireland*[4]' that states:

> "Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EcIA, 'significant effect' is an effect that

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

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 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. Legislation and Policy used to assess ecological receptors

4.1. Planning policy

National Planning Policy Framework

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.

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 environmental 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 purposes

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.

County Level

The Cornwall Biodiversity Action Plan has applied the principles of the UK Priority Habitat and Species Plan at county level and has published lists of Priority Species and Priority Habitats for the area. The listed species and habitats are those which will be the target of conservation actions.

County Wildlife Sites (CWS)

These are not statutory designation like SSSIs, and they do not have any legal status. The National Planning Policy framework (NPPF) requires local authorities to identify and map locally designated sites of biodiversity importance (such as Local Wildlife Sites) as part of the Local Plan process and to draw up criteria-based policies against which proposals for development affecting them will be judged. CWS recognition does not demand any particular

actions on the part of the Landowner and does not give the public rights of access. However, it may increase eligibility for land management grants.

5. Ecological baseline

5.1. Desktop Study

Statutory Nature Conservation Sites (SNCS)

There are two Sites of Special Scientific Interest (SSSI) located within 2km of the site, both of which are designated for geological value. St. Mewan Beacon SSSI is located approximately 1.6km to the south (at the closest point), while Wheal Martyn SSSI is located approximately 1.1km to the south-east of the Site (at the closest point).

Impact Risk Zones

The Site is not within an area identified as a SSSI Impact Risk Zone for this type of development.

SSSIs do not need to be considered further and can be screened out at this stage.

Non-statutory Nature Conservation Sites (NNCS)

There are three County Wildlife Sites (CWS) located within 2km of the Site.

A small section of Burngullow Common and Glover Valley CWS is located within the site and is adjacent to the south of the site. This CWS is designated for presence of priority habitats such as lowland heathland.

Longstone Downs CWS is located 1.2km north-west of the wind turbine, which is designated as an area containing the priority habitat lowland heathland.

Hensbarrow CWS is located approximately 1.9km to the north of the wind turbine (at the closest point). This CWS is designated for presence of priority habitats such as lowland heathland and priority species such as pale dog-violet, grasshopper warbler and skylark.

Due to limited transboundary effects and separation distance, Longstone Down CWS and Hensbarrow CWS can be screened out at this stage.

Burngullow Common and Glover Valley CWS are brought forward for further assessment.

Receptor value: Burngullow Common and Glover Valley CWS is of County (Cornwall) importance.

Biological records

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 10 in Appendix 1.

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 EcIA 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. Habitats

Habitats within the development, along with an assessment of their biodiversity value, are given in Table 4. Habitat maps are provided in Map 1.

Table 4. UKHabs classification

Habitat	Description	Receptor value
G4- modified grassland	The majority of the Site is within an agricultural field, the grassland regularly grazed. Species were dominated by palatable grasses with only occasional forbs, including perennial rye-grass, cock's-foot, Yorkshire fog, creeping bent, ribwort plantain, white clover and creeping buttercup.	Site
H3- dense scrub and H3e gorse scrub	There is a mosaic of bramble and gorse scrub that runs along the wire and post fence line to the south of the Site, this is equal parts bramble and gorse.	Site

U1c – unvegetated, unsealed surface	A section of gravel trackway provides access to the Site.	Negligible
Native hedgerow associated with bank (Cornish hedgebank)	H1 and H2: Native hedgerows with bank (Cornish hedgebank) are located to the north of the site. Species present included mainly hawthorn and oak sp., with rare holly and European gorse. The vegetated bank is mainly species from the adjacent fields, plus rare bracken and hart's-tongue fern. H3: To the east of the Site, bordering the site entrance, is a Cornish hedgebank. This has no hedgerow, however does have scattered sparse willow sp. and common ash. It is predominantly a vegetated bank made of earth and stone. Species are of the adjacent grassland, with frequent navelwort and common nettle.	Local Habitat of Principal Importance (JNCC & Defra, 2012) & Local Biodiversity Action Plan priority habitat (Cornwall Biodiversity Initiative, 2011)

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Legend

- Survey area (approx.)
- Native hedgerow - associated with bank or ditch (Cornish hedgebank)
- g4 - modified grassland
- h3- dense scrub and h3e gorse scrub
- u1c - artificial unvegetated unsealed surface

Title: Map 1. UK Habitat Survey Baseline Map

Project: Land at Higher Biscovillack, St Austell, Cornwall

Checked by: CDH
Version: 01
Date: 03/11/2025

5.4. Potential for species of nature conservation importance

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

Table 5. Value of the assessment site for species of nature conservation importance

Species	Assessment	Assessment site value
Amphibians (common and widespread)	There is no aquatic habitats associated with the site likely to support breeding amphibians. The hedgebanks on-site all provide suitable terrestrial habitat for foraging and hibernating common amphibians.	Site
Great crested newt (GCN)	GCN are generally absent from Cornwall. This species is unlikely to be a constraint on the project and does not need to be considered further.	Negligible
Badgers	The local area is likely to support badger populations. No evidence of badgers or badger setts recorded within the site. Grassland will likely provide foraging opportunities, while badgers are likely to disperse through the site in their use of habitats in the local area.	Site
Bats (roosting)	No trees associated with the site possessed visible potential roosting features for bats.	Negligible
Bats (foraging and commuting)	Much of the Assessment Site is of low importance for foraging bats due to a dominance of managed agricultural habitats within the site and around it. Common Pipistrelle were the most frequently recorded bat with 3.556 calls per hour. This species was also recorded during bat activity transects. Calls were highest at remote locations 1, adjacent to the hedgerow away from the turbine site. Activity levels are typical for the habitats found within the survey area and do not indicate reliance on this site. The site is of Site value for this species. Noctule calls were recorded 0.188 times per hour during remote monitoring and were recorded twice during bat activity transects. Activity was slightly higher at remote location 2, in the open habitat. It should be noted that the high amplitude calls produced by Noctule can be detected from more than 100m away, and remote location 2 is approximately 35m from the field boundary. Activity levels are typical for the habitats found within the survey area and do not indicate reliance on this site. The site is of Site value for this species. Greater Horseshoe call frequency averaged 0.113 calls per hour across remote monitoring locations but were not recorded during the transect surveys. Activity was highest at remote location 1 adjacent the hedgerow and away from the turbine site. Activity levels are typical for the habitats found within the survey area and do not indicate reliance on this site. The site is of Site value for this species.	Site for common pipistrelle, noctule and greater horseshoe Negligible for other bat species

