

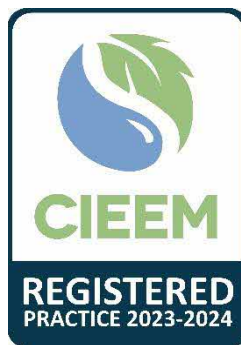


**PRELIMINARY ECOLOGICAL APPRAISAL
(PEA)**

of

**LAND ADJ. TO BOTALLACK VEAN, BOTALLACK,
ST JUST, CORNWALL**

June 2023



Wheal Grey Ecology Ltd

Admiralty House, 2 Bank Place,
Falmouth, Cornwall. TR11 4AT

Email: info@whealgreynecology.co.uk

Web: www.whealgreynecology.co.uk

Tel: 01326 761092

PRELIMINARY ECOLOGICAL APPRAISAL (PEA) OF LAND ADJ. TO BOTALLACK VEAN, BOTALLACK, ST JUST, CORNWALL

OS Grid Ref: SW 3654 3313

Survey date: 1st June 2023

Surveyor: Matthew Thurlow BSc (Hons) MSc ACIEEM

Time spent on site: 1 hour



Report Author: Matthew Thurlow BSc (Hons) MSc ACIEEM

Filename: PEA_Land adj. Botallack Vean, Botallack, Cornwall_Final 1

Report No: 22-291/LAA/Land adj. Botallack Vean, Botallack, Cornwall_PEA

Report for: Mark Farmer and Jess Morris

Report completed: 14th August 2023

Report Sign off		
Document checked and approved for issue by:	Simon Barnard BSc (Hons) MSc CEcol MCIEEM 	
Signature: Date:	24 th August 2023	

This report is considered valid for up to 18 months under CIEEM advice notes on the lifespan of ecological reports. After this 18-month period a re-inspection of the site by a suitable qualified ecologist should be conducted.

Table of Contents

1. SUMMARY.....	4
2. INTRODUCTION.....	6
2.1. Background.....	6
2.2. Purpose of Preliminary Ecological Appraisal.....	7
3. METHODS.....	8
3.1. Desktop study.....	8
3.2. Field methods.....	8
3.3. Assessment.....	8
3.4. Caveats and limitations to survey work.....	8
3.5. Summary of surveyor’s experience.....	9
4. SURVEY RESULTS.....	11
4.1. Overview.....	11
4.2. Description of habitats.....	11
4.3. Results of desktop survey.....	14
5. ASSESSMENT OF ECOLOGICAL AND CONSERVATION VALUE.....	19
5.1. Rationale.....	19
5.2. Proposal.....	19
5.3. Landscape context, connectivity and proximity to designated areas.....	19
5.4. Important habitat features of the study area and habitats likely to be impacted.....	20
5.5. Nightscape and artificial lighting.....	20
5.6. Potential for the site to support rare and protected flora and fauna.....	20
6. RECOMMENDATIONS.....	24
6.1. Designated areas and ecological connectivity.....	24
6.2. Habitats.....	25
6.3. Nightscape and artificial lighting.....	26
6.4. Flora and Fauna.....	27
6.5. Potential impacts on protected Flora and Fauna.....	29
7. CONCLUSIONS AND SUMMARY OF RECOMMENDATIONS.....	30
7.1. Summary of additional or further survey work.....	31
7.2. Summary of avoidance measures.....	31
7.3. Summary of mitigation.....	31
7.4. Recommendations for maintaining and enhancing the biodiversity value of the site.....	32
8. APPENDICES.....	35

1. SUMMARY	
Instructing agent	Ms Chloe Pitt of LA Architecture on behalf of the client.
Date of survey	1 st June 2023
Brief site description	The survey area covers 0.12ha consisting largely of scrub, tall ruderals and Bracken bound by a post and wire fence to the south west and occasional sections of stone walls.
Purpose of survey	This PEA aims to provide ecological recommendations in response to plans to erect a single dwelling within the Site.
Methods used	A field survey and desktop study was undertaken, the habitats onsite were classified and mapped using the JNCC Phase 1 Habitat Survey methodology.
Designated areas	The Site does not lie within any statutory or non-statutory designated sites, there is a low risk of adjacent designated sites being impacted during the construction phase without appropriate mitigation. Due to the SSSI IRZ the Site is within and the scale of the proposal the LPA do not need to consult NE regarding this application. The site does not lie within the ZoI of any SACs.
Impacts on HPI habitats	No habitats on site qualify as HPI or BAP priority habitats and there are no HPI's in close proximity to the site to be directly impacted by the proposal.
Gain in biodiversity value	Overall, the habitats within the Site to be impacted are of medium to low distinctiveness but they have high value to nesting birds and other wildlife. There is wild planting and hedgerow creation within the current proposal which will partially mitigate for the loss of the habitats on site. The creation of good quality replacement habitats, as stated in Table 4, may mitigate for the reduction in habitat area and could create more valuable habitats upon completion. Providing the proposed areas of landscape planting follow the guidance in this document and any resulting recommendations from the reptile survey, a gain in biodiversity value onsite could be achieved.
Impacts on protected species	No direct use of the Site by protected species was found, although a slow worm was found adjacent to the Site. There is good potential for the Site to be used for nesting by birds and for reptiles to be present. Further survey work for reptiles is recommended. Providing the recommendations on lighting are followed and that the avoidance and mitigation measures summarised below, and any resulting from the reptile survey, are followed during the clearance of the Site and the construction and operational phase of the proposal no protected species are likely to be significantly adversely impacted.
Further surveys	Reptiles A reptile refugia survey of the Site is recommended in order to determine the presence or absence of reptiles onsite and establish potential impacts on these species and any suitable mitigation that may be required
Avoidance measures	Nesting bird The clearance of suitable bird nesting habitat must be carried out outside of the accepted bird nesting season (March to August inclusive). This is because birds, chicks, eggs, and their nests are protected by law whilst nesting.
Mitigation	Construction phase
	Waste and materials Construction materials should be appropriately stored to prevent them being blown off site, i.e., being weighed down, stored under cover or stored off site. Use shuttering around locations where concrete will be poured. Use solid board fencing or lined Heras fencing along the boundaries of the work area. Carefully time sensitive works to avoid periods of high winds and heavy rain to prevent materials or waste being blown or washed off site.
	Schedule 9 INNS Measures will need to be taken to ensure that all parts of the Montbretia and Three-cornered Garlic, including seed and underground growth, are managed in accordance with the law and the guidance contained in the UK Government Guidance Treatment and disposal of invasive non-native plants.

	Reptiles	The necessary mitigation for reptiles will be detailed in the reptile survey report.
	Birds/ Badgers	The habitats on site must be cleared outside of the widely accepted bird nesting season (March to August inclusive) and must then be cleared under an ecological watching brief conducted by a suitable qualified ecologist due to the density of the vegetation and potential for protected species to be present.
	General wildlife	Any holes or excavations during the work should be protected by fencing, covered over at night, or have a means of escape in the form of a ramp in case any animals accidentally fall into the excavation.
	Operational phase	
	Lighting	Sensitive lighting designs should be used as detailed in Section 6.3 or summarised in Section 7 to reduce light spill on the Site. Exterior lighting should only be used where it is absolutely necessary.
Recommendations for maintaining and enhancing the biodiversity value of the site		
Habitats	Create the proposed hedgerows along the eastern and southern boundaries with locally prevalent native woody species, with an additional hedgerow along the northern boundary, ideally being allowed to grow as high as the surrounding conditions allow.	
	Create a good quality mixed woody scrub within the area of proposed wild planting.	
	Create areas of unmanaged grassland and tall ruderals with locally prevalent species or grassland types, such as a maritime grassland, in the southern part of the wild planting to mitigate for the loss of existing habitats.	
Species	Create the new lawn with a species rich seed mix or turf suitable for mowing.	
	The new dwelling should be enhanced for protected species in line with Cornwall Council's planning for Biodiversity guide 2018 which requires a bat or bird box being incorporated into the design.	
	Maintain the permeability of the Site by ensuring the new fencing is as open as possible by incorporating regular gaps approximately 13cm ² at the base of any fences/walls, not tying in fencing at the ends and using gates with gaps underneath.	
		See Section 7 for more details and Appendix 5 and 6 for planting and bat, bird and bee/insect enhancement recommendations.

2. INTRODUCTION

2.1. Background

Wheal Grey Ecology Ltd were instructed by Ms Chloe Pitt of LA Architecture, on behalf of their clients Mr Mark Farmer and Ms Jess Morris to carry out a Preliminary Ecological Appraisal (PEA) on land adjacent to Botallack Vean, Botallack, St Just, Cornwall. This PEA aims to provide ecological recommendations in relation to the erection of a single dwelling, the currently available proposed layout labelled ‘23109-SK-00-04 MORRIS PROPOSED SITE PLAN’ as provided by Ms Chloe Pitt on behalf of the client can be found in Appendix 4. A walkover of the survey area was undertaken on 1st June 2023 at 09.30 by Matthew Thurlow. The weather was largely sunny with a very light breeze and occasional clouds; the temperature was 18°C.

The survey area covers 0.12ha of land consisting largely of scrub, tall ruderals and Bracken, bound by a post and wire fence to the south west with occasional short sections of vegetated stone walls in the southern, western and eastern corners. The Site lies approximately 250 metres to the north west of the village of Botallack with the coastline approximately 400m to the west in West Cornwall, see approximate location indicated by the arrow in Figure 1. There are several adjacent buildings to the north west and south east with a band of scrub and a hedgerow running along but outside of the north east boundary, an access road currently runs along the south west boundary. Beyond the immediate vicinity there are agricultural fields used for the grazing of livestock to the north east and south west. The coastline is present approximately 400m to the west with areas of maritime grassland present.

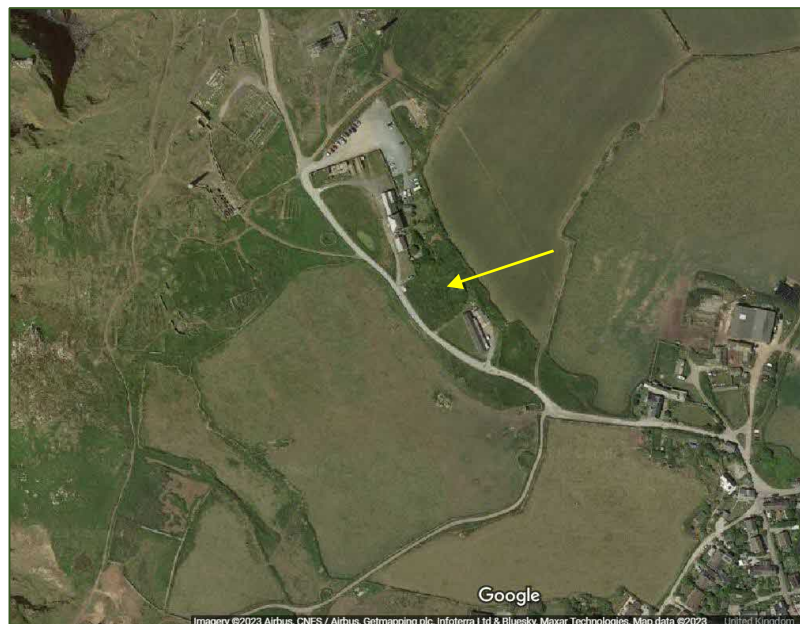


Figure 1: Screenshot of Google earth imagery for the surrounding landscape and approximate location of the survey area

The ‘survey area’ is shown highlighted in pink in Map 1 and consists of the area within the red line of the planning application as provided by the client and any land in the immediate vicinity of the planning application boundary, where access is allowed, which may also be impacted by the works. Within this report this area is referred to as the Site or land adj. to Botallack Vean, St Just, Cornwall.

2.2. Purpose of Preliminary Ecological Appraisal

The purpose of this initial PEA is to:

Describe the habitats within the site using nationally recognised classification methods,
assess the conservation value of the habitats on-site to avoid significant ecological impact,
identify signs of the use of the site or the potential for the site to support protected species,
highlight any species or areas of concern that may need further survey work,
highlight any ecological constraints present that may require mitigation,
and make further recommendations for the potential to enhance the site for biodiversity.

3. METHODS

The survey comprised a desktop study and field survey, the report has been compiled in line with the CIEEM (2017) Guidelines on Ecological Report Writing, Chartered Institute of Ecology and Environmental Management, Winchester. A biological records search from the Environmental Records Centre for Cornwall and the Isles of Scilly was purchased.

3.1. Desktop study

A desktop-based study consisted of reviewing the following local and online resources:

A biological records search of statutory and non-statutory nature conservation sites and species of conservation concern or interest was obtained from the Environmental Records Centre for Cornwall and the Isles of Scilly. The search radius extended for 1000 metres from the middle of the site and was conducted on 26th May 2023, see Appendix 7.

The DEFRA based Magic Maps facility was also consulted for site designations, protected species licences and surrounding habitats, this can be found at the following web address:

<https://magic.defra.gov.uk/>

The Cornwall Council interactive map was consulted for site designations and surrounding habitats, this can be found at the following web address:

<https://map.cornwall.gov.uk/website/ccmap>

3.2. Field methods

The field survey was conducted in line with national survey methods, with the habitats classified and mapped using the standard Phase 1 Habitat survey methodology (JNCC, 2003). The Site was also searched for signs of use by protected species and habitats of nature conservation importance, and features were assessed for their potential to support protected species. A list of vascular plants found during the survey is included in Appendix 1 which were identified according to Rose, 2007. This is not intended to be a comprehensive plant list; it's aim is to support the habitat classifications. However, if the site is either known to, or is believed to have the potential to support rare, protected, or invasive plant species these were also searched for.

3.3. Assessment

The habitats and species located during the walk-over survey have been assessed for their nature conservation and biodiversity significance according to current standard criteria (listed in Appendix 3); the criteria consist of international, national, and local designations and include statutory legislation and non-statutory designations.

3.4. Caveats and limitations to survey work

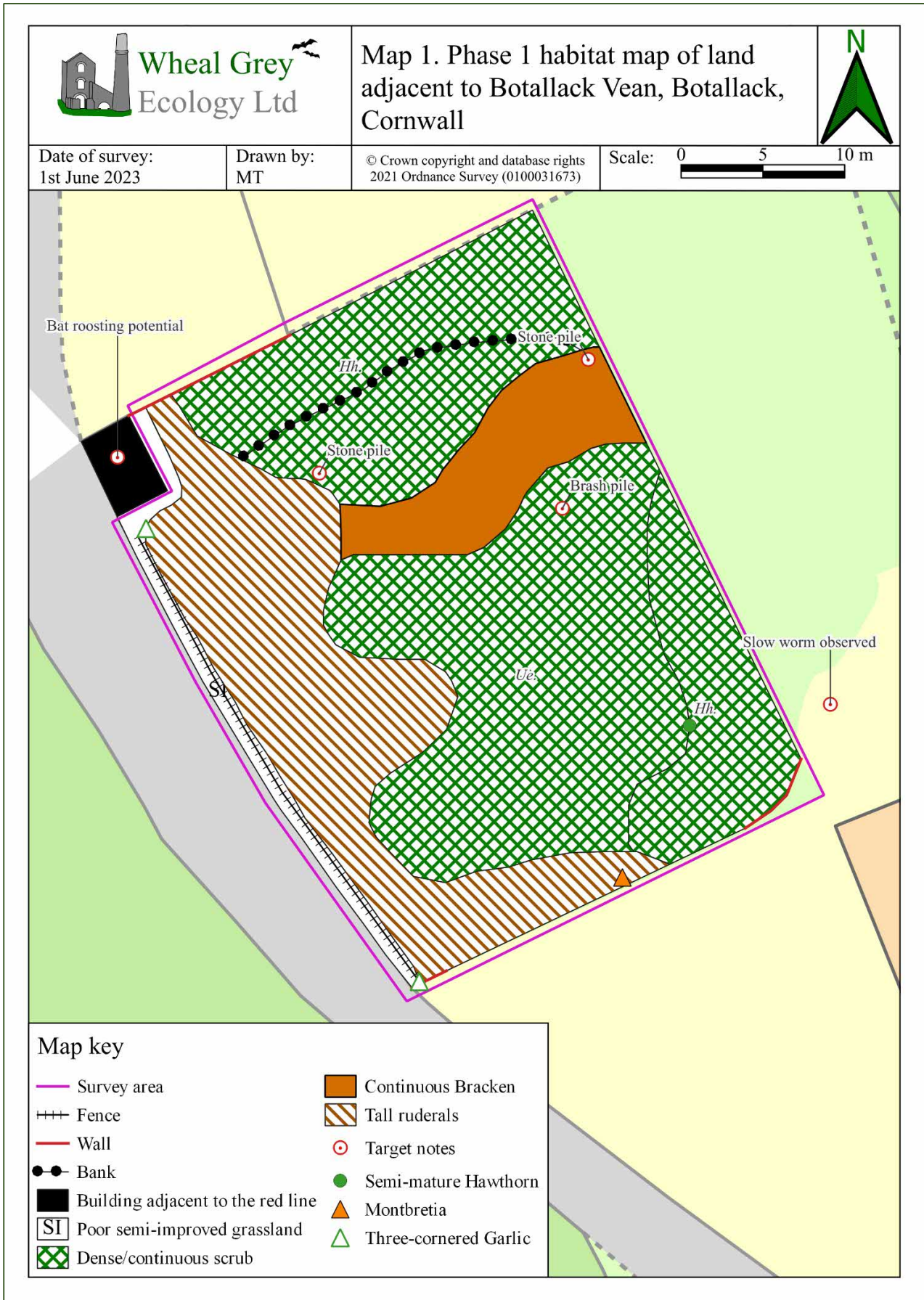
The dense scrub on site made it impossible to fully inspect every part of the Site.

The survey was conducted at the best possible time of year for plant identification although some plant species still may have been overlooked or were currently not visible.

The recommendations in this report are based on the layout that was available at the time of writing this report.

3.5. Summary of surveyor's experience

Matthew Thurlow is an experienced field surveyor over four years' experience working in Ecology and Conservation and is experienced in conducting Extended Phase 1 Habitat surveys, Preliminary Ecological Appraisals, and a variety of protected and non-protected phase two species surveys. He holds a Bachelor's Degree in Applied Marine Science and Masters in Conservation and Biodiversity.



