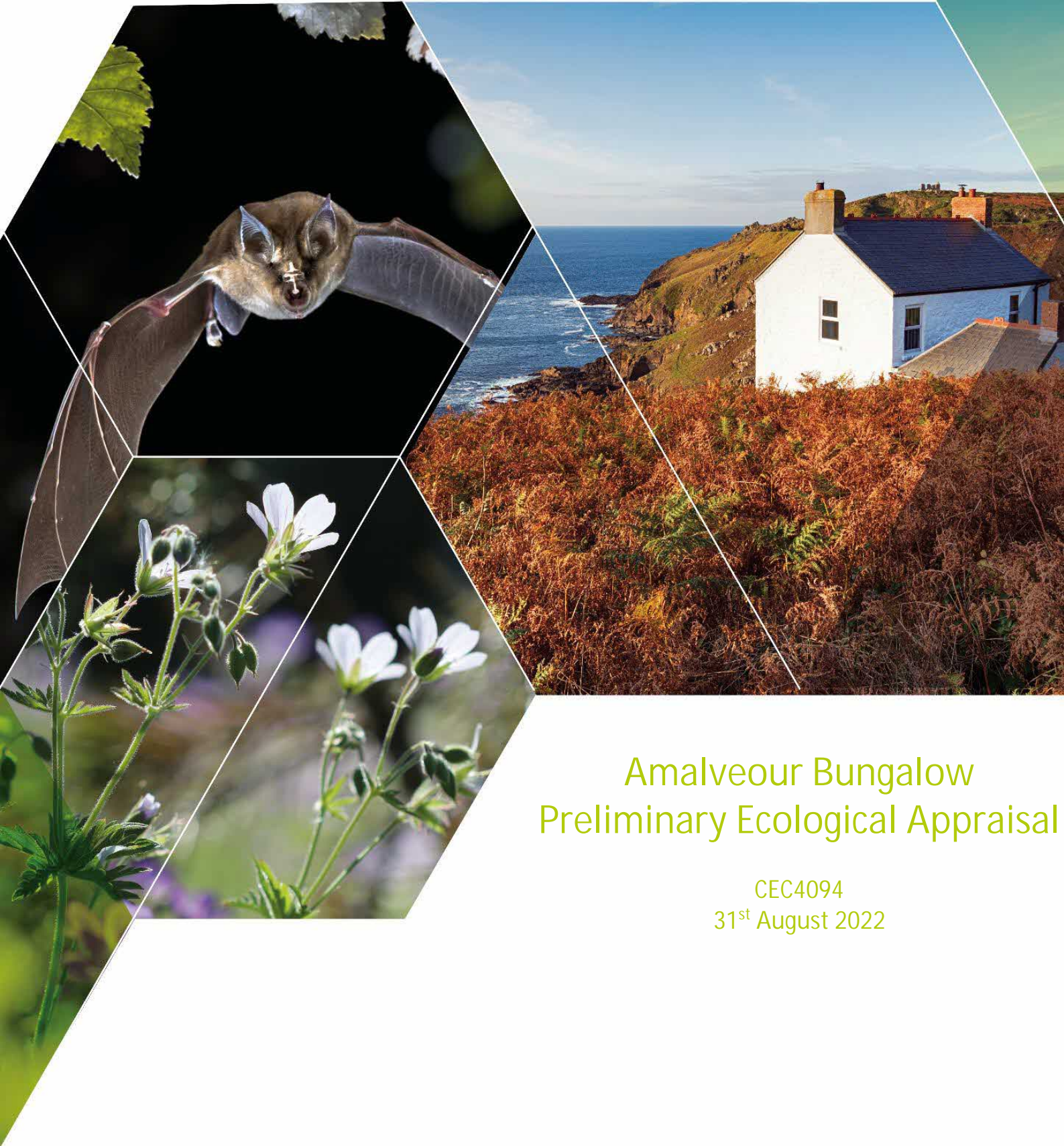


cec

cornwall
environmental
consultants LTD



Amalveour Bungalow
Preliminary Ecological Appraisal

CEC4094
31st August 2022

Document Control

Revision	Prepared by	Checked by	Approved by
First Issue 24/10/2022	Eldon Douglas BSc (Hons) QCIEEM Assistant Ecologist	Cathy Shaw BSc(Hons), MSc, ACIEEM, MRSB Ecologist	Cathy Shaw BSc(Hons), MSc, ACIEEM, MRSB Ecologist
Rev A 24/10/2022	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.
Rev B 24/10/2022			

Disclosure

The information, opinion, and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct and the British Standard for Biodiversity – Code of Practice for Planning and Development (2013). We confirm that the opinions expressed are our true and professional bona fide opinions.

