



**Preliminary Ecological Appraisal
(PEA)**



Trewithen Dairy,
Greymare Farm,
Lostwithiel.
PL22 0LW

SX 12711 63756

May 2021



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Declaration of Compliance

BS 420202013

This study has been undertaken in accordance with British Standard 420202013 Biodiversity, Code of practice for planning and development, unless specifically stated otherwise.

Code of Professional Conduct

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

Validity of Survey Data and Report

The findings of this report are valid for 12 months from the date of survey, unless the site has been maintained in exactly the same condition, in which case the report can be considered valid for 24 months once verified by the acting ecologist. Please be aware that some Local



Planning Authorities (LPAs) require an update once 12 months has elapsed. If work has not commenced within this period, an updated survey by a suitably qualified ecologist may be required.

Legal and Moral Constraints and Responsibilities Summary

An overview of relevant legislation and responsibility is given within the Appendices Planning Policy and Legislation. Constraints exist for development where specific habitats or species are, or are potentially, within or adjoining a site proposed for development.

It is the responsibility of the client and those in receipt of this report to ensure ALL personnel or associated peoples likely to be involved in ANY management or works to this site - including but not limited to the seasonal flailing of hedgerows or cutting of grassland/scrub - are fully informed of any restrictions in force regarding the possible presence of protected species on this site as outlined in this report. If there is any doubt as to what works or management of habitats may legally occur, consultation with the acting ecologist is essential. Avoidance, mitigation, compensation and enhancement are site specific and apply as herein.

In all instances where Mitigation is given, also refer to:

- Any further survey work for protected species (Phase 2 Surveys) recommended, or their results.
- General Good Practice during Construction Stage.
- Law and Legislation pertaining to specific species (plants and animals)
- Prevention of the spread of native and non-native invasive plants and animals.
- Avoidance of Wildlife Crime <http://www.nwcu.police.uk/>

Further advice if species are found onsite during development may be sought from Ecological Surveys Ltd (Tel 01503 240846 or 07736 458609) or Natural England.



1 INTRODUCTION

1.1 Executive Summary

Table 1

<p>Purpose of the report:</p>	<p>To present the results of the Extended Phase 1 Habitat Survey undertaken at the named site; assess the impacts of the proposed development on the important ecological features identified and detail applicable compensation, mitigation measures and biodiversity enhancements as appropriate.</p>
<p>Proposed development:</p>	<p>It is understood that the proposals include the following elements</p> <ul style="list-style-type: none"> - Extension of existing building to create refrigeration facilities to the north of existing buildings (this will intrude into potential reptile habitat and scrub) - Creation of a new road to the west of the existing yard (will impact potential reptile habitat) - Construction of new structures within the concrete yard – no impact
<p>The following will be required in association with this PEA: -</p> <p>Further Phase 2 Surveys</p> <p>Further Mitigation Strategy reports</p>	<p>This report is considered sufficient for the size and scale of predicted impacts as a result of the proposal.</p> <p>However, the proposed design of the development will impact on habitats suited to protected species habitation, therefore, <u>further Phase 2 surveys will be required.</u></p> <ul style="list-style-type: none"> • Reptile Presence/Absence Survey. <p>(This survey is currently underway)</p>
<p>Avoidance of impact to & retention & protection of: -</p>	<p>Habitats: -</p> <ul style="list-style-type: none"> • Removal of woody species (trees/scrub) during the bird nesting season (March to August inclusive), is prohibited unless an ecologist checks for nesting birds prior to removal. • Reptile Habitat must not be impacted prior to completion of the reptile surveys and advice provided on the legal requirements to protect these species. <p>Species: -</p> <ul style="list-style-type: none"> • Nesting birds. • Reptiles
<p>Habitat/Species Mitigation</p>	<ul style="list-style-type: none"> - Impact Avoidance during the Construction Phases. - Where hedgerow shrubs/trees are cleared – this action is constrained whilst birds are actively nesting or fledging in the habitat.



	<ul style="list-style-type: none"> - Creation of replacement scrub area .010h will replace 0.08h - Creation of a ruderal/ephemeral reptile bank 0.07h will replace 0.06h
Habitat & Species Enhancement/Creation	<ul style="list-style-type: none"> - 1 bird provision - Bee bank provision - Landscaping for the benefit of wildlife.
International/Nationally Designated sites	There are no designated or non-designated site which will be impacted by the proposal
Summary Figures Net Gain	The proposed Mitigation provides an overall gain. However, the use of the Defra Metric is not mandated for this scale of development as the land take is less than .5 hectares
<p>An area of ruderal/ephemeral 0.06 hectares and hazel scrub 0.08 hectares will be mitigated for onsite, by creating an area of scrub of 0.10 hectares and profiling of the track edges will create ephemeral (reptile habitat) which exceeds 0.07 hectares in extent. This exceeds the BNG 10% target.</p>	
<p>The LPA should ensure that any mitigation and compensation measures identified in this report, together with enhancement recommendations are 'conditioned' where appropriate.</p>	

1.2 Requirement for Ecological Survey/Assessment

Ecological Surveys Ltd were commissioned to undertake a Preliminary Ecological Appraisal (PEA) to include the potential for legally protected and notable species of the Site, and to assess the potential impact of the development on the biodiversity of the Site and its immediate environs. Ecological Surveys Ltd has not been informed of any previous surveys undertaken on this site that need to inform this report.

All ecological data and information gained through both the desktop survey and the survey work were evaluated. The important ecological features were then identified and evaluated against the potential impacts/effects that the proposed development may have on the ecology of the Site and surrounding area.

The biodiversity importance of each designated site, habitat and species is evaluated on a geographic scale: international, national, county and local.

Evaluation of designated sites considers their designation; their ecological and landscape relationship with the proposed site; and the species and/or habitat types for which the site was designated.

Evaluation of habitats considers their designation; their area, quality and viability; diversity and connectivity to the wider landscape; and structural diversity and species-richness.



Evaluation of species considers their designation, including legal protection and rarity.

When assessing the impact of the development and changes to the baseline conditions on site, predictions will be made which focus solely on the zone of influence whilst taking into consideration the lifespan of the development and the significant impacts as identified from the proposed work operations throughout the lifespan of the development.

The proposed development aims to firstly avoid and then mitigate against any potential effects/impacts on the local ecology/biodiversity, ensuring compliance with nature conservation legislation. It aims to achieve this by applying the mitigation hierarchy (as mentioned in Paragraph 118 of the National Planning Policy Framework and detailed in Paragraph: 018 Reference ID: 8-018-20140306 of National Planning Practice Guidance) as follows:

Avoidance – Significant harm to wildlife species and habitats should be avoided through design.

Mitigation – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations.

Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity.

Appropriate measures to avoid and/or minimise the significant negative effects on the important ecological features have been identified. These mitigation measures aim firstly to avoid the overall effect/impact, or for those that cannot be avoided, reduce their overall effect value. It is not always possible to fully mitigate an adverse effect to neutral levels.

Under the National Planning Policy Framework, NPPF, (HM Government, 2019) local planning policies and decisions should 'contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise



pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

[Taken from NPPF 2019, Section 15. Conserving and enhancing the natural environment, paragraph 170, p49]

Thus, the mitigation hierarchy should be applied when considering the impacts of developments and local planning decisions on the natural environment, with the protection of important wildlife sites, habitats, species and ecosystem services; the avoidance of impacts, mitigating these impacts where appropriate, and then achieving biodiversity net gain through enhancements.

Section 15 of the NPPF 2019 goes on to state that 'when determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.'

[Taken from NPPF 2019, Section 15. Conserving and enhancing the natural environment, paragraph 175, p50]

The aim of development should be to deliver biodiversity net gain on site as well as limiting damage to important ecological features. Using the information gained during the desktop survey and the extended Phase 1 habitat survey, and the ecological requirements of habitats, species and local environmental conditions, biodiversity enhancements for the Site have been considered, providing opportunities to increase the diversity of habitats and species on site.