4. SURVEY RESULTS

4.1. Overview

The Site consists of dense and continuous scrub, tall ruderals, continuous Bracken and small areas of poor semi-improved grassland bound by sections of vegetated stone walls in the southern, eastern and western corners with post and wire fencing forming the south west boundary. A majority of the north east boundary and part of the north west boundary is unmarked and only appeared to be indicated by a mound of earth and stone covered with dense vegetation. The south east boundary is largely indicated by an access track to an adjacent building, see Map 1 above.

The historical use of the site, by looking at historical imagery, indicates that the survey area has been as it currently is since satellite imagery has been available (22 years).

4.2. Description of habitats

A list of the plant species recorded in each habitat can be found in Appendix 1.

4.2.1. Scattered tree

There is a single semi-mature Hawthorn with stunted growth present in the eastern corner of the survey area, see Photograph 1.



Photograph 1. Semi-mature stunted
Hawthorn tree facing south east

4.2.2. Dense and continuous scrub

The Site is dominated by dense and continuous scrub which largely consisted of Common Ivy, European Gorse, Elder, Bracken and Bramble, with Bluebell and Red Campion also present. The composition of this scrub varies within the Site with areas of Ivy dominated scrub labelled *Hh* and areas of European Gorse dominated scrub labelled *Ue*, see Map 1 and Photographs 2 and 3.



Photograph 2. Area of Ivy dominated scrub along the north west boundary facing north



Photograph 3. Central area of European Gorse dominated scrub facing east

4.2.3. Poor semi-improved grassland

There is a small strip of poor semi-improved grassland forming the verge along the south west edge of the Site, see Photograph 4. Grass species present include Cock's-foot, Yorkshire-fog, and Red Fescue with Bracken, Yarrow, Red Campion, Cut-leaved Crane's-bill, Common Vetch and Smooth Sow-thistle also present.

The Schedule 9 listed Invasive Non-native Species of Three-cornered Garlic was present within this grassland, see Map 1.



Photograph 4. Poor semi-improved grassland verge

4.2.4. Tall ruderals

The south western part of the survey area is dominated by tall ruderals, see Map 1 and Photograph 5. The species present were largely dominated by Common Nettle and Bracken with Common Ivy covering the ground underneath, also present was Hart's-tongue fern, Red Campion, Broad Buckler-fern, Comfrey and Black Mustard.

The Schedule 9 listed INNS Montbretia is present in the south eastern part of this habitat, see Map 1.



Photograph 5. Tall ruderals in the southern corner facing north

4.2.5. Continuous Bracken

A strip of continuous Bracken is present through the middle of the Site, see Photograph 6. This habitat is dominated by Bracken with Common Ivy, Bramble, Common Nettle and Elder occasionally present.



Photograph 6. Continuous bracken facing north

4.2.6. Walls

There are three sections of vegetated stone wall that were visible during the survey, see Photograph 7. The species found growing within the walls consisted of Common Ivy, Black Mustard, Cleavers, Herb-robert and Cut-leaved Crane's-bill. The Schedule 9 listed INNS Three-cornered Garlic is present at the base of the wall in the southern corner of the Site, see Map 1.



Photograph 7. Vegetated stone wall in the eastern corner

4.2.7. Adjacent building

Outside of, but adjacent to the red line of the survey area there is a small stone building with a pitched slate roof on an approximate north west to south east alignment, see Photograph 8. There is a line of hanging slates at the eaves of the gable ends with soffit boxing running along the south west aspect. Dense Ivy has grown up the eastern most corner and north east aspect of the building.



Photograph 8. Adjacent building facing north west

4.3. Results of desktop survey

The results of the records search from ERCCIS were analysed and key data relating to the site has been extracted and presented in Tables 1 and 2 below. A full summary of the records search provided by ERCCIS can be found in Appendix 7. Additional information has also been gathered from Magic Maps and the Cornwall Council interactive map.

4.3.1. Statutory and non-statutory site designations

There are four statutory sites and nine non-statutory sites within 1km of the survey area along with one listed priority habitat. The site is within the Cornwall Area of Outstanding Natural Beauty (AONB) and two areas of National Trust land surrounds the survey area on all sides but the Site itself is not classified as National Trust land. Details of the sites listed within 1km of the survey area along with the priority habitats are detailed in Table 1 below.

The Site lies within a Natural England (NE) Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) (Natural England, 2021).

The Site is not within the recreational Zone of Influence (ZoI) of any Special Areas of Conservation (SAC).

Table 1. List of all statutory and non-statutory designated sites/listings and priority habitats within 1km of the survey area as listed by ERCISS and Cornwall Council interactive map.

Site designation	Site name	Distance from site
Statutory		
AONB	Cornwall	Within the AONB
SAC	Lands End and Cape Bank	400m W
SAC (Marine)	Lands End and Cape Bank	400m W
SSSI	Aire Point to Carrick Du	50m W
Non-statutory		
CGS	Grylls Bunny	400m W
CGS	Wheal Edward	400m W
CGS	Pendeen Cliff to Kenidjack	400m W
CGS	Wheal Cock	400m W
CGS	Wheal Hazard	400m W
CGS	Wheal Drea	400m W
NT Land	St Just Sites	Surrounding the Site
NT Land	Levant Mine and Bearn Engine	Surrounding the Site
RSPB Reserve	West Penwith Coast and Moors	60m W
SSSI impact risk zone		
RuralNonRe: Large non-residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m ² or footprint exceeds 0.2ha.		
Residentia: Residential development of 50 units or more.		
RuralResid: Any residential development of 10 or more houses outside existing settlements/urban areas.		
ZoI Natura 2000		
None		
Priority habitats		
	Lowland Heathland	450m SW

4.3.1.1. Statutory and non-statutory sites within 1km of the Site

Aire Point to Carrick Du

Located on the west and north coast of the Penwith Peninsula, extending from a point approximately 3km north east of Land's End to St Ives. The site is dominated by vertical sea cliffs formed by the Land's End granite mass. The soils, which are often thin, are generally acidic, well drained with a gritty, loamy texture. Exposure to salt spray and the prevailing south westerly winds have resulted in

a dwarfed vegetation. The site supports populations of Red Data Book (RDB) (*) and nationally scarce plants and animals.

The vegetation of the cliffs exhibits a complex of maritime and sub-maritime communities. The cliff slopes and tops are characterised by maritime grassland, heath and scrub communities with frequent species rich flushes, particularly on the north coast. On the shallow soils of rock ledges and outcrops, a maritime therophyte community occurs where typical species include English stonecrop *Sedum anglicum*, thrift, buck's-horn plantain *Plantago coronopus*, and kidney vetch *Anthyllis vulneraria*. The grassland communities of the cliff slopes are dominated by red fescue which often forms a matresy sward, and Yorkshire fog *Holcus lanatus*. Thrift, wild carrot *Daucus carota*, sea campion *Silene maritima*, sea plantain *Plantago maritima* and oxeye daisy *Leucanthemum vulgare* are common. Bluebell *Hyacinthoides non-scripta* is found in more sheltered areas and on upper slopes where it is typically associated with coarse grasses, mainly cock's-foot and scrub communities. Extensive areas of heath occur generally higher up the cliff profile and on the cliff tops. These are dominated by heather *Calluna vulgaris*, bell heather *Erica cinerea* and western gorse *Ulex gallii* and often display the waved structure characteristic of exposure to saltladen winds. Spring squill, common bird's-foot-trefoil *Lotus corniculatus*, sheep's bit *Jasione montana* and wild thyme *Thymus drucei* are abundant. The maritime communities support the RDB (*) species eyebright *Euphrasia vigursii* and early meadow grass *Poa infirma* and nationally scarce plants including lanceolate spleenwort *Asplenium billotti*, hairy bird's-foot-trefoil *Lotus subbiflorus* and pale dog violet *Viola lactea*. Scrub communities, including pure stands of bracken occur on the cliff slopes and tops and particularly in the valleys. European gorse *Ulex europaeus*, bramble and blackthorn are frequent, associated with cock's-foot, bluebell and, locally, honeysuckle and ivy *Hedera helix*. The site supports a typical Cornish cliff bryophyte flora and includes a number of rarities, most notably the RDB (*) moss *Tortula solmsii*. The range of land habitats, many of which are floristically rich, support a diverse and abundant invertebrate fauna, including RDB (*) species: mud snail *Lymnaea glabra*, a bug *Heterogaster artimisiae* and a hoverfly *Microdon mutabilis*. Nationally scarce butterflies including the pearl-bordered fritillary *Boloria euphrosyne* and silver-studded blue *Plebejus argus* and the nationally scarce jewel beetle *Trachys troglodytes* also occur. Areas of scrub on the cliff tops and in the valleys provide nesting sites for many species, including stonechat *Saxicola torquata* and warblers such as whitethroat *Sylvia communis* and sedge warbler *Acrocephalus schoenobaenus*.

RSPB reserve/Birdlife Important Bird areas - West Penwith Coast and Moors

No information on this reserve on the RSPB website could be found. The Birdlife international website describes the site as a stretch of rocky coastline and a large number of moorland areas, situated mainly to the north and west of Land's End. The IBA is important for cliff-nesting and heathland species. Birdlife international most recently assessed the site in 2007 and considered its condition to be favourable. <http://datazone.birdlife.org/site/factsheet/west-penwith-coast-and-moors-iba-united-kingdom>.

4.3.2. CRDB listed and protected species

A summary of the key Cornwall Red Data Book listed and protected species from the ERCCIS record search and the records approximate location in relation to the site has been extracted and presented in Table 2 below. A full list of birds can be found in the attached ERCCIS report.

Table 2. List of protected species and red-listed or important species (Cornwall Red Data Book species), other than marine birds, recorded within a 1km radius of the site as listed by ERCCIS. The number of Roosts/Setts/Holts, or the nearest sightings, where accurate locations are provided with the record, are included below.

Species group	Species Scientific	Species vernacular	No. records	Roosts Setts Holts Nests	Nearest sighting/ roost
Plants	<i>Teucrium chamaedrys</i>	Wall Germander	11	N/A	700m S
	<i>Chamaemelum nobile</i>	Chamomile	1	N/A	1000m SW
	<i>Spergula arvensis</i>	Corn Spurrey	12	N/A	200m E
	<i>Stachys arvensis</i>	Field Woundwort	3	N/A	300 SW
	<i>Glebionis segetum</i>	Corn Marigold	1	N/A	800m S
	<i>Allium ampeloprasum</i>	Wild Leek	1	N/A	200m E
	<i>Misopates orontium</i>	Weasel's-snout	7	N/A	550m W
	<i>Lotus subbiflorus</i>	Hairy Bird's-foot-trefoil	5	N/A	850m NW
	<i>Spiranthes spiralis</i>	Autumn Lady's-tresses	2	N/A	250m SW
	<i>Cuscuta epithymum</i>	Dodder	9	N/A	300m E
	<i>Trifolium occidentale</i>	Western Clover	2	N/A	900m SW
	<i>Viola lactea</i>	Pale Dog-violet	3	N/A	500m W
	<i>Inula crithmoides</i>	Golden-samphire	4	N/A	500m E
	<i>Erodium moschatum</i>	Musk Stork's-bill	4	N/A	550m S
	Birds	<i>Curruca curruca</i>	Lesser Whitethroat	24	0
<i>Falco peregrinus</i>		Peregrine	50	0	400m NW
<i>Falco subbuteo</i>		Hobby	10	0	1000m S
<i>Ficedula hypoleuca</i>		Pied Flycatcher	65	0	700m S
<i>Lullula arborea</i>		Woodlark	1	0	1000m S
<i>Milvus milvus</i>		Red Kite	4	0	1000m S
<i>Riparia riparia</i>		Sand Martin	12	0	600m W
<i>Saxicola rubetra</i>		Whinchat	15	0	600m W
<i>Tyto alba</i>		Barn Owl	17	0	120m E
<i>Cettia cetti</i>		Cetti's Warbler	1	0	1000m S
<i>Pyrrhocorax pyrrhocorax</i>		Chough	153	0	200m W
<i>Emberiza calandra</i>		Corn Bunting	2	0	600m S
<i>Circus cyaneus</i>		Hen Harrier	10	0	1000m S
<i>Athene noctua</i>		Little Owl	1	0	1000m S
<i>Spinus spinus</i>		Siskin	31	0	1000m S
<i>Phyllosopus sibilatrix</i>	Wood Warbler	8	0	600m S	
Bats	<i>Pipistrellus sp.</i>	Pipistrelle species	2	2	1000m S
	<i>Myotis mystacinus/brandtii</i>	Whiskered/Brandt's	1	0	100m E

	<i>Nyctalus noctula</i>	Noctule	1	0	1000m S
	<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	5	2	600m SE
	<i>Pipistrellus pygmeus</i>	Soprano Pipistrelle	1	0	1000m S
	<i>Rhinolophus ferrumequinum</i>	Greater Horseshoe	5	0	1000m S
Other mammal	<i>Lutra Lutra</i>	Otter	3	0	600m SE
	<i>Meles meles</i>	Eurasian Badger	6	0	350m E
	<i>Erinaceus europaeus</i>	Hedgehog	6	0	On Site
Reptiles	<i>Vipera berus</i>	Adder	8	N/A	300m NW
	<i>Anguis fragilis</i>	Slow worm	1	N/A	600m S
Amphibians	<i>Lissotriton helveticus</i>	Palmate Newt	2	N/A	400m E
	<i>Bufo bufo</i>	Common Toad	3	N/A	600m N
	<i>Rana temporaria</i>	Common Frog	4	N/A	400m E

5. ASSESSMENT OF ECOLOGICAL AND CONSERVATION VALUE

5.1. Rationale

This section assesses the value of the Site based on the information obtained during the field survey and desktop study. The assessment is in terms of presence of, or potential to support protected, rare or scarce habitats and species, general biodiversity value and ecological function in the wider landscape.

The criteria that are used in assessing species and habitat importance consist of international, national, and local designations; they include statutory legislation and non-statutory designations (as listed in Appendix 3) and the protection level and legislation specific for each animal group (as listed in Appendix 2).

5.2. Proposal

The proposal is to erect a single residential dwelling within the Site with a separate garage and new fencing, see Appendix 4. This will involve the clearance of the vegetation on site, removal of the stone piles and earth banks and the clearance of some of the grassland verge to create an access.

5.3. Landscape context, connectivity and proximity to designated areas

The Site is located on a fairly exposed gentle south west facing slope within a band of scrubby habitat that runs south east to north west from the north western edge of the village of Botallack. There is agricultural land to the north, south and east with areas of coastal grasslands present to the west along the coastline. The surrounding field boundaries largely consist of hedgerows topped with stunted vegetation most likely due to the exposed nature of the area.

There is a low risk of the designated areas in close proximity to the survey area being impacted by construction waste if materials are not stored properly or if works are conducted during high winds or periods of heavy or prolonged rainfall where surface run-off could transport materials off site.

The Site is not within any recreational ZoI of any SACs.

The Site is within a IRZ of the SSSI; the zone this Site falls in does not require Natural England (NE) to be consulted by Local Planning Authority (LPA) regarding a proposal of this scale.

5.3.1. Landscape fragmentation and ecological connectivity

The scrub within the Site and along the north east and north west boundary provide moderate connectivity around the Site between the agricultural fields and the maritime grasslands to the north west.

5.3.2. Permeability of the site to wildlife

The Site is largely permeable in all directions although no distinct mammal pathways were observed within, or crossing into the site.

5.4. Important habitat features of the study area and habitats likely to be impacted

No habitats on site qualify as Habitats of Principal Importance (HPIs) or UK Biodiversity Action Plan Priority Habitats (UK BAP, 2007) or Local Biodiversity Action Plan (BAP) Priority Habitats (Cornwall Biodiversity Initiative, 2009).

The dense scrub is of high value to nesting birds and possibly common UK reptile species, this scrub will be impacted by the proposal.

5.5. Nightscape and artificial lighting

The Site is located in an area with estimated low artificial light emissions according to Lagas online mapping tools, see approximate location highlighted by the arrow in Figure 2 below. The adjacent buildings are unlikely to produce any additional direct light spill into the site.



Figure 2. Lagas Light map, <https://lagas.co.uk/app/product/light-maps>, accessed 15/07/23

5.6. Potential for the Site to support rare and protected flora and fauna

The potential for the Site to support rare or protected species and the need for further consideration regarding mitigation or survey work is summarised below, see Table 3.

Table 3. Summary of the likely presence of protected species and the need for further consideration.

Flora/Fauna	Records	Suitable habitats on site	Evidence of use or potential for use	Further consideration
CRDB Plants	45 records of 14 species.	Semi-improved grassland Tall ruderals.	No evidence of CRDB plant species were observed during the survey and the survey was timed for the best opportunity to identify any CRDB plants. The CRDB plants listed are unlikely to be	The semi-improved grassland verge is largely to be retained. Considering the relatively small area of the site, the dense covering of scrub, the distance from the nearest recorded CRDB plants and the low likelihood of

Flora/Fauna	Records	Suitable habitats on site	Evidence of use or potential for use	Further consideration
			present within the habitats present on site.	rare/protected plants being present, it is unlikely the loss of CRDB plants will occur. No further consideration necessary.
Schedule 9 listed and non-listed invasive plants (Schedule 9 INNS and INNS)	63 records of seven species.	All habitats on site.	Three-cornered Garlic and Montbretia were identified on site during the survey, see Map 1.	These plants will be disturbed by the works. See recommendations in Section 6.
Birds	404 records of 16 CRDB species likely to use the site.	Dense scrub.	Good potential for nesting birds to use the hedgebanks. Moderate to low potential for the tall ruderal habitats and Bracken to be used for nesting by birds.	A large portion of these habitats will be cleared as part of the proposal. See recommendations in Section 6.
Bats	15 records of at least five species. No Roosts.	Foraging/commuting: Scrub.	Some limited potential to forage the scrub on Site.	A majority of the scrub will be lost, although this is a relatively small area. See recommendations in Section 6.
	No EPS licences within 1km.	Roosting: No suitable roosting features present onsite. Adjacent building.	No roosting features present.	There is potential to enhance the Site for roosting bats post-development. See recommendations in Section 6.
Hazel Dormouse	No records.	Dense scrub.	There is very low potential for Dormice to access the Site and scrub within it as this is isolated within the	The scrub will be removed as part of the proposal.