	For the remainder of the species recorded here (Brown Long-eared, Myotis, barbastelle, Nathusius Pipistrelle, serotine, and, soprano pipistrelle) call frequency was extremely low and they are not considered to be regularly active here; the site is of negligible value for these bats.	
Birds – breeding	A total of 18 species of birds were recorded during the breeding bird transect undertaken in June 2025. Of the 18 species recorded, 11 species are declining and included in the BoCC5 Red or Amber lists, whilst six are also species of principal importance The remainder were common and widespread passerines. Although these results are only from a single survey visit, they give an indication of the likely breeding assemblage associated with the Assessment Site and surrounding land. The breeding assemblage is moderate, but one that is typical of the local china clay pits area. The areas that are associated with the proposed turbine footings and construction areas supported little activity. Breeding period VP surveys are currently on-going however the survey effort to date has recorded the following target species: - buzzard; - greater black-backed gull; - herring gull; - hobby - kestrel; - lesser black-backed gull; - sparrowhawk The provisional predicted number of collisions are: buzzard (0.1), greater black-backed gull (0.01), herring gull (0.3), kestrel (0.1) and sparrowhawk (0.02). The breeding activity associated with the Assessment Site is considered to be of Site value however this will be updated once the full survey effort has been completed.	Site (provisional)
Birds – wintering	The field in which the proposed turbine is located features sufficient size and openness to provide suitability for notable wintering species (such as wader species). There are also records in the local area and these species may also be active around the airspace of the proposed turbine. The value of the Assessment Site for wintering birds will be determined once the wintering VP survey effort is completed.	To be determined
Birds - Nightjar	The Assessment Site itself provides negligible suitability for breeding nightjar. Suitable habitat is located within 500m to the south and comprises rough grassland, heathland and scattered scrub.	Negligible

	Three nightjar survey visits were undertaken between May to July 2025. No nightjar activity was recorded and this species is considered to be absent from the Assessment Site and immediate area. Nightjar do not need to be considered further.	
Common dormouse	The hedgebank habitat is sub-optimal for dormice due to lack of fruiting suitable species and would not support this animal. It is unlikely that dormice would use the site and do not need to be considered further.	Negligible
Hedgehog	Grassland will provide foraging, dispersal and hibernation opportunities.	Site
Reptiles	The grassland on site has limited thatch and is regularly grazed, and so provides negligible potential for reptile species. However, the boundary habitats provide opportunities for foraging, dispersal and hibernation for 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 this site and it is unlikely to be present here.	Negligible
Invasive non-native plants	There are no invasive non-native plant species present.	Negligible

The ecological receptors to be considered for significant effects are given in Table 6. 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 6. Table of ecological receptors to be considered for significant effects

Receptor	**Relevant legislation/policy**	**Value**
Burngullow Common and Glover Valley CWS	Local Plan	County
Glover Valley CWS	Local Plan	County
Cornish hedgebank	Habitat of Principal Importance, Local BAP habitat	Local
Amphibians (common and widespread)	Wildlife and Countryside Act 1981, Species of Principal Importance (common toad), Local BAP species (common toad)	Site
Badgers	Protection of Badgers Act	Site
Bats – foraging and commuting	European Protected Species, Species of Principal Importance,	Site: common pipistrelle, noctule and greater horseshoe

Birds - Breeding	Wildlife and Countryside Act 1981, Species of Principal Importance, Local BAP species	Site (provisional)
Birds - Wintering	Wildlife and Countryside Act 1981, Species of Principal Importance, Local BAP species	To be determined
Hedgehog	Wildlife and Countryside Act 1981	Site
Reptiles	Wildlife and Countryside Act 1981, Species of Principal Importance, Local BAP species	Site

6. Assessment of ecological impacts

6.1. The development

The proposed development concerns construction and operation of a single turbine. 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

The southern extent of the site contains Burngullow Common and Glover Valley CWS, which has been designated for lowland heathland habitat. Lowland heathland is not a habitat that is present within the site or within the southern extent adjacent to the site and as such there will be no direct loss/damage to the primary feature of this CWS.

However, any unmitigated construction activities adjacent to Burngullow Common and Glover Valley CWS have potential to cause damage to habitats within the CWS through accidental pollution, dust deposition, machinery movements and storage of materials.

Assessment: It is near-certain that unmitigated construction would have a negligible impact on this CWS. An effect, were it to occur, would be minor, short-term, adverse.

Valued habitats of the Assessment Site

Cornish hedgebank

Approximately 40m of hedgebank is to be temporarily lost for access however it will be reinstated after construction is complete. Enhancement of the retained hedgebank is proposed. There is potential to impact the retained hedgebank habitats; the primary pathway of effect would be damage due to vehicle movements, pollution and material storage.

Assessment: It is unlikely that unmitigated construction would have an impact on Cornish hedgebanks. An effect, were it to occur, would be short-term and minor adverse.

Notable species of the Assessment Site

Amphibians (common and widespread)

The assessment site is of site value for common and widespread amphibians with potential for them to use the vegetated habitats of the assessment site for foraging and hibernating.

The ecological pathway of effect on this group relates to direct harm during construction activities which could result in the killing or injury of individuals.

Assessment: Unmitigated construction is unlikely to have an adverse effect on common and widespread amphibians. Were it to occur, it would be short-term, minor, averse.

Intentional or reckless killing or injury would be an offence under relevant legislation.

Badgers

The assessment site is of site value for badgers, likely to be used for foraging.

The primary pathway of effect would be through becoming trapped within the construction site,

Assessment: Unmitigated construction phase is near-certain to have an adverse effect on badgers. The effect would be short-term, minor adverse.

Works would not cause damage, destruction or obstruction of a badger sett, nor disturbance of a badger whilst in a sett. No offence is predicted.

Bats – foraging and commuting

The assessment site is of Negligible value for Brown Long-eared, Myotis, barbastelle, Nathusius Pipistrelle**,** serotine, and, soprano pipistrelle, and Site value for common pipistrelle, noctule, and greater horseshoe.

The primary pathway of effect during the construction phase would be through impacts to habitat features used by foraging bats, such as temporary habitat loss and damage. There will be a temporary loss of a limited area of grassland 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.

Breeding birds

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

The majority of breeding activity was recorded within habitats located at/beyond the field boundaries such as Cornish hedgebanks, heathland, rough grassland, scrub and woodland which would remain largely unaffected. Works associated with the removal of approx. 40m of Cornish hedgebank has potential to damage or destroy any individual nests that may be present. 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.