1.3 Limitations to Report

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The current survey was carried out in May. This is an optimal time for undertaking ecological field surveys for most species/groups. The ecological survey has not produced a definitive list of plant and animal species present on site and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. However, the results of field- and desk-based surveys are considered to have been sufficient to evaluate ecological features within the predicted zone of influence to a high degree of confidence and to enable an initial assessment of potential impacts likely to require mitigating actions.

It should be noted that habitats, and the species they may support, change over time due to natural processes and because of human influence. In line with current guidelines, the survey on which this report is based is only valid for two years, after which time it will need updating. It being accepted that some LPA's now expect a survey to be updated after twelve months.

2 METHODS

2.1 Desk Based Assessment

An initial desk-based assessment was carried out by Ecological Surveys Ltd collating data relating to the site itself and up to a 2km radius or greater depending upon the import of information gathered and includes:

- Statutory and non-statutory wildlife and earth science sites
- BAP Priority Inventory Habitats
- Legally protected and nationally notable species
- Sites primarily utilised included MAGIC, National Biodiversity Network

The data gathered is considered sufficient along with the field survey to reach appropriate conclusions for the mitigation and enhancement of this site.

2.2 Phase 1 Field-based Assessment

The field survey included carrying out an Extended Phase 1 Habitat Survey, consisting of a walkover assessment of the Site using Phase 1 Habitat Survey methodology (JNCC, 2010, as amended by the Institute of Environmental Assessment (IEA, 1995)). This is a standard technique for classifying and mapping British habitats. All areas within the Site were surveyed, the main plant species recorded, and habitat type mapped. Indicators of ecological value were also noted, including the presence or signs of any legally protected or rare species.

A search was also made to identify the presence of any invasive non-native species (particularly those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)), including Japanese knotweed (*Reynoutria japonica*) and Himalyan balsam (*Impatiens glandulifera*).



2.2.1 Vegetation

All broad habitat types were identified, and a list was compiled of characteristic plant species within each habitat type. Where necessary, habitat types of particular botanical interest are subject to more detailed survey using methods developed for the National Vegetation Classification (NVC) (Rodwell, 1992). The vegetation recorded on site during this Extended Phase 1 Ecological Survey is described here with reference to Joint Nature Conservation Committee Phase 1 habitat terminology.

Table 2 Protected Species Grading Criteria

Grading Criteria	Justification
Confirmed Presence	Species confirmed on site through direct sighting, presence of unambiguous field signs (e.g. scat, hair, prints, nest, eggs, habitation etc.) or through desk-based assessment.
High Potential	Presence of optimal habitat features for species. Surveyed site within known range/close to known occurrence. Excellent connectivity to optimal habitat. No justification for discounting presence of species.
Moderate Potential	Presence of some suitable habitat features for species. Surveyed site within/close to known range or known occurrence but factors such as isolation/fragmentation may reduce potential. Presence of species is more likely than not.
Low Potential	Minimal suitable habitat present or, if present, highly degraded/fragmented. Minimal linkage to suitable habitat beyond site. Presence of species unlikely.
Negligible Potential	Site is entirely unsuitable for species. Presence of species highly unlikely.

2.2.2 Buildings

Protected Species – Built Structures

All built structures were assessed for their potential to support protected species. All external and internal areas were inspected for the presence of suitable access, egress nesting or roosting features. Such features include open access for entry or free flight, missing, slipped, broken or bowed roof materials; gaps within soffits; gaps behind fascia; gaps/holes within brickwork; louvers; lifted lead flashing and gaps around window and door casements. Features were inspected using binoculars/close range monocular and the surveyor was equipped with a high-powered torch. All accessible internal void spaces were inspected for actual evidence (field signs) of protected presence (living or dead) nesting material, droppings, fur and urine staining.

2.2.3 Badger

The surveyed area and adjacent habitats were inspected for field signs of badger activity.



This includes badger setts, latrine sites, dung piles, well-used trails, prints and hairs.

2.2.4 Bats – Trees

Trees within and immediately adjacent to the surveyed area were subject to detailed visual inspection from ground level using binoculars in order to identify potential roost features (PRF) which may offer suitable opportunities for bats. These features include dense ivy cladding; woodpecker holes; rot holes; limb stubs; cavities; flaking bark; cracks and splits. Each tree has been graded for its suitability for supporting bats based on criteria within 'Bat Surveys for Professional Ecologists Good Practice Guidelines 3rd Edition' (Collins, 2016). These criteria are detailed in Table 1.

Table 3 Bat Roost Tree Grading Criteria

Grading Criteria	Reason
Confirmed Bat Roost	Unambiguous evidence of roost bats seen emerging/entering, bats audible, droppings/urine-/fur- staining visible or known roost based on desk-based assessment.
1* - High Suitability	Trees with obviously suitable PRFs which are considered capable of supporting larger, established roosts of high conservation significance.
1 - Moderate Suitability	Trees with potentially suitable PRFs but which are not likely to support roosts of high conservation status.
2 - Low Suitability	Trees of sufficient size/age to exhibit PRFs but nonvisible from ground-level or features seen appear to offer limited potential.
3 - Negligible Suitability	Trees with no /negligible potential to support bats.

2.2.5 Bats – Foraging and Commuting Habitat

An assessment was made of the suitability of the surveyed area and the surrounding landscape to support foraging and/or commuting bats. The assessment was based on the presence of key habitat features such as woodland, scrub, hedgerows, grassland and open water, which are highly attractive to bat species. Of importance, is the presence of unlit semi-natural vegetation and habitat linkage between the site and the surrounding landscape such that the site may form an integral part of landscape-scale habitat for bats.

The quality of bat foraging and commuting habitat has been assessed using the criteria detailed in Table 2.

**Table 4 Bat Foraging and Commuting Habitat Grading Criteria**

Grading Criteria	Reason
Optimal Quality	Presence of optimal habitat features such as unlit woodland, scrub, hedgerows, grassland and open water with excellent linkage to similar habitats within the wider landscape. Presence of high potential buildings/trees and/or known roosts within immediate landscape. Sites are generally rural in character.
Moderate Quality	Presence of optimal habitat features such as woodland, scrub, hedgerows, grassland and open water with reasonable linkage to similar habitats within the wider landscape. Limiting factors may include size of site.
Low Quality	Presence of some limited habitat features such as scrub or hedgerows, with minimal linkage to suitable habitats within the wider landscape.
Poor Quality	No suitable habitat present or, if present, highly degraded/fragmented. Minimal unlit areas with no linkage to suitable habitat beyond site. Generally urban in character.

2.2.6 Hazel dormouse

An assessment was made of the suitability of habitat within the site to support hazel dormice *Muscardinus avellenarius*. Key habitats are woodland, scrub and hedgerows, particularly where dense vegetation within which to nest/hibernate is offered along with key resources such as hazel nuts, fruiting/nectar-rich plants (e.g. hawthorn, bramble) and honeysuckle (for nesting material). Of importance is the presence of landscape-scale habitat linkages such as hedgerows, and where the site is linked to such habitat this will raise the potential for the species to occur.

2.2.7 Birds

An assessment was made of the site's suitability to support breeding and wintering bird species. Birds will utilise a broad range of habitats, including built structures; trees; scrub; isolated shrubs; dense herbaceous vegetation (terrestrial and aquatic) and open grassland among others. All bird species observed on site were recorded.

2.2.8 Reptiles

An assessment was made of the site's suitability to support reptile populations. Key habitat features include tussocky/patchy grassland; scrub edge; linear watercourses; ponds; compost



heaps; brash piles and rubble/soil heaps. Linkage to suitable habitat within the surrounding landscape will increase the potential for reptiles to occur, although populations can occur within isolated/fragmented habitats even within otherwise-unsuitable areas.