Contents

1.	Introduction.....	7
1.1.	Background.....	7
2.	Planning Policy & Legislation.....	9
2.1.	Planning Policy	9
2.2.	Cornwall Planning Policy	9
2.3.	Legislation	9
3.	Methodology	11
3.1.	Desk Study.....	11
3.2.	Field Survey	11
3.3.	Limitations.....	11
4.	Baseline Ecological Conditions	13
4.1.	Site Description	13
4.2.	Designated Sites.....	13
4.3.	Habitats	14
4.4.	Species.....	15
5.	Ecological Constraints and Opportunities, including mitigation requirements	18
5.1.	Ecological Constraints	18
5.2.	Impact Avoidance and Mitigation	18
	Ecology Enhancement Opportunities.....	19
5.3.	19	
6.	Conclusions.....	20
7.	References.....	21
8.	List of Appendices.....	22
A.	Phase 1 Habitat Survey Vascular Plant List	23

List of Figures

Figure 1: Site location.....	7
------------------------------	---

Figure 2: Aerial image of site and its location 8

Figure 3 Site overview 13

Figure 4: Non-statutory Designated Sites within a 1km radius of the site 14

Figure 5: Cornish native species-poor hedge (left-hand image) and mature sycamore trees (right-hand image) 15

Summary

Site and methods	
Purpose of report	To identify the ecological constraints and opportunities associated with the site and proposed development, and to identify the ecological mitigation measures required and potential enhancement opportunities.
Site assessed	Amalveour Bungalow St Ives Cornwall TR26 3AG
Area (ha)	0.07ha
Location:	Grid reference: SW 483 375
Planning Authority involved	Cornwall Council
Survey methods	Extended Phase 1 Habitat Survey and a Bat and Barn Owl Assessment
Surveyor's name	Eldon Douglas BSc (Hons) QCIEEM
Date of assessment	31 st August 2022
Weather on date of assessment	Dry clear skies, 17-24°C 5-10mph wind

Results	
Designated sites	West Penwith coast and Moors RSPB reserve, Churchtown Common to Trendrine Hill County Wildlife Site (CWS) and Cold Harbour Marsh (CWS) were recorded within a 1km search area.

Important habitats present	Cornish hedge (BAP habitat)
Non-native invasive species present	Montbretia was identified across the western boundary of the site (a Wildlife and Countryside Act Schedule 9 species).
Protected species present	None
Potential for protected species	Nesting birds and Reptiles
Further survey recommendations	None
Mitigation recommendations	<p>Long term plan to remove montbretia</p> <p>Minimise hedge loss during the creation of site entrance.</p> <p>If the trees along the western boundary need to be felled, then this should be completed between October and April to avoid disturbance to nesting birds (this timescale is longer than usual, as the trees are all broadleaved and will not have sufficient leaf coverage for nesting until late April). If this is not possible, then the trees would need to be checked for nesting birds prior to removal.</p> <p>If the hedgerows need to be removed, then this should be completed between March and September to avoid disturbance of hibernating reptiles.</p>
Enhancement recommendations	<p>Construct Cornish hedges planted with native shrubs to mark out site boundary</p> <p>Control of non-native invasive species</p> <p>Reinstatement of any damage to grass areas with a flowering lawn mix</p> <p>If there are opportunities to create habitat other than grassland, consider creating beds of pollinator friendly planting</p> <p>Incorporate 1 bird or bat boxes, and bee bricks within the new building</p>

1. Introduction

1.1. Background

- 1.1.1. Cornwall Environmental Consultants (CEC) Ltd were commissioned by Tom Russell in August 2022 to undertake a preliminary ecological appraisal for the demolition of the current dwelling and construction of a new dwelling within the current grounds of the site within the village of Amalveor. The location of the site and its boundaries are shown in Figure 1 and Figure 2.