Flora/Fauna	Records	Suitable habitats on site	Evidence of use or potential for use	Further consideration
			<p>landscape from any other suitable Dormouse habitat. This scrub also has limited suitable foraging opportunities considering the species present.</p> <p>Dormice are not known to be in the area.</p>	No further consideration necessary.
Otter	<p>Three records.</p> <p>No holts.</p>	No suitable habitat.	<p>It is highly unlikely Otter access this Site or the habitats within it as it is a considerable distance from any suitable otter habitat.</p> <p>The nearest stream lies 700m to the south and is separated by several exposed agricultural fields.</p>	No further consideration necessary.
Badger	<p>Six records.</p> <p>No setts.</p>	Scrub covered banks.	No evidence of Badger using the interior of the Site, in the form of latrines, snuffle holes or Setts were observed, although it was not possible to fully inspect the site due to the vegetation.	<p>The scrub covered banks are likely to be removed.</p> <p>See recommendations in Section 6.</p>
Reptiles	Nine records of two species.	All habitats on site.	<p>A Slow worm was observed under a sign adjacent to the red line of the survey area, see Map 1 and section 5.6.1.</p> <p>The scrub and ruderal vegetation and grassland edges provide suitable foraging and basking opportunities.</p> <p>This scrub habitat is also fairly rare within the wider landscape.</p>	<p>The areas of suitable reptile habitat are likely to be impacted by the proposal.</p> <p>See recommendations in Section 6.</p>

Flora/Fauna	Records	Suitable habitats on site	Evidence of use or potential for use	Further consideration
Hedgehogs	Six records.	Scrub habitats. Tall ruderals. Grassland.	Some potential for accessing the Site and foraging within the grassland and scrub.	No further surveys necessary. Hedgehogs are a BAP priority species. See recommendations for General wildlife in Section 6.
Amphibians	Nine records of three species.	All habitats on site.	The habitats on site provide some suitable terrestrial habitat for amphibians.	The scrub, tall ruderals and grassland will be removed. Common Toads are a Bap Priority species. See recommendations for General wildlife in Section 6.

5.6.1. Reptiles

A young slow worm was observed under a sign adjacent and to the north east of the red line of the survey area, see Map 1 and Photograph 9 below.



Photograph 9. Young Slow worm found under a sign to the north east of the Site.

6. RECOMMENDATIONS

This section lays out recommendations for any necessary further survey work, ecological constraints present, and any necessary mitigation and avoidance measures required prior to any works onsite.

6.1. Designated areas and ecological connectivity

The Site does not lie within any statutory or non-statutory designated sites, although there are several in close proximity to the site. There is a low risk of these sites being impacted during the construction phase by construction materials/waste being blown or washed off-site during periods of heavy wind or heavy and prolonged rainfall.

It should be possible to reduce the risk of any impacts occurring to the adjacent designated sites to a negligible level through the use of careful working procedures and mitigation measures. These should include: Suitable methods for storing materials during the works (such as being secured/weighted down/stored under cover), use shuttering around locations where concrete will be poured, use solid board fencing or lined Heras fencing along the boundaries and the carefully time the works to avoid periods of high winds and heavy rain to reduce the risk of construction materials and waste being blown or washed off site.

Due to the SSSI IRZ the Site is within and the scale of the proposal NE does not need to be consulted by the LPA regarding this application. The site is not within the ZoI of any SAC's.

6.1.1. Landscape connectivity

The current ecological connectivity around the Site is unlikely to be impacted by the proposal as the band of scrub and hedgerow to the north east of the survey area are outside of the red line of the application and not being impacted.

6.1.2. Permeability of the site to wildlife

A wooden fence is proposed along the northern boundary of the Site, the remaining boundaries appear to be staying as they are or will likely to remain permeable to wildlife as they will consist of hedgerows.

It is important that the permeability of the Site is maintained, the new fencing should be designed/installed with the following principles in mind: ensuring they are as open as possible, e.g. not having the kick board present at the bottom of close boarded fencing, use hit and miss fencing, incorporating regular gaps approximately 13cm² at the base of the fence, not tying in the fencing at the ends and using gates with gaps underneath. These methods would ensure wildlife can move into and through the Site. Further mitigation recommendations may be required as a result of the recommended Reptile survey.

Due to the permeability of the Site and the records of wildlife being present in the area care should be taken during the construction phase to ensure no animals can become trapped in any holes or excavations overnight. Any excavations should be protected by fencing, covered over at night or have a means of escape in the form of a ramp in case any animals accidentally fall in. Any excavations should be carefully checked at the start of each day in case animals have still managed to become trapped.

6.2. Habitats

6.2.1. Priority or high value habitats

No habitats on site qualify as HPI or BAP priority habitats, although the scrub has high value to nesting birds and possibly reptiles.

6.2.2. Biodiversity loss and gains

The existing habitats to be impacted by the proposal are of medium to low distinctiveness due to the species present, current structure and scarcity of these habitats in the surrounding area. The scrub has high value to nesting birds and possibly common UK reptiles. A summary of the habitat losses and gains is set out below in Table 4.

Table 4. Summary of habitats, their ecological value and area to be lost (if known) along with planned habitat creation and enhancement recommendations.

Habitat distinctiveness	Habitats	Area of loss (hectares, km & % of area)	Potential mitigation and habitat gains
High	None present.		
Medium	Dense scrub.	0.06ha (100% loss).	<p>Approximately 0.05ha of wild planting is proposed to be created on the current plans. The final planting designs should be informed by the results of the reptile survey. This planting should partially consist of a good quality mixed woody scrub to partially mitigate for the loss of the existing scrub. The species should consist of European Gorse, Blackthorn and Hawthorn to mimic existing and surrounding species.</p> <p>A low hedge approximately 40 metres long is proposed along the eastern and southern boundaries linking the existing vegetated stone walls. This should consist of locally prevalent native species to further mitigate for the loss of bird nesting habitat within the site and be allowed to grow to a height of 2m, see Appendix 5.</p> <p>A portion of the wild planting should also aim to mitigate for the loss of Bracken, poor semi-</p>
Low	Continuous Bracken.	0.001ha (100% loss).	
	Tall ruderals.	0.028ha (100% loss).	
	Scattered Tree.	To be lost.	
	Poor semi-improved grassland.	Less than 0.001ha (30% loss).	

			<p>improved grassland and tall ruderals. The southern areas of the site would be suitable for grassland and tall ruderal/wildflower planting.</p> <p>Approximately 0.01ha of private garden is proposed. This should consist of a native species rich seed mix or turf suitable for mowing to maximise the species diversity in the lawn, see Appendix 5.</p>
	Vegetated stone walls.	Retained.	These will be linked together with a low hedge as described above.
Negligible	None present.		

Overall, the habitats within the Site likely to be impacted are of medium to low distinctiveness but they have high value to nesting birds and other wildlife. There is wild planting and hedgerow creation within the current proposal which will help maintain connectivity around the Site and partially mitigate for the loss of the habitats present. The creation of good quality replacement habitats, as stated in Table 4, may mitigate for the reduction in habitat area and could create more valuable habitats upon completion. Providing the proposed areas of landscape planting follow the guidance above and any resulting recommendations from the reptile survey and consists of native species a gain in biodiversity value onsite could be achieved. Considering the location and sensitive habitats in the surrounding landscape no non-native species should be included in the landscaping designs.

6.3. Nightscape and artificial lighting

The proposal will introduce additional artificial light into the Site. It is highly important that artificial light is not encouraged to spread throughout the Site, especially to the north east or south west, to allow nocturnal wildlife to use them as they currently do and to maintain the medium to low light emissions in the area. This could be achieved by carefully designing the locations of windows and the use of sensitive lighting designs.

Any introduced lighting should use sensitive lighting designs to reduce light spill and any internal lighting should be rebated and directed into the rooms away from the windows to minimise any light spill through windows.

Ideally there will be no exterior lighting installed. If exterior lighting is unavoidable, it should only be used where it is absolutely necessary and should involve the use of sensitive lighting and alternatives to high lux artificial light. This should involve warm white coloured bulbs, with light levels lower than 0.5 Lux within five metres of any boundaries, be downward-pointing (below horizontal), installed no higher than first floor level and be triggered on short-timers to help minimise the amount of artificial light added into the site and light spill into the surrounding area.

A low native hedgerow, approximately 1metre high is to be created along the south eastern and part of the south western boundaries; this height should be increased to as high as the surrounding conditions allow to help screen the surrounding habitats from the new dwelling. A new hedgerow

along the fence should also be considered along the northern boundary to further screen the surrounding habitats from the new dwelling.

6.4. Flora and Fauna

6.4.1. Schedule 9 listed INNS

Areas of Montbretia and Three-cornered Garlic will be disturbed by the works. Measures will need to be taken to ensure that all parts of the plants, including seed and underground growth, are managed in accordance with the law and the guidance contained in the UK Government Guidance Treatment and disposal of invasive non-native plants: Regulatory Position Statement 178 Updated 9 April 2019 which can be found at the following web address: <https://www.gov.uk/guidance/prevent-the-spread-of-harmful-invasive-and-non-native-plants> or the document can be found directly via this link <https://www.gov.uk/government/publications/treatment-and-disposal-of-invasive-non-native-plants-rps-178/treatment-and-disposal-of-invasive-non-native-plants-rps-178>.

Elimination options are either spraying plants with chemicals, burying plants, burning plants, or disposing of plants off site. The selected method should either be selected as part of a management plan that is in accordance with the government guidance or, if that is not feasible, in accordance with The Environmental Protection Act 1990 and the amendments in The Waste Enforcement (England and Wales) Regulations 2018.

It will be highly beneficial to the surrounding habitats for these Schedule 9 INNS to be removed as part of the proposal.

6.4.2. Nesting birds

All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence to deliberately, or recklessly kill or injure any wild bird or damage or destroy any active birds' nest or eggs.

Because of the density of vegetation and scarcity of this habitat in the surrounding area the vegetation on site could be used for nesting by birds beyond the widely accepted nesting bird season (March to August inclusive). The vegetation on site must be cleared outside of the widely accepted bird nesting season and even beyond this timeframe the vegetation should be cleared under an ecological watching brief conducted by a suitable qualified ecologist.

The new dwelling should be enhanced for nesting birds in line with Cornwall Councils Planning for Biodiversity guide 2018 in the form of a single bat or bird box. This could be achieved through incorporating a bird nesting box into the external skin or attached to the exterior of the building. This should be between one and five metres above the ground depending on target species and be north facing, see Appendix 6. Overhanging eaves could also be incorporated into the design to provide additional nesting opportunities.

6.4.3. Bats

6.4.3.1. Foraging

The loss of the habitats onsite are unlikely to adversely impact bats that currently forage in the area so no further survey work for the use of the habitats on site by bats is necessary.

Bat roosting behaviour, commuting and foraging activity can additionally be dramatically affected by artificial lighting (BCT, 2018). It is strongly recommended that any proposed exterior lighting is designed and managed appropriately to ensure that the area remains suitable for foraging bats by following the sensitive lighting design recommendations above.

6.4.3.2. Roosting

No potential features that could support roosting bats was found within the site.

The adjacent small building outside of the red line of the application in the south west corner does have some potential to be used for roosting by bats. This building, namely the gable ends and soffit boxing is unlikely to be directly impacted by the proposal. Providing this building does not become lit by any artificial lighting the use of the building by any roosting bats is unlikely to change.

The new building should be enhanced for in accordance with the Cornwall Council Planning for Biodiversity guide 2018 in the form of a single bat or bird box. This could be in the form of a bat roosting box being incorporated into the new building. This enhancement should be incorporated into a south, south west or south east facing external aspect of the building. This should be as high up as possible, but being at least 3m above the ground with no artificial lighting on it, see Appendix 6 for recommended bat boxes.

6.4.4. Badgers

No evidence of Badgers using the Site was found, however the Site could not be thoroughly inspected. As the use of sites by Badger can change rapidly and the Site could not be fully inspected the clearance of the dense vegetation should be conducted under an ecological watching brief to ensure no active Badger setts are present. If any badger setts are found works will need to stop and further survey work conducted to classify the sett and gather evidence for a licence application to Natural England to close the sett.

6.4.5. Reptiles

The likelihood of common UK reptiles being present on site is considered to be high and a young Slow worm was found adjacent to the site boundary.

All UK reptile species are protected under Schedule 5 of the Wildlife & Countryside Act (1981) and are listed as Species of Principal Importance under the NERC Act (2006). It is an offence to intentionally kill or injure individuals of these species (see Appendix 2 for more information).

Further survey work is recommended in order to determine the presence or absence of reptiles onsite and establish potential impacts on these species and any suitable mitigation that may be required. These surveys should be carried out using artificial cover objects, alternatively referred to as refugia

(on or under which reptiles can bask) in the active season which runs from March to October. The optimum survey times are in April, May, and September. Seven visits should be conducted during suitable weather conditions according to guidance published by Froglife (1999).

6.4.6. General Wildlife

There are many opportunities for wildlife to be present, such as hedgehogs and amphibians, within the scrub, tall ruderal vegetation and semi-improved grassland. The clearance of the vegetation on site should be conducted carefully under an ecological watching brief, this will reduce the risk of any harm occurring to any wildlife that is present.

6.5. Potential impacts on protected Flora and Fauna

No direct use of the Site by protected species was found, although a slow worm was found adjacent to the Site and it was not possible to fully inspect all areas. There is good potential for the Site to be used for nesting by birds and for reptiles to be present. Further survey work for reptiles is recommended. Providing the recommendations on lighting are followed and that the avoidance and mitigation measures recommended above, and any resulting from the reptile survey, are followed during the clearance of the Site and the construction and operational phase of the proposal no protected species are likely to be significantly adversely impacted.

7. CONCLUSIONS AND SUMMARY OF RECOMMENDATIONS

The Site does not lie within any statutory or non-statutory designated sites, although there are several in close proximity to the site. There is a low risk of these sites being impacted during the construction phase by construction materials/waste being blown or washed off-site during periods of heavy wind or heavy and prolonged rainfall. It should be possible to reduce the risk of any impacts occurring to the adjacent designated sites to a negligible level through the use of careful working procedures and mitigation measures. Due to the SSSI IRZ the Site is within and the scale of the proposal NE does not need to be consulted by the LPA regarding this application and the site does not lie within the ZoI of any SACs.

The current ecological connectivity around the Site is unlikely to be impacted by the proposal as the scrub habitats to the north east of the survey area are not being impacted by the proposal. A wooden fence is proposed along the northern boundary of the Site, the remaining boundaries appear to be staying as they are or are likely to remain permeable to wildlife. It is important that the permeability of the Site is maintained and any fencing designed to be permeable as described in Section 6.

No habitats on site qualify as HPI or BAP priority habitats.

A summary table of the habitat gains and losses can be found in Section 6 (Table 4). Overall, the habitats within the Site to be impacted are of medium to low distinctiveness but they have high value to nesting birds and other wildlife. There is wild planting and hedgerow creation within the current proposal which will help maintain connectivity around the Site and partially mitigate for the loss of the habitats on site. The creation of good quality replacement habitats, as stated in Table 4, may mitigate for the reduction in habitat area and could create more valuable habitats upon completion. Providing the proposed areas of landscape planting follow the guidance in this report and any resulting recommendations from the reptile survey and consists of native species, a gain in biodiversity value onsite could be achieved. Considering the location and sensitive habitats in the surrounding landscape no non-native species should be included in any landscaping designs.

It is highly important that artificial light is not encouraged to spread throughout the Site, especially to the north east or south west, to allow nocturnal wildlife to use them as they currently do and to maintain the low light emissions in the area. This could be achieved by carefully designing the locations of windows and the use of sensitive lighting designs. The creation of new hedgerows and the fence will help screen the surrounding habitats from the dwelling.

No direct use of the Site by protected species was found, although a slow worm was found adjacent to the Site and it was not possible to fully inspect all areas. There is good potential for the Site to be used for nesting by birds and for reptiles to be present. Further survey work for reptiles is recommended. Providing the recommendations on lighting are followed and that the avoidance and mitigation measures summarised below, and any resulting from the reptile survey, are followed during the clearance of the Site and the construction and operational phase of the proposal no protected species are likely to be significantly adversely impacted.

7.1. Summary of additional or further survey work

Reptiles A reptile refugia survey of the Site is recommended in order to determine the presence or absence of reptiles onsite and establish potential impacts on these species and any suitable mitigation that may be required.

7.2. Summary of avoidance measures

Nesting Birds The clearance of suitable bird nesting habitat must be carried out outside of the accepted bird nesting season (March to August inclusive). This is because birds, chicks, eggs, and their nests are protected by law whilst nesting.

7.3. Summary of mitigation

7.3.1. Construction phase

Construction waste and materials Construction materials should be appropriately stored to prevent them being blown off site, i.e., being weighed down, stored under cover or stored off site

Use shuttering around locations where concrete will be poured.

Use solid board fencing or lined Heras fencing along the boundaries of the work area.

Carefully time the works to avoid periods of high winds and heavy rain to prevent materials or waste being blown or washed off site.

Schedule 9 INNS Measures will need to be taken to ensure that all parts of the Montbretia and Three-cornered Garlic, including seed and underground growth, are managed in accordance with the law and the guidance contained in the UK Government Guidance Treatment and disposal of invasive non-native plants.

Reptiles The necessary mitigation for reptiles will be detailed in the reptile survey report.

Birds, Badgers, and general wildlife The habitats on site should be cleared outside of the widely accepted bird nesting season (March to August inclusive) and must then be cleared under an ecological watching brief conducted by a suitable qualified ecologist due to the density of the vegetation and likelihood of wildlife being present.

General wildlife Any holes or excavations during the work should be protected by fencing, covered over at night, or have a means of escape in the form of a ramp in case any animals accidentally fall into the excavation. Excavations should be checked at the start of each day in case animals have still managed to become trapped.

7.3.2. Operational phase

Lighting Any introduced lighting should use sensitive lighting designs to reduce light spill; internal lighting should be rebated and directed downwards and into rooms away from the windows to minimise any light spill through windows.

If exterior lighting is unavoidable, it should only be used where it is necessary and avoiding the north eastern and south wester aspects, and should involve the use of sensitive lighting and alternatives to high lux artificial light. This should involve warm white coloured bulbs, with light levels lower than 0.5 Lux within five metres of the boundaries, be downward-pointing (below horizontal), installed no higher than first floor level and be triggered on short-timers to help minimise the amount of artificial light added into the Site.