2.2.9 Amphibians

An assessment was made of all waterbodies and terrestrial habitat within the site for their suitability to support populations of amphibians. Suitable waterbodies will generally be characterised by the presence of good quality freshwater, diverse macrophyte cover and an absence of fish.

For the European-protected great crested newt *Triturus cristatus*, each waterbody was, where considered necessary, assessed using the Habitat Suitability Index (HSI) system (Oldham et al., 2000) and assigned a grading score between zero (poor suitability) and 1 (excellent suitability).

2.2.10 Invertebrates

The presence of important invertebrate species or assemblages is generally dependent upon distinct micro-habitats such as dead wood (standing, fallen, of all decay stages), sap runs, damp/wet soils, mixed sun/shade, bare/friable soils (e.g. exposed sand/soil banks) and a diversity of plant species.

For aquatic invertebrates, important species/assemblages will generally be associated with high-quality aquatic habitats such as ponds, rivers, streams and ditches where water quality is good, and vegetation is diverse. Other key factors will include substrate and waterbody morphology. An assessment of the site's potential to support a diverse invertebrate assemblage and/or specialist species is based loosely on the presence of habitat features described in Kirby (2001). Where possible, a list of all invertebrate species encountered has been made.

3 PROJECT DETAILS

Ecological Survey Ltd were commissioned by the clients to undertake a Preliminary Ecological Survey (PEA) of this site in relation to:

- Extension of existing building to create refrigeration facilities to the north of existing buildings
- Creation of a new road to the west of the existing yard
- Construction of new structures within the concrete yard

3.1 Site Location Description

The site is located as indicated: - Grid Reference - SX 12711 63756. The existing site is largely on hardstanding with an access track to the north and west and roads to the south and east. The site consists of a modern dairy facility producing a range of dairy products including, milk,



butter and cheese product.

The site is set within a rural setting, with the surrounding land used to support dairy farming industries. The wider landscape is both pasture and woodland dominated.

Figure 1 Site Location



Figure 2: Surveyed Area

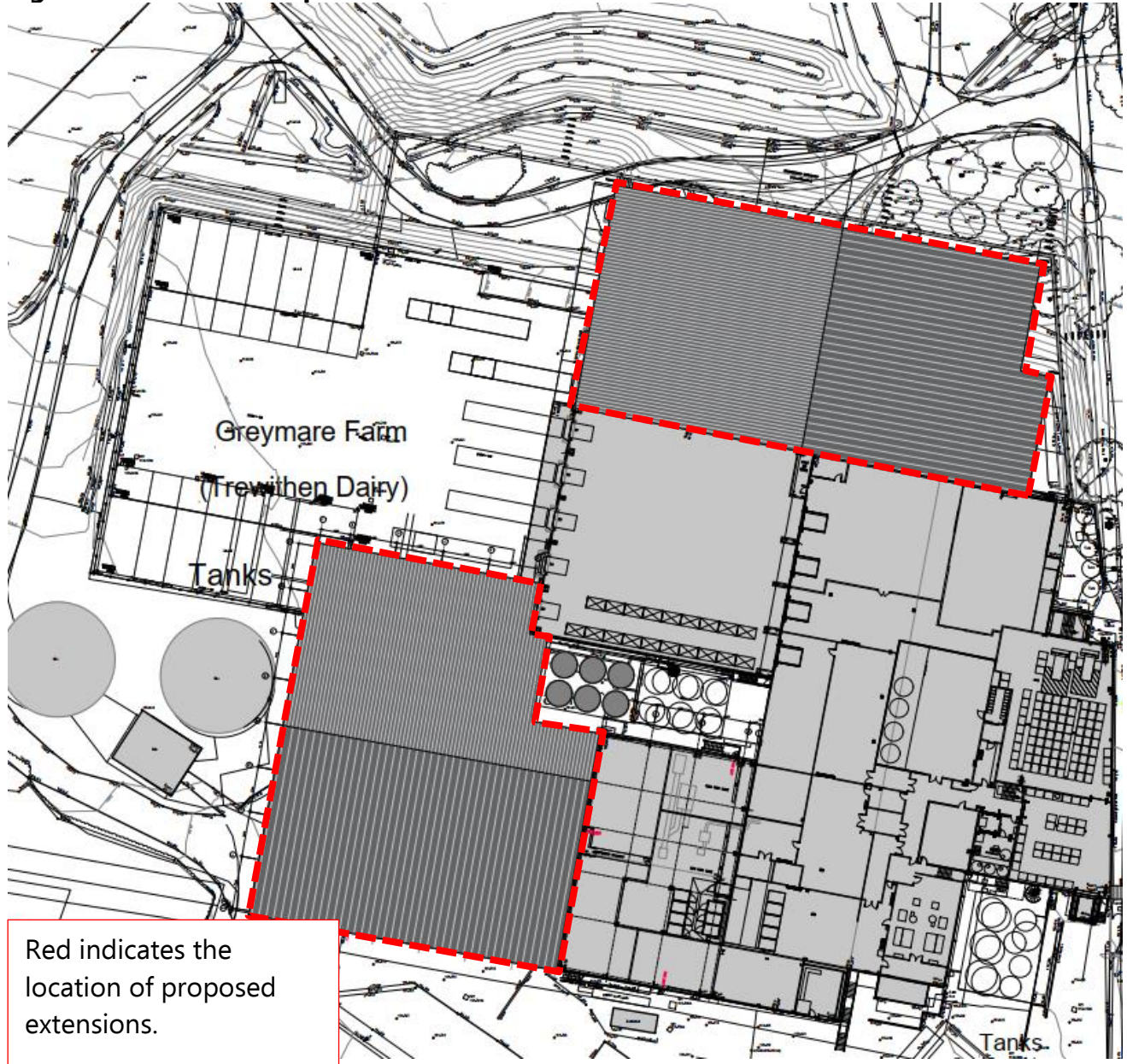
Land within the red line shown above was surveyed.

3.2 Illustrated Proposal

Works on this site will necessitate the clearance of scrub and grass ruderal areas to enable the proposal to be taken forward. This is largely to the north and west of the main dairy facilities and is highlighted on the drawing below. In order to develop in a northerly direction some habitats will be lost. Similarly, widening /strengthening any tracks will be likely to impact habitats on either side of the existing track.



Figure 3 Illustrated Proposal



The images below show the habitats to be impacted and their location.





4 RESULTS

4.1 Introduction

This section provides details of the results of the Extended Phase 1 Ecological Survey of the named site.

4.2 Desk-based Assessment

4.2.1 Internationally and Nationally Designated Sites

A biological records search (up to 2km search) was commissioned from Cornwall Biodiversity Network and where appropriate details are included within this report.