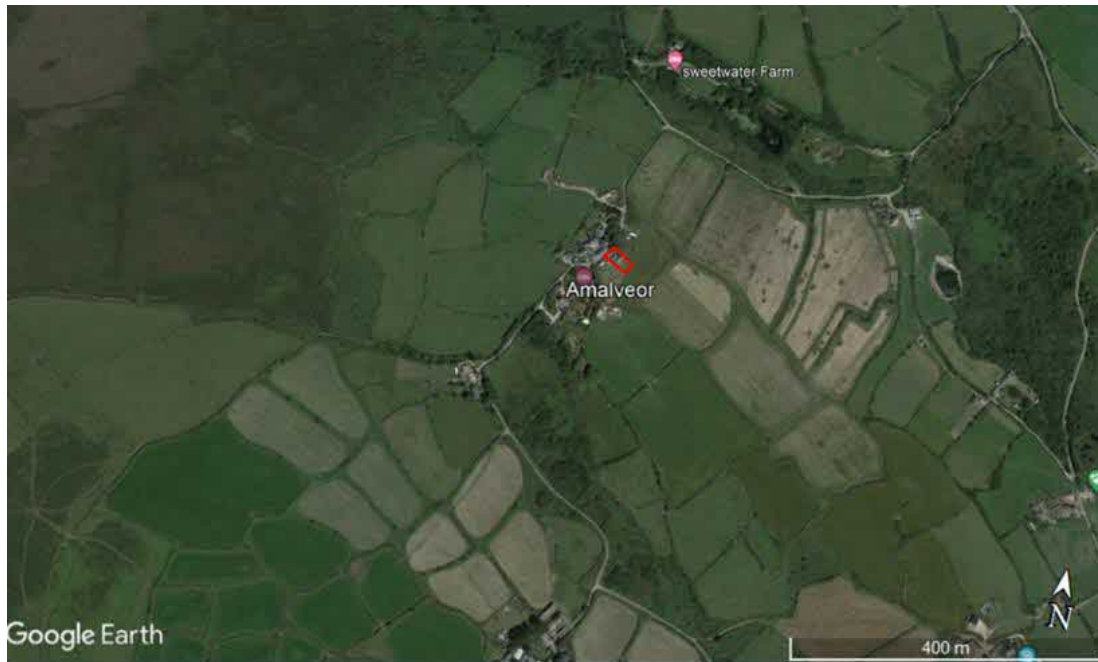


Figure 1: Site location



Figure 2: Aerial image of site and its location

- 1.1.2. The building is situated within the village of Amalveor near the town of St Ives. The surrounding landscape is semi-improved grassland used by for grazing, arable fields within a network of hedgerows and small blocks of broadleaved woodlands which are inter-connected. The habitat offers good foraging opportunities for bats and barn owls.
- 1.1.3. This report has been prepared by Eldon Douglas BSc (Hons) QCIEEM. An ecologist with over 7-years' experience in a range of ecological projects. He has been a licensed bat ecologist for 2 years.
- 1.1.4. The client proposes to demolish the current building on site to construct a new modern dwelling, together with associated infrastructure, within the village of Amalveour.
- 1.1.5. The purpose of this report is:
 - To identify key ecological constraints to the proposed development
 - To allow mitigation or compensation measures to be developed
- 1.1.6. This report will be suitable for submission as part of a planning application, as it identifies all ecological impacts and suitable mitigation.

2. Planning Policy & Legislation

2.1. Planning Policy

National Planning Policy Framework

2.1.1. National planning policy is set out in the National Planning Policy Framework (NPPF) (2021). Chapter 15 relates to conserving and enhancing the natural environment. The most relevant policies relating to planning decisions are (summarised):

2.1.2. The most relevant policies relating to planning decisions are summarised below:

Recognising the wider benefits of natural capital and ecosystem services

Minimising impacts and providing net gains in biodiversity

By ensuring that new development is appropriate for its location, and that the potential sensitivity of the site is taken into account, planning decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

2.2. Cornwall Planning Policy

2.2.1. The Cornwall Local Plan (2016) sets out policies relating to the natural environment.

2.2.2. Policy 23 relates to all aspects of the natural environment; section 3 of this policy relates specifically to biodiversity and geodiversity. The policy sets out that developments should conserve, protect, and where possible, enhance biodiversity and geodiversity, giving appropriate weight to their level of importance.

2.2.3. Opportunities should be sought within developments, to create networks of wildlife corridors linking County Wildlife Sites and other areas of biodiversity importance, helping to deliver the Cornwall Biodiversity Action Plan's actions.

2.2.4. Proposals should avoid impacts to designated sites, protected species or species/ habitats of principal importance, and any proposals where such impacts cannot be avoided will only be permitted where suitable mitigation/ compensation can be provided, and if the tests of the relevant legislation are met.

2.2.5. The mitigation hierarchy should be applied, such that attempts are first made to avoid impacts, and to enable net gains. Where impacts are unavoidable, they must be adequately and proportionately mitigation. Compensation would be required, as a final resort, if full mitigation cannot be provided.

2.3. Legislation

2.3.1. The Wildlife and Countryside Act (HM Government, 1981, as amended) is the main piece of legislation relating to nature conservation in Great Britain. It transposes into British law the Berne, Bonn and RAMSAR Conventions, and the European 'Birds Directive' (CEC, 1979). This legislation covers protection of wildlife (birds, other animals and plants), Sites of Special Scientific Interest (SSSI's) (with some SSSI's also designated as Special Protection Areas, SPA's), National Nature Reserves (NNR's) and RAMSAR sites.

2.3.2. The Conservation of Habitats and Species Regulations (HM Government, 2017) transposes into British law the European 'Habitats Directive' (CEC, 1992), and covers Special Areas of Conservation (SAC's) and European Protected Species (EPS) (see below). It also provides further protection for SPA's and RAMSAR sites.

- 2.3.3. The Countryside and Rights of Way (CROW) Act (HM Government, 2000) increases protection for SSSIs and threatened species. It specifies the duty of Local Authorities to further the conservation of listed (UK BAP priority) habitats and species.
- 2.3.4. The Natural Environment and Rural Communities (NERC) Act (HM Government, 2006) confers a legal duty on every public authority to conserve biodiversity under Section 40(1). Section 41 required the publication of lists of habitats and species of principal importance for the conservation of biodiversity in England. This list contains the habitats and species previously known as UK BAP priorities for conservation, and the terminology of habitats and species of principal importance supersedes the UK BAP terminology. Such features will be referred to as Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs), throughout this report.
- 2.3.5. The Environment Act 2021 (HM Government, 2021) sets clear statutory targets for the recovery of the UK's natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in UK species abundance by the end of 2030. It will also require new developments to improve and/ or create habitats for nature, and tackle deforestation overseas.
- 2.3.6. The Hedgerows Regulations 1997 protects historically / ecologically important hedgerows.
- 2.3.7. The Protection of Badgers Act 1992 provides specific protection for badgers.

3. Methodology

3.1. Desk Study

- 3.1.1. The desk study consisted of a search of all existing ecological records within a 1km radius of the site using the information held by the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS). This data search was supplied to CEC on 08/09/22.