Any breeding territories that may be associated with the open field would be likely to be more susceptible to disturbance given the open nature of this area, where meadow pipit and skylark activity was 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[5]. Given the extent of available retained habitat in the immediate area, and the temporary nature of any displacement or disturbance that may occur, this impact is considered to be negligible.

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

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.

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 activity given that the Assessment Site is currently active agricultural land and is also located close to an operational mining area (approximately 300m to the north east) and species regularly active within and around here will be largely normalised to higher levels of noise, machinery movements and human presence.

Hedgehog

The site is suitable for foraging hedgehog. Proposals have the potential to trap individual animals in open trenches.

Assessment: Unmitigated construction phase is unlikely to have an adverse effect on hedgehog. Any effect were it occur would be short-term, minor adverse.

Reptiles

Hedgebank habitats provide potential for reptile species such as slow worm, common lizard, grass snake and adder. The assessment site is site value for common and widespread reptiles.

The primary pathway of effect would be potential for direct harm or injury during the construction phase resulting from works affecting hedgebank habitat at the construction site boundary, although reptiles would likely relocate as the construction site will move forwards slowly.

[5] Ecology Consulting (2021). Report to Renewable Energy Systems Ltd: Kelburn Windfarm: Post Construction Phase Breeding Bird Surveys 2021 (Operational Year 10).

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

Intentional or reckless killing for injuring of reptiles would 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.

Non-statutory nature conservation sites

Burngullow Common and Glover Valley CWS

This CWS is of County value and is located adjacent to the south of the proposed turbine.

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.

Habitats

Cornish hedgebank

A total of 40m of hedgerow habitat will be temporarily removed to allow safe vehicle access, this will be reinstated once construction is completed. All other retained hedgebank habitat will unimpacted by the proposed development.

Assessment: It is certain that unmitigated operational impacts would have a short - term, minor adverse effect on hedgebank habitat.

Species

Amphibians (common and widespread)

There will be no permanent loss of suitable amphibian habitat, and an ecological pathway of adverse effect does not exist for the operational phase.

Changes in land management will result in enhanced hedgebanks and grassland/scrub adjacent to the site, which would enhance the site for amphibians.

Assessment: Changes in land management make it near-certain that the operational phase will have a minor positive effect on this receptor for the period of its operation

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.

Hedgehog

There will be no loss of suitable habitat and no adverse effect is predicted for hedgehog. 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.

Bats

No suitable features for roosting bats were within 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 agricultural 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[10], and professional judgement.

The assessment site is of Negligible value for Brown Long-eared, Myotis, barbastelle, Nathusius Pipistrelle**,** serotine, and, soprano pipistrelle, and Site value for common pipistrelle, noctule, and greater horseshoe.

A single turbine is proposed for this site, with a hub height of 77 metres and a blade radius of 58 metres (up to 135m to tip) with the blade tip passing within 19 metres of the ground.

Due to their extremely low levels of activity during walked transects and remote monitoring, no realistic ecological pathway of effect exists for Brown Long-eared, Myotis, barbastelle, Nathusius Pipistrelle**,** serotine, and, soprano pipistrelle.

Common pipistrelle

Common pipistrelle bats are considered to be at the highest risk from collision with wind turbines.

Common pipistrelle were the most commonly recorded bat at this site. This bat is considered a high collision risk species and medium population vulnerability. Taking into account landscape, habitat and land use, and informed by personal experience, activity levels at the assessment site are considered within the normal range for Cornwall along the hedgerows but very low during remote monitoring at the proposed turbine site.
As this bat is known to regularly forage along hedge lines, as illustrated by survey results, it is unlikely that the proposed turbine will result in adverse effects on this bat.

Assessment: It is nearly 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 the highest risk from wind turbines.

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 avoided turbines at a local scale[6], 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); calls were recorded 0.188 times per hour during remote monitoring and were recorded twice during bat activity transects. If this bat was foraging here on a regular basis for prolonged periods, many more calls would have been recorded.

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

Greater Horseshoe

Greater Horseshoe bats are considered to be at low risk from turbines.

Greater Horseshoe call frequency averaged 0.113 calls per hour during remote monitoring and were not recorded during the activity transects. This bat typically flies and forages close to the ground and due to a lack of tall hedgerows or woodland within the vicinity of proposed turbines is extremely unlikely to fly at heights where it is at risk of harm from the passing blades. No adverse effect is predicted during the operational phase.

Assessment: It is near-certain that operational phase will have negligible adverse effect on populations or individual Greater Horseshoe.

[6] 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

Summary assessment:
It is near certain that the operational phase would have a negligible impact on bat populations. Any effects, were they to occur, would relate to individual bats and would be similar to the current operational impact: minor, permanent adverse at an individual level.

Breeding birds

Habitat loss

Direct habitat loss associated with the operational phase concerns limited extents of agricultural modified grassland and approx. 40m of Cornish hedgebank. Both of these habitats are plentiful in the local area and loss of limited extents of these to the proposed turbine would be very unlikely to impact local breeding populations. Further to this, the Cornish hedgebanks to the north of the Site will be enhanced providing a 10% biodiversity net gain on-site. Therefore, direct habitat loss is unlikely to adversely affect breeding birds 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 passerines such as meadow pipit have been shown to be between 41-100m from wind turbines (Hötker et al. 2005; RSPB, 2009), while other studies suggest wind turbines to cause little disturbance to passerines (Devereux *et al.* 2008; Percival, 2005). The long-term monitoring at Kelburn Wind Farm[7] have also shown that species such as meadow pipit and skylark have not been displaced by operation of either turbine structures or access tracks. Additionally, breeding bird surveys undertaken by Western Ecology at operational wind farms in Cornwall have also recorded skylark and meadow pipit breeding activity close to operational turbines which suggests displacement distances are very low. 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 are three existing operational turbines in the local area[8] and five approved turbine applications[9]. With the exception of the turbine at Trenance Downs, all of these turbines have a separation distance of at least 1km. This proposed turbine does not block any recorded flight corridors, and it is predicted birds will continue to be able to access resources in the local area without impediment. The turbine at Trenance Downs is sited atop of a spoil heap and situated at a higher elevation than the proposed turbine here. Therefore, natural flight lines of birds transiting through the airspace to the east of the proposed turbine would be above the maximum blade height (135m) in order to clear the existing turbine. Furthermore, most of the species recorded here have been observed adjusting their flight patterns around operational turbines in the local area.