Table 5

Site Name	Distance & Direction
Special Area of Conservation (SAC):	None
Special Protection Area (SPA):	None
RAMSAR:	None
World Heritage Site:	None with 2km
Site of Special Scientific Interest (SSSI):	None within 2km – Boconnoc Park Woods approx. 3km SE and Mid Cornwall Moors 4km SW
Areas of Outstanding Natural Beauty:	
National Nature Reserve (NNR):	None
Local Nature Reserve (LNR):	None

4.2.2 Locally Designated Sites

Table 6: Non-statutory designated sites located within 2km of the site

Cornwall Wildlife Sites Name	Distance & Direction
Glynn Valley Woods	within 100m SW
Lanhydrock	Within 500m SW

There are no vectors between the site and the County Wildlife Sites

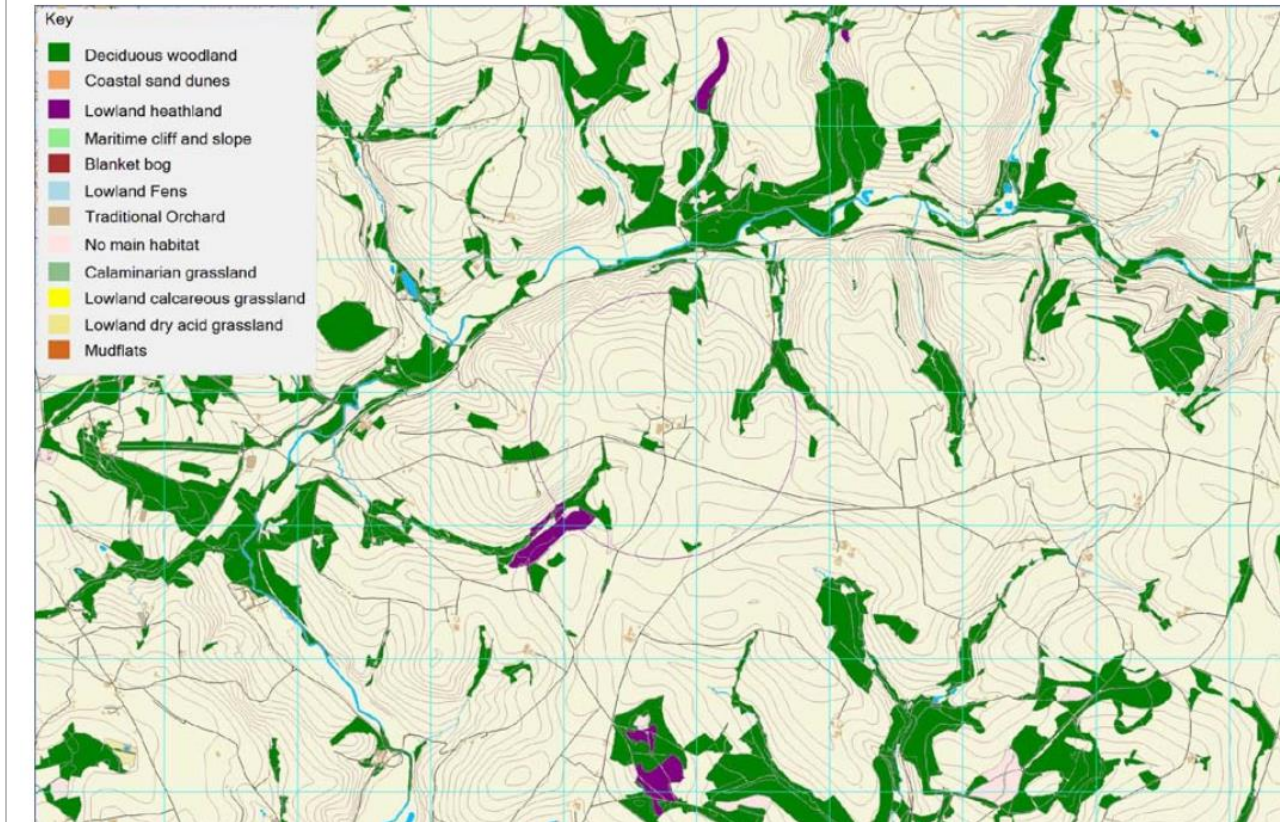


4.2.3 Priority Habitats

Table 7: UK BAP Priority Habitat Inventory habitats found both on site and within a 2km radius of the proposed development site.

Priority Habitats Distance & Direction

Figure 6: Map showing the location of BAP Priority Habitat Inventory habitats.



4.2.4 Protected Species

Records of protected and notable mammals, reptiles or amphibian records within 2km (raising to 5km, species dependent) of the site have been collated. The potential for the site to support these various groups is discussed further in the following sections. Records are for post 1999 or last record pre 2000 if no later record exists. Not all records can be legally reported.

Table 8

Species	Location and Year. All species below recorded as OFF SITE
Bats:	A lack of records is indicative of a lack of survey effort, not a lack of bats. Dairy farms generally have high numbers of bats foraging.
Other mammals:	Dormice are known to thrive in woodlands to the north of the site
Birds	Skylarks have been recorded in the vicinity
Reptiles:	Adders have not been recorded for several years



Amphibians:	Frogs and palmate newts are highly likely to be present in the surrounding areas
Invertebrates:	There are significant numbers of records of moths in this locality, however the impacted habitats are not likely to host any unusual species.
Flora:	Cornish Bladderseed (<i>Physospermum cornubiensis</i>) and Bastard balm (<i>Mellittis melissophyllum</i>) has been recorded just south of the site. Neither were recorded on site.
Schedule 9 non-native invasive plants:	

4.3 Field Survey

The broad distribution of each habitat and its general composition is described below. The location of each surveyed area is shown in Figure 4 Habitat Map.

4.4 Habitat Map

Table 9

Habitat type	Area		Condition	Key/target note
Area habitats	Hectare	Sq.m		
Hazel scrub	0.08	800	Poor	Some removed
Ruderal / ephemeral	0.06	600	Poor	Previously worked ground
Linear habitats	Length km - m			
None -	Km/	m		

Additionally, one extension is to be constructed on an existing concrete yard and is neutral in impact.



Figure 4 Habitats Map



Yellow = Reptile area north of factory units – new refrigeration extension will destroy this area. Orange is scrub and dotted orange recently removed scrub. Stumps still visible.



Yellow - Reptile potential in these areas too. Green area (variable size) to create lost scrub.

**Habitats and Species: -**

Habitats assessed of no/negligible value or of which do not offer an important ecological feature were: - the existing yard on which an extension is proposed

These habitats are not considered further.

4.4.1 Vegetation

Past and present usage: - The areas to the north and west of the site have been subject to disturbance during various phase of the dairy's growth / expansion. Historically, the area would have been pasture, but that was many years previously and the habitats have been assessed as they currently are.

The following broad habitats were recorded on-site during the survey:

Vegetation onsite comprises ruderal / ephemeral and hazel scrub. Whilst neither category is entirely descriptive, they are close approximations. The hazel scrub contained some ornamental trees and some larger native species such as ash and oak. Some of the scrub has been removed and some remains to be removed. The area of loss has been estimated at 0.08hectare and the area of ruderal/ephemeral has likewise been estimated – at 0.06hectares.

These habitats can be important for several animal species and provides habitat for potential protected species such as: ruderal/ephemeral - reptiles and hazel scrub – nesting birds.

The site vegetation value is assessed as low floral diversity: ruderal/ephemeral and moderate diversity: hazel scrub.

4.4.2 Invasive Non-native Species: -

No invasives were recorded during the visit, although Invasive non-native species listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) have been recorded within the vicinity. Himalayan balsam (*Impatiens glandulifera*), montbretia (*Crocsmia x crocosmiiflora*) are shown in close vicinity and variegated yellow archangel (*Lamiastrum galeobdolon* ssp. *argentatum*), three-cornered garlic (*Allium triquetrum*)) a little further away. *Rhododendron ponticum* is found within the hedgerow of the lane directly south of the site.

These are listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended).

4.4.3 Injurious Weeds

Broadleaved dock species are recorded onsite and are covered by the Weeds Act 1959 which specifies five injurious weeds including Common ragwort – *Senecio jacobaea*, Broad-leaved dock – *Rumex obtusifolius*, Curled dock – *Rumex crispus*, Creeping thistle – *Cirsium arvense*, Spear thistle (other common names: Scotch Thistle, Bell Thistle) – *Cirsium vulgare*.



4.4.4 Hedgerows: -

No Hedgerows are impacted by the proposal.

4.4.5 Woodland: -

No Woodlands is impacted by the proposal.

4.4.6 Trees: -

There are a number of trees on site amongst the scrub. None of the trees offer bat roosting potential. There does not appear to be any reason to remove any more trees/scrub for this proposal to proceed.



4.4.7 Scrub: -

Scrub onsite comprised the following woody species: hazel (*Corylus avellana*) hawthorn (*Crataegus monogyna*), bramble (*Rubus fruticosus agg.*) etc. Most has been removed so definitive ID is not possible.