3.2. Field Survey

- 3.2.1. A walkover site survey was undertaken to identify plant species and map habitats present. Signs of faunal species were also searched for; including tracks, prints, droppings, hairs, feeding remains, nests and burrows.
- 3.2.2. An assessment as to the suitability of the building and surrounding habitat for bats and barn owls was made. The building was surveyed using a high-powered lamp to illuminate all areas thought suitable for roosting bats and barn owls. This included searching for bats and barn owls in situ, droppings, pellets, staining, liming, feathers and feeding remains. Any cracks and crevices thought suitable for use by bats were inspected using an endoscope. The floor spaces, walls, lintels and timbers were checked. A search around the perimeter of the building was then conducted and any gaps and crevices which had the potential for roosting bats checked.
- 3.2.3. The survey was carried out by surveyor Eldon Douglas 31st August 2022. The study area included the proposed development site, Figure 2. The weather conditions at the time of survey were clear skies, dry, wind of 5-10 mph and temperatures of 17-24°C.
- 3.2.4. The survey work was carried out in accordance with the following documents:
- Phase 1 Habitat Classification (JNCC, 2010)
 - CIEEM Guidelines for Preliminary Ecological Appraisal (2013)
 - BS42020:2013 Biodiversity – Code of Practice for Planning and Development (BSI, 2013)

3.3. Limitations

- 3.3.1. The conclusions and recommendations presented within this report are based on the current ecological features identified, and the current red line boundary as shown in Figure 1 and in Map 1. Ecological features can change over time, particularly if site management or site use changes; as a guide it is recommended that this report is valid until October 2023.
- 3.3.2. August is a suitable time of year to undertake vegetation surveys: as many plant species will be actively growing at this time of year, and an accurate identification of habitats was possible.
- 3.3.3. This ecological assessment does not include a search for Tree Preservation Orders (TPOs) or Conservation Area status.
- 3.3.4. Data from biological records centres or online databases is historical information, and datasets may be incomplete, inaccurate or missing. It is important to note that even where data is held, a lack of records for a defined geographical area does not necessarily mean that the species is absent: the area may simply be under-recorded. Additionally, detailed grid reference locations of European Protected Species (EPS) records may be withheld by record centres / animal recording groups and remain confidential.
- 3.3.5. Furthermore, not all returned desk study records are listed and discussed in this report, only a discussion

of important species, with relevance to the geographic location and the habitat types present within the site, is provided; if a full list is required, this can be supplied upon request.

4. Baseline Ecological Conditions

4.1. Site Description

The site is in a rural location surrounded by a working farm. The surrounding landscape is semi-improved grassland used for grazing and arable fields with a network of hedgerows, and a small block of broadleaved woodlands which are inter-connected. The habitat offers good foraging opportunities for bats and barn owls.

The property is based within the town of Amalveor. The front garden is an area of hard standing for cars with a small patch of poor semi-improved grassland. Between the road and grassland is a small section of Cornish hedge with 4 mature sycamore trees, with a row of hedging privet at ground level.

To the southwest of the drive is a small section of Cornish hedge this area has been left to go wild. As brambles and nettles are dominate in this area. Target note montbretia is present in this area.

- 4.1.1. The back garden of the site boundary is marked out with wooden fencing and the lawn is highly maintained poor semi-improved grassland. Surrounding this garden is a field with livestock (horse and goats)



Figure 3 Site overview

- 4.1.2. Phase 1 habitat distribution is shown in Map 1 and a species list for each habitat is included in Appendix A of this report.

4.2. Designated Sites

Statutory Designated Sites

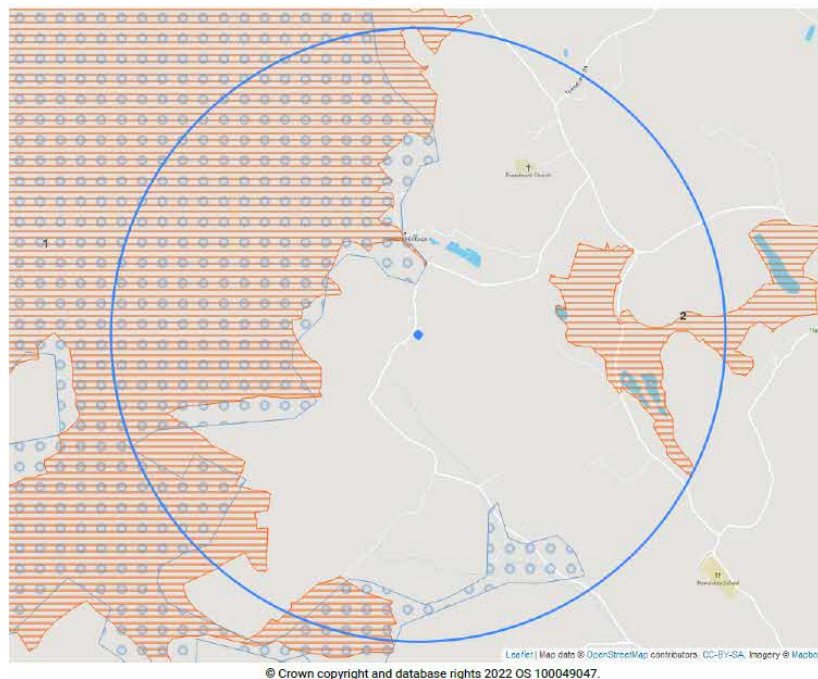
- 4.2.1. There are no statutory designated sites of nature conservation importance within the 1km search area.