[7] Ecology Consult. (2021). Report to Renewable Energy Systems Ltd: Kelburn Wind Farm: Post-Construction Phase Breeding Bird Surveys 2021 (Operational Year 10)

[8] PA14/07230 Trenance Downs; PA14/12102 Higher Goonamarth and PA15/01218 Blackpool Quarry.

[9] PA20/09318 – Land at Lower Longstones; PA21/07216 – Land NW of Carthew Farm; PA21/12493 – Land at East Karslake; PA23/09937 – Land at Burngullow and PA23/10069 – Land at Higher Goonamarth.

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

Kestrel flight activity was broadly associated with two areas; the vegetated slopes of spoil tip to the east and an area of rough grassland to the south of the proposed turbine (>250m). 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 single turbine 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 a single turbine 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 with the survey area as well as transiting flights. Flight heights were at 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 single 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 a 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.

Collision risk

Provisional collision estimates for target species during the breeding season have been provided for the proposed turbine in Table 7 below.

Table 7. Provisional estimated collisions from proposed turbine

Bird species	**No. of predicted collisions during passage/winter**	**No. of predicted collisions during breeding period (provisional)[10]**	**Combined estimated collisions per year**	**Combined estimated collisions across operational lifetime**
Survey data	*With applied avoidance rate and operational time*[11]	*With applied avoidance rate and operational time*	*Estimated collisions over passage/winter and summer*	*Estimated collisions over 40 years*

[10] This will be updated once full breeding VP survey effort is completed

[11] Avoidance rate of 98% applied to all species except gulls. Avoidance rate of 99.5% applied to gulls. Operational rate of 85% applied to no. of collisions, as detailed in Section 2.4

Buzzard	TBC[12]	0.1	TBC	TBC
Greater black-backed gull	TBC	0.01	TBC	TBC
Herring gull	TBC	0.3	TBC	TBC
Kestrel	TBC	0.1	TBC	TBC
Sparrowhawk	TBC	0.02	TBC	TBC

For all target species recorded the predicted number of collisions per annum is <0.5 individuals, which is considered to be a negligible impact on local populations. This will be updated once the full survey effort has been completed.

Assessment: It is near-certain that the operational phase will have a negligible effect on local breeding bird populations.

Wintering birds

Habitat loss

Direct habitat loss associated with the operational phase largely concerns extents of agricultural modified grassland habitats. The Assessment Site is unlikely to support locally significant numbers of wintering birds due to concerning a relatively small area. Therefore, direct habitat loss associated with the operation of the proposed turbine is unlikely to adversely affect wintering bird populations at the Assessment Site. This will be updated once the winter VP survey effort has been completed.

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 (Hötker *et al*. 2006) suggests that taller 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. There is potential for disturbance or displacement, should any notable wintering species be active on the land in the immediate vicinity of the proposed turbine. This assessment will be updated once the full winter VP survey effort has been completed.

Barrier effect

The are three existing operational turbines in the local area[13] and five approved turbine applications[14]. With the exception of the turbine at Trenance Downs, all of these turbines have a separation distance of at least 1km. This proposed turbine does not block any recorded flight corridors, and it is predicted birds will continue to be able to access resources in the local area without impediment. The turbine at Trenance Downs is sited atop of a spoil heap and situated at a higher elevation than the proposed turbine here. Therefore, natural flight lines of birds transiting through the airspace to the east of the proposed turbine would be above the maximum blade height (135m) in order to clear the existing turbine.

[12] To be confirmed once full passage/winter VP survey efforted is completed.

[13] PA14/07230 Trenance Downs; PA14/12102 Higher Goonamarth and PA15/01218 Blackpool Quarry.

[14] PA20/09318 – Land at Lower Longstones; PA21/07216 – Land NW of Carthew Farm; PA21/12493 – Land at East Karslake; PA23/09937 – Land at Burngullow and PA23/10069 – Land at Higher Goonamarth.

Furthermore, most of the species recorded here have been observed adjusting their flight patterns around operational turbines in the local area.

It is considered unlikely that a single wind turbine would create any barrier to birds transiting either north-south or east-west through the turbine envelopes. Barrier effect is not predicted to adversely impact wintering birds, however this will be updated on the winter VP surveys have been completed.

Collision risk
This assessment will be updated once the winter VP surveys have been completed.

Reptiles
There will be no permanent loss of suitable reptile habitat, and an ecological pathway of adverse effect does not exist for the operational phase.

Changes in land management will result in enhanced hedgebanks and grassland adjacent to the site, which would enhance the site for reptiles.

Assessment: Changes in land management make it near-certain that the operational phase will have a minor positive effect on this receptor for the period of its operation

7. Mitigation

7.1. Construction phase

The following mitigation would be provided to minimise the unavoidable effects during the construction phase and will be detailed in the Construction Environment Management Plan. Detail is provided in the ecological constraints plan (Map 2):

- Nearby nature conservation sites - Burngullow Common and Glover Valley CWS:
    - An Ecological Clerk of Works (ECoW) would be appointed to oversee works within 100m of the CWS and to provide toolbox talks, inspect, supervise and monitor works where necessary;
    - The works area would be delineated by appropriate fencing, with no access, storage of materials, ground disturbance, burning or contamination beyond the fenced off areas;
    - No works would be undertaken outside of the approved footprint;
    - Measures to ensure there is no contamination of soil or water by hazardous substances, with particular attention paid to waterlogged/damp areas and potential run-off;
    - Measures to ensure there is no sediment is deposited outside the Site, including the reduction of dust deposition;
    - Appropriate soil handling and storage;
    - Works would occur during daylight hours only;
    - Appropriate storage and transportation of any hazardous/waste materials, including fuel and oils;
    - Measures to ensure there are no spills, or leaks of fluids, fuels or oils from vehicles or plant;
    - Measures to ensure vehicles and plant are parked an appropriate distance from sensitive environmental areas when not in use, and movements/tracking uses designated routes only.
- Cornish Hedgebank - There is potential for accidental damage to retained hedgebanks during the construction phase:
    - Hedgebanks would be protected from accidental damage during the construction phase by a suitable buffer of at least 2 metres, unless informed by an arboriculture assessment.
    - This buffer zone would be delineated by a suitable fence during the construction phase.
    - This protection zone would be maintained for the duration of the works, and there should be no access, storage of materials, ground disturbance, burning or contamination within the fenced areas.
- Temporary loss of Cornish Hedgebank to construction areas will be mitigated by method statement involving:
    - Careful dismantling of hedgebank and separate storage of stone, topsoil and subsoil in order to reinstate in new location
- Badgers and other mammals:
    - Any trenches left open at night would have some means of escape for badgers, such as the placement of a scaffolding board at one end;
    - Any site security fences would have a gap at each corner sufficient to allow badgers to exit the Site should they gain entry.