4.4.8 Water: -



Water is not a feature of the surrounding habitat.

4.4.9 Buildings



Buildings on site are of a prefabricated nature and largely of sheet metal walls over steel frames. They are light and airy and very busy. Totally unsuited to bats and nesting birds. Value for protected species: - Negligible.

4.5 Protected Species

4.5.1 Bats

Bats – Trees: No Potential

Bats – Foraging and Commuting Habitat: Negligible value

4.5.2 Badger

No evidence of badger was recorded. The habitat is assessed as offering negligible value.

4.5.3 Birds

No present or past nests were recorded. The habitat is assessed as offering low value in general and moderate value in the remaining trees / scrub.



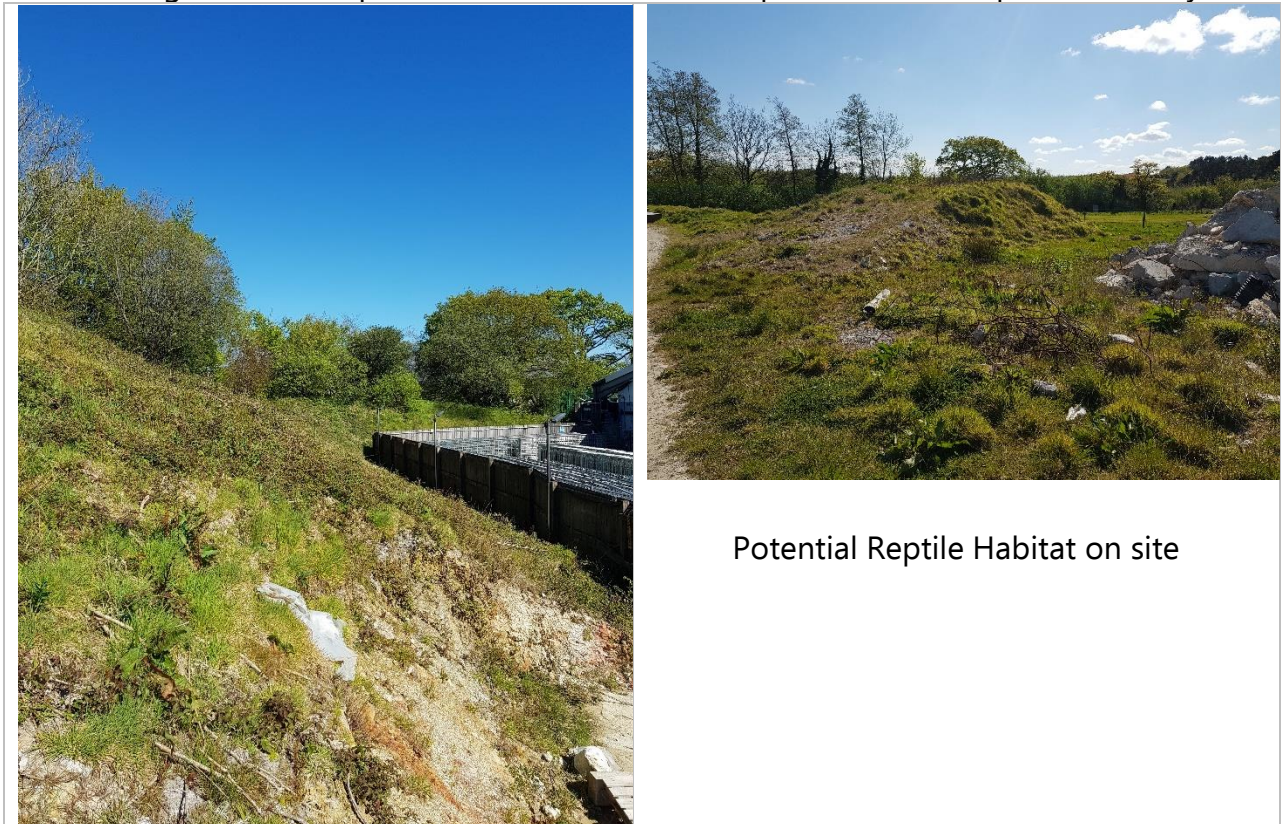
4.5.4 Hazel Dormouse

Trees onsite have a low capacity to support hazel dormice. No evidence was recorded of this species, or of foraging by this species. The level of disturbance and fragmented habitat in this location is considered to offer negligible potential.

4.5.5 Reptiles

The survey identified habitat on site of composition that could be capable of supporting and sustaining reptiles such as slow worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*). In brief, the habitat structure comprised: -

- Vegetative Structure: ephemeral with scrub
- Extent: - large enough and connected to other aspects for slow-worm/lizard/snake
- Aspect: - sunny south facing
- Topography: - banks/hummocks/hollows/south slopes
- Connectivity: - allowing for colonisation and recolonization
- History: - past and present management of the land indicates time for reptiles to have established.
- Refuge: - where reptiles could take cover from predation and reproduce safely.



4.5.6 Amphibians

No suitable habitat was recorded. The habitat is assessed as offering negligible value.



4.5.7 Invertebrates

The habitats are common and unlikely to support rare or notable species. The habitat is assessed as offering low value for invertebrates.

4.5.8 Further Species Considerations

BAP and invasive species

It is possible hedgehogs may occupy this site as the habitat is suitable, however, no evidence was recorded of this species.

5 IMPACTS

5.1 Introduction

This section is supported by the results of the Extended Phase 1 ecological survey and presents the likely impacts, *in the absence of any mitigating actions*, on protected and notable habitats and species associated with the proposed works. Only those features confirmed as present on site or considered to have from low to high potential occurrence on site have been taken forward for further assessment. In addition, any designated sites located within 0.5km of the site have been taken forward for further assessment.

5.2 Designated Sites: SSSI/SPA/SAC/RAMSAR

The River Camel SAC 13km N, St Austell Clay Pits 4.6km SW of the site and Golitha Fall NNR 4.7km NE are highly unlikely to be impacted by any works at this site.

The Site lies within a SSSI Impact Risk Zone, but the type of development does not require Natural England to be consulted.

Various Zones of Influence are shown below, but these exclude the recent development concerning the River Camel Catchment. Nonetheless the proposal is outside of the Camel catchment by some margin.



Derived Zones of Influence

- 35. The Zones of Influence around each European Designated Site have been derived using the data collected (as summarised above) and are shown in figure 2. The Zones of Influence (Zoi) represent the zone from which most visitors travel to access the European sites for recreational purposes.
- 36. For the marine and estuarine sites the Zois are based on four seasons of visitor survey work, undertaken through face to face surveys. Postcodes collected during these surveys were plotted on maps to show where visitors had travelled from. The geographic zone of influence shown use these plotted postcodes and show, measured in kilometres, zones within which 75% or more of likely visits are deemed to arise in association with where people live.