Non-statutory Designated Sites

- 4.2.2. The desk study returned three non-statutory designated sites with the search areas. These consisted of

West Penwith coast and Moors RSPB reserve, Churchtown Common to Trendrine Hill County Wildlife Site (CWS) and Cold Harbour Marsh (CWS) (Figure 4).

- 4.2.3. The likely impact on non-statutory designated sites will be minimal due to the site being a little distant away from the designated sites. However, some of the biggest impact would include increased traffic to the area, noise pollution and dust.



Location	Site Code	Site Type	Site Name	Colour
1	900414	RSPB Reserve	WEST PENWITH COAST AND MOORS	
2	P11.7	CWS	Churchtown Common to Trendrine Hill	
3	P7	CWS	Cold Harbour Marsh	

Figure 4: Non-statutory Designated Sites within a 1km radius of the site

4.3. Habitats

- 4.3.1. The habitats within the site consist of amenity grassland that is maintained for household use. The habitat surrounding the immediate site consists of poor semi-improved grassland used for grazing animals and crop harvesting. The dominate species on the site were grasses such as red fescue (*Festuca rubra*) and Yorkshire fog (*Holcus lanatus*). The non-native invasive species *Montbretia* (*Crocsmia × crocosmiiflora*) is present, this species is listed under Schedule 9 of The Countryside and Wildlife Act 1981. Making it illegal to ‘cause it to spread’.

Hedges

- 4.3.2. Within the site there are only two hedges. One is constructed with an earth bank with mature sycamore trees planted on top with a row of garden privet (*Ligustrum ovalifolium*) planted on the house side of the hedge. The second hedges on site appear to be a mature Cornish hedges constructed of stone-faced earth

banks, with a species-poor mix of native species, as shown in Figure 3.



Figure 5: Cornish native species-poor hedge (left-hand image) and mature sycamore trees (right-hand image)

- 4.3.3. Hedgerows provide connectivity between habitats by providing safe corridors for species to travel across. As well as this, it provides a good space for reptiles to hibernate along with consistent mixed-species ground flora, which is beneficial for pollinators and insects.
- 4.3.4. Site clearance to allow construction of buildings will result in the potential loss of: c. 10m² (c. 60%) of Cornish hedgerow habitat.
- 4.3.5. Species-rich hedges with a continuous tree or shrub cover will qualify as HPI and boundary features BAP in the county BAP.

4.4. Species

Flora

Vascular Plants

- 4.4.1. No notable plant species of conservation concern were identified on site, and only a small list of commonly found species was recorded. Therefore, the small-scale proposal will not negatively impact the populations of conservation notable species.

Non-native Invasive Plants

- 4.4.2. The desk study returned 20 records of non-native invasive species within 1km search radius. These species include three-cornered garlic (*Allium triquetrum*), montbretia (*Crocsmia × crocosmiiflora*) and Japanese knotweed (*Reynoutria japonica*).

Lower Plants

- 4.4.3. A specialised survey for non-vascular plants, bryophytes and lichens, was outside the scope of this study. The desk study revealed 10 records for lower plant species, including dwarf swan-neck moss (*Campylopus pyriformis*), Nicholson's beard-moss (*Didymodon nicholsonii*) and aloe haircap (*Pogonatum aloides*) that are both Cornwall Red Data Book species. The habitats on site are highly unlikely to support such notable lower plant species.

Bats

- 4.4.4. All UK bat species and their roosts are legally protected under the Conservation Regulations 2017 (HM Government, 2017).
- 4.4.5. The desk study revealed four records for bat species within the search area, including a Natter's bat

(*Myotis nattereri*) and a common pipistrelle (*Pipistrellus pipistrellus*).

- 4.4.6. Desk study results continued. A search for granted European Protected Species (EPS) licence applications on MAGIC found one such licence application located c. 1.8km southwest of the site. This EPS licence allowed for the destruction of a resting place for brown long-eared bats between 2013 and 2014.
- 4.4.7. The site is in a rural village location c. 3km southeast from the north Cornish coast. The site is partially bound by Cornish hedges and is well connected to the surrounding landscape via these hedges and surrounding dark country lanes. There is partial lighting on, and adjacent to site. The habitats on and abutting the site are species-poor with minimal herb species present. The surrounding hedges and lanes all hold more potential than the site to support commuting and foraging bats. A Bat and Barn Owl assessment of the building searching evidence of bats highlighted that the building doesn't support bats at the time of the survey.

Badgers

- 4.4.8. The desk study returned six records for badgers within the search area. Although widespread and common in Cornwall, badgers and their sets are legally protected under the Protection of Badgers Act 1992 (HM Government, 1992).
- 4.4.9. An assessment of the habitats potential to support badgers was undertaken. No badger setts or evidence of activity, such as snuffle holes, mammal pathways, latrines or hairs were recorded on-site. No signs of this species were recorded and due to the size of the site, habitats present and a solid fence surrounding the property, the site is unlikely to support commuting or foraging badgers.

Otter

- 4.4.10. The desk study revealed two records for otter within the search radius of the site. Otters and their resting places are legally protected under the Conservation Regulations 2019 and are a SPI and Cornwall BAP Priority species.
- 4.4.11. The habitats on site are highly unlikely to support otters, due to size and location of the site.