- Reptiles and common and widespread amphibians: Reasonable Avoidance Measures (RAMs) would be adopted as follows:
    - Construction during the period November to mid-March:
      Clearance of areas that may provide hibernacula (such as logs, wood piles, debris piles) would 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 and amphibian season (late March to October), rough grassland areas to be affected by construction activities would be de-vegetated prior to any site activities under the supervision of a suitably qualified ecologist. Any grassland, or ecotone between grassland and scrub/hedgerow 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 reptiles 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 would ensure that any reptiles, if present, are displaced from the construction site onto adjacent intact habitats.

- Nesting birds: Potential bird nesting habitats such as scrub and trees would be protected from accidental damage during the construction phase by a suitable buffer zone. If construction activities are also likely to impact any of these areas during the nesting season, a pre-works nesting bird survey of these areas will be required.

7.2. Operational phase

In order to ensure successful reinstatement of the 40m of Cornish Hedgebank the following mitigation will be implemented:

- Hedgebank recreation should follow an accepted methodology such as the best practice method produced by the Guild of Cornish Hedgers[15]

[15] Code of Good Practice; Building and repairing Cornish Hedges – The Guild of Cornish Hedgers, 2001. Available at: https://www.cornishhedgers.org.uk/wp-content/uploads/2021/09/2021-Guild-Code-MASTER.pdf

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. Details of potential impacts and their significance at the level of assessment are given in Table 8. Where no reasonable pathway of effect exists and pre-mitigation impact has been discounted, the receptor is not considered here.

Table 8. 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, short, medium or long term)	Mitigation	Residual impact - Significant / not significant?
Construction phase					
Burngullow Common and Glover Valley CWS	Accidental pollution, dust deposition	Minor	Short term, adverse	Adoption of a suitable CEMP	Negligible
Cornish hedgebanks	Accidental damage or pollution	Minor	Short term, adverse	Adoption of a suitable CEMP. Protection of boundary habitats	Negligible
Amphibians and reptiles (common and widespread)	Damage to suitable habitats and intentional harm	Minor Potential for offence	Short term, adverse	Adoption of a suitable CEMP. Adoption of suitable RAMs during site clearance in suitable habitat.	Negligible Offence avoided
Badgers and other mammals	Becoming trapped within the construction site	Minor Potential for offence	Short term	Trenches with escape features and fences allowing animals to escape.	Negligible Offence avoided
Birds (breeding)	Accidental damage to hedgerows, temporary loss of nesting habitats, and disturbance/damage to nests and harm to chicks.	Minor Potential for offence	Short term, adverse	Protection of boundary habitats. RAMs adopted for any woody vegetation removal	Negligible Offence avoided

Birds (wintering)	Disturbance/displacement	To be determined	To be determined	To be determined	To be determined
Operational phase					
Cornish hedgebanks	Temporary loss of 40m of habitat extent	Minor	Short term, adverse	Hedgebank dismantling/recreation to follow method statement	Minor – not significant
Birds (breeding & wintering)	Displacement/collision mortality	To be determined	To be determined	To be determined	To be determined

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 9.

Table 9 – 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. No significant effects to breeding birds. Cumulative collision estimates per annum as follows: Buzzard = 1.41 Common gull = 0.041 Greater black-backed gull = 0.075 Herring gull = 2.98 Kestrel = 2.78 Lesser black-backed gull = 0.108 Peregrine = 0.008 Mallard = 0.032 Sparrowhawk = 0.009
PA21/07216 – Land NW of Carthew Farm	2.44km	single wind turbine with maximum blade tip height of 135m	Approved	
PA21/12493 – Land at East Karslake	1.36km	single wind turbine with maximum blade tip height of 135m	Approved	
PA23/09937 – Land at Burngullow	2.19km	single wind turbine with maximum blade tip height of 135m	Approved	
PA23/10069 – Land at Higher Goonamarth	1.90km	single wind turbine with maximum blade tip height of 135m	Approved	
Land at Dubbers	2.8km	Two wind turbines with maximum blade tip height of 135m	Application pending	

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. It is anticipated that the populations which are active in the area would quickly become adapted to the presence of this new turbine in the landscape, given the frequency of turbines in this local area. Most of species recorded here have been observed adjusting flight patterns to avoid existing operational turbines and it is unlikely that the proposed turbine would displace any birds from using habitats within the local landscape.

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

The provisional collision estimates predicted for this turbine are less than 0.5 individuals for all species. An impact of this order of magnitude would have negligible cumulative impact upon bird species active in the local area.

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 10.

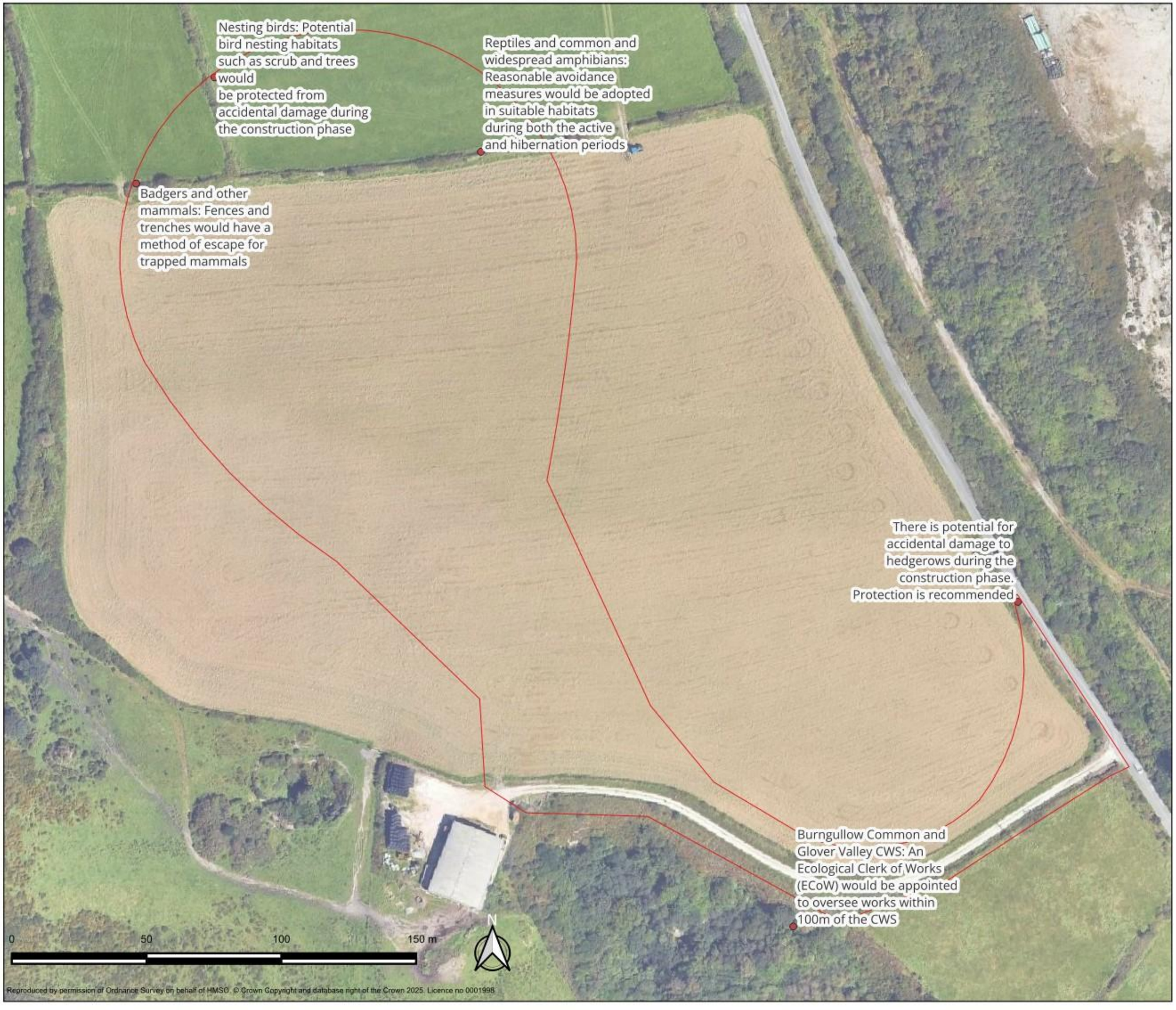
Table 10 – Bat assessments associated with wind turbine developments within the local area

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: *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.*
PA21/07216 – Land NW of Carthew Farm	2.44km			Bat activity surveys undertaken which concluded: *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.*
PA21/12493 – Land at East Karslake	1.36km			Bat activity surveys undertaken which concluded: *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.
PA23/09937 – Land at Burngullow	2.19km			Bat activity surveys undertaken. EcIA concluded: *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*.
PA23/10069 – Land at Higher Goonamarth	1.90km			Bat activity surveys undertaken. EcIA concluded: *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.*
Land at Dubbers	2.8	Two wind turbines with maximum blade tip height of 135m	Application pending	Bat activity surveys undertaken. EcIA concluded: *It is probable to near certain that the operational phase will have a negligible adverse effect on populations of Nathusius' pipistrelle, common pipistrelle, noctule and brown long-eared bat. Other bat species were seldom active in the area.*

These other turbine developments have found there to be no significant adverse impacts to local bat populations. When viewed in the context of the local landscape, there is an extensive body of woodland associated with Glover Valley which serves as a natural landscape corridor situated between the above turbine developments and the one proposed here. It represents high value habitat likely to support significant levels of local bat activity. In contrast, the turbine developments considered here are largely situated within unexceptional habitat and which is widespread in the local landscape (such as agricultural grassland and post mining restoration areas). Therefore, at a landscape level bat activity within/around the above turbine locations will be at low densities compared to optimal habitat such as that at Glover Valley. This conclusion is also reflected in the respective bat survey results.

No significant cumulative impact upon bat populations is predicted.



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Legend

- Survey area (approx.)
- Ecological constraint

Title: Map 2. Ecological Constraints Plan

Project: Land at Higher Biscovillack, St Austell, Cornwall

Checked by: CDH
Version: 01
Date: 03/11/2025

Appendix 1. Biological Records

Table 10. Biological records within 2km

Species Group	Species Scientific	Species Venacular	International Designation	National Designation	National Status	Count
Amphibian	*Rana temporaria*	Common Frog	Bern-A3, HabDir-A5	WACA-Sch5_sect9.5a		10
	Bufo bufo	Common Toad	Bern-A3	WACA-Sch5_sect9.5a	England_NERC_S.41, BAP-2007	9
	Lissotriton helveticus	Palmate Newt	Bern-A3	WACA-Sch5_sect9.5a		10
Bird	*Tyto alba*	Barn Owl	Bern-A2, ECCITES-A	WACA-Sch1_part1		8
	Turdus merula	Blackbird	BirdsDir-A2.2			267
	Chroicocephalus ridibundus	Black-headed Gull	BirdsDir-A2.2, CMS_AEWA-A2		Bird-Amber, Bird_RedList_GB_post2001-LC_Breeding,Bird_RedList_GB_post2001-VU_NonBreeding	2
	Cyanistes caeruleus	Blue Tit	Bern-A2			249
	Fringilla montifringilla	Brambling		WACA-Sch1_part1		1
	Buteo buteo	Buzzard	CMS_A2, ECCITES-A			132
	Branta canadensis	Canada Goose	BirdsDir-A2.1, CMS_A2	WACA Sch 9 Pt 1		34
	Corvus corone	Carrion Crow	BirdsDir-A2.2			74
	Periparus ater	Coal Tit	Bern-A2			139
	Streptopelia decaocto	Collared Dove	BirdsDir-A2.2		Bird_RedList_GB_post2001-NT_Breeding	85
	Larus canus	Common Gull	BirdsDir-A2.2, CMS_AEWA-A2		Bird-Amber	2
	Actitis hypoleucos	Common Sandpiper	CMS_A2,CMS_AEWA-A2		Bird-Amber, Bird_RedList_GB_post2001-VU_Breeding	1
	Curruca undata	Dartford Warbler	BirdsDir-A1	WACA-Sch1_part1	Bird-Amber, Bird_RedList_GB_post2001-VU_Breeding	2