7.4. Recommendations for maintaining and enhancing the biodiversity value of the Site

There are areas of planting within the proposed layout which provide opportunities to mitigate for the habitat loss and to create better quality habitats onsite that could achieve a gain in the biodiversity value of the Site:

Create native species rich hedgerows as proposed along the eastern and southern boundaries, with an additional hedgerow along the northern boundary, ideally being allowed to grow as high as the surrounding conditions allow, see Appendix 5,

Create a good quality mixed woody scrub within the area of proposed wild planting, See appendix 5,

Create areas of unmanaged grassland and tall ruderals with locally prevalent species or grassland types such as a maritime grassland, to mitigate for the loss of existing habitats in the southern part of the wild planting, see Appendix 5,

Create the new lawn with a species rich seed mix or turf suitable for mowing, see Appendix 5,

Additional habitat creation or guidance will be provided in the reptile survey report,

Maintain the permeability of the Site by ensuring the new fencing is as open as possible, e.g. not having the kick board present at the bottom of close boarded fencing, incorporating regular gaps approximately 13cm² at the base of any fences/walls, not tying in fencing at the ends and using gates with gaps underneath, see Appendix 6,

The new dwelling should be enhanced for protected species in line with Cornwall Council's planning for Biodiversity guide 2018 which required a bat or bird box being incorporated into the design:

- A bird nesting box could be incorporated into the external skin or installed onto the exterior of the new dwelling, these should be between one and five metres above the ground depending on target species and be north facing, see Appendix 6,
- A bat roosting box could be incorporated into the external skin of the new dwelling, this should be as high up as possible, be roughly south facing and at least three metres above ground with no lighting on or near it, see Appendix 6.

References

- BCT (2018) Bats and artificial lighting in the UK. Bats and the Built Environment series, Guidance Note 8 Bat Conservation Trust (BCT).
- BirdLife International (2023) Important Bird Area factsheet: West Penwith Coast and Moors. Downloaded from <http://datazone.birdlife.org/site/factsheet/west-penwith-coast-and-moors-iba-united-kingdom> on 03/08/2023
- CIEEM Advice note 'ON THE LIFESPAN OF ECOLOGICAL REPORTS & SURVEYS' April 2019. CIEEM 43 Southgate Street, Winchester, Hampshire SO23 9EH
- CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester
- CIEEM (2018), Guidelines for ecological impact assessment in the UK and Ireland. September 2019 Update 1.1.
- Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn.). The Bat Conservation Trust, London.
- Cornwall Biodiversity Initiative. 2011. Cornwall's Biodiversity Action Plan. Volume 4: Priority Projects. Cornwall Wildlife Trust. Truro.
- Cornwall Council European Sites Mitigation plan, 2021.
<https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/European-sites-mitigation-spd/>
- Cornwall Planning for Biodiversity Guide. 2018. Cornwall Council.
<https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/cornwall-planning-for-biodiversity-guide/>
- Edgar, P., Foster, J. and Baker, J. (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.
- Edwards J, Knight M, Taylor S & Crosher I. E (May 2020) 'Habitat Networks Maps, User Guidance v.2', Natural England.
- Ferguson, Joanna & Fox, Harry & Smith, Nick. (2018). Bats and artificial lighting in the UK. Institution of Lighting Professionals Regent House Regent Place Rugby Warwickshire CV21 2PN. Copyright © 2018 ILP.
- Froglife (1999) Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.
- Hedgehog street, City of Wildlife – 10 tips for encouraging hedgehogs in your neighbourhood-
<https://www.britishhedgehogs.org.uk/leaflets/Hedgehog-Street-top-tips.pdf>
- Jeremy, A.C, Simpson, D.A, Foley, M.J.Y & Porter, M.S. (2007). Sedges of the British Isles Edition 3. Revised and reprinted 2010. Botanical Society of the British Isles c/o The Natural History Museum, Cromwell Road, London, SW7 5BD.
- JNCC, 2003. Handbook for Phase 1 habitat survey – a technique for environmental audit. Revised reprint 2003. Nature Conservancy Council, Peterborough.
- Lagas, Nature Capital Information & Management hub, 2023, University of Exeter in partnership with the Cornwall Wildlife Trust, Cornwall Council and the Cornwall Development Company, Available at <https://lagas.co.uk/>.

Natural England, 27 April 2021. Natural England's Impact Risk Zones for Sites of Special Scientific Interest, for use by Local Planning Authorities to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites and determine when to consult Natural England.

Rose, F., 2007. The Wild Flower Key. Penguin Books Ltd, 80 Strand, London.

UK BAP, 2007. UK Biodiversity Action Plan: Species and Habitat Review, 2007 List of Priority Species and Habitats www.ukbap.org.uk

8. APPENDICES

APPENDIX 1

Vascular plants recorded at land adj. to Botallack Veian, Botallack, St Just, Cornwall June 2023

A = Abundant C = Common F = Frequent O = Occasional R = Rare (L*) = Indicates Local Abundance

Poor semi-improved grassland	Scientific name	Common Name	Abundance
	<i>Pteridium aquilinum</i>	Bracken	C
	<i>Allium triquetrum</i>	Three-cornered Garlic	R
	<i>Dactylis glomerata</i>	Cock's-foot	C
	<i>Cirsium vulgare</i>	Spear Thistle	R
	<i>Olearia traversiorum</i>	Yarrow	O
	<i>Silene dioica</i>	Red Campion	O
	<i>Holcus lunatus</i>	Yorkshire-fog	O
	<i>Urtica dioica</i>	Common Nettle	O
	<i>Rubus fruticosus</i> agg.	Bramble	C
	<i>Heracleum sphondylium</i>	Hogweed	R
	<i>Rumex crispus</i>	Curled Dock	R
	<i>Ranunculus acris</i>	Meadow Buttercup	R
	<i>Festuca rubra</i>	Red Fescue	O
	<i>Plantago lanceolata</i>	Ribwort Plantain	R
	<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	R
	<i>Vicia sativa</i>	Common Vetch	R
	<i>Anthriscus sylvestris</i>	Cow Parsley	R
	<i>Brassica nigra</i>	Black Mustard	R
	<i>Sonchus oleraceus</i>	Smooth Sow-thistle	O
Vegetated stone wall	Scientific name	Common Name	Abundance
	<i>Hedera helix</i>	Common Ivy	A
	<i>Brassica nigra</i>	Black Mustard	C
	<i>Allium triquetrum</i>	Three-cornered Garlic	R
	<i>Galium aparine</i>	Cleavers	O
	<i>Geranium robertianum</i>	Herb-robert	R
	<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	R
Tall ruderals	Scientific name	Common Name	Abundance
	<i>Pteridium aquilinum</i>	Bracken	A
	<i>Urtica dioica</i>	Common Nettle	C
	<i>Hyacinthoides non-scripta</i>	Bluebell	O
	<i>Geranium robertianum</i>	Herb-robert	R
	<i>Phyllitis scolopendrium</i>	Hart's-tongue fern	O
	<i>Hedera helix</i>	Common Ivy	F
	<i>Rubus fruticosus</i> agg.	Bramble	O

Scrub	<i>Brassica nigra</i>	Black Mustard	R	
	<i>Silene dioica</i>	Red Campion	O	
	<i>Petasites fragrans</i>	Winter Heliotrope	O	
	<i>Hydrangea macrophylla</i>	Hydrangea sp.	R	
	<i>Juncus inflexus</i>	Hard Shield Fern	O	
	<i>Symphytum officinale</i>	Comfrey	O	
		Scientific name	Common Name	Abundance
		<i>Pteridium aquilinum</i>	Bracken	LA
		<i>Hedera helix</i>	Common Ivy	C
		<i>Ulex gallii</i>	Western Gorse	C
Bracken	<i>Heracleum sphondylium</i>	Hogweed	R	
	<i>Silene dioica</i>	Red Campion	R	
	<i>Sambucus nigra</i>	Elder	LA	
	<i>Crataegus monogyna</i>	Hawthorn	R	
	<i>Hyacinthoides non-scripta</i>	Bluebell	O	
	<i>Rubus fruticosus agg.</i>	Bramble	F	
	<i>Urtica dioica</i>	Common Nettle	O	
		Scientific name	Common Name	Abundance
		<i>Pteridium aquilinum</i>	Bracken	LA
		<i>Hedera helix</i>	Common Ivy	O
	<i>Rubus fruticosus agg.</i>	Bramble	O	
	<i>Urtica dioica</i>	Common Nettle	O	
	<i>Sambucus nigra</i>	Elder	R	

APPENDIX 2

Summary of legal protection covering general and specific animal groups

Species	Protection status
Plants	Many plants are fully protected as a European Protected Species (EPS) These are listed in Annexes II and IV of the European Habitats Directive. In the UK protected plants are listed under Schedule 8 Section 13. Section 13 protects plants from picking and sale of plants or parts of plants.
Bats	The Wildlife and Countryside Act 1981 protects bats and their roosts in England, Scotland and Wales. Some parts have been amended by the Countryside and Rights of Way Act 2000 (CRoW) which applies only in England and Wales. The Conservation of Habitats and Species Regulations 2010 implements the Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora. All bats are listed as European protected species of animals. It is illegal to intentionally kill, injure or capture bats or to deliberately disturb them. It is also illegal to damage, destroy, or obstruct access to bat roosts.
Common/Hazel Dormouse	The Common Dormouse is protected from intentional or reckless killing, injury or capture, deliberate disturbance (whether in a nest or not) and damage or destruction of a breeding site or resting place used by a Dormouse under the Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended). The Dormouse is also a species of Principal Importance and a Priority Biodiversity Action Plan Species (UK BAP, 2007) so the presence of this species on site would be a material consideration for planning purposes.
Nesting Birds	<p>Schedule 1 Part 1 of the Wildlife and Countryside Act 1981 (as amended) prohibits the intentional killing, injuring or taking of any wild bird and the taking, damaging or destroying of the nest (whilst being built or in use) or eggs. Nests may be lawfully destroyed when not in use, i.e., outside the nesting season (September to February). Schedule 1 part 2 of the Wildlife and Countryside Act 1981 (as amended) adds special protection to birds listed during the close season which is 1 February to 31 August (21 February to 31 August below highwater mark) but these species may be killed or taken outside this period.</p> <p>The Countryside and Rights of Way Act 2000 (The CRoW Act) Schedule 12 adds the words “or recklessly” after the word “intentional” for a range of wildlife species including nesting birds listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), thus providing fuller protection than previously granted.</p>
Badger	<p>Badgers are protected and so are the setts they live in, under the Protection of Badgers Act 1992, in England and Wales it is an offence to:</p> <ul style="list-style-type: none"> Wilfully kill, injure or take a badger (or attempt to do so). Cruelly ill-treat a badger. Dig for a badger. Intentionally or recklessly damage or destroy a badger sett or obstruct access to it. Cause a dog to enter a badger sett. Disturb a badger when it is occupying a sett.

<p>Otter</p>	<p>The Eurasian Otter is fully protected as a European Protected Species (EPS) and is also protected under sections 9 and 11 of the Wildlife and Countryside Act 1981.</p> <p>It is illegal to:</p> <ul style="list-style-type: none"> Capture, kill, disturb or injure otters (on purpose or by not taking enough care) Damage or destroy a breeding or resting place (deliberately or by not taking enough care) Obstruct access to their resting or sheltering places (deliberately or by not taking enough care) Possess, sell, control or transport live or dead Otters, or parts of Otters
<p>Reptiles</p>	<p>In the UK all six native species of reptile receive legal protection. The four widespread species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect of Section 9(5) and part of Section 9 (1). Under this Act individual animals are protected from intentional killing or injury and also from sale or attempted sale. All native reptiles are species of Principal Importance and Priority Biodiversity Action Plan Species (UK BAP, 2007) so the presence of this species on site would be a material consideration for planning purposes.</p>
<p>Amphibians</p>	<p>Amphibians Are protected via part of Section 9(5) of the Wildlife & Countryside Act 1981 (as amended) against:</p> <ul style="list-style-type: none"> selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or intending to buy or sell, any of those things. <p>This legislation relates only to ‘wild animals’, but in any proceedings the animal in question shall be presumed to have been a wild animal unless the contrary is shown. This protection is solely through the Wildlife & Countryside Act 1981 as amended, and defences and licensing provisions are provided within that Act.</p>

APPENDIX 3

Sources for criteria for assessment of nature conservation importance

Habitats and species located during the field and desk surveys have been assessed for their significance according to the following sources:

International

European Habitats and Species Directive (CEC, 1992)
European Red Data lists (IUCN, 2000)
European Birds Directive (CEC, 1979)
Water Framework Directive (2000/60/EC)

National

Conservation of Habitats and Species Regulations (2010) and amendment (2012)
Wildlife and Countryside Act 1981 and amendments
Countryside and Rights of Way Act 2000
Natural Environment and Rural Communities Act 2006
Protection of Badgers Act 1992
The Hedgerow Regulations 1997
UK Biodiversity Steering Group reports (UKBSG, 1995 and updates)
UK Biodiversity Action Plan: Species and Habitat Review, 2007
British Red Data Books and Lists (various authorities)
Birds of Conservation Concern 4; the population status of birds in the United Kingdom, Channel Islands and Isle of Man (fourth, 2009, review) (Eaton et al, 2015)
Guidelines for Selection of Biological SSSIs (NCC, 1989 and updates)
Water Framework (Water Framework Directive) (England and Wales) Regulations 2003 (the Water Framework Regulations)

County and local significance

Cornwall Biodiversity Initiative Reports 1 - 4 (CBI, 2009, 2011)
Red Data Book for Cornwall and the Isles of Scilly (CISBFR, 2009)
Flora of Cornwall (French, Murphy and Atkinson, 1999)

References and bibliography for criteria

Eaton M.A., Brown, A.F., Noble, D.G., Musgrove, A.J., Hearn, R.D., Aebisher, N.J., Gibbons, D.W., Evans, A. and Gregory, R.D., 2009. Birds of Conservation Concern 3; the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds*, 102 June 2009.

CEC (Council of the European Communities) 1992. Council Directive 79/409/EEC 92/43/EEC on the conservation of wild birds Annex I. *Official Journal of the European Communities*: L103

CEC (Council of the European Communities) 1992. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. *Official Journal of the European Communities*: L206

Cheffings, C.M., and Farrell, L., (eds) Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I., 2005. *The Vascular Plant Red Data List for Great Britain. Species Status 7*. Joint Nature Conservation Committee, Peterborough.

CISBFR, 2009. *Red Data Book for Cornwall and the Isles of Scilly*. 2nd Edition. Croceago Press. Praze-an-Beeble.

Cornwall Biodiversity Initiative, 2009. Cornwall Biodiversity Action Plan Volume 3: 2009

Cornwall Biodiversity Initiative (CBI) (2011) Cornwall Biodiversity Action Plan Volume 4: Priority Projects. Cornwall Biodiversity Initiative, Cornwall Wildlife Trust, Truro.

Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C. & Vincent, M., (2001), Marine Monitoring Handbook, JNCC

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708–746. [Online: britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf]

French, C.N., Murphy, R.J. and Atkinson, M.G.C., 1999. Flora of Cornwall. Wheal Seton Press, Camborne.

JNCC [Joint Nature Conservation Committee] (2007) UK List of Priority Habitats and Species.

Lawton, J.H., Brotherton, P.N.M., Brown, V.K., Elphick, C., Fitter, A.H., Forshaw, J., Haddow, R.W., Hilborne, S., Leafe, R.N., Mace, G.M., Southgate, M.P., Sutherland, W.J., Tew, T.E., Varley, J., & Wynne, G.R. (2010) Making Space for Nature: a review of England's wildlife sites and ecological network. Report to Defra.

NCC (Nature Conservancy Council), 1989. Guidelines for selection of Biological SSSIs (including revisions and additions of 1992, 1995, 1996, 1997, 1998). NCC, Peterborough.

Rodwell, J.S. (ed.) 2000. British plant communities. Volume 5. Maritime communities and vegetation of open habitats. Cambridge University Press.

UKBSG (UK Biodiversity Steering Group), 1995. Biodiversity: The UK Steering Group Report, 1995. Volume 2: Action Plans. HMSO.

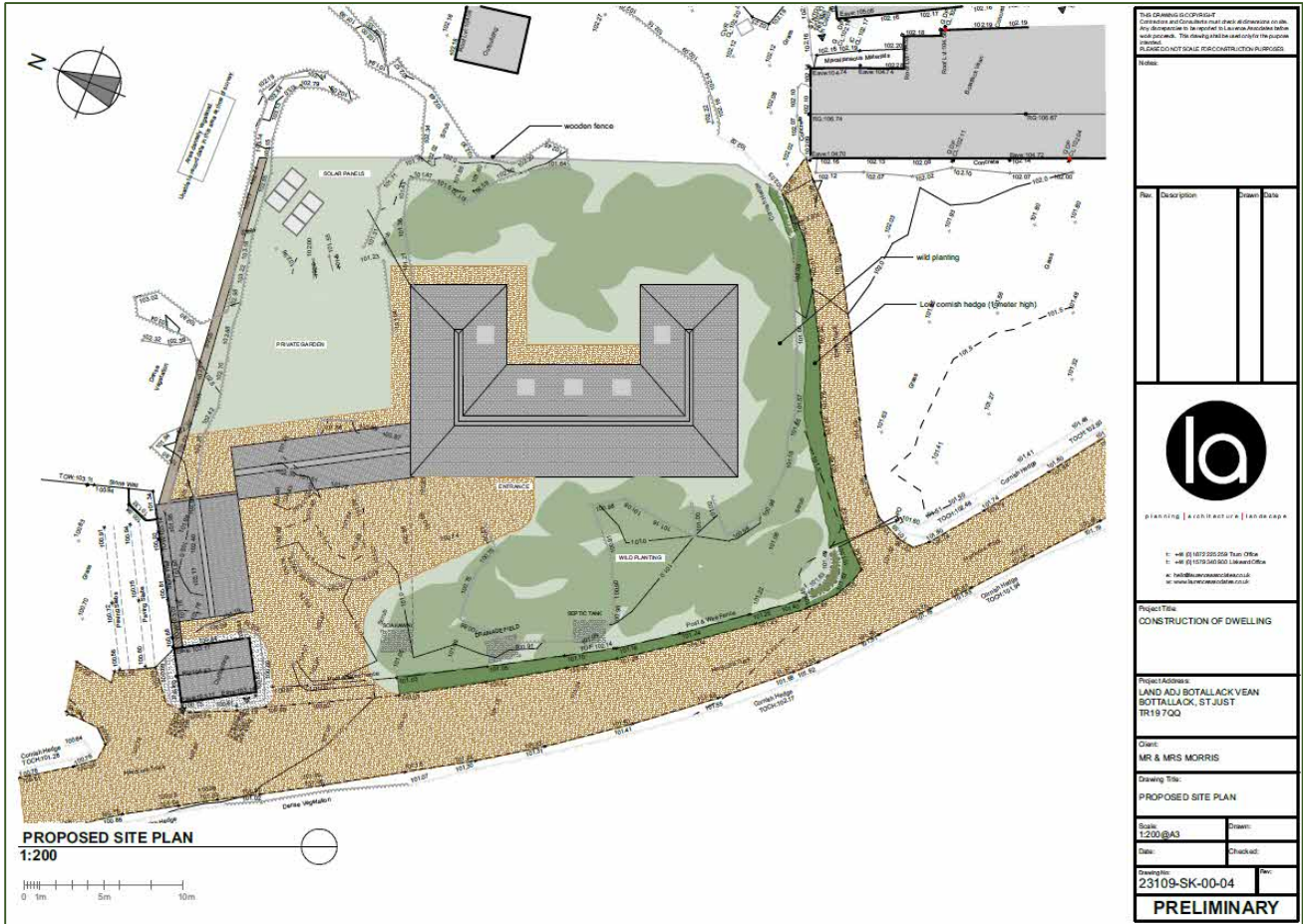
UKBG (UK Biodiversity Steering Group) 1995. Biodiversity: The UK Group Tranche 2 Action Plans, volumes 1 – 6. English Nature, Peterborough.

UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008. (Updated Dec. 2011)

UK Biodiversity Action Plan (UK BAP) <http://www.jncc.gov.uk/page-5155>

APPENDIX 4

Proposed site layout as provided by Ms Chloe Pitt on behalf of the client.



APPENDIX 5
Recommended planting schemes

Native woody species

Locally characteristic woody native species for enhancing or creation of new native species rich hedges and understorey enhancement, follow the below links for Cornwall Council related documents for the forest for Cornwall initiative or see below for brief list of Cornwall woody species:

Main website link:

<https://www.cornwall.gov.uk/environment/countryside/forest-for-cornwall-programme/>

Forest for Cornwall document:

<https://www.cornwall.gov.uk/media/dwgorwlg/tree-planting-guidance-v9-final-for-publication.pdf>

Woodland trust planting guide:

<https://www.woodlandtrust.org.uk/media/1168/twigged.pdf>

RGS native shrub hedging recommendations:

<https://www.rhs.org.uk/plants/articles/misc/best-native-shrubs-for-hedging>

Archived list of native woody shrubs listed by Cornwall Council available via Tywardreath and Par Parish Council:

https://www.tywardreathandparparishcouncil.gov.uk/data/uploads/1125_2015681183.pdf

Document outtake:

Scientific Name	Common Name
<i>Coryllus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Ilex aquifolium</i>	Holly
<i>Lonicera periclymenum</i>	Honeysuckle
<i>Prunus spinosa</i>	Blackthorn
<i>Rosa canina</i> agg.	Dog Rose
<i>Sambucus nigra</i>	Elder
<i>Ulex europaeus</i>	European Gorse

For the use in gardens it would be recommended that a species-rich turf suited to regular mowing is used, a possible source is from Wildflower Turf:

<https://www.wildflowerturf.co.uk/products/wildflower-turf/species-rich/>. Alternatively, a seed mix tolerant to regular mowing could be used, however this would take more time to establish and would require more management, examples listed below:

Planting area	Seed mix and brand
Shady areas of grass adjacent to trees and good for underplanting hedgebanks	Emorsgate EH1 Boston Seeds BS7M: Hedgerow and Light Shade 80/20
Pure wildflower mixes for shady areas	Emorsgate EH1F – Wild Flowers for Hedgerows Boston Seeds BS7P Hedgerow and Light shade 100% Wildflower Seed Mix
Wildflower Meadow/grassland	Emorsgate EM3 – Special General Purpose Meadow Mixture

	Boston seeds BSXM: Dual Purpose Wildflower Meadow Seeds
Mixed for sunny areas and containing 100% flowers which are good for pollinators	Emorsgate EN1F – Special Pollen & Nectar Wild Flowers https://wildseed.co.uk/mixtures/view/62 Boston seeds BSBP 100%: Bees and Butterfly Wildflower Seeds
Grass on matting, good for stablishing growth on slopes and better for retaining seeds against birds	Emorsgate Seeds EG22 – Strong Lawn Grass Mixture

All the sowing and aftercare is detailed on the company websites under the seed mix detail.

APPENDIX 6

Optional mitigation and enhancement opportunities for new structures

This appendix is intended for use only by clients of Wheal Grey Ecology to support them in implementing biodiversity enhancements or mitigation recommended during reports provided by Wheal Grey Ecology. Products listed in this document are by recommendation only and use of any chosen product is at the client’s discretion and the product should be used as described in its description and within its warranty. Wheal Grey Ecology to do not take any responsibility for the performance or warranty of any products purchased as a result of this document.

RECOMMENDED EXAMPLES OF DURABLE ROOST BOXES FOR BATS

Bat boxes should be installed with the following guidance:

- Where bats are known or likely to feed and navigate (close to hedges and tree lines),
- Ideally at least 3 to 4m above the ground (where safe installation is possible),
- Away from artificial light sources and windows (to protect them from predation), and
- Sheltered from strong winds and exposed to the sun for part of the day (usually south, south-east or south-west).

We usually recommend Schwegler, if available, as these are the most durable; however, sometimes the lead time can be long. There are other durable products on the market but if alternatives are to be used then these should be appraised by a suitably qualified ecologist to ensure their suitability. Please note that durable bat boxes are heavy and will need secure fixings.

Tree mounted bat boxes

External wall mounted bat boxes



Eco Kent Bat Box



Eco Kent Bat Box



Schwegler 1WQ (Summer and Winter Bat Roost)



Schwegler 1WQ (Summer and Winter Bat Roost)



Large Multi Chamber Woodstone bat box



Improved Crevice Bat Box, Triple

Built-in bat tubes



2 FR Schweglar
Bat Tube



Bat Block

RECOMMENDED EXAMPLES OF DURABLE NEST BOXES FOR BIRDS

Nest boxes should be installed with the following guidance:

Make sure that the birds have a clear flight path to the nest without any clutter directly in front of the entrance.

External boxes should be tilted forward slightly so that any driving rain will hit the roof and bounce clear (only relevant to externally mounted boxes).

Most birds like their nest to be hidden in a quiet spot among trees, bushes, and other planting. It can be slightly less covered for the sparrows, starlings and tits. Woodpeckers, kestrels, and owls on the other hand are a good bit bolder and actually prefer a nice open space.

Do not install or hang bird boxes in line with windows and/or entrances

To ensure late-breeding birds are not disturbed, leave any cleaning until October or afterwards and before the end of February. This should involve completely removing any nest material from the box. If further cleaning is required, it is ideal to use hot water and not any pesticides. The use of gloves is recommended, and you should wash your hands afterwards.

Robins, Wrens, Blackbirds and Song Thrush

These boxes should be in a sheltered spot out of direct sunlight 1-2m off the ground. These can be attached to a wall, fence or tree but there must have sufficient vegetation cover around the box such as shrubs and creepers to provide cover for visiting birds.



2H
Schweglar
Robin box



Vivara
Woodstone
Barcelona
Open Nest



WoodStone
Build-in
Open Nest
Box

Swallows, House Martins, Swifts and House Sparrows

Boxes should be installed below overhanging eaves or at the ridge of gable ends to provide nesting opportunities for Swallows, House Martins and House Sparrows. These should be at least 2 metres away from any windows.

Vivara Pro Woodstone House Sparrow Nest Box



Schweglar Lightweight Swift Box Type 1A

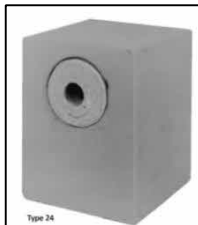


Vivara Pro WoodStone House Martin Nest



Passerines (Blue Tits, Great Tits etc)

Install boxes onto larger tree trunks or integrate these boxes, at a height of at least 2 to 3 m above ground.



Schweglar Brick Nest Box



1B Schweglar Nest Box

BUILT IN BEE BRICKS AND STAND-ALONE BEE AND INSECT ‘HOTELS’

Bee bricks and planters can be built into the walls of new dwellings or boundaries or used within herbaceous planting areas (planters) to provide a safe nesting place for non-swarming solitary bees like Red Mason *Osmia bicornis* and Leafcutters *Megachile sp.*, these must be south-facing. A Selection are available from www.greenandblue.co.uk

“bees block”



“bee pot concrete planter”



“bee brick”



EXAMPLES OF PRE-BUILT AND SELF-BUILD “INSECT HOTELS”:

Insect hotels could be created and can be raised off the ground and affixed to trunks of larger trees and shrubs. Pre-constructed bug houses can also be purchased.



Westwood's Insect/Shelter Box



RSPB Insect sculpture hotel



Schwegler Reed Insect
Box



The Worm that
Turned
9 Room Insect
Hotel

LOG PILES

Example of upright log piles with a variety of log widths



Example of horizontal log pile design as an ecological enhancement feature



EXAMPLES OF SECURE BUT PERMEABLE FENCING FOR PLOT BOUNDARIES



APPENDIX 7

A data search from the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS) extending 1km in all direction for all species was purchased.

ERCCIS Data Search SUMMARY REPORT



Report on data hosted at ERCCIS on species ,
habitats , statutory and non-statutory designations

Reference: Land adjacent to Bottallack Vean PEA records

Location: 50.13972 / -5.688373

Buffer: 1 KILOMETRES

Date of Publication: 26/05/2023

Expires: 26/05/2024

Organisation: Wheal Grey Ecology Ltd

ERCCIS Data Search Disclaimer:

Please note that Biological Records within this report have been provided by third parties including other users of the ERCCIS site and whilst ERCCIS aims to verify these Biological Records where possible, certain information and materials will not have been verified or approved by ERCCIS and should therefore not be relied on. ERCCIS cannot guarantee that the Biological Records are complete and/or accurate, that the species detailed in the Biological Records continue to be present in the area recorded or that the lack of a species being present in a Biological Record correlates with there being a low biodiversity value or absence of the species in the EDS geographical area. For further details please see our Terms of Use and Order Terms which apply to the provision of this information.

ERCCIS Data Search Terms and Conditions:

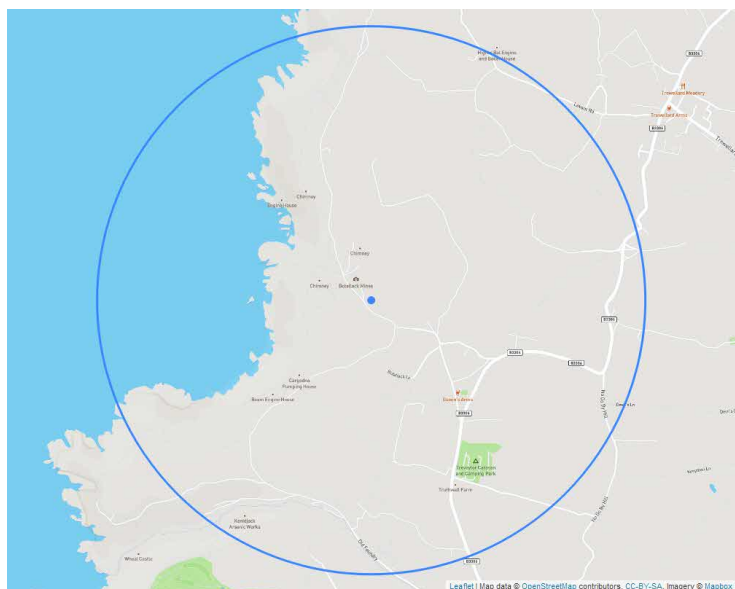
To receive your EDS search you have already agreed to ERCCIS's terms and conditions, but please remember;

1. The following report and associated data provided by ERCCIS are only to be used for the specific purpose agreed between parties.
2. The data and any copyright remains the property of ERCCIS, its licensors and/or the data providers (as applicable), and the data products and services remain the copyright of ERCCIS.
3. Permission to use the data and reports provided by ERCCIS expires 1 (one) year following supply.

For ERCCIS's full terms and conditions please see [https:// datasearch.erccis.org.uk/terms-and-conditions](https://datasearch.erccis.org.uk/terms-and-conditions).



Report Details



Report for: Matthew Thurlow

Organisation: Wheal Grey Ecology Ltd

Date: 26/05/2023

The following report summarises data currently held at the Environmental Record Centre for Cornwall and the Isles of Scilly (ERCCIS) and found within the search radius. This report summarises a search of statutory sites, non-statutory sites, other sites, habitats and species within the specified area of study.

The species data held by ERCCIS are collated from the biological recording community in Cornwall and Scilly, from statutory bodies, non-government organisations and local groups, ecological consultant report outputs as well as ad hoc records from a wider audience. However, there are areas of Cornwall where the records held are limited: either spatially, temporally, or taxonomically. It must be assumed that this report contains the definitive species and habitat information for the site concerned. ERCCIS continually strives to further improve and update all data wherever possible. However, this report should be treated as indicative of the best available data, rather than definitive.

The report is for the client's use to inform understanding of the site of interest. This report must not be distributed or published for an external or public audience, with the only exception being part of wider reports for the Cornwall Council on-line planning system. Data from within this report may be referenced as long as the Environmental Records for Cornwall and the Isles of Scilly is acknowledged.

A data search from ERCCIS will give the user a clear indication of what biological recording has taken place. The information provided with decision making of future management or purposing of the site, but should be used in conjunction with site visits and appropriate surveys before further judgements on the presence or absence of key species or habitats can be made.

The Environmental Records Centre for Cornwall and the Isles of Scilly must be acknowledged whenever data is cited from this report.



Statutory Sites within the search area

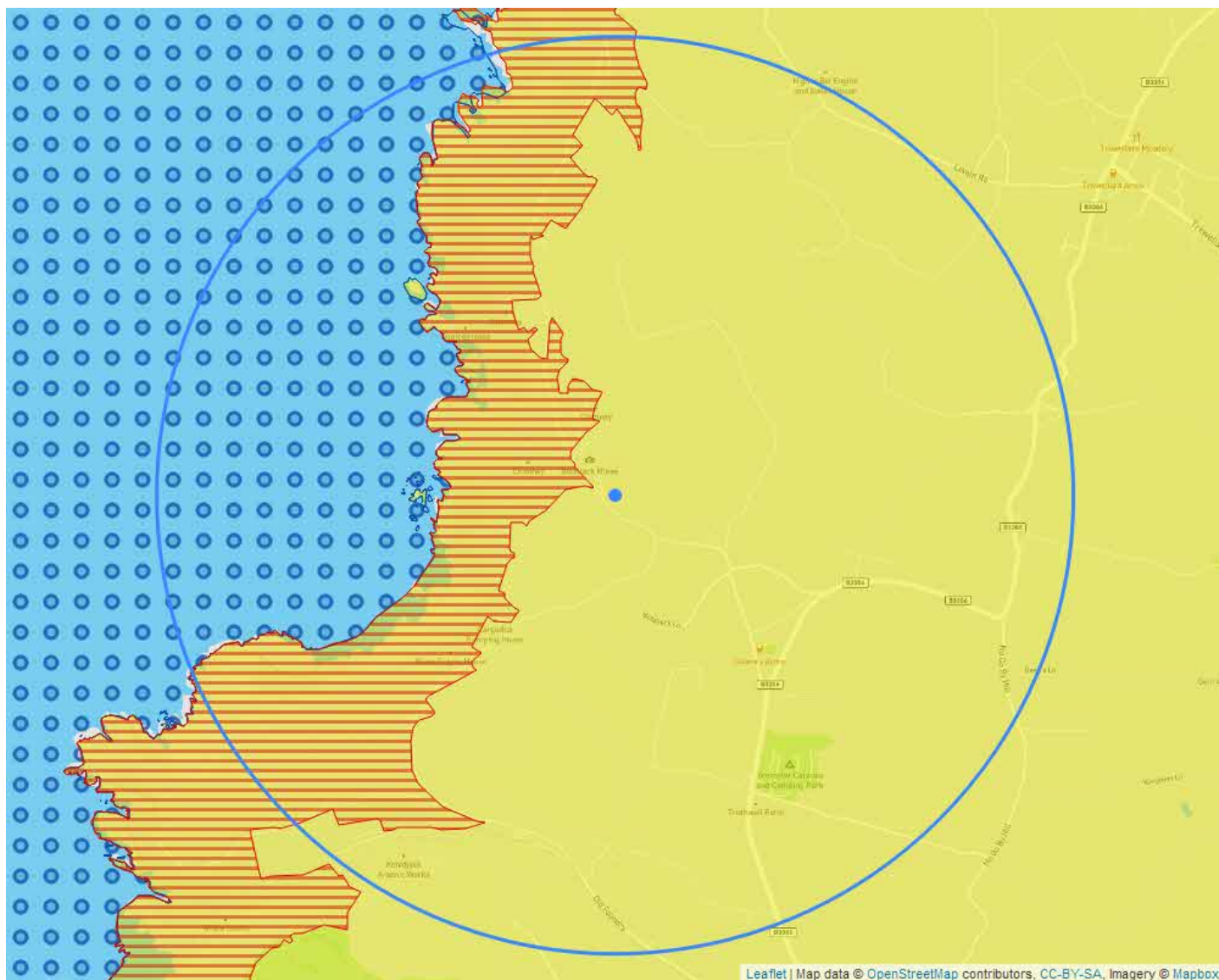
Statutory sites are those given level protection aimed at preventing activities that may damage features of interest. Further details can be found in the ERCCIS report summary .pdf or from Natural England and The National Association for Areas of Outstanding Natural Beauty.

Contains public sector information licensed under the Open Government License v3.0. & contains OS data Crown copyright and database rights 2023.





Site Type	Site Code	Site Name	More Information
AONB	6	Cornwall	http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/aonb/cornwall.aspx
SAC	UK0030375	Lands End and Cape Bank	https://www.orks.org.uk/sites/default/files/EDS_Links/SACs/Lands%20End%20and%20Cape%20Bank%20SAC.pdf
SAC (Marine)	UK0030375	Lands End and Cape Bank	https://www.orks.org.uk/sites/default/files/EDS_Links/SACs/Lands%20End%20and%20Cape%20Bank%20SAC.pdf
SSSI	1001255	Aire Point to Carrick Du	https://www.orks.org.uk/sites/default/files/EDS_Links/SSSIs/Aire%20Point%20to%20Carrick%20Du%20SSSI.pdf



Statutory Sites Map



© Crown copyright and database rights 2023 OS 100049047.