Dormice

- 4.4.12. The desk study revealed no records for dormice from the ERCCIS search, nor were any granted dormouse licence applications found in MAGIC within a 1km radius of the site.. Dormice and their nests are legally protected under the Conservation Regulations 2017; they are also SPI and Cornwall BAP Priority species.
- 4.4.13. Due to the habitats on site and connectivity to potential suitable dormouse habitat, and the size and location of the site it is unlikely to support dormice.

Hedgehog

- 4.4.14. The desk study returned more than 14 records for hedgehog within the 1km search area. Hedgehogs are SPI and Cornwall BAP Priority species.
- 4.4.15. Hedgehogs are often associated with suburban areas, in parks and gardens. No evidence of this secretive species was found on site, although there is potential for hedgehogs to be both commuting and foraging on site, therefore suitable mitigation measures must be adopted during the site clearance.

Birds

- 4.4.16. The desk study revealed a range of bird species of conservation value recorded within 1km of the site. All birds are legally protected whilst nesting under the Wildlife & Countryside Act 1981, as amended. The bird records are of differing statutory protection and conservation importance, ranging from Wildlife and

Countryside Act 1981, as amended, Schedule 1 species such as barn owl; Schedule 1, RSPB red-listed and SPI cirl bunting; RSPB red-listed song thrush, herring gull, woodcock and starling; and SPI and RSPB red-listed house sparrow, yellowhammer, lapwing and cuckoo. Many songbirds such as those returned in the desk study have potential to be foraging and breeding on site.

- 4.4.17. During the site visit very few birds were observed. However, robins, crows and wood pigeons were recorded flying over the site. This is not a comprehensive list as a bird survey was not carried out, and merely provides an indication of the species present on the day of survey.
- 4.4.18. The hedge at the front of the drive with the mature sycamore does have potential to support nesting common songbirds. Therefore, suitable mitigation measures must be adopted to ensure that no nesting birds are harmed during any vegetation removal or site clearance works, as described in Section 5.2.5.

Reptiles & Amphibians

- 4.4.19. The desk study revealed 4 records for reptiles found within 1km of the site. These species were adder (*Vipera berus*) and common lizard (*Zootoca vivipara*).
- 4.4.20. Adder and common lizard are partially protected under Schedule 5 (section 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended) Cornwall is considered a UK stronghold for adder. Adders and common lizards are listed as priority species for conservation on the UK BAP (BRIG, 2007). Adders have been identified as priority species for conservation within the county BAP (CBI, 1997, 1998).
- 4.4.21. Reptiles require a mixture of dry sheltered sites such as hedgerows/ woodland for shelter/ hibernation, open areas such as grassland for basking, and in the case of grass snake standing water in which to hunt. While the Cornish hedges provide potential reptile habitat, the amenity grassland which is kept cut short has very little potential for reptiles.
- 4.4.22. All British amphibian species require standing water to reproduce, so amphibians would not breed on this site in its current condition.

Invertebrates

- 4.4.23. The desk study returned numerous conservation notable species, such as small heath (heathland and grassland), small pearl-bordered fritillary (damp grassland) and wall butterfly (short grassland). Due to the main habitat being short cut amenity grassland, the site is unlikely to support any conservation notable species. However, there is potential to increase invertebrate interest on site post-development.

5. Ecological Constraints and Opportunities, including mitigation requirements

5.1. Ecological Constraints

- 5.1.1. Due to the habitats, connectivity, size and location of the site there are very few ecological restrains to the site. However, the largest restrain on site will include nesting birds between March-August.

Hedge Loss

- 5.1.2. The roadside hedges with mature trees could be lost or removed under the new footprint of the site.

Invasive Non-Native Species

- 5.1.3. Montbretia (*Crococsmia × crocosmiiflora*) was found on site, and these are listed under Schedule 9 of the Wildlife and Countryside Act 1981, as amended. It is illegal to allow such species to spread off site.

Commuting & Foraging Bats

- 5.1.4. Due to the size and location of the site bats are unlikely to use this site

Nesting Birds

- 5.1.5. Any loss of shrubs or trees such as along the hedges, which could provide nesting sites, has the potential to disturb nesting birds.

Commuting & Foraging Mammals

- 5.1.6. Due to the size and location of the site mammals are unlikely to use this site

Reptiles

- 5.1.7. Due to the size and location of the site reptiles are unlikely to use this site

5.2. Impact Avoidance and Mitigation

Hedge Loss

- 5.2.1. It will be necessary to ensure that there is no net loss of hedge associated with the proposed development. The access should be designed to minimise hedge loss. Any loss of hedge will need to be compensated for by the construction of a similar length of Cornish hedge and planted up with native shrubs such as blackthorn, hawthorn, hazel, holly, elder, field rose and dog rose.

Invasive Non-native Species

- 5.2.2. It is illegal to cause Schedule 9 species to spread to another location off site, therefore, as these plants are likely to be disturbed, these plants will need to be removed and disposed of appropriately. As there are only relatively small clumps of montbretia, it is recommended that these non-native invasive plants are hand-dug, ensuring that all the underground corms are extracted, and taken to a commercial composting facility, or to landfill. The receptor of this waste should be informed that it contains Schedule 9 species.

Nesting Birds

- 5.2.3. Any vegetation removal (including the brash pile removal) should be timed to avoid the main breeding

bird season between March and September (inclusive) and therefore be undertaken between October and February (inclusive). The nests and eggs of all wild birds are protected against taking, damage or destruction under the Wildlife and Countryside Act 1981. If this is not possible, and vegetation removal needs to be undertaken during the breeding bird season, then vegetation clearance will need to be undertaken under the supervision on an ecologist, carrying out an ecological watching brief during removal. If an active birds' nest is discovered, it will be necessary to stop work immediately and create a 10m exclusion zone in which no works are undertaken until the birds have fledged naturally.

- 5.2.4. Contractors must ensure that no harm should come to wildlife by maintaining the site efficiently by clearing away any material such as wire that animals can become entangled and preventing access to toxic substances.

5.3. Ecology Enhancement Opportunities

- 5.3.1. Enhancement measures are recommended under NPPF Chapter 11, Cornwall Local Plan Policy 23 (see Section 2.1.2) and Cornwall Planning for Biodiversity Guide (2018). This planning guidance recommends that at least one bird/ bat box should be installed per 'unit'. At least 75% of bat and bird boxes must be provided built into the dwellings themselves as tree-mounted boxes have a limited life span. Examples of suitable boxes are shown in Appendix B. One of each of the following boxes/bricks should be installed on each of the new properties; locations are as follows:

Bat boxes should be installed on south, south-east and south-westerly aspects, to face the sun, at least 2m above ground level;

Bird boxes should be installed between northern and eastern aspects, avoiding direct sunlight, at least 2m above ground level; and

Bee bricks should be installed on southern aspects, at least 1m above ground level with no upward height limit, close to areas of vegetation but not shaded by them.

- 5.3.2. As new amenity grassland lawn is likely to be proposed for the new properties, a seed mix such as Emorsgate Seeds EL1 Flowering Lawn Mixture should be used to increase biodiversity on site. Details regarding the management of this seed mix can be found at <https://wildseed.co.uk/mixtures/view/56>.
- 5.3.3. New trees or shrubs could be planted on the site perimeter. These should be native trees and shrubs such as crab apple, hawthorn, hazel and blackthorn.
- 5.3.4. New Cornish hedges could be planted as new boundaries on site. These should be planted with native woody species and be allowed to form a dense hedge that will provide a foraging, commuting, and nesting resource for a range of species. This hedgerow could be managed as a dense bushy structure to c. 2m wide and 3m tall and consist of species including hazel, hawthorn, field maple, blackthorn, oak, willow, rowan, spindle and crab apple. The hedges should be cut every 3-5 years to c. 2m wide and 3m tall.
- 5.3.5. However, if the site boundary is to be lined with fencing. It is proposed, 13cm x 13cm gaps should be created in occasional places at the base of the fences, to allow the movement of protected species such as hedgehogs to be able to commute across the site.

6. Conclusions

- 6.1.1. The purpose of this report is to identify key ecological constraints and mitigation requirements to inform the site design and planning application for the proposed development of a replacement dwelling at Amelveour Bungalow.
- 6.1.2. Under current proposals, the client plans to demolish the existing dwelling and garage, to allow the construction of the new dwelling. The dwelling will not be on the footprint of the existing house, but further south on the grassland. There will be no loss of hedges under the current proposals.
- 6.1.3. The potential for nesting birds was identified on site. It is considered that suitable mitigation can be incorporated into the development to minimise any impacts to acceptable levels.
- 6.1.4. The Bat and Barn Owls Assessment revealed that no bats or evidence of bats were found within the building prior to the assessment. However, if you wish to promote wildlife it is possible to provide roosting opportunities for bats within the completed building. Access for bats can be provided into the roof space (or into the space beneath the roofing slates if the development is to have vaulted ceilings) by leaving small gaps 15-20mm wide by at least 50mm long in suitable places. Suitable places would include behind soffits, fascias and barge boards or at the gable apex. The access points would need to be next to the walls (to allow bats to land on the wall then crawl up through the access point) and not inadvertently blocked by insulation (see enclosed leaflet for additional information).
- 6.1.5. If access for bats is included and the roof covering is to be underlined it is recommended that bitumen roofing felt is used. Recent research has shown that the modern breathable membranes can be harmful to bats (bats have been found dead in some roosts after having become entangled in the fibres of the membrane) and the membrane deteriorates over time due to damage from bats. Only type F1 bitumen felt is suitable for use in bat roosts; if the product states non-woven, polypropylene or spun-bond it is not suitable.
- 6.1.6. Alternatively bat bricks can be built into the walls of the building. These should be located as high as possible and away from any external lighting. These are widely available from a number of sources. Locally, Green & Blue in Perranporth make 'Bat Blocks' (<https://www.greenandblue.co.uk/products/bat-block>). Other bat bricks are available from websites such as Wildcare (<https://www.wildcare.co.uk/wildlife-nest-boxes/bat-boxes/wall-mounted.html>) or NHBS (<https://www.nhbs.com/equipment>).
- 6.1.7. Montbretia was recorded on site. A management plan for these species should be developed and followed to facilitate the eradication of this species from the site.
- 6.1.8. No further ecological surveys are required.