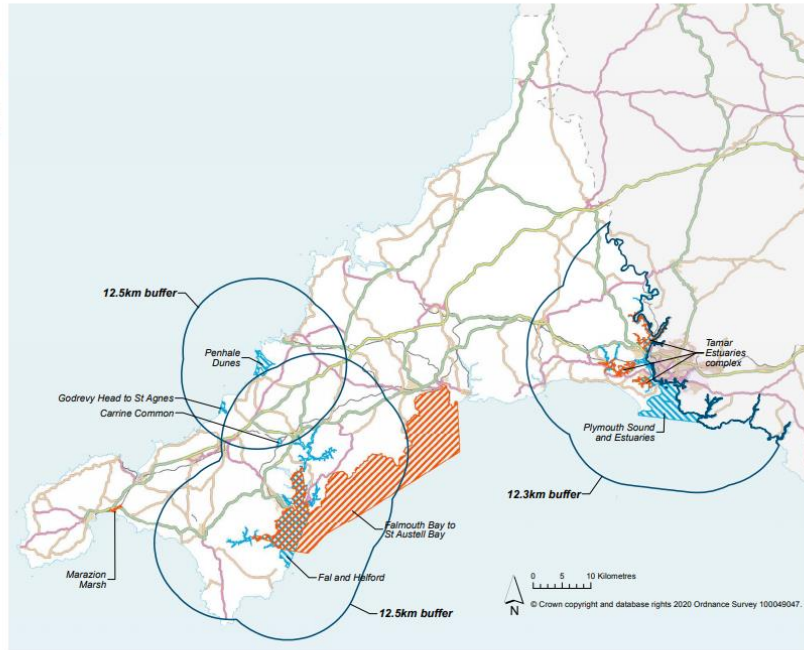


Figure 2 - Zones of Influence

Usage Surveys and Zone of Influence

- 19. The Local Plan process and HRA recreational studies (done by the Council to national standards and agreed with Natural England) identified the following sites as vulnerable to threat and require mitigation due to potential for increased recreational pressure:

Terrestrial Sites:

- Penhale Dunes SAC

And Marine and Estuarine Sites¹

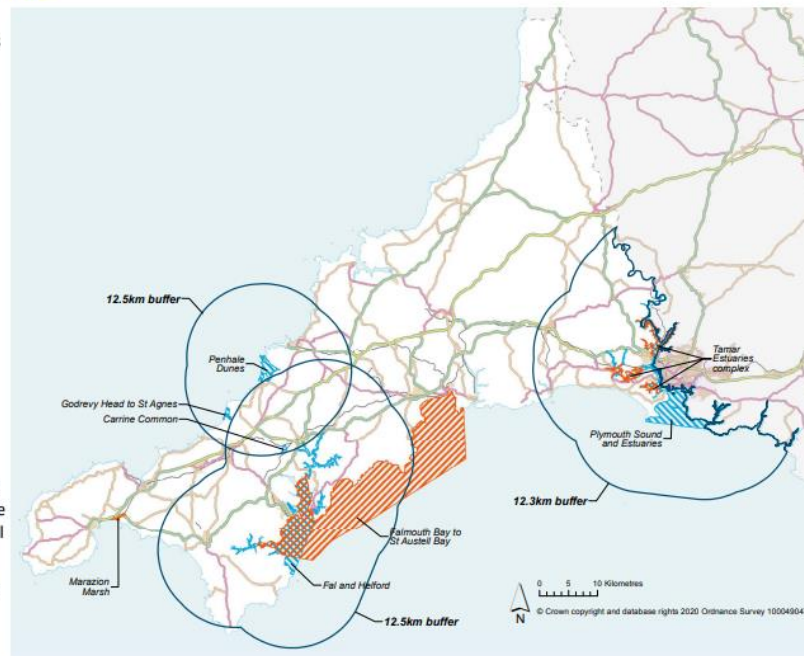
- Fal and Helford SAC
- Plymouth Sound and Estuaries SAC

Tamar Estuaries Complex SPA

- 20. The process for screening out other European sites is documented and can be seen at <http://www.cornwall.gov.uk/europeansitespd>.

Zones of Influence

- 21. The recreational studies derived, for AA and mitigation purposes, the zone of influence (Zoi) for Penhale Dunes that reflects the area from which the majority of visitors, and most potential harm, travel from to access the site for recreational purposes.
- 22. For Penhale Dunes SAC this zone is the area within 12.5 km of the site.
- 23. A summary of the survey methodology is presented in Appendix 1: The full Survey and Methodology can be viewed on the Council's web pages <http://www.cornwall.gov.uk/europeansitespd>





A '**Habitats Regulation Assessment' (HRA)** is **unlikely** to be required on this site.

If the proposed development has the potential to impact up on any of the European sites, the LPA can request an HRA be conducted. The responsibility for conducting such an HRA lies with the LPA, but they can insist that all relevant information is provided to them by the developer.

Appropriate assessment (or 'Habitats Regulation Assessment', HRA) is one of the most powerful tools currently available to control the environmental impacts of development. Whereas sustainability appraisal is a decision-informing tool, appropriate assessment is often described as a decision-making tool because has the potential to stop development. Appropriate assessment tests whether a plan or a project is likely to have a significant negative impact on any:

- Special Protection Area (SPA) – a European designation which protects birds
- Special Area of Conservation (SAC) – a European designation which protects habitats
- RAMSAR site – a European designation which protects wetlands.

Jointly, these are called European sites. Appropriate assessment does not apply to other designations, like Sites of Special Scientific Interest (SSSI) or Areas of Outstanding Natural Beauty (AONB). Proximity to a site is not the defining factor, potential 'impact' is, and for large projects this could be up to 15km from the site. The closer to a protected site, the more likely it is that an HRA will be required, even for a very small site.



5.3 Summary of Impact.

5.3.1 Protected Habitats (Important Ecological Features)

Onsite

Ruderal/Ephemeral: -

Unmitigated works onsite will impact upon this habitat which provides potential habitat for reptile species. Consequently, a reptile survey is required (and currently underway)

Should reptiles be recorded, mitigation required includes:

- erecting a reptile fence alongside the bank on the northern edge of the track.
- Reptiles can be caught and moved beyond the reptile fence as the habitat is suitable.
- The fencing can be removed post completion of works.

Scrub:-

An area of scrub has already been moved and potentially a little more may require removal. The loss of scrub must be mitigated for onsite and this can be achieved by planting hazel and willow within an area of ground agreed with the client onsite and indicated in green below. This area will need to be approx. 0.10 hectares in extent and sufficient room is available for this to be achieved.



Yellow - Reptile potential in these areas too. Green area (variable size) to create lost scrub.



5.4 Protected Species

5.4.1 Badger

The legally protected European badger is not considered to be present on site. Unmitigated works on this site are unlikely to cause disturbance, harm or death to protected species. Where badger setts or presence of badger is suspected post publication of this report to the client, Legal protection/constraints will exist under the Wildlife and Countryside Act 1981 (as amended) and the Protection of Badgers Act 1992.

5.4.2 Bats – Built Structures

Legally protected bat species are not considered to be present on site.

5.4.3 Bats – Tree Roosting, Foraging & Commuting

The habitat has been assessed as not supporting protected species. Therefore, unmitigated works to facilitate this development is unlikely to cause disturbance, harm or death to protected bat species.

5.4.4 Birds

The habitat has been assessed as capable of supporting protected species: nesting and fledging bird species.

Unmitigated works to facilitate this development has the potential to cause disturbance, harm or death to protected species. Legal protection/constraints therefore exist under The Conservation of Habitats and Species Regulations 2010, the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006.

Mitigation will include seasonally constrained clearance of trees where active nesting and fledging occurs between March and September. If trees are to be felled in this time, ecological supervision to check for nests must be implemented.

5.4.5 Reptiles

The habitat has been assessed as capable of supporting this protected species. Legally protected and/or notable reptile species may be present on site.

Unmitigated works to facilitate this development might cause disturbance, harm or death to protected species. Therefore, legal protection/constraints exist under The Conservation of Habitats and Species Regulations 2010, the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006.

Consequently, a reptile survey is required (and is currently underway). If reptiles are recorded it will be necessary to protect them during the development and provide adequate (0.07 hectares) habitat post completion



6 BIODIVERSITY IMPACT ASSESSMENT: LOSSES AND GAINS

The biodiversity impact assessment calculations, to determine the biodiversity losses and gains associated with the proposed development, have not been undertaken using the Department for Environment, Food and Rural Affairs (Defra)/Natural England Biodiversity Metric 2.0 Beta Version (Natural England, 2019a and 2019b).