Location	Site Code	Site Type	Site Name	Colour
1	6	AONB	Cornwall	
2	UK0030375	SAC	Lands End and Cape Bank	
3	UK0030375	SAC (Marine)	Lands End and Cape Bank	
4	1001255	SSSI	Aire Point to Carrick Du	





Non-Statutory Sites & Reserves

Non-statutory sites are sites that have wildlife or habitat interest, but lack a legal protection. These sites form part of the natural environments wider ecological network

The report summarises all County Wildlife & Geology Sites which are sites recognised for wildlife or geological value and the Local Sites partnership in Cornwall is coordinated by Cornwall Wildlife Trust. It also includes summaries of the Road Side Verge Inventory; Voluntary Marine Conservation Area; Ancient Woodland; The Reserves of Cornwall Wildlife Trust; National Trust; Woodland Trust and the Royal Society for the Protection of Birds (RSPB).

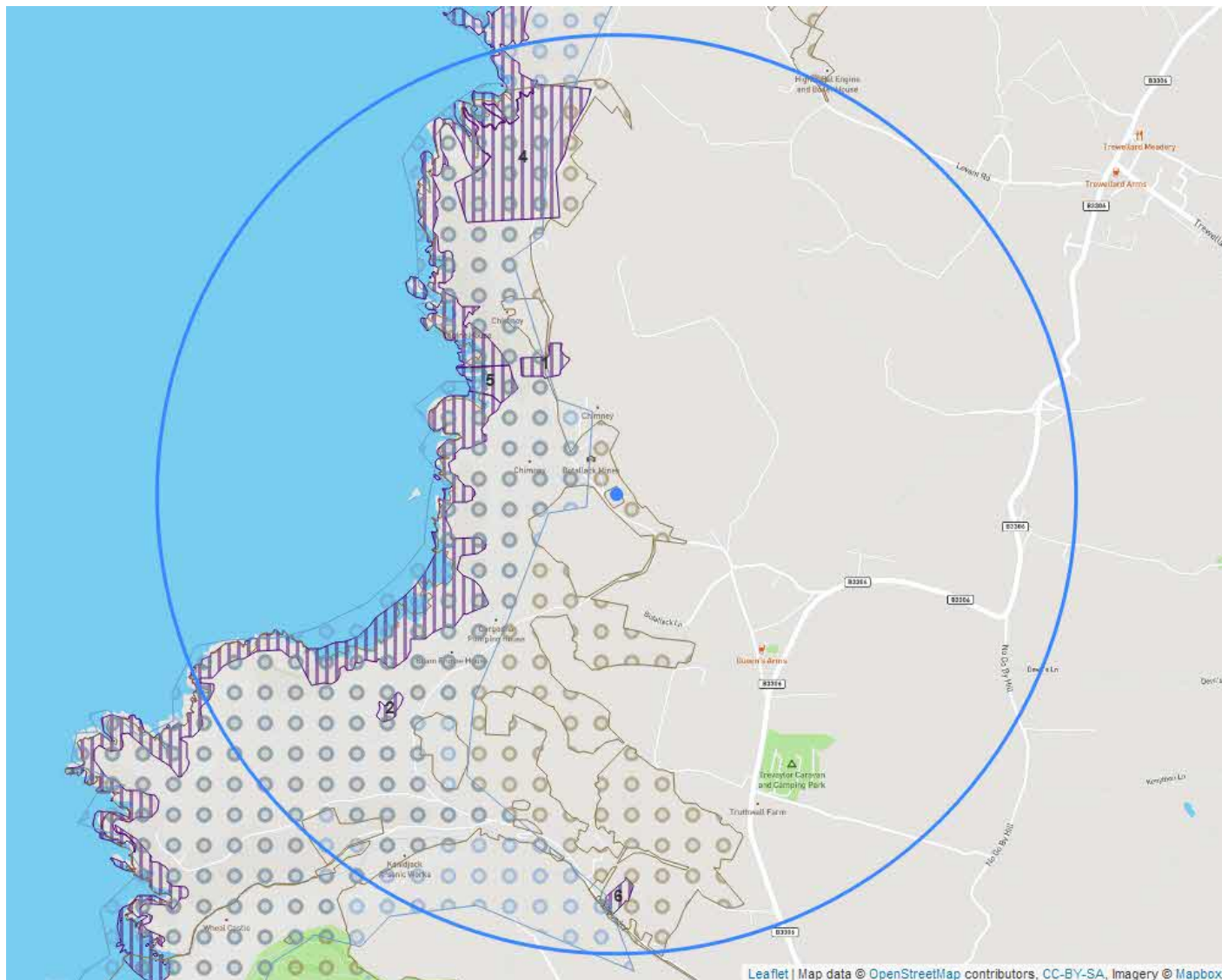
Further details can be found in the ERCCIS report summary .pdf, but for specific information on a site listed below you might need to contact the relevant organisation.

Site Type	Site Code	Site Name	More Information
CGS	P/1	Grylls Bunny	n/a
CGS	P/13	Wheal Edward	n/a
CGS	P/15	Pendeen Cliff to Kenidjack	n/a
CGS	P/3	Wheal Cock	n/a
CGS	P/4	Wheal Hazard	n/a
CGS	P/8	Wheal Drea	n/a
NT Land	11241	St Just Sites	https://www.nationaltrust.org.uk/contact-us
NT Land	11401	Levant Mine and Beam Engine	https://www.nationaltrust.org.uk/contact-us
RSPB Reserve	900414	WEST PENWITH COAST AND MOORS	https://www.rspb.org.uk/about-the-rspb/get-in-touch/rspb-offices/england/






Non-Statutory Sites & Reserves Map





© Crown copyright and database rights 2023 OS 100049047.

Location	Site Code	Site Type	Site Name	Colour
1	P/1	CGS	Grylls Bunny	
2	P/13	CGS	Wheal Edward	
3	P/15	CGS	Pendeen Cliff to Kenidjack	
4	P/3	CGS	Wheal Cock	
5	P/4	CGS	Wheal Hazard	
6	P/8	CGS	Wheal Drea	
7	11241	NT Land	St Just Sites	





8	11401	NT Land	Levant Mine and Beam Engine	
9	900414	RSPB Reserve	WEST PENWITH COAST AND MOORS	



Habitats

The Environmental Records Centre for Cornwall and the Isles of Scilly provide three summaries of the habitat in your search area.

First is the Biodiversity Action Plan (BAP) habitat map. BAP Habitats are now called priority habitats and are those identified as being the most threatened and requiring conservation action in Cornwall. However it should be noted that absence of information doesn't mean that the Priority habitat isn't present.

The report also summarises the ERCCIS land cover interpretation and Phase One interpretation which represents the most up - to - date habitat data held by ERCCIS. Further details can be found in the ERCCIS report summary.pdf.

Habitat Type	Habitat Code	Habitat Name	Site Area (ha)
Priority Habitat	HE1	Lowland heathland	2.83

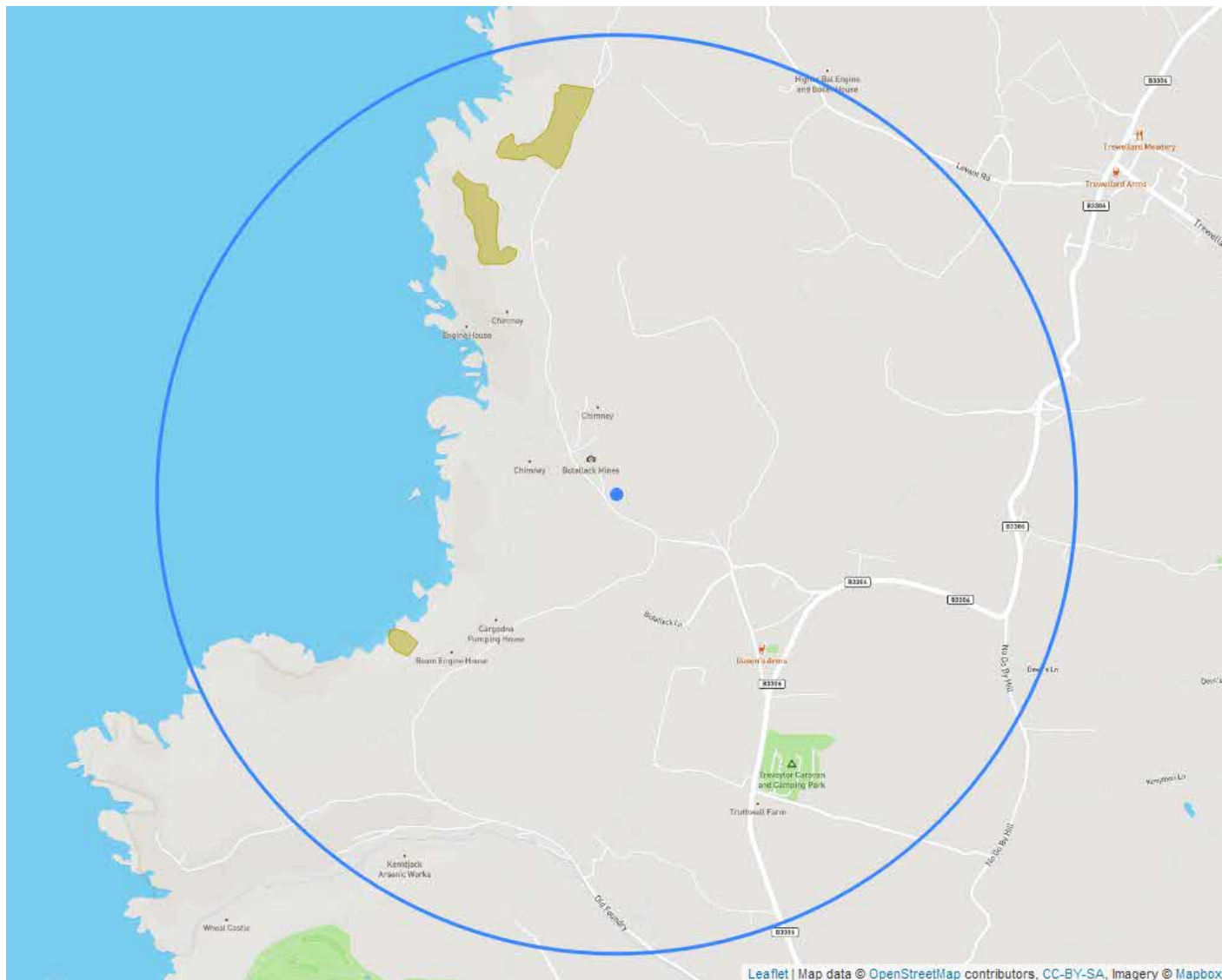
Habitat Type	Habitat Code	Habitat Name	Site Area (ha)
Land Cover	n/a	Acid Grassland	1.33
Land Cover	n/a	Arable and Horticultural	88.27
Land Cover	n/a	Bracken	15.91
Land Cover	n/a	Broadleaved, Mixed and Yew Woodland	17.14
Land Cover	n/a	Built-up Areas and Gardens	23.10
Land Cover	n/a	Dwarf Shrub Heath	2.33
Land Cover	n/a	Fen, Marsh and Swamp	1.93
Land Cover	n/a	Improved Grassland	489.49
Land Cover	n/a	Inland Rock	1.29
Land Cover	n/a	Littoral Rock	2.42
Land Cover	n/a	Neutral Grassland	35.99
Land Cover	n/a	Standing Open Water and Canals	0.03
Land Cover	n/a	Supralittoral Rock	23.25

Habitat Type	Habitat Code	Habitat Name	Site Area (ha)
Phase One	Arable	J1	88.27
Phase One	Bracken	C1	15.91
Phase One	Broadleaved woodland	A1.1	0.10


Phase One	Built environment	J3	23.11
Phase One	Coastal Cliff	H8	18.83
Phase One	Coastal grassland	H8.4	22.67
Phase One	Coastal heathland	H8.5	2.13
Phase One	Disturbed ground	I	1.29
Phase One	Dry dwarf shrub heath - acid	D1.1	0.20
Phase One	Improved grassland	B4	489.51
Phase One	Intertidal - boulders/ rocks	H1.3	2.42
Phase One	Scrub	A2	17.03
Phase One	Standing water	G1	0.02
Phase One	Unimproved grassland / Bracken (possibly)	B1	1.33
Phase One	Unimproved grassland / Bracken (possibly)	B2	17.72
Phase One	Wetland	E3	1.93



Priority Habitat Map

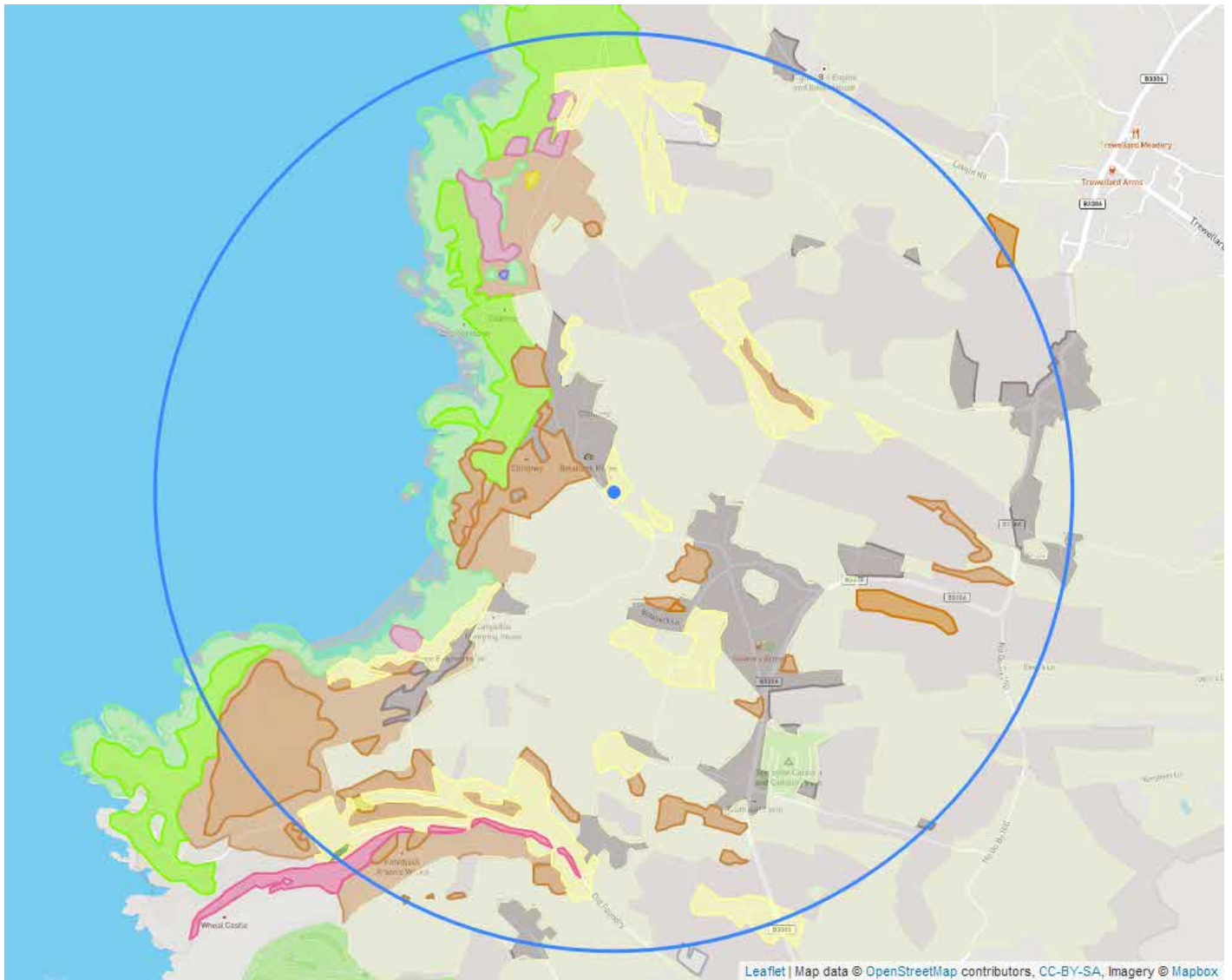


© Crown copyright and database rights 2023 OS 100049047.

Habitat Name	Colour
Lowland heathland	










Phase One Interpretation Map



© Crown copyright and database rights 2023 OS 100049047.

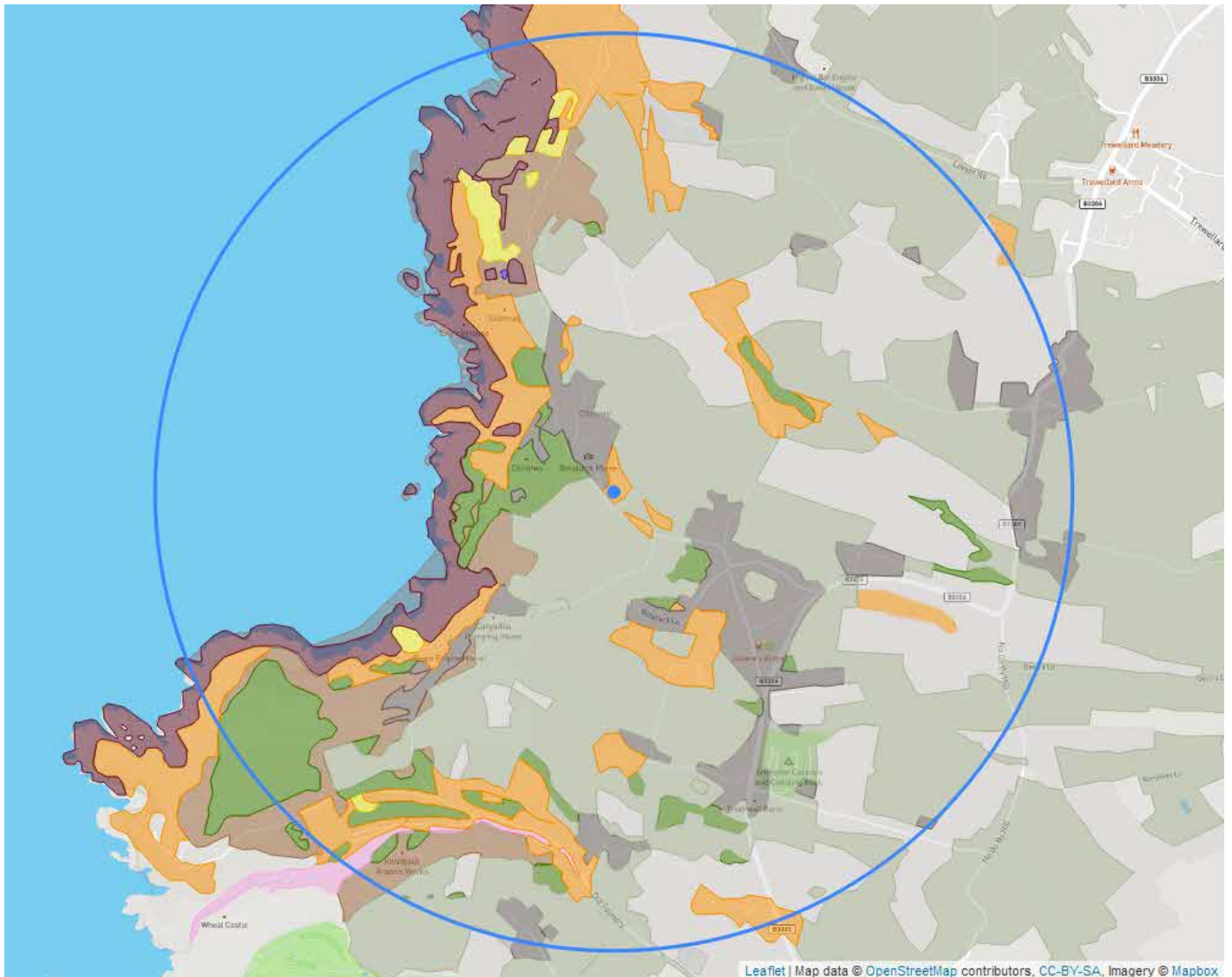
Habitat Code	Colour
J1	
C1	
A1.1	
J3	
H8	
H8.4	
H8.5	
I	



D1.1	
B4	
H1.3	
A2	
G1	
B1	
B2	
E3	







ERCCIS Land Cover Habitat Interpretation Map



© Crown copyright and database rights 2023 OS 100049047.