7. References

- Bat Conservation Trust (2018). Bats and Artificial Lighting in the UK Guidance Note. Bat Conservation Trust, London.
- British Standards Institute (BSI) (2013) Biodiversity – Code of Practice for Planning and Development BS42020:2013.
- Cheffings, C.M. & Farrell, L. (Eds), (2005) The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough.
- CIEEM [Chartered Institute of Ecology and Environmental Management] (2017), Guidelines for Preliminary Ecological Appraisal, CIEEM, Winchester.
- CIEEM (2017) Guidelines for Ecological Report Writing. Available from: <https://www.cieem.net/guidelines-for-ecological-report-writing> [last accessed 3rd December 2021]
- Cornwall Council (2016) Cornwall Local Plan: Strategic Policies 2010-2030. Available from: <https://www.cornwall.gov.uk/environment-and-planning/planning/planning-policy/adopted-plans/> [last accessed 3rd December 2021]
- Cornwall Council (2018) Biodiversity Guide. Available from: <https://www.cornwall.gov.uk/environment-and-planning/planning/planning-policy/adopted-plans/planning-policy-guidance/cornwall-planning-for-biodiversity-guide/> [last accessed 3rd December 2021]
- Cornwall Mammal Group (2013) The Mammals of Cornwall and the Isles of Scilly. ERCCIS, Truro.
- Eaton M. A., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. & Gregory, R. (2015) Birds of Conservation Concern 4: The population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds December 2015.
- HM Government (2017) The Conservation of Habitats and Species Regulations 2017. HMSO, London.
- HM Government (2006) The Natural Environment and Rural Communities Act 2006. HMSO, London. HM Government (1981) The Wildlife and Countryside Act 1981. HMSO, London.
- HM Government (2000) The Countryside and Rights of Way Act 2000. HMSO, London.
- HM Government (1992). Protection of Badgers Act 1992. HMSO, London.
- HM Government (1981, as amended) The Wildlife and Countryside Act 1981 (as amended). HMSO, London.
- JNCC [Joint Nature Conservation Committee] (2011a) UK BAP Priority Species and Habitats. Available at: <http://jncc.defra.gov.uk/page-5705> [accessed 3rd December 2021].
- JNCC (2010) Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit. ISBN 0 86139 636 7.

8. List of Appendices

A. Phase 1 Habitat Survey Vascular Plant List

A. Phase 1 Habitat Survey Vascular Plant List

DAFOR is a nominative scale where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare. L = Locally

Latin Name	Common Name	H1	back garden	front garden
<i>Acer pseudoplatanus</i>	Sycamore	x		
<i>Anthriscus sylvestris</i>	Cow parsley	x		x
<i>Asplenium scolopendrium</i>	Hart's tongue	x		
<i>Bellis perennis</i>	Daisy		x	x
<i>Buddleja davidii</i>	Buddleja	x		
<i>Carex pendula</i>	Pendulous sedge	x	x	x
<i>Cerastium fontanum</i>	Common mouse-ear	x	x	x
<i>Cirsium vulgare</i>	Spear thistle		x	x
<i>Crepis</i> sp.	Hawk's-beard		x	
<i>Crocsmia x crocosmiiflora</i>	Montbretia	x		
<i>Dactylis glomerata</i>	Cock's-foot	x	x	x
<i>Digitalis purpurea</i>	Foxglove	x		
<i>Dryopteris filix-mas</i>	Common male fern	x	x	x
<i>Epilobium</i> sp.	Willowherb	x		
<i>Festuca rubra</i>	Red fescue	x	x	x
<i>Fuchsia magellanica</i>	Fuchsia	x		
<i>Geranium robertianum</i>	Herb-robert			x
<i>Glechoma hederacea</i>	Ground ivy	x	x	
<i>Heracleum sphondylium</i>	Hogweed, cow parsnip	x	x	x
<i>Holcus lanatus</i>	Yorkshire fog	x	x	x
<i>Hypochaeris radicata</i>	Common cat's ear		x	
<i>Leontodon hispidus</i>	Rough hawkbit		x	
<i>Ligustrum ovalifolium</i>	Garden privet	x		
<i>Matricaria discoidea</i>	Pineappleweed			x
<i>Plantago lanceolata</i>	Ribwort plantain	x	x	x
<i>Plantago major</i>	Greater plantain		x	x
<i>Poa annua</i>	Annual meadow grass		x	
<i>Polypodium vulgare</i>	Common polypody	x		
<i>Potentilla anserina</i>	Silverweed			x

Latin Name	Common Name	H1	back garden	front garden
Ranunculus acris	Meadow buttercup			x
Ranunculus repens	Creeping buttercup		x	x
Rubus fruticosus agg.	Blackberry/bramble	x		x
Rumex obtusifolius	Broad-leaved dock	x		x
Senecio jacobaea	Ragwort			x
Silene dioica	Red campion	x	x	x
Taraxacum officinale agg.	Dandelion	x	x	x
Trifolium repens	White clover	x	x	x
Umbilicus rupestris	Navelwort	x		
Urtica dioica	Common nettle	x	x	x
Veronica chamaedrys	Germander speedwell		x	x
Tyrimnus leucographus	white spotted thistle		x	