	Cinclus cinclus	Dipper	Bern-A2		Bird-Amber, Bird_RedList_GB_post2001-NT_Breeding	10
	Prunella modularis	Dunnock	Bern-A2		Bird-Amber	106
	Turdus pilaris	Fieldfare	BirdsDir-A2.2	WACA-Sch1_part1	Bird-Red, Bird_RedList_GB_post2001-CR(PE)_Breeding,Bird_RedList_GB_post2001-LC_NonBreeding	16
	Regulus ignicapilla	Firecrest	Bern-A2	WACA-Sch1_part1		4
	Mareca strepera	Gadwall	BirdsDir-A2.1, CMS_A2,CMS_AEWA-A2		Bird-Amber	1
	Regulus regulus	Goldcrest	Bern-A2			20
	Bucephala clangula	Goldeneye	BirdsDir-A2.2, CMS_A2,CMS_AEWA-A2	WACA-Sch1_part2	Bird-Red, Bird_RedList_GB_post2001-VU_Breeding,Bird_RedList_GB_post2001-VU_NonBreeding	1
	Carduelis carduelis	Goldfinch	Bern-A2			167
	Larus marinus	Great Black-backed Gull	BirdsDir-A2.2, CMS_AEWA-A2		Bird-Amber, Bird_RedList_GB_post2001-EN_NonBreeding,Bird_RedList_GB_post2001-LC_Breeding	3
	Dendrocopos major	Great Spotted Woodpecker	Bern-A2			78
	Parus major	Great Tit	Bern-A2			193
	Tringa ochropus	Green Sandpiper	Bern-A2, CMS_A2,CMS_AEWA-A2	WACA-Sch1_part1	Bird-Amber, Bird_RedList_GB_post2001-EN_Breeding,Bird_RedList_GB_post2001-EN_NonBreeding	3
	Picus viridis	Green Woodpecker	Bern-A2			49
	Chloris chloris	Greenfinch	Bern-A2		Bird-Red, Bird_RedList_GB_post2001-EN_Breeding	178
	Ardea cinerea	Grey Heron	CMS_AEWA-A2		Bird_RedList_GB_post2001-LC_NonBreeding,Bird_RedList_GB_post2001-NT_Breeding	9
	Motacilla cinerea	Grey Wagtail	Bern-A2		Bird-Amber, Bird_RedList_GB_post2001-NT_Breeding	19

	Circus cyaneus	Hen Harrier	BirdsDir-A1, CMS_A2, ECCITES-A	WACA-Sch1_part1	England_NERC_S.41, Bird-Red, Bird_RedList_GB_post2001-VU_Breeding	1
	Larus argentatus	Herring Gull	BirdsDir-A2.2, CMS_AEWA-A2		Bird-Red, Bird_RedList_GB_post2001-DD_Breeding,Bird_RedList_GB_post2001-EN_NonBreeding	257
	Falco subbuteo	Hobby	Bern-A2, CMS_A2, ECCITES-A	WACA-Sch1_part1		2
	Delichon urbicum	House Martin	Bern-A2		Bird-Red, Bird_RedList_GB_post2001-VU_Breeding	69
	Coloeus monedula	Jackdaw	BirdsDir-A2.2			265
	Garrulus glandarius	Jay	BirdsDir-A2.2			137
	Falco tinnunculus	Kestrel	Bern-A2, CMS_A2, ECCITES-A		Bird-Amber, Bird_RedList_GB_post2001-VU_Breeding	12
	Vanellus vanellus	Lapwing	BirdsDir-A2.2, CMS_A2,CMS_AEWA-A2		England_NERC_S.41, BAP-2007, Bird-Red, Bird_RedList_GB_post2001-EN_Breeding,Bird_RedList_GB_post2001-VU_NonBreeding	2
	Larus fuscus	Lesser Black-backed Gull	BirdsDir-A2.2, CMS_AEWA-A2		Bird-Amber, Bird_RedList_GB_post2001-DD_Breeding	4
	Dryobates minor	Lesser Spotted Woodpecker	Bern-A2		Bird-Red, Bird_RedList_GB_post2001-EN_Breeding	1
	Linaria cannabina	Linnet	Bern-A2		Bird-Red, Bird_RedList_GB_post2001-NT_Breeding	19
	Tachybaptus ruficollis	Little Grebe	CMS_AEWA-A2			3
	Athene noctua	Little Owl	Bern-A2, ECCITES-A			4
	Pica pica	Magpie	BirdsDir-A2.2			270
	Anas platyrhynchos	Mallard	BirdsDir-A2.1, CMS_A2,CMS_AEWA-A2		Bird-Amber, Bird_RedList_GB_post2001-LC_Breeding,Bird_RedList_GB_post2001-NT_NonBreeding	7
	Poecile palustris	Marsh Tit	Bern-A2		Bird-Red, Bird_RedList_GB_post2001-VU_Breeding	9
	Anthus pratensis	Meadow Pipit	Bern-A2		Bird-Amber	27

	Turdus viscivorus	Mistle Thrush	BirdsDir-A2.2		Bird-Red, Bird_RedList_GB_post2001-VU_Breeding	10
	Caprimulgus europaeus	Nightjar	Bern-A2, BirdsDir-A1		England_NERC_S.41, BAP-2007, Bird-Amber	18
	Sitta europaea	Nuthatch	Bern-A2			12
	Phasianus colchicus	Pheasant	BirdsDir-A2.1			10
	Motacilla alba	Pied Wagtail	Bern-A2			7
	Aythya ferina	Pochard	BirdsDir-A2.1, CMS_A2,CMS_AEWA-A2		Bird-Red, Bird_RedList_GB_post2001-EN_Breeding,Bird_RedList_GB_post2001-EN_NonBreeding	2
	Milvus milvus	Red Kite	BirdsDir-A1, CMS_A2, ECCITES-A	WACA-Sch1_part1		4
	Turdus iliacus	Redwing	BirdsDir-A2.2	WACA-Sch1_part1	Bird-Amber, Bird_RedList_GB_post2001-CR_Breeding,Bird_RedList_GB_post2001-LC_NonBreeding	59
	Emberiza schoeniclus	Reed Bunting	Bern-A2		England_NERC_S.41, BAP-2007, Bird-Amber	11
	Turdus torquatus	Ring Ouzel	Bern-A2		England_NERC_S.41, BAP-2007, Bird-Red, Bird_RedList_GB_post2001-VU_Breeding	3
	Erithacus rubecula	Robin	Bern-A2			282
	Columba livia	Rock Dove	BirdsDir-A2.1, ECCITES-A			5
	Corvus frugilegus	Rook	BirdsDir-A2.2		Bird-Amber, Bird_RedList_GB_post2001-NT_Breeding	238
	Riparia riparia	Sand Martin	Bern-A2			15
	Aythya marila	Scaup	BirdsDir-A2.2, CMS_A2,CMS_AEWA-A2	WACA-Sch1_part1	England_NERC_S.41, BAP-2007, Bird-Red, Bird_RedList_GB_post2001-EN_NonBreeding	1
	Spinus spinus	Siskin	Bern-A2			10
	Alauda arvensis	Skylark	BirdsDir-A2.2		England_NERC_S.41, Bird-Red	14
	Gallinago gallinago	Snipe	BirdsDir-A2.1, CMS_A2,CMS_AEWA-A2		Bird-Amber, Bird_RedList_GB_post2001-	3

					LC_Breeding,Bird_RedList_GB_post2001-NT_NonBreeding	
	Turdus philomelos	Song Thrush	BirdsDir-A2.2		Bird-Amber	53
	Accipiter nisus	Sparrowhawk	CMS_A2, ECCITES-A		Bird-Amber, Bird_RedList_GB_post2001-NT_Breeding	12
	Muscicapa striata	Spotted Flycatcher	Bern-A2, CMS_A2		England_NERC_S.41, BAP-2007, Bird-Red	1
	Sturnus vulgaris	Starling	BirdsDir-A2.2		Bird-Red, Bird_RedList_GB_post2001-LC_NonBreeding,Bird_RedList_GB_post2001-VU_Breeding	55
	Columba oenas	Stock Dove	BirdsDir-A2.2		Bird-Amber	1
	Saxicola rubicola	Stonechat	Bern-A2			5
	Hirundo rustica	Swallow	Bern-A2			63
	Strix aluco	Tawny Owl	Bern-A2, ECCITES-A		Bird-Amber, Bird_RedList_GB_post2001-NT_Breeding	130
	Anas crecca	Teal	BirdsDir-A2.1, CMS_A2,CMS_AEWA-A2, ECCITES-C		Bird-Amber	7
	Anthus trivialis	Tree Pipit	Bern-A2		England_NERC_S.41, BAP-2007, Bird-Red	2
	Certhia familiaris	Treecreeper	Bern-A2			1
	Aythya fuligula	Tufted Duck	BirdsDir-A2.1, CMS_A2,CMS_AEWA-A2			9
	Oenanthe oenanthe	Wheatear	Bern-A2		Bird-Amber	1
	Poecile montanus	Willow Tit	Bern-A2		Bird-Red, Bird_RedList_GB_post2001-EN_Breeding	1
	Scolopax rusticola	Woodcock	BirdsDir-A2.1, CMS_A2,CMS_AEWA-A2		Bird-Red, Bird_RedList_GB_post2001-LC_NonBreeding,Bird_RedList_GB_post2001-VU_Breeding	4
	Columba palumbus	Woodpigeon	BirdsDir-A2.1		Bird-Amber	271
	Troglodytes troglodytes	Wren	Bern-A2		Bird-Amber	166

	Motacilla flava	Yellow Wagtail	Bern-A2		Bird-Red, Bird_RedList_GB_post2001-NT_Breeding	1
	Emberiza citrinella	Yellowhammer	Bern-A2		England_NERC_S.41, BAP-2007, Bird-Red	5
Flowering plant	*Hyacinthoides non-scripta*	Bluebell		WACA-Sch8		27
Insect - butterfly	*Danaus plexippus*	Monarch	CMS_A2			1
	Boloria euphrosyne	Pearl-bordered Fritillary		WACA-Sch5_sect9.5a	England_NERC_S.41, BAP-2007, RedList_GB_post2001-EN	1
Reptile	*Vipera berus*	Adder	Bern-A3	WACA-Sch5_sect9.1(kill/injuring),WACA-Sch5_sect9.5a	England_NERC_S.41, BAP-2007	3
	Zootoca vivipara	Common Lizard	Bern-A3	WACA-Sch5_sect9.1(kill/injuring),WACA-Sch5_sect9.5a	England_NERC_S.41, BAP-2007	4
	Natrix helvetica	Grass Snake	Bern-A3	WACA-Sch5_sect9.1(kill/injuring),WACA-Sch5_sect9.5a	England_NERC_S.41, BAP-2007	7
	Anguis fragilis	Slow-worm	Bern-A3	WACA-Sch5_sect9.1(kill/injuring),WACA-Sch5_sect9.5a	England_NERC_S.41, BAP-2007	10
Terrestrial mammal	*Meles meles*	Badger	Bern-A3	Protection_of_Badgers_Act_1992		4
	Sorex araneus	Eurasian Common Shrew	Bern-A3			1
	Erinaceus europaeus	Hedgehog	Bern-A3		England_NERC_S.41, BAP-2007, RedList_GB_post2001-VU	10
	Capreolus capreolus	Roe Deer	Bern-A3			5
	Mustela erminea	Stoat	Bern-A3			1
	Erinaceus europaeus	West European Hedgehog	Bern-A3		England_NERC_S.41, BAP-2007, RedList_GB_post2001-VU	73
Terrestrial mammal - bat	*Plecotus auritus*	Brown Long-eared Bat	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c	England_NERC_S.41, BAP-2007	8
	Pipistrellus pipistrellus	Common Pipistrelle	CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c		8

	Myotis daubentonii	Daubenton's Bat	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c		1
	Rhinolophus ferrumequinum	Greater Horseshoe Bat	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A2*,HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c	England_NERC_S.41, BAP-2007	1
	Rhinolophus hipposideros	Lesser Horseshoe Bat	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A2*,HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c	England_NERC_S.41, BAP-2007	9
	Myotis nattereri	Natterer's Bat	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c		1
	Nyctalus noctula	Noctule Bat	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c	England_NERC_S.41, BAP-2007	3
	Pipistrellus pipistrellus	Pipistrelle	Bern-A2,Bern-A3, CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c		13
	Eptesicus serotinus	Serotine	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c	RedList_GB_post2001-VU	1
	Pipistrellus pygmaeus	Soprano Pipistrelle	Bern-A2, CMS_A2,CMS_EUROBATS-A1, HabDir-A4	HabReg-Sch2, WACA-Sch5_sect9.4b,WACA-Sch5_sect9.5a,WACA-Sch5Sect9.4c	England_NERC_S.41, BAP-2007	8