Habitat Name	Colour
Acid Grassland	
Arable and Horticultural	
Bracken	
Broadleaved, Mixed and Yew Woodland	
Built-up Areas and Gardens	
Dwarf Shrub Heath	
Fen, Marsh and Swamp	
Improved Grassland	



Inland Rock	
Littoral Rock	
Neutral Grassland	
Standing Open Water and Canals	
Supralittoral Rock	





Summary Species Table

The Environmental Records for Cornwall and the Isles of Scilly holds biological records on the following species within or overlapping the search area.

Please note that past records of presence of a species does not guarantee continued occurrence and absence of records does not imply absence of a species, merely that no records are held. Confidential data, zero abundance records, data at poorly defined geographic resolutions and data pending validation and/or verification are also excluded from this report.

Details on abundance can be seen in your excel dataset, but please note that where 'Present' appears in abundance column, no single numerical figure for abundance was provided with the record.

Eurasian beavers are now present within the wider Tamar catchment. They are highly mobile animals and may be exploring or inhabit any of the waterbodies within it, including small streams, ditches and areas of standing water. In August 2021, the government announced their intention to make Eurasian beavers a European Protected Species, and this is likely to come into force in 2022.

Abbreviation designation	As list on one or more of the following;
Protected	Bern Convention; Bonn Convention; EC Birds Directive; Convention on Migratory Species; CITES; Habitat Directive; OSPAR; Protection of Badgers Act; Wildlife and Countryside Act; NERC s41
Priority	National Red data list; BAP Species; Nationally Rare/Scarce
Local Priority	Cornwall Red Data Book
Non-Native	As listed on the ERCCIS interpreted INNS list

Confidential records

Certain records are marked as confidential by the original recorder and ERCCIS respects the original recorders wishes.

Sensitive Records

Certain records are marked as sensitive by the original recorder and ERCCIS respects the original recorders wishes.



Protected and designated species records table

This table summarises records from 1960 onwards. The sighting numbers are total number of records in period, not the number of individuals

Details on abundance can be seen in your Excel dataset, but please note that where 'Present' appears in abundance column, no single numerical figure for abundance was provided with the record

Amphibian				
Bufo bufo	Common Toad	3	2003 - 2019	Protected, Priority
Lissotriton helveticus	Palmate Newt	2	2012 - 2012	Protected
Rana temporaria	Common Frog	4	1989 - 2013	Protected
Bird				
Acanthis flammea	Common Redpoll	1	1997 - 1997	Protected, Priority
Accipiter nisus	Sparrowhawk	46	1991 - 2021	Protected, Priority
Acrocephalus schoenobaenus	Sedge Warbler	7	1967 - 2016	Priority
Alauda arvensis	Skylark	3	2014 - 2017	Protected, Priority
Alca torda	Razorbill	3	2007 - 2022	Protected, Priority, Local Priority
Alcedo atthis	Kingfisher	1	2016 - 2016	Protected
Anthus campestris	Tawny Pipit	1	1987 - 1987	Protected
Anthus hodgsoni	Olive-backed Pipit	1	2021 - 2021	Protected
Anthus petrosus	Rock Pipit	19	1967 - 2021	Protected
Anthus pratensis	Meadow Pipit	37	1983 - 2021	Protected, Priority
Anthus richardi	Richard's Pipit	1	1990 - 1990	Protected
Anthus spinoletta	Water Pipit	1	2002 - 2002	Protected, Priority, Local Priority
Anthus trivialis	Tree Pipit	10	1987 - 2010	Protected, Priority
Apus apus	Swift	26	1963 - 2022	Priority
Ardea alba	Great White Egret	2	2020 - 2020	Protected, Priority
Ardea cinerea	Grey Heron	12	1997 - 2021	Protected, Priority
Asio flammeus	Short-eared Owl	5	1992 - 2018	Protected, Priority
Athene noctua	Little Owl	1	1979 - 1979	Protected, Local Priority
Bombycilla garrulus	Waxwing	1	2004 - 2004	Protected

Bubo scandiacus	Snowy Owl	1	2016 - 2016	Protected
Bubulcus ibis	Cattle Egret	2	2007 - 2007	Protected, Priority
Burhinus oedicnemus	Stone-curlew	1	2007 - 2007	Protected, Priority
Buteo buteo	Buzzard	79	1988 - 2021	Protected
Calcarius lapponicus	Lapland Bunting	7	1990 - 2020	Protected, Priority
Calidris alpina	Dunlin	2	1998 - 2021	Protected, Priority, Local Priority
Calidris maritima	Purple Sandpiper	1	1999 - 1999	Protected, Priority, Local Priority
Calidris minuta	Little Stint	2	1990 - 1990	Protected
Carduelis carduelis	Goldfinch	58	1983 - 2022	Protected
Carpodacus erythrinus	Common Rosefinch	2	1991 - 1997	Protected
Cecropis daurica	Red-rumped Swallow	6	1987 - 2006	Protected
Certhia familiaris	Treecreeper	1	1990 - 1990	Protected
Cettia cetti	Cetti's Warbler	1	2014 - 2014	Protected, Local Priority
Charadrius hiaticula	Ringed Plover	1	2019 - 2019	Protected, Priority, Local Priority
Chloris chloris	Greenfinch	15	1967 - 2022	Protected, Priority
Chroicocephalus ridibundus	Black-headed Gull	6	2014 - 2021	Protected, Priority, Local Priority
Cinclus cinclus	Dipper	7	2000 - 2012	Protected, Priority
Circus aeruginosus	Marsh Harrier	1	2019 - 2019	Protected, Priority
Circus cyaneus	Hen Harrier	10	1979 - 2020	Protected, Priority, Local Priority
Circus pygargus	Montagu's Harrier	1	2003 - 2003	Protected, Priority
Coccothraustes coccothraustes	Hawfinch	2	2017 - 2022	Protected, Priority
Coloeus monedula	Jackdaw	97	1967 - 2022	Protected
Columba livia	Rock Dove	21	1964 - 2021	Protected
Columba oenas	Stock Dove	9	1997 - 2018	Protected, Priority
Columba palumbus	Woodpigeon	72	2002 - 2022	Protected, Priority
Corvus corone	Carrion Crow	74	1967 - 2022	Protected
Corvus frugilegus	Rook	35	2002 - 2021	Protected, Priority
Cuculus canorus	Cuckoo	14	1967 - 2014	Priority

<i>Curruca communis</i>	Whitethroat	38	1967 - 2021	Priority
<i>Curruca curruca</i>	Lesser Whitethroat	24	1986 - 2016	Local Priority
<i>Curruca nisoria</i>	Barred Warbler	3	2004 - 2014	Protected
<i>Curruca undata</i>	Dartford Warbler	2	2001 - 2003	Protected, Priority, Local Priority
<i>Cyanistes caeruleus</i>	Blue Tit	63	1967 - 2022	Protected
<i>Cygnus cygnus</i>	Whooper Swan	1	2003 - 2003	Protected, Priority
<i>Delichon urbicum</i>	House Martin	24	1997 - 2021	Protected, Priority
<i>Dendrocopos major</i>	Great Spotted Woodpecker	8	1990 - 2020	Protected
<i>Egretta garzetta</i>	Little Egret	2	2014 - 2016	Protected, Local Priority
<i>Emberiza calandra</i>	Corn Bunting	2	1967 - 1990	Priority, Local Priority
<i>Emberiza citrinella</i>	Yellowhammer	12	1967 - 2001	Protected, Priority
<i>Emberiza hortulana</i>	Ortolan Bunting	1	2003 - 2003	Protected
<i>Emberiza pusilla</i>	Little Bunting	1	2014 - 2014	Protected
<i>Emberiza schoeniclus</i>	Reed Bunting	3	1990 - 2019	Protected, Priority
<i>Erithacus rubecula</i>	Robin	84	1967 - 2022	Protected
<i>Falco columbarius</i>	Merlin	15	1992 - 2016	Protected, Priority
<i>Falco peregrinus</i>	Peregrine	50	1997 - 2021	Protected, Local Priority
<i>Falco subbuteo</i>	Hobby	10	1990 - 2017	Protected, Local Priority
<i>Falco tinnunculus</i>	Kestrel	89	1967 - 2021	Protected, Priority
<i>Ficedula hypoleuca</i>	Pied Flycatcher	65	1972 - 2021	Protected, Priority, Local Priority
<i>Ficedula parva</i>	Red-breasted Flycatcher	10	1998 - 2017	Protected
<i>Fratercula arctica</i>	Puffin	1	2007 - 2007	Protected, Priority, Local Priority
<i>Fringilla montifringilla</i>	Brambling	11	1990 - 2018	Protected
<i>Fulmarus glacialis</i>	Fulmar	23	2002 - 2021	Priority
<i>Gallinago gallinago</i>	Snipe	10	1996 - 2019	Protected, Priority, Local Priority
<i>Gallinula chloropus</i>	Moorhen	1	2000 - 2000	Protected, Priority
<i>Garrulus glandarius</i>	Jay	8	2006 - 2020	Protected
<i>Gavia immer</i>	Great Northern Diver	2	2016 - 2022	Protected, Priority, Local Priority

<i>Gulosus aristotelis</i>	European Shag	14	1967 - 2020	Protected, Priority
<i>Haematopus ostralegus</i>	Oystercatcher	6	2011 - 2018	Protected, Priority, Local Priority
<i>Hirundo rustica</i>	Swallow	87	1967 - 2021	Protected
<i>Ichthyaetus melanocephalus</i>	Mediterranean Gull	1	2020 - 2020	Protected, Priority, Local Priority
<i>Jynx torquilla</i>	Wryneck	54	1979 - 2021	Protected, Priority
<i>Lanius collurio</i>	Red-backed Shrike	2	2007 - 2007	Protected, Priority
<i>Lanius senator</i>	Woodchat Shrike	3	1988 - 2021	Protected
<i>Larus argentatus</i>	Herring Gull	81	1967 - 2021	Protected, Priority
<i>Larus argentatus argenteus</i>	n/a	1	2020 - 2020	Priority
<i>Larus canus</i>	Common Gull	2	2009 - 2014	Protected, Priority
<i>Larus fuscus</i>	Lesser Black-backed Gull	9	2007 - 2020	Protected, Priority
<i>Larus glaucooides</i>	Iceland Gull	5	2016 - 2019	Protected, Priority
<i>Larus hyperboreus</i>	Glaucous Gull	1	2014 - 2014	Protected, Priority
<i>Larus marinus</i>	Great Black-backed Gull	31	2002 - 2021	Protected, Priority
<i>Limosa limosa</i>	Black-tailed Godwit	1	1972 - 1972	Protected, Priority, Local Priority
<i>Linaria cannabina</i>	Linnet	45	1967 - 2021	Protected, Priority
<i>Linaria flavirostris</i>	Twite	1	2010 - 2010	Protected, Priority
<i>Loxia curvirostra</i>	Crossbill	3	1990 - 1997	Protected, Local Priority
<i>Lullula arborea</i>	Woodlark	1	1991 - 1991	Protected, Priority, Local Priority
<i>Luscinia megarhynchos</i>	Nightingale	1	2003 - 2003	Protected, Priority
<i>Melanitta nigra</i>	Common Scoter	4	2000 - 2014	Protected, Priority, Local Priority
<i>Merops apiaster</i>	Bee-eater	2	2010 - 2018	Protected
<i>Milvus migrans</i>	Black Kite	1	2018 - 2018	Protected
<i>Milvus milvus</i>	Red Kite	4	2006 - 2019	Protected, Local Priority
<i>Morus bassanus</i>	Gannet	37	2004 - 2020	Protected, Priority
<i>Motacilla alba</i>	Pied Wagtail	7	1967 - 2020	Protected
<i>Motacilla cinerea</i>	Grey Wagtail	56	1990 - 2021	Protected, Priority
<i>Motacilla flava</i>	Yellow Wagtail	6	1991 - 2019	Protected, Priority



Muscicapa striata	Spotted Flycatcher	62	1985 - 2020	Protected, Priority
Numenius arquata	Curlew	1	2012 - 2012	Protected, Priority, Local Priority
Numenius phaeopus	Whimbrel	5	1997 - 2018	Protected, Priority, Local Priority
Oenanthe oenanthe	Wheatear	39	1987 - 2020	Protected, Priority
Oriolus oriolus	Golden Oriole	7	1990 - 1999	Protected, Priority
Pandion haliaetus	Osprey	3	1997 - 2004	Protected, Priority
Parus major	Great Tit	58	2001 - 2022	Protected
Passer domesticus	House Sparrow	45	1967 - 2022	Priority
Periparus ater	Coal Tit	6	1990 - 2020	Protected
Pernis apivorus	Honey-buzzard	4	1991 - 2019	Protected, Priority
Phalacrocorax carbo	Cormorant	5	2007 - 2020	Protected, Priority
Phasianus colchicus	Pheasant	2	2020 - 2021	Protected
Phoenicurus ochruros	Black Redstart	49	1983 - 2022	Protected, Priority
Phoenicurus phoenicurus	Redstart	20	1986 - 2022	Protected, Priority
Phylloscopus inornatus	Yellow-browed Warbler	102	1984 - 2020	Priority
Phylloscopus sibilatrix	Wood Warbler	8	1986 - 2020	Priority, Local Priority
Phylloscopus trochilus	Willow Warbler	39	1967 - 2021	Priority
Pica pica	Magpie	87	1967 - 2022	Protected
Picus viridis	Green Woodpecker	19	1967 - 2021	Protected
Plectrophenax nivalis	Snow Bunting	7	1990 - 2020	Protected, Priority
Plegadis falcinellus	Glossy Ibis	1	2019 - 2019	Protected
Pluvialis apricaria	Golden Plover	4	1998 - 2019	Protected, Local Priority
Podiceps cristatus	Great Crested Grebe	1	2016 - 2016	Protected, Priority, Local Priority
Prunella modularis	Dunnock	82	1967 - 2022	Protected, Priority
Prunella modularis occidentalis	Hedge Accentor	2	2020 - 2021	Priority
Puffinus mauretanicus	Balearic Shearwater	5	2001 - 2015	Protected, Priority, Local Priority
Puffinus puffinus	Manx Shearwater	6	1997 - 2022	Protected, Priority, Local Priority
Pyrrhocorax pyrrhocorax	Chough	153	2006 - 2022	Protected, Priority, Local Priority





<i>Pyrrhula pyrrhula</i>	Bullfinch	22	1967 - 2021	Priority
<i>Pyrrhula pyrrhula pileata</i>	n/a	2	2020 - 2021	Priority
<i>Rallus aquaticus</i>	Water Rail	8	1997 - 2014	Protected, Local Priority
<i>Regulus ignicapilla</i>	Firecrest	66	1990 - 2020	Protected
<i>Regulus regulus</i>	Goldcrest	79	1990 - 2021	Protected
<i>Riparia riparia</i>	Sand Martin	12	1998 - 2018	Protected, Local Priority
<i>Rissa tridactyla</i>	Kittiwake	4	2011 - 2021	Protected, Priority, Local Priority
<i>Saxicola rubetra</i>	Whinchat	15	1997 - 2019	Protected, Priority, Local Priority
<i>Saxicola rubicola</i>	Stonechat	64	1993 - 2021	Protected
<i>Scolopax rusticola</i>	Woodcock	7	1991 - 2014	Protected, Priority
<i>Serinus serinus</i>	Serin	2	2012 - 2019	Protected, Priority
<i>Spinus spinus</i>	Siskin	31	1990 - 2021	Protected, Local Priority
<i>Stercorarius longicaudus</i>	Long-tailed Skua	1	1983 - 1983	Protected
<i>Stercorarius parasiticus</i>	Arctic Skua	1	2007 - 2007	Priority
<i>Stercorarius skua</i>	Great Skua	2	2003 - 2007	Protected, Priority
<i>Sterna paradisaea</i>	Arctic Tern	1	2007 - 2007	Protected, Priority
<i>Streptopelia decaocto</i>	Collared Dove	32	1984 - 2022	Protected, Priority
<i>Streptopelia turtur</i>	Turtle Dove	18	1962 - 2021	Protected, Priority
<i>Strix aluco</i>	Tawny Owl	1	1992 - 1992	Protected, Priority
<i>Sturnus vulgaris</i>	Starling	20	2007 - 2021	Protected, Priority
<i>Thalasseus sandvicensis</i>	Sandwich Tern	1	2020 - 2020	Protected, Priority, Local Priority
<i>Tringa ochropus</i>	Green Sandpiper	1	2002 - 2002	Protected, Priority, Local Priority
<i>Tringa totanus</i>	Redshank	1	2020 - 2020	Protected, Priority, Local Priority
<i>Troglodytes troglodytes</i>	Wren	80	1967 - 2022	Protected, Priority
<i>Turdus iliacus</i>	Redwing	21	1983 - 2018	Protected, Priority
<i>Turdus merula</i>	Blackbird	99	1967 - 2022	Protected
<i>Turdus philomelos</i>	Song Thrush	36	1967 - 2022	Protected, Priority
<i>Turdus philomelos clarkei</i>	n/a	1	2020 - 2020	Priority
<i>Turdus pilaris</i>	Fieldfare	9	1986 - 2017	Protected, Priority