6.1 Table 10 Existing habitats recorded on site, their coverage and condition.

Habitat type	Area ha / Length	Condition
Area habitats	0.17 hectares of habitat	
Sparsely vegetated ground - ruderal/ ephemeral	0.06 / 600sq.m	poor
Hazel scrub	0.08 / 800sq.m	poor
Linear habitats		
None Present		
The proposal impacts less than .5 hectares and thus does not require a full Defra Metric		

6.2 Table 11: Habitats being retained on site, along with their target condition.

Habitat type	Area / Length	Target condition
Area habitats		
None – habitats will be cleared and replanted.	N/A	
Linear habitats		
None	N/A	

6.3 Table 12: Habitats being created on site, along with their target condition.

Habitat type	Area ha/ Length	Target condition
Area habitats		
Hazel/willow scrub	0.10 hectares	moderate
Reptile habitat – sparse ruderal/ephemeral	0.07 hectares	
	0.17 hectares	
Linear habitats		
Any hedgerow planting will be voluntary		

Sites in excess of 0.5 hectares require the use of the Defra Metric. However, this site will only impact 0.14 hectares with further work on concrete hardstanding.



7 FURTHER SURVEYS, MITIGATION & ENHANCEMENT

7.1 Introduction

This section provides details of recommendations considered necessary in order to ensure that ecological issues are considered fully. This includes recommendations for further ecological surveys to inform the assessment of impacts as well as mitigation, compensation or enhancement measures to avoid, lessen or offset the identified impacts to ecological features arising from the proposed works.

Ecological Constraints and Opportunities (Avoidance/Mitigation/Enhancement) are mapped (where mappable) in Section 6.

7.2 Further Survey Requirements

This section provides recommendations for further ecological survey effort. The surveys/monitoring are considered justified in order to provide an up-to-date and robust baseline for a fully detailed assessment of potential impacts. It is the client's responsibility to ensure that these Phase 2 Surveys are commissioned and are undertaken.

7.2.1 Reptile Presence/Absence Survey

As it is likely all reptile habitat on site will be removed, any reptiles present are likely to be killed. A Reptile Presence/Absence Survey is therefore required to ascertain the presence or absence of reptiles on site. Surveys are constrained to specific times of the year beginning March with April, May and September key survey months and ending October. Surveys have begun.

Any necessary mitigation can be enacted prior to the hibernation period – ensuring any reptiles onsite can be translocated where necessary. There is suitable habitat immediately adjacent to the site, to the north of the track is a grassed bank. If reptiles are recorded during the survey, it will be necessary to erect a reptile fence alongside the track. Reptiles can be caught and transferred to the safe side of the reptile fence. Post completion the reptile fence can be removed.

Replacement reptile habitat must be provided and the location for this is shown above P.31 Spoil from the necessary earth works can be used to create a crescent shaped mound which can then be planted with a wildflower seed mix such as EM1 – Basic General Purpose Meadow Mixture. This will be effective in providing habitat and attractive to look at.



7.3 Mitigation & Enhancement

This section provides general recommendations for mitigation and enhancement measures.

7.3.1 Avoidance

Habitats Retained: - It is unlikely that the habitats can be retained, hence the requirement for recreation elsewhere on site.

7.4 Mitigation

7.4.1 Species Protection

A reptile survey is underway. The reptile report will detail the mitigation and habitat replacement required as appropriate.

7.4.2 Removal of Woody Species

Removal of any woody species (trees/hedgerows/scrub) should be done outside of the bird nesting season of March – September (inclusive) to prevent impact to protected species associated with the habitat.

If removal is not possible during this period, a supervised watching brief must be conducted by a suitably experienced ecologist prior to works commencing.

If breeding birds are found or suspected, clearance work will not be permitted until an ecologist is satisfied that breeding is complete, which may be as late as August or September.

7.4.3 Construction Exclusion Zones (CEZ)

Areas that are being retained should be protected from damage during the groundworks and construction phase of the development by erecting Heras (or similar) fencing around these features. Temporary fencing (Heras or similar) with appropriate signage will be erected at the appropriate distance(s). The only exception to this is at existing access points. Heras fencing is not intended to restrict the access of species to other areas of the site, therefore, mindful procedure by site workers and visitors to the site is always necessary.

No development work should be undertaken within the CEZs and no materials, machinery, chemicals etc. should be stored within these zones. No development or any associated works should be located within these Construction Exclusion Zones.

Appropriate signs should be placed at regular intervals along the fencing to ensure everyone on site is aware of the CEZ and understands its relevance e.g. CONSTRUCTION EXCLUSION ZONE – NO ACCESS.

Any areas proposed for planting post-development should also be fenced off where possible to prevent compaction of the soil through vehicle movements.



7.5 Reptile 'Crescent'

EM1 This is a simple low-cost meadow mixture suitable for a wide range of soil types. The wildflowers are robust and showy, and the grasses are fine and slow growing.

%	Scientific name	Common name
4	Centaurea nigra	Common Knapweed
0.5	Knautia arvensis	Field Scabious
4.4	Leucanthemum vulgare	Oxeye Daisy - (Moon Daisy)
3	Poterium sanguisorba - (Sanguisorba minor)	Salad Burnet
0.1	Prunella vulgaris	Selfheal
4.5	Silene dioica	Red Champion
Grasses		
8	Agrostis capillaris	Common Bent
20	Cynosurus cristatus	Crested Dogstail
24	Festuca rubra	Slender-creeping Red-fescue
3	Phleum bertolonii	Smaller Cat's-tail
16	Poa pratensis	Smooth-stalked Meadow-grass

7.6 Replacement Scrub planting

It will be necessary to provide replacement scrub planting. Its location and area of planting required is discussed above.

A method statement detailing species selections and initial planting together with a management plan will be required. This can be Conditioned.

7.7 Enhancement

7.7.1 Bird Nesting Provision

Bird provision is required.

In-built bird bricks provide a long-lasting solution. It being accepted that the fabricated nature of the proposed structures make it difficult to 'build-in' bird nesting provision, together with the hygiene requirement applicable to a food establishment, makes the recommendation of Tree mounted boxes applicable in this instance. Albeit LPA approval of external mounted boxes is generally required.

- Only boxes of robust or permanent construction are suitable. Some account must be taken of the potential need to maintain and replace boxes after a number of years in use.
- Boxes/bricks should be positioned with orientation preferably between north and east with external positions of not less than 3m high to avoid cat predation and vandalism.
- Site nest boxes in locations that are accessible for maintenance, but away from bird feeders. Ideally boxes should be a discrete distance away from other nest boxes, except for house sparrows, as they like to nest in colonies.



Garden Birds

2M Schwegler Nest Box – 32mm hole size. Suitable for Great-, blue-, marsh-, coal- and crested tit, redstart, nuthatch, collared and pied flycatcher, wryneck, tree and house sparrows, and occasionally bats.

Schwegler nests will last decades (20-25 years) and are very successful at attracting inhabitants. This has resulted in decades of breeding success in real life conditions. These nest boxes have been developed in close collaboration with leading ornithologists, nature conservation organisations, Government conservation agencies and forestry experts, and are backed up by decades of experience and knowledge. The high quality light-weight concrete provides insulation against temperature fluctuations, allows air to pass through the walls, and prevents the formation of condensation which often occurs in nest boxes made of plastic, stone or more conventional forms of concrete.

7.7.2 Solitary Bee Provision

Cornwall Biodiversity SPD specifies that Bee Bricks must be included in all structures. However, in this case I believe it a better alternative to create a 'Bee Bank' This can be part of the Reptile crescent and simply requires some bare earth and some areas of sand orientated towards the southwest

They require minimal ongoing management, just clear patches of vegetation on the bank every year, to ensure bare ground.

7.7.3 Hedgehog Provision

The frequent movement of HGV's through this site, make attracting hedgehogs a bad idea, consequently, although the SPD stipulates hedgehogs should be considered. In this instance they have been discounted.



7.7.4 Small Mammal Access Provision

The fences used on site permit small mammals to move freely.

8 CONCLUSIONS

The Extended Phase 1 Habitat Survey undertaken along with the desktop survey/ data searches are considered to have collected enough information about the ecological condition of the site to have been able to adequately assess the impact of the proposed development. However, the results of the reptile survey are required to ensure Mitigation as recommended is suitable. In reality, even if reptiles are not proven to be present, the habitat recommendations if followed through will make the site suitable should they arrive at a later date, although this would technically make them enhancements rather than Mitigation.

Mitigation measures have been set out to avoid and reduce the effects/impacts of the development on the important ecological features and the local environment as a whole. These include replacement of lost scrub habitat and ruderal/ephemeral habitat, Construction Exclusion Zones and all measures should be included as a planning condition for the proposed development.

Enhancement measures for biodiversity have also been set out, including the provision for bird and bees. These enhancements should result in a net ecological gain for the site and should be included as a planning condition for the proposed development.

Providing the recommendations within this report are adhered to, with the mitigation measures and enhancements agreed, there would appear to be no ecological constraints to prevent this development. The local planning authority (LPA) should ensure that the mitigation measures (including those within the reptile report), together with enhancement recommendations, are 'conditioned' where appropriate.

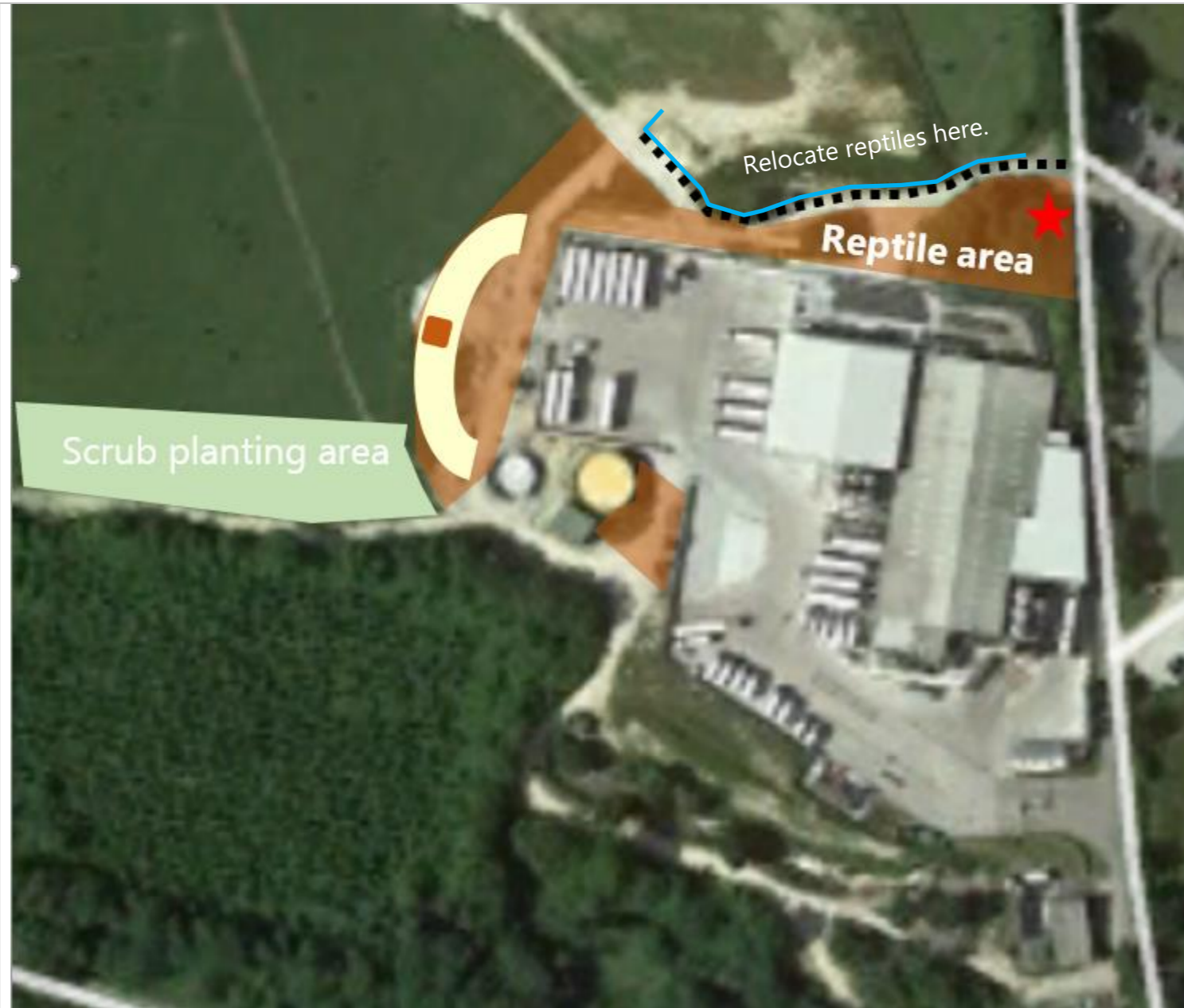
It is the responsibility of all those involved with the proposed development works at this site to ensure that wildlife protection and nature conservation legislation is complied with throughout the lifespan of the development, at every stage. Although no current evidence of protected species was found on site it cannot be assumed that they are not present when the development work commences. Care should therefore be taken during all stages of the development and if any protected are discovered they must not be handled; works must stop immediately, and advice sought from a licensed ecologist.

9 MAP OF ECOLOGICAL CONSTRAINTS & OPPORTUNITIES

The drawing below must be kept on site throughout the works to ensure contractors know precisely what is required in term of biodiversity Avoidance, Mitigation and Enhancement



Habitats and Species ECOLOGICAL CONSTRAINTS	
Site boundary	
PHASE 2 SURVEY underway for Reptiles	
AVOID IMPACT TO -	
All habitats until surveys are complete and mitigation provided	
MITIGATION REQUIREMENTS	
Apply CEZ fencing reflecting the protection of reptile habitat	
Creation of Replacement Reptile Habitat	
Woody species constraint for clearance – ecological supervision required during March – September.	
Replacement Scrub Planting	
Reptile fencing if required	
Unmappable Mitigation Requirements	
Small mammal access provision of 150mm on fencing throughout site.	
OPPORTUNITY/ENHANCEMENT	
Erection of 1 bird provision amongst trees as indicated	★
Creation of bee-bank as indicated	





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10.1 Data Search Websites

- Barn Owl Trust: www.barnowltrust.org.uk
- Cornwall Biodiversity Action Plan: www.cornwallwildlifetrust.org.uk/bap
- Cornwall Council Interactive Map: <https://map.cornwall.gov.uk/>
- Cornwall Planning for Biodiversity Guide (2018):
<https://www.cornwall.gov.uk/media/35514048/biodiversity-spd-v7.pdf>
- Cornwall Wildlife Trust: www.cornwallwildlifetrust.org.uk
- Freshwater Habitats Trust: <https://freshwaterhabitats.org.uk/projects/million-ponds/pond-creation-toolkit/#Core>



- [GB non-native species secretariat: www.nonnativespecies.org](http://www.nonnativespecies.org)
- [Multi Agency Geographical Information for the Countryside: www.magic.defra.gov.uk](http://www.magic.defra.gov.uk)
- [National Biodiversity Network Atlas: www.nbnatlas.org](http://www.nbnatlas.org)
- [Prevent the spread of harmful invasive plants: www.gov.uk/prevent-the-spread-of-harmful-invasive-and-non-native-plants](http://www.gov.uk/prevent-the-spread-of-harmful-invasive-and-non-native-plants)
- [UK Biodiversity Action Plan: www.ukbap.org.uk/NewPriorityList.aspx](http://www.ukbap.org.uk/NewPriorityList.aspx)

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