<i>Turdus torquatus</i>	Ring Ouzel	40	1987 - 2022	Protected, Priority
<i>Tyto alba</i>	Barn Owl	17	2000 - 2021	Protected, Local Priority
<i>Upupa epops</i>	Hoopoe	13	1971 - 2022	Protected
<i>Uria aalge</i>	Common Guillemot	4	2007 - 2022	Protected, Priority, Local Priority
<i>Vanellus vanellus</i>	Lapwing	4	2004 - 2018	Protected, Priority, Local Priority
<i>Xema sabini</i>	Sabine's Gull	3	2001 - 2019	Protected

Bony Fish (Actinopterygii)

<i>Mola mola</i>	Sun-fish	6	2003 - 2014	Local Priority
------------------	----------	---	-------------	----------------

Cartilagenous Fish (Chondrichthyes)

<i>Cetorhinus maximus</i>	Basking Shark	33	2001 - 2020	Protected, Priority, Local Priority
---------------------------	---------------	----	-------------	-------------------------------------

Fern

<i>Asplenium obovatum</i> subsp. <i>lanceolatum</i>	n/a	2	1971 - 2002	Local Priority
--	-----	---	-------------	----------------

Flowering Plant

<i>Allium ampeloprasum</i>	Wild Leek	1	2014 - 2014	Priority, Local Priority
<i>Allium triquetrum</i>	Three-cornered Garlic	10	1992 - 2021	Protected, Non-Native
<i>Buddleja davidii</i>	Butterfly-bush	7	1992 - 2018	Non-Native
<i>Calluna vulgaris</i>	Heather	18	1992 - 2021	Priority
<i>Chamaemelum nobile</i>	Chamomile	1	1995 - 1995	Priority, Local Priority
<i>Cotoneaster horizontalis</i>	Wall Cotoneaster	1	2011 - 2011	Protected, Non-Native
<i>Crocasmia pottsii</i> x <i>aurea</i> = <i>C. x crocosmiiflora</i>	Montbretia	19	1992 - 2021	Protected, Non-Native
<i>Cuscuta epithymum</i>	Dodder	9	1992 - 2021	Priority, Local Priority
<i>Daucus carota</i> subsp. <i>gummifer</i>	Sea Carrot	1	2011 - 2011	Priority
<i>Erica cinerea</i>	Bell Heather	15	1992 - 2021	Priority
<i>Erica tetralix</i>	Cross-leaved Heath	1	2020 - 2020	Priority
<i>Erodium moschatum</i>	Musk Stork's-bill	4	1973 - 2011	Local Priority
<i>Eryngium maritimum</i>	Sea-holly	2	2021 - 2021	Priority
<i>Euphrasia tetraquetra</i>	an Eyebright	4	1995 - 2011	Priority
<i>Fallopia baldschuanica</i>	Russian-vine	2	1973 - 1973	Non-Native

<i>Fallopia japonica</i>	Japanese Knotweed	24	1990 - 2018	Protected, Non-Native
<i>Fragaria vesca</i>	Wild Strawberry	1	2014 - 2014	Priority
<i>Genista tinctoria</i>	Dyer's Greenweed	1	2017 - 2017	Priority
<i>Genista tinctoria</i> subsp. <i>littoralis</i>	n/a	5	1995 - 2017	Priority
<i>Glebionis segetum</i>	Corn Marigold	1	1995 - 1995	Priority, Local Priority
<i>Hyacinthoides non-scripta</i>	Bluebell	16	1995 - 2020	Protected
<i>Hydrocotyle vulgaris</i>	Marsh Pennywort	2	1995 - 1995	Priority
<i>Impatiens glandulifera</i>	Himalayan Balsam	4	2002 - 2018	Protected, Non-Native
<i>Inula crithmoides</i>	Golden-samphire	4	1965 - 2002	Priority, Local Priority
<i>Jasione montana</i>	Sheep's-bit	23	1992 - 2021	Priority
<i>Lagarosiphon major</i>	Curly Waterweed	2	2010 - 2010	Protected, Non-Native
<i>Lotus subbiflorus</i>	Hairy Bird's-foot-trefoil	5	1965 - 1995	Priority, Local Priority
<i>Mentha suaveolens</i>	Round-leaved Mint	2	1960 - 2007	Priority
<i>Misopates orontium</i>	Weasel's-snout	7	1995 - 2021	Priority, Local Priority
<i>Myriophyllum aquaticum</i>	Parrot's-feather	3	2010 - 2010	Protected, Non-Native
<i>Pedicularis sylvatica</i>	Lousewort	8	2002 - 2021	Priority
<i>Petasites fragrans</i>	Winter Heliotrope	6	1992 - 2021	Non-Native
<i>Potentilla erecta</i>	Tormentil	5	1995 - 2021	Priority
<i>Sagina subulata</i>	Heath Pearlwort	5	1972 - 2002	Priority
<i>Silene gallica</i>	Small-flowered Catchfly	1	2014 - 2014	Priority
<i>Solidago virgaurea</i>	Goldenrod	3	2008 - 2021	Priority
<i>Spergula arvensis</i>	Corn Spurrey	12	1995 - 2021	Priority, Local Priority
<i>Spiranthes spiralis</i>	Autumn Lady's-tresses	2	1970 - 1973	Priority, Local Priority
<i>Stachys arvensis</i>	Field Woundwort	3	1996 - 2008	Priority, Local Priority
<i>Succisa pratensis</i>	Devil's-bit Scabious	2	2006 - 2017	Priority
<i>Teucrium chamaedrys</i>	Wall Germander	11	1970 - 2013	Priority, Local Priority
<i>Trifolium occidentale</i>	Western Clover	2	2002 - 2002	Priority, Local Priority
<i>Vicia sativa</i> subsp. <i>segetalis</i>	Common Vetch	7	1995 - 2011	Priority
<i>Viola lactea</i>	Pale Dog-violet	3	1972 - 2011	Priority, Local Priority

Insect - Beetle (Coleoptera)



Aizobius sedi	n/a	1	2017 - 2017	Priority
Cathormiocerus aristatus	n/a	1	2017 - 2017	Priority
Meloe proscarabaeus	Black Oil-beetle	1	2013 - 2013	Priority
Ophonus laticollis	Set-aside Downy-back	1	2002 - 2002	Priority, Local Priority
Smicronyx jungermanniae	n/a	1	2017 - 2017	Priority
Insect - Butterfly				
Boloria euphrosyne	Pearl-bordered Fritillary	2	1973 - 1973	Protected, Priority, Local Priority
Boloria selene	Small Pearl-bordered Fritillary	22	1994 - 2020	Priority
Coenonympha pamphilus	Small Heath	37	1994 - 2020	Priority
Danaus plexippus	Monarch	1	1999 - 1999	Protected
Euphydryas aurinia	Marsh Fritillary	1	1965 - 1980	Protected, Priority, Local Priority
Hipparchia semele	Grayling	10	1968 - 2011	Priority
Lasiommata megera	Wall	44	1973 - 2021	Priority
Plebejus argus	Silver-studded Blue	20	1965 - 2017	Protected, Priority, Local Priority

Insect - Cockroach (Dictyoptera)

Ectobius panzeri	Lesser Cockroach	1	2002 - 2002	Priority, Local Priority
------------------	------------------	---	-------------	--------------------------

Insect - Hymenopteran

Andrena bicolor	Gwynne's Mining Bee	1	2012 - 2012	Local Priority
Andrena fulvago	Hawksbeard Mining Bee	1	2017 - 2017	Priority, Local Priority
Andrena nigriceps	Black-headed Mining Bee	5	2002 - 2021	Priority, Local Priority
Andrena pilipes	Black Mining Bee	2	2002 - 2002	Priority, Local Priority
Andrena rosae	Perkin's Mining Bee	1	2021 - 2021	Local Priority
Andrena thoracica	Cliff Mining Bee	2	2009 - 2021	Local Priority
Astata boops	n/a	2	2002 - 2002	Local Priority
Bombus humilis	Brown-Banded Carder Bee	6	2002 - 2021	Priority, Local Priority
Bombus jonellus	Heath Bumblebee	2	2002 - 2002	Local Priority
Caliadurgus fasciatellus	n/a	2	2002 - 2002	Local Priority
Cerceris ruficornis	n/a	2	2002 - 2002	Local Priority



<i>Ceropales maculata</i>	n/a	1	1995 - 1995	Local Priority
<i>Cryptocheilus notatus</i>	n/a	4	2002 - 2007	Local Priority
<i>Eucera longicornis</i>	Long-horned Bee	6	2008 - 2021	Priority, Local Priority
<i>Nomada integra</i>	Catsear Nomad Bee	1	1995 - 1995	Priority, Local Priority
<i>Podalonia hirsuta</i>	Hairy Sand Wasp	1	2006 - 2006	Priority, Local Priority
<i>Temnothorax albipennis</i>	n/a	1	1996 - 1996	Priority, Local Priority

Insect - Moth

<i>Acronicta rumicis</i>	Knot Grass	65	2002 - 2018	Priority
<i>Apamea remissa</i>	Dusky Brocade	18	2009 - 2018	Priority
<i>Arctia caja</i>	Garden Tiger	21	2009 - 2018	Priority
<i>Ceramica pisi</i>	Broom Moth	30	2009 - 2021	Priority
<i>Diarsia rubi</i>	Small Square-spot	99	2008 - 2018	Priority
<i>Ecliptopera silaceata</i>	Small Phoenix	13	2010 - 2018	Priority
<i>Eugnorisma glareosa</i>	Autumnal Rustic	5	2013 - 2018	Priority
<i>Hepialus humuli</i>	Ghost Moth	8	2009 - 2018	Priority
<i>Hoplodrina blanda</i>	Rustic	6	2013 - 2014	Priority
<i>Hydraecia micacea</i>	Rosy Rustic	46	2009 - 2018	Priority
<i>Leucania comma</i>	Shoulder-striped Wainscot	7	2012 - 2017	Priority
<i>Litoligia literosa</i>	Rosy Minor	9	2008 - 2018	Priority
<i>Malacosoma neustria</i>	Lackey	12	2009 - 2018	Priority
<i>Melanchra persicariae</i>	Dot Moth	38	2009 - 2018	Priority
<i>Scopula marginepunctata</i>	Mullein Wave	21	2009 - 2018	Priority
<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	1	2011 - 2011	Priority
<i>Spilosoma lubricipeda</i>	White Ermine	54	2009 - 2018	Priority
<i>Spilosoma lutea</i>	Buff Ermine	71	2009 - 2018	Priority
<i>Tachystola acroxantha</i>	Ruddy Streak	3	2009 - 2010	Local Priority
<i>Xestia agathina</i>	Heath Rustic	1	2014 - 2014	Priority

Insect - Stick Insect (Phasmida)

<i>Acanthoxyla prasina</i> subsp. <i>inermis</i>	Unarmed Stick-insect	2	2008 - 2016	Priority, Local Priority
--	----------------------	---	-------------	--------------------------

Insect - True Bug (Hemiptera)



<i>Alydus calcaratus</i>	n/a	1	1997 - 1997	Priority
<i>Leptoglossus occidentalis</i>	Western Conifer Seed Bug	1	2010 - 2010	Priority, Non-Native
<i>Strongylocoris luridus</i>	n/a	1	2002 - 2002	Priority, Local Priority

Insect - True Fly (Diptera)

<i>Asilus crabroniformis</i>	Hornet Robberfly	2	2007 - 2007	Priority, Local Priority
<i>Pterella grisea</i>	n/a	1	2002 - 2002	Priority

Lichen

<i>Acarospora subrufula</i>	n/a	1	1996 - 1996	Priority, Local Priority
<i>Arthonia varians</i>	n/a	1	2006 - 2006	Priority
<i>Buellia stellulata</i>	n/a	4	1986 - 2006	Priority
<i>Cladonia ciliata</i> var. <i>ciliata</i>	n/a	1	1986 - 1986	Protected
<i>Cladonia coccifera</i> s. lat.	Scarlet-Cup Lichen	1	1986 - 1986	Priority
<i>Cladonia portentosa</i>	n/a	6	1986 - 2021	Protected
<i>Diploschistes caesioplumbeus</i>	n/a	1	1986 - 1986	Priority
<i>Leptogium britannicum</i>	n/a	1	2001 - 2001	Priority
<i>Moelleropsis nebulosa</i>	n/a	1	2001 - 2001	Priority
<i>Pertusaria excludens</i>	n/a	1	2001 - 2001	Priority
<i>Porpidia contraponenda</i>	n/a	1	2006 - 2006	Priority
<i>Rinodina beccariana</i>	n/a	2	1986 - 2001	Priority
<i>Xanthoparmelia delisei</i>	n/a	1	1986 - 1986	Priority

Liverwort

<i>Cephaloziella nicholsonii</i>	Greater Copperwort	4	1993 - 2005	Priority, Local Priority
----------------------------------	--------------------	---	-------------	--------------------------

Marine Mammal

<i>Balaenoptera acutorostrata</i>	Minke Whale	4	2004 - 2021	Protected, Priority, Local Priority
Cetacea	Whales & Dolphins	4	2002 - 2005	Protected
<i>Delphinus delphis</i>	Common Dolphin	2	2004 - 2014	Protected, Priority, Local Priority
<i>Globicephala melas</i>	Long-finned Pilot Whale	4	1991 - 2013	Protected, Priority, Local Priority
<i>Grampus griseus</i>	Risso's Dolphin	5	2003 - 2006	Protected, Priority, Local Priority



<i>Halichoerus grypus</i>	Grey Seal	5	2003 - 2020	Protected
<i>Orcinus orca</i>	Killer Whale	2	2003 - 2003	Protected, Priority, Local Priority
<i>Phocoena phocoena</i>	Common Porpoise	48	2003 - 2014	Protected, Priority, Local Priority
<i>Tursiops truncatus</i>	Bottle-Nosed Dolphin	10	1994 - 2020	Protected, Priority, Local Priority

Mollusc

<i>Theba pisana</i>	White Snail	1	2020 - 2020	Priority, Local Priority
---------------------	-------------	---	-------------	--------------------------

Moss

<i>Aloina ambigua</i>	Tall Aloe-moss	4	1993 - 2005	Local Priority
<i>Bryum donianum</i>	Don's Thread-moss	3	1993 - 2005	Local Priority
<i>Bryum dunense</i>	Dune Thread-moss	4	1994 - 2003	Local Priority
<i>Fissidens crispus</i>	Herzog's Pocket-moss	1	2010 - 2010	Local Priority
<i>Plagiothecium denticulatum</i> var. <i>denticulatum</i>	n/a	2	1993 - 2005	Local Priority
<i>Pogonatum aloides</i>	Aloe Haircap	1	1965 - 1965	Local Priority
<i>Tortula atrovirens</i>	Rib-leaf Moss	2	1965 - 1969	Local Priority
<i>Tortula viridifolia</i>	Bristly Pottia	4	1993 - 2005	Local Priority

Reptile

<i>Anguis fragilis</i>	Slow-worm	1	2007 - 2007	Protected, Priority
<i>Vipera berus</i>	Adder	8	1994 - 2021	Protected, Priority

Spider (Araneae)

<i>Argenna subnigra</i>	n/a	1	2017 - 2017	Priority
-------------------------	-----	---	-------------	----------

Terrestrial Mammal

<i>Cervus elaphus</i>	Red Deer	1	2019 - 2019	Protected
<i>Erinaceus europaeus</i>	West European Hedgehog	6	2004 - 2021	Protected, Priority, Local Priority
<i>Lutra lutra</i>	Eurasian Otter	3	2005 - 2021	Protected, Priority, Local Priority
<i>Meles meles</i>	Eurasian Badger	6	1994 - 2016	Protected, Local Priority
<i>Mustela erminea</i>	Stoat	1	2009 - 2009	Protected
<i>Mustela nivalis</i>	Weasel	3	2010 - 2016	Protected
<i>Neomys fodiens</i>	Eurasian Water Shrew	1	2004 - 2005	Protected, Local Priority

Neovison vison	American Mink	1	2016 - 2016	Protected, Priority, Non-Native
Oryctolagus cuniculus	European Rabbit	23	2001 - 2021	Priority, Non-Native
Rattus norvegicus	Brown Rat	3	2003 - 2011	Priority, Non-Native
Sorex araneus	Eurasian Common Shrew	2	2000 - 2004	Protected, Local Priority

Terrestrial Mammal - Bat

Myotis mystacinus/brandtii	Whiskered/Brandt's Bat	1	2017 - 2017	Local Priority
Nyctalus noctula	Noctule Bat	1	2012 - 2012	Protected, Priority, Local Priority
Pipistrellus	Pipistrelle	2	2016 - 2016	Local Priority
Pipistrellus pipistrellus	Common Pipistrelle	4	2016 - 2018	Protected, Local Priority
Pipistrellus pipistrellus	Pipistrelle	1	2012 - 2012	Protected
Pipistrellus pygmaeus	Soprano Pipistrelle	1	2012 - 2012	Protected, Priority, Local Priority
Rhinolophus ferrumequinum	Greater Horseshoe Bat	5	1986 - 2012	Protected, Priority, Local Priority



The Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS)

Five Acres Allet

Truro

TR4 9DJ

Phone: 01872 302240

Email: WIS@cornwallwildlifetrust.org.uk

Website: www.erccis.org.uk

About the Cornwall and the Isles of Scilly Environmental Records Centre

The Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS) collates, manages and disseminates biological and geological information for use in sustainable development, conservation and research. Working with local and national biological recorders and organisations to gather data that is crucial to aid conservation management of sites, to help organisations prioritise action, and to understand the distribution of species and trends over time. For more information on ERCCIS, visit the website at <https://erccis.org.uk>



ERCCIS is accredited by the Association of Local Environmental Records Centres in 2016, by meeting the national standards of environmental data management and provision. For more information on accreditation, see the ALERC website at <http://www.alerc.org.uk/alerc-accreditation.html>

Hosted by: