

## Ecological Appraisal, Polvellan House

11.08. 2020



Polvellan June 2020

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Date: 12<sup>th</sup> August 2020

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Date: 12<sup>th</sup> August 2020

Project No: J000155



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## 1. Introduction

Land and Heritage Ltd has been commissioned by the Property Alliance Group to produce an Ecological Appraisal Report for the land and buildings at Polvellan House in Looe, Cornwall.

A series of ecological surveys and reports have previously been produced for this site, by members of the current survey and report team, and have been used to inform this report. An Extended Phase 1 Habitat Survey was first undertaken at Polvellan in 2013, and has been updated periodically, most recently in August 2018. Protected Species surveys have also been undertaken with respect to reptiles and bats. A reptile survey was undertaken during 2014, with further records for slow-worm in 2017 and 2018. Bat surveys were undertaken within Polvellan House in 2013, 2015, 2016, 2017 and 2018. An emergence survey of the manor was completed in 2013 and repeated on 21<sup>st</sup> August 2018. A walkover ecological survey was undertaken in August 2018 to update and revise the Extended Phase 1 survey undertaken in 2013 with additional field notes made in 2016 and 2017.

Nevertheless, the last formal survey work was undertaken in 2018, and the detailed reptile survey dated from 2014. It has therefore been necessary to update all reports to reflect the current site conditions and re-assess the use of the site by protected species.

This Ecological Appraisal comprises a revised Preliminary Ecological Assessment which includes calculation for Biodiversity Net Gain. Our appraisal also includes the results of protected species surveys which have been recently undertaken with respect of bats and reptiles. A revised Ecological Impact Assessment has been completed in line with the current development proposals produced by RLT Architects in 2018, and the base line ecological data collected over six survey seasons. The mitigation and ecological enhancement proposals have also been revised and updated to satisfy current planning requirements.

## 2. Background

The objectives of the Preliminary Ecological Appraisal are to ascertain the habitat types and key ecological issues relating to the development proposal. This includes identifying potential impacts upon designated species and habitats and determining whether there is a need for more detailed surveys of notable plant and animal species.

The current scheme has been informed by ecological base line data collected from repeated surveys over a six-year period. This report includes the conclusions and mitigation recommendations from the additional species surveys undertaken in 2020. This has enabled a full ecological assessment of the proposed development to be made as all the current base line ecological data was available.



Polvellan House has been vacant for many years and extensive restoration plans are proposed. Additional residential accommodation is proposed in four locations across the site (see proposed layout plans in section 7). There are mature broadleaf plantations around the house which have been neglected for many years.

Sufficient ecological information is required to fully inform the site design and the proposed works. Reports will enable the project to satisfy current UK and European legal wildlife requirements, as well as national and local planning regulations. All public bodies have statutory obligations under the Natural Environment and Rural Communities Act 2006 to conserve and enhance biodiversity (see Section 3).

## 2.1 Scope of Works

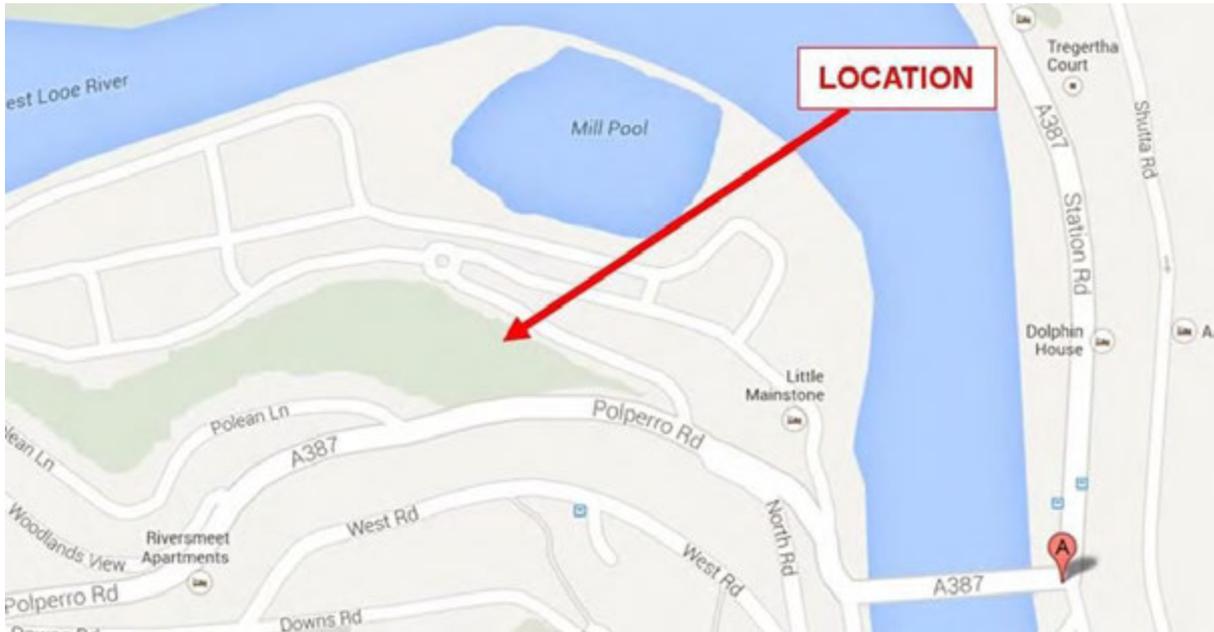
The impacts of the proposed works may be significant, so it is important that all ecological indicators are identified and correctly assessed. Sufficient ecological information is required to fully inform the site design and the proposed works. A Preliminary Ecological Appraisal comprises the following elements:

- Desktop study of all available site information.
- Phase one habitat survey of the site.
- Assessment of the potential impacts of the proposed scheme.
- Appraisal of the requirements for further survey work.
- Appraisal of the requirements for mitigation and potential for enhancement measures.

This report brings together further information from recent protected species surveys to inform the impact assessment and detailed mitigation design.

## 2.2 Site location

The site is located on OS grid reference SX 250 537 which is shown in Figure 1 and extends to an area of approximately 1.7 hectares.



**Figure 1: Site Location**

Walk over surveys were carried out the land within the area shown in Figure 2. Cornwall Council have retained a thin strip of land along the northern and eastern boundary of the site alongside the adjoining Mill Pool access road. This additional land has been included within the survey area. The site is otherwise surrounded and delineated by roads. Trees in adjoining properties which might be affected by the proposals were also considered.



**Figure 2: Site outline (in yellow)**



### 3. Assessment Methodology

This assessment follows the methodology of an Extended Phase 1 Habitat Survey, which aims to identify habitat features of value to different plant and animal groups. A Phase 1 Habitat Survey of the site was undertaken on 8th June 2020. A series of additional visits was made linked to both a further reptile survey and bat survey work. The survey followed the methodology guidelines of the Chartered Institute for Ecology and Environmental Management (CIEEM). Habitats were recorded according to the Joint Nature Conservation Committee (JNCC) handbook for phase 1 habitat survey. Target notes, recording specific items of ecological interest or importance were also made.

Site visits were completed in order to map general habitats present in the area. The surveys also aimed to record any evidence of the species groups outlined below, including habitat features with the potential to support them:

- **Plant species** of significant value, particularly European Protected Species;
- **Nesting birds**, particularly specially protected species;
- **Animal species** protected under UK legislation and European legislation;
- **Invasive species**, particularly Japanese Knotweed and Giant Hogweed which are listed under UK legislation.

Surveys were made of the suitability of the site to support roosting bats. An internal and external survey of all buildings was undertaken. A survey was also undertaken to determine the presence of Barn Owls within any of the structures or trees.

This information allowed the requirement for more detailed species surveys to be evaluated which included bats, badgers and reptiles.

Biodiversity net gain calculations have been undertaken using the Defra trial biodiversity metrics, version 2.0 July 2019. This have been used to calculate the baseline number of biodiversity units on site, losses from the development and calculations for habitat creation and habitat enhancement have also been undertaken.

## 4. Desktop Study

This desktop study utilises a range of information sources, including the Multi Agency Geographic Information for the Countryside (MAGIC) to ascertain potential impacts of the scheme. Records have been made available by the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS). These records have been analysed and selected records of notable species are presented in within Appendix A.

### 4.1 Statutory Designations

The proposed scheme is not located within a statutory designated area.

Whitsand and Looe Bay is designated as a Marine Conservation Zone (MCZ), designated for a range of features, including intertidal and subtidal rocks and sediment, seagrass beds, a range of invertebrates and the Giant Goby (*Gobius cobititis*).

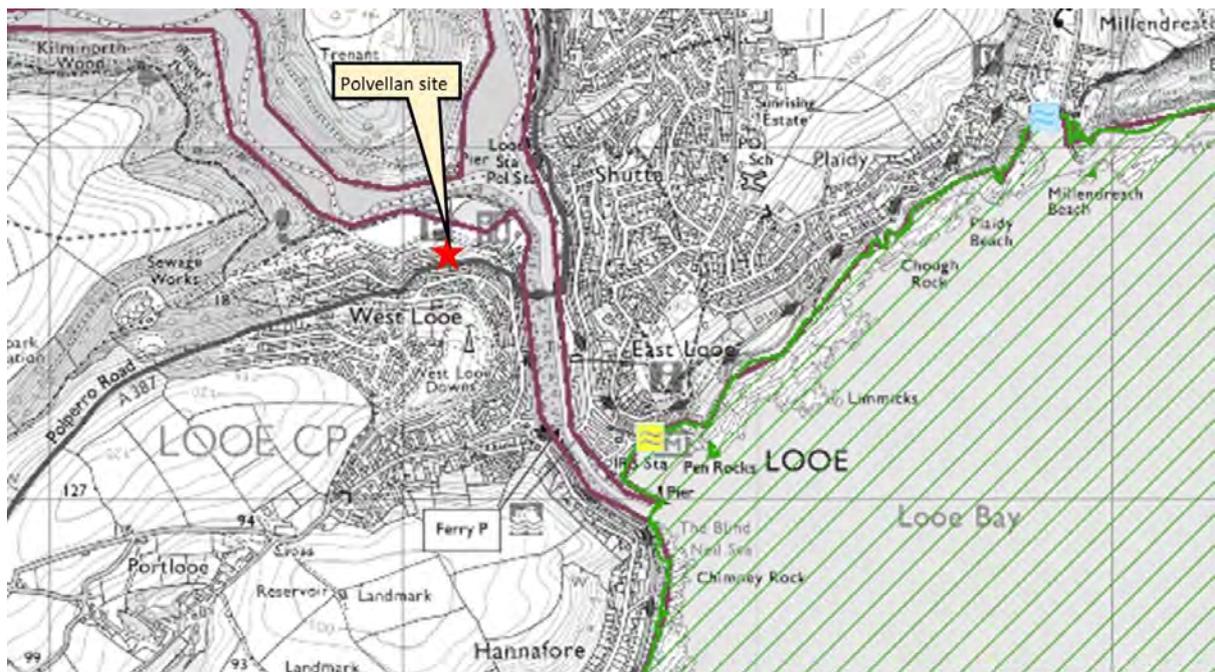
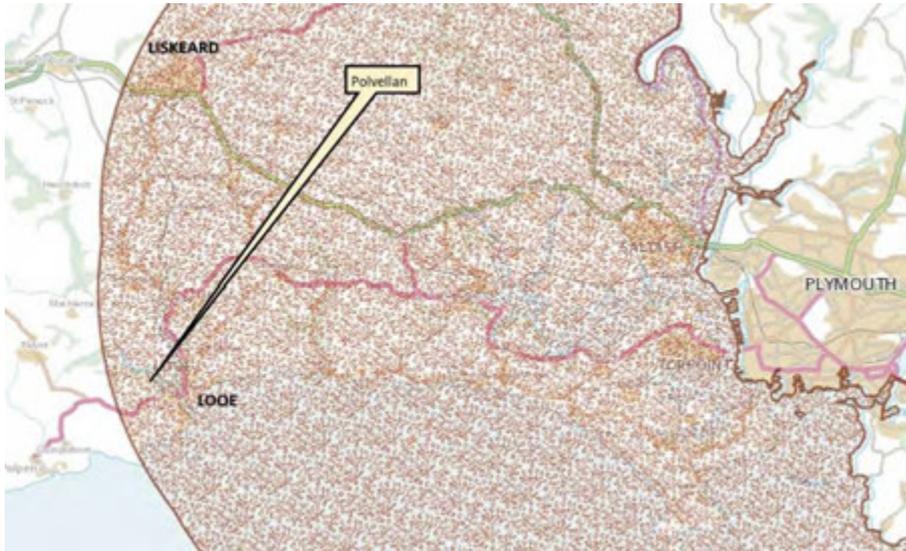


Figure 3: Whitsand and Looe Bay MCZ (MAGIC Mapping)

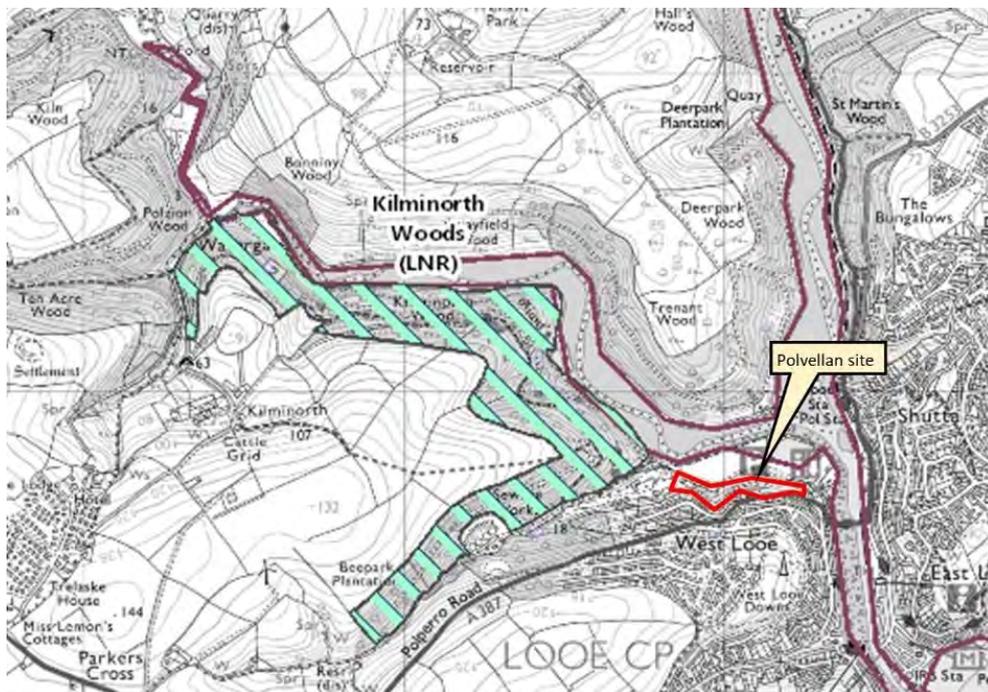
Looe is considered to be potentially within the zone of influence of Plymouth Sound and Estuaries SAC. This means that additional housing development may impose additional indirect recreation pressures on the SAC. However, the effects will be low level and very indirect.



**Figure 4: Plymouth Sound and Estuaries SAC: Zone of Influence (Cornwall Council)**

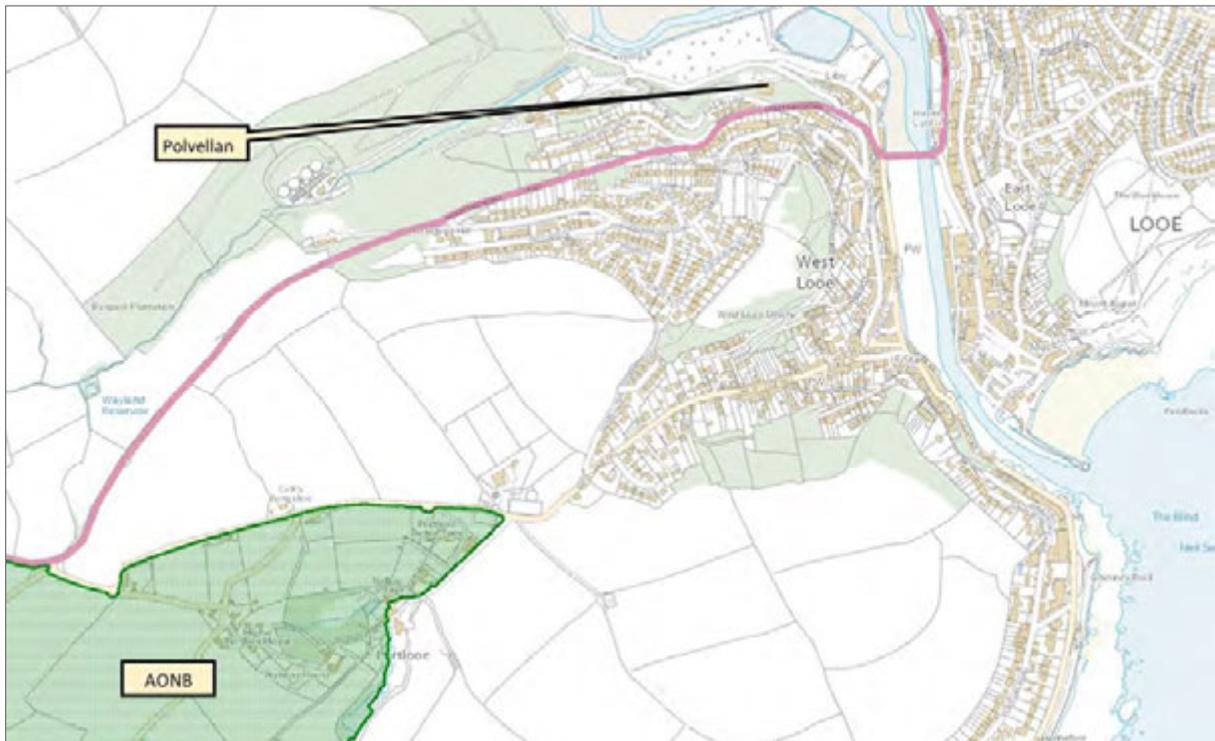
There are no Sites of Scientific Interest (SSSI) located within 2 km of Polvellan. However, Polvellan does fall within the SSSI risk impact zones of Polruan to Polperro SSSI and Talland Barton Farm SSSI. Natural England require consultation for infrastructure developments and developments that risk air pollution, and for residential developments of 100 units or more.

Kilminorth Local Nature Reserve is located 200m to the west of Polvellan. There is a narrow yet continuous woodland link between the two (figure 5).



**Figure 5: Kilminorth Wood LNR (MAGIC mapping)**

Cornwall AONB lies approximately 1 km south west of the development site (figure 6).



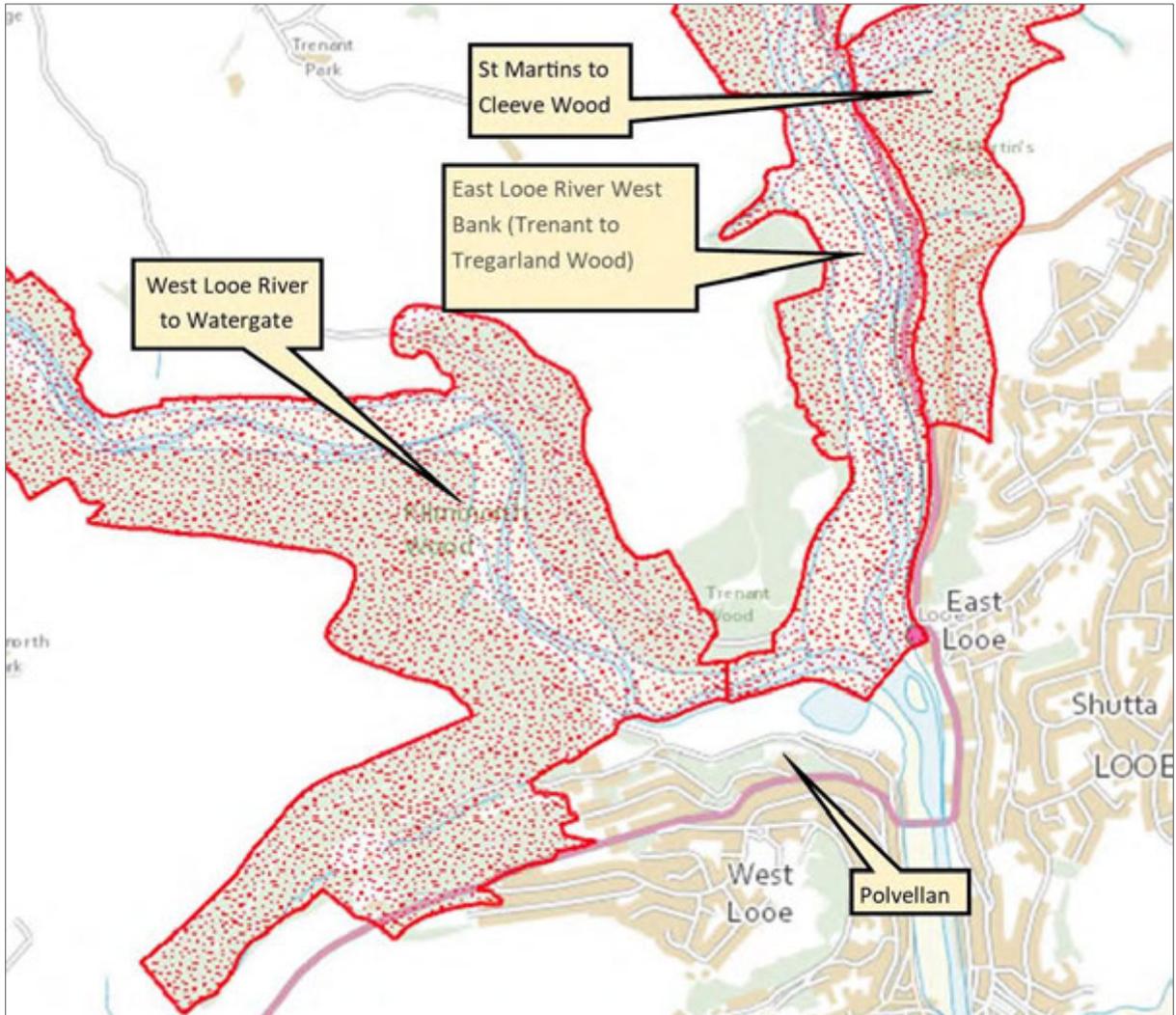
**Figure 6: Cornwall AONB (Cornwall Council)**

## 4.2 Non-statutory Designated Sites

Information provided by ERCCIS indicates that there are several non-statutory designated sites within 1 km of the application site. These include Three County Wildlife Sites:

- CN 1.3 St Martins to Cleeve Wood
- CN 1.6 East Looe River West Bank (Trenant to Tregarland Wood)
- CN 12.1 West Looe River to Watergate

County Wildlife Sites (CWS) are the most significant areas for wildlife in Cornwall outside Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs). County Wildlife Sites contain features that are of substantive nature conservation value at a county level of significance. These woodlands follow the river valleys and are many are ancient in character.



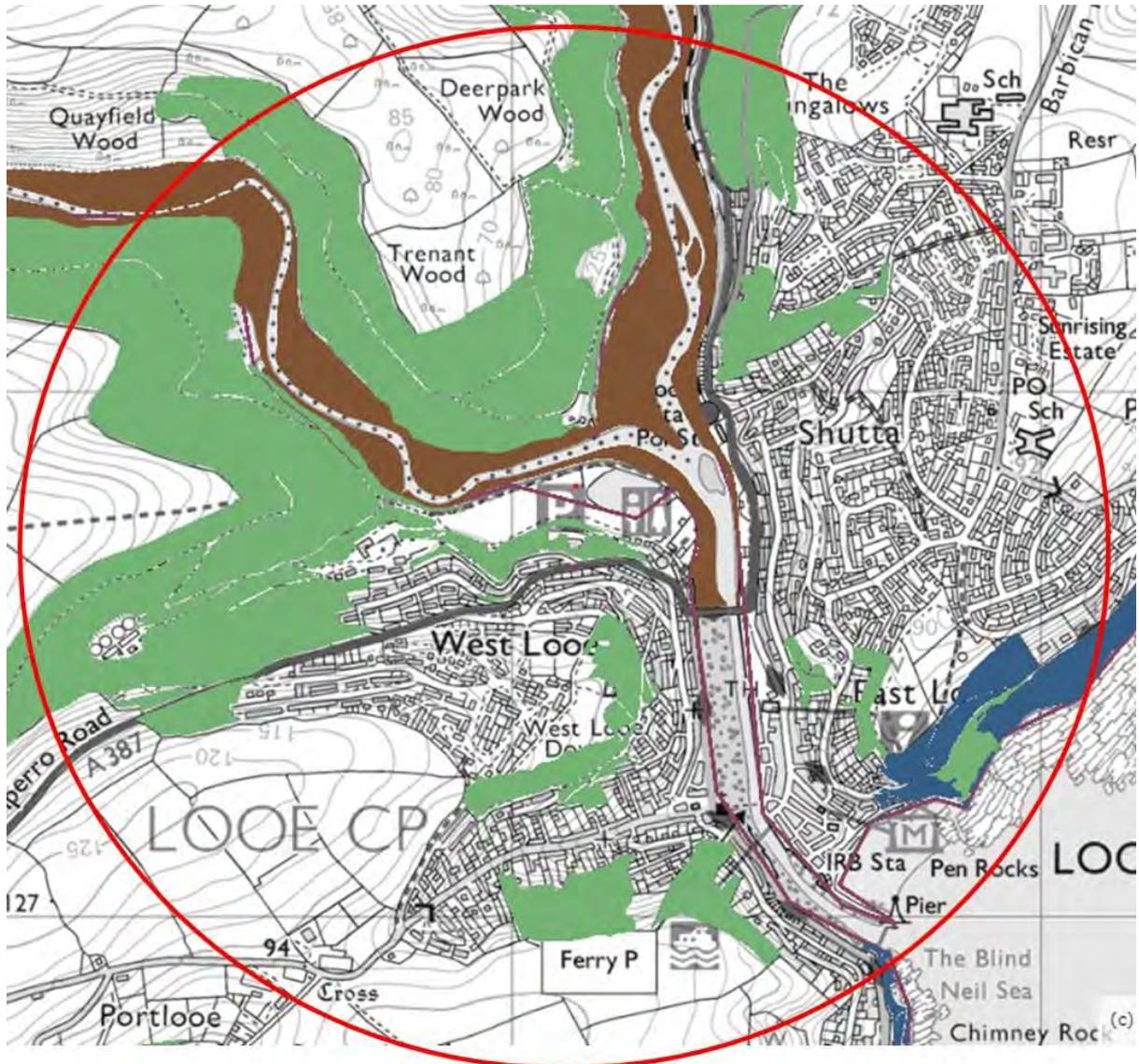
**Figure 7: County Wildlife Sites within 1 km of Polvellan (Cornwall Council)**

Trenant Wood is also a Woodland Trust Reserve.

There are no tree preservation orders within the proposed development, but there are two TPOs are recorded close to the site:

- E2/06/TPO/00065 Two small groups of trees along Polean Lane West
- E2/07/TPO/00007 A group of trees on the site of the former gasholder, including 4 oak, 6 sycamore, 2 ash and 1 holly.





**Figure 9: BAP Priority Habitats (MAGIC Mapping)**

Green: deciduous woodland

Brown: mudflats

Blue: maritime cliffs and slopes

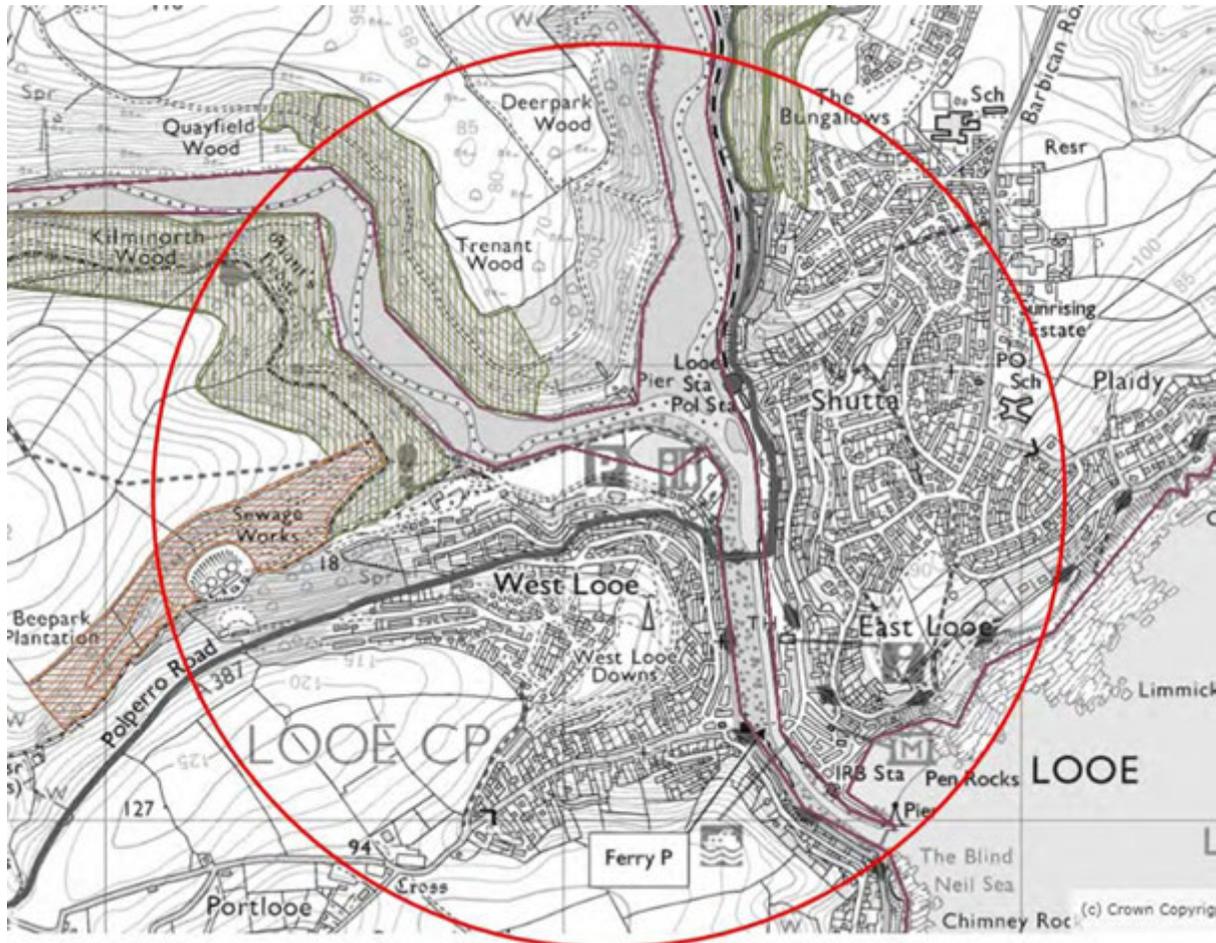


Figure 10: ASNW (green) and PAWS (brown shading) from MAGIC Mapping

## 4.2 Species Records

Records of protected and notable species which have been identified within a 1 kilometre of the site have been procured from the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS).

There are a large number of bird and botanical records for the Looe area, which have been reviewed but not included in this report. Full details of all local records are available on request. A summary of the records for notable species have been included within this section. This summarises those European Protected Species (Habitat Regulations) and UK Statutory Protected Species (Wildlife and Countryside Act (WCA)).

In addition, a series of previous ecological reports for this site have been reviewed. These date from 2014 and have been produced by the current authors, working for previous site owners.



#### 4.2.1 Reptiles and Amphibians

There are no recent reptile records within ERCCIS data.

Moderate numbers of Slow Worms were recorded in a reptile survey undertaken by Wildlife Woodlands in 2014. Individuals were found across the open area to the east of the Manor House and in the grass area immediately in front of the Manor. Recommendations were made for excluding slow worms from these areas during construction works and for long term habitat enhancement.

Slow worms were found again in 2017 and in 2018, during other field survey. However, vegetation has continued to develop, with areas of old grass and garden succeeding to young scrub, which is likely to be less attractive to reptiles.

Due to changing habitat conditions and the length of time since the main reptile survey, a repeat survey was commissioned for the current planning application (see section 7 and Appendix C)

#### 4.2.2 Bats

There are recent records for two bat species only. In view of the quality of habitat available bats would appear to be under recorded. Bat species recorded in ERCCIS data search area include:

- Lesser Horseshoe Bat (*Rhinolophus hipposideros*), town centre, 2007
- Barbastelle Bat (*Barbastella barbastellus*), confidential bat roost record from 1988

Tamar Consulting surveyed Polvellan Manor in 2013. This report found that the Manor roof space was being used by three pipistrelle bats as a day roost and by a single lesser horseshoe bat as an occasional night/ feeding roost. Several emergence points were recorded. Bat activity around the site was considered to be comparatively low. A remote recording survey did not record any night-time activity for Lesser Horseshoe bats.

Penpont Ecological Services surveyed the property again in 2015. This report found similar results to the 2013 survey suggesting no overall change to bat activity. They did not identify any bats emerging from the building. However, droppings were identified during the building inspection and the survey results concur with Tamar Consulting's findings. Bat activity around the site was low with only a small number of Common Pipistrelles foraging periodically within the locality recorded during the emergence surveys.

The house was surveyed in 2016 by Wildlife Woodlands. This survey could not find direct evidence of the presence of pipistrelle bats but concluded that they could be present behind roofing felt. Bat droppings appeared to be present in greater numbers, and at two locations, an accumulation of butterfly and moth wings were found. The majority of the droppings appeared typical of Lesser

Horseshoe Bats, although some larger droppings are probably of Long-eared bats, most likely Brown Long-eared bat. The survey concluded that bat activity had increased since the 2015 assessment.

The bat survey of the Manor House was repeated in 2017 which made similar findings to the previous year with the additional record of a single Greater Horseshoe bat. The level of bat use has remained relatively low throughout the 4 years of survey work with 4 species recorded over the period. Pipistrelle bats were recorded in 2013 and 2015 but not since. Brown long-eared, lesser and greater horseshoe bats are present within the roof space in low numbers as both a day and night roost. There is no evidence of any maternity roosts.

The manor was further surveyed in 2018, by Penpont Ecological Services, to provide an updated survey for this current development. This included a dusk emergent survey. Low numbers of non-breeding Common Pipistrelle and Brown long-eared bats were identified using the building as a day-time roost. It was considered likely low numbers of Lesser Horseshoe and Greater Horseshoe use the building as a non-breeding, occasional day-time roost and occasional night-time feeding roost.

#### 4.2.3 Dormouse (*Muscardinus avellanarius*)

There are records for dormice within 1km at Kilminorth woods up until 2012. However, volunteer recorders have not recorded them since, and it is likely that the lack of active coppice management has led to their decline or loss from the woodland. A dormouse survey was undertaken in 2012 in the scrub woodland surrounding the adjoining industrial estate at Polean. No dormice were recorded. Hazel is rare in the woodland at Polvellan which lacks a shrub layer apart from rhododendron.

#### 4.2.4 Badger (*Meles meles*)

There are 7 local records for badgers within a 1km radius, mainly from Kilminorth Woods. This suggests a healthy local population.

#### 4.2.5 Otters (*Lutra lutra*)

There is a single local record for Otter from 1992 but there are no recent sightings within 1km. There are frequent records for otter further upstream on both the East and West Looe River.

#### 4.2.6 Other Notable Species with National Levels of Protection

There are extensive bird records for the Looe area which include a wide range of waders and migrant species which visit the estuaries. Protected species include Kingfisher, Greylag Goose, Garganey,



Greater Scaup, Purple Sandpiper, Long tailed Duck, Cirl Bunting, Peregrine, Little Gull, Black tailed Godwit, Common Scooter, Storm Petrel, Whimbrel, Ruff, Black Redstart, Slavonian Grebe, Black necked Grebe, Pied Avocet, Green Sandpiper, Redwing, Fieldfare, Barn Owl, and Hoopoe have also been recorded.

Killarney fern (*Trichomanes speciosum*) is a European protected species and is present within Kilminorth Woods.

These records are indicative of a wide range of high value habitats within a short distance of the house and grounds. The proximity of extensive ancient woodland, parkland, two river corridors and coastal habitats will influence the biodiversity of the Polvellan site and increase the likelihood of protected species being present.

## 5. Site Description

An ecological walkover survey was undertaken on 8th June 2020 by Stephen Lees, B.A., M.Sc., MCIEEM. The weather was good. The findings of the survey are detailed in the following sections. A Phase 1 Habitat Plan is presented in figure 11 overleaf. The survey aimed to identify all the features recorded in 2013 and in 2018 and to record any changes to their areas and their condition. The survey also took note of features highlighted in the protected species surveys. A survey was also undertaken to determine the likelihood of Barn Owls nesting on site.

Polvellan Manor is located on a north facing slope adjacent to the old mill pool (currently a large car park). The property extends over a length of 340m and is dominated by mature broadleaf plantation. A range of habitat types were identified on site which have been classified using the Joint Nature Conservation Committee (JNCC) phase 1 code.

In general, the main site has changed little between 2013 and 2018. The majority of the site is broadleaved woodland plantation, which has received little management in the last seven years, apart from limited safety management. There has been a continued steady loss of mature trees from the woodland, as a result of storm damage, leaving some more open areas, notably to the east of the site and below the proposed west courtyard. Natural regeneration is beginning to fill gaps in the canopy. Closer to the house the old gardens have seen gradual ecological succession. The land to the east of the house, once gardens, and then temporary parking has now evolved into woody shrubs and bramble scrub. Land in front of the house is now dense young woodland scrub (on the slopes) and much younger woody scrub on the flat areas that were previously classed as grassland in 2014. Land to the west of the main house, once classed bare land has now developed into rough grass and scattered scrub. The house and grounds remain derelict, with a continued gradual deterioration in the building fabric and with broken windows, letting in more of the elements.

### 5.1 Broadleaf Plantation Woodland (A1.3.2)

Approximately 75% (1.3ha) of the total site area is broadleaf woodland plantation dominated by beech trees. Sweet chestnut, sycamore and pedunculate oak are also frequent (see Polvellan Arboricultural Report, Land and Heritage, 2020), with occasional lime, Norway maple and horse chestnut.

Most of the mature trees are even aged and suggest planting in the period 1860 -1875. There is little natural regeneration over much of the site and much of the shrub layer is dominated by dense growth of *Rhododendron ponticum*.

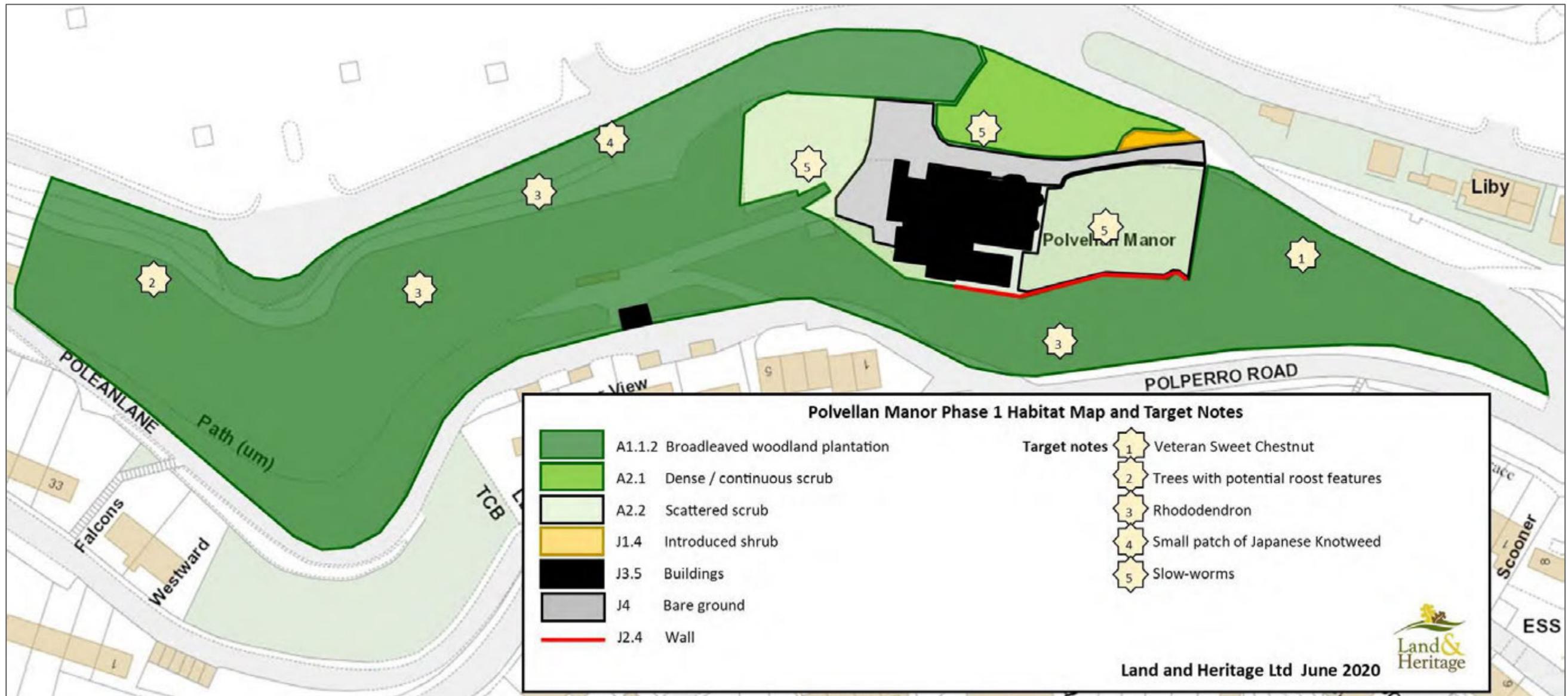


Figure 11: Phase 1 map of vegetation and target notes

Other tree species present in the woodland include:

- Ash *Fraxinus excelsior*
- Sycamore *Acer pseudoplatanus*
- Norway Maple *Acer platanoides*
- Downey Birch *Betula pubescens*
- Horse Chestnut *Aesculus hippocastanum*
- Yew *Taxus baccata*
- Hybrid Lime *Tilia x europaea*
- Scots Pine *Pinus sylvestris*
- Western Red Cedar *Thuja plicata*

Smaller shrub species present include:

- Goat Willow *Salix caprea*
- Hazel *Corylus avellana*
- Hawthorn *Crataegus monogyna*
- Elder *Sambucus nigra*

More open areas now subject to natural regeneration, are dominated by a combination of sycamore and Goat Willow. The ground flora is of moderate diversity. Ramsons (*Allium ursinum*) are dominant in local areas, with male fern (*Dryopteris filix-mas*) soft shield fern (*Polystichum setiferum*), hart's tongue (*Phyllitis scolopendrium*) and ivy (*Hedera helix*). The ground flora is restricted by the widespread presence of *Rhododendron ponticum*.

The woodland structure is poor, with a dense canopy in places preventing natural regeneration. Mature trees are too close together, preventing full crown development, and there has been regular loss of trees from storm damage over the six years the site has been surveyed and monitored by the current team.

The woodland is not registered as 'ancient semi natural woodland' by Natural England but is assessed as being of local importance.



**Figure 12: Dense shade and rhododendron: western woodland**



**Figure 13: Open area close to proposed western courtyard (resulting from storm damage)**

## 5.2 Dense / Continuous Scrub (A2.1)

A small area of abandoned garden to the north of the manor house has scrubbed over. The slopes are dominated by goat willow, but there is also frequent buddleia on former amenity grassland.



Figure 14: Scrub to the north of the manor house

## 5.3 Scattered Scrub (A2.2)

Two areas of former car park have been classed as scattered scrub. These areas undergoing ecological succession, resulting from a lack of management. Brambles (*Rubus fruticosus*), birch (*Betula pubescens*) and willow (*Salix caprea*) are now seeding into the areas, with some sycamore seedlings also present.

The eastern area (figure 15) is more woody than the western area (figure 16). This reflects different stages of scrub development; two years ago, the eastern area was classed as ephemeral/short perennial and the western section as bare ground. Remnant garden plants are also present, including St John's Wort (*Hypericum hirsutum*). Ruderal species include *Rumex obtusifolius*, *Scrophularia nodosa*, *Poa pratensis* and occasional *Carex pendula*. The woody shrubs continue to have grown significantly over period of surveys and are increasingly shading the annual forbes from these areas.

This habitat area also continues to support a fair to large population of slow worms.



**Figure 15: Eastern area of scattered scrub**



**Figure 16: Western area of scattered scrub (hard standing in 2013)**

## 5.4 Buildings (J 3)

Polvellan Manor was originally constructed in the eighteenth century and extended during both the nineteenth and twentieth centuries. The buildings occupy an area of approximately 0.2 hectares. The slate roof structure is complex with several valleys, skylights and a belfry structure. The house has been disused for many years and many windows are missing or partly sealed over. Some repair work has been undertaken in the past, but little in the last five years. Weather and minor vandalism has caused a continual gradual deterioration in the buildings.

The main roof of the building has been occupied as a temporary bat roost throughout, although at low levels and as a day roost only. There are no signs of any breeding bats. Pipistrelle, long-eared bat and lesser horseshoe bats have all used the building in small numbers.

To the east of the main manor there is an open side stone barn. The original slate roof is in poor repair and there are no signs of any bat activity. The habitat is very poor, with minimal protection from weather and our conclusion is that it is not used by bats.



Figure 17: North elevation of Polvellan Manor



**Figure 18: Stone barn to west of manor**

### 5.5 Walls (J2.4)

There is a large stone retaining wall to the east of the manor house. This is well pointed with limited ivy growth but increasing amounts of bramble. There are lengths of dry slate wall alongside the front driveway and along some woodland tracks. These walls support a range of fern and bryophyte species.



**Figure 19: Wall to the east of the Manor House**

## 5.6 Bare Ground (J4)

Asphalt and hard standing areas cover approximately 0.08 hectares of the site.



Figure 20: Bare ground - car parking and access roads

## 5.7 Target Notes

Target notes provide supplementary information on sites of interest, and information on sites which are too small or difficult to map. They may also highlight sites which require additional survey effort.

### Target Note 1

A single large sweet chestnut tree (*Castanea sativa*) was recorded close to the front entrance. This veteran tree is likely to be more than 200yrs old. Parts of the main trunk are dead, and the tree is likely to support a wide range of invertebrate species. Bat activity in this part of the site was found to be low, possibly due to the presence of the Mill Pool road and street lighting. This tree is one of the oldest

trees within the town and is of local importance. A more detailed assessment and measures to protect this tree are included in the arboricultural report.



**Figure 21: Target note 1 veteran sweet chestnut tree**

#### Target Note 2

Throughout the woodland there are large mature trees which exhibit features with the potential to support roosting bat species (potential roost features – prf's). These tend to be oaks which support more ivy than the mature beech trees and retain more dead wood in their crowns and higher branches. Other potential roost features include rot or woodpecker holes, splits in stems and lifting platy bark.

Activity surveys generally found bat activity to be low at the western and eastern ends of the site. This may be due to the proximity of cars and street lighting and the large number of more favourable roost sites nearby.



Figure 22: Mature tree with potential bat roost features.

### Target Note 3

*Rhododendron ponticum* was recorded through large sections of the woodland area forming a dense or scattered shrub layer. *Rhododendron ponticum* is an invasive species which shades out native flora. It is also an important host plant for Sudden Oak Death Disease (*Phytophthora ramorum*) which can in turn lead to the rapid death of species such as beech and sweet chestnut.

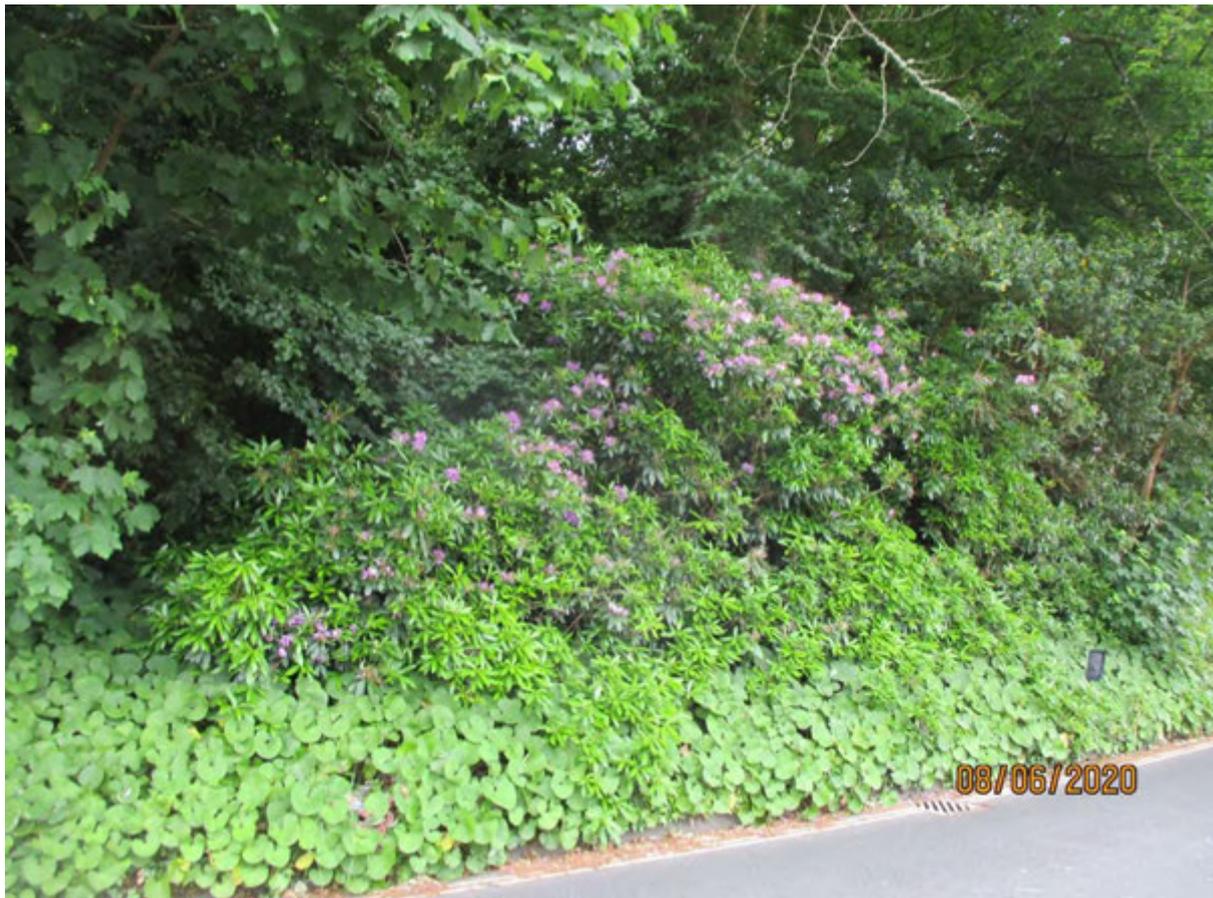


Figure 23: Target note 3, *Rhododendron ponticum* within woodland

### Target Note 4

There is a small area of Japanese Knotweed (*Fallopia japonica*) growing alongside the road opposite to the car park entrance. Japanese Knotweed is invasive, and the infestation currently covers an area of approximately 10 m<sup>2</sup>. Two clumps are in close proximity and on the main survey date (8th June 2020) one clump had been recently sprayed with herbicide, possibly by Cornwall Council, and was wilting. The adjacent clump (see figure 24) has not been sprayed and was thriving. This infestation does not appear to have spread much since 2013 but is still present. Treatment with herbicide will be required. *Petasites fragrans* is also frequent along the northern site boundary.



Figure 24: Japanese Knotweed

Target Note 6

Slow-worms have been recorded to both the north and more recently west of the manor house. Recommendations for their protection and relocation are provided in section 8.4.



Figure 25: Slow-worms recorded in 2020 in Polvellan grounds



## 6. Protected Species

### 6.1 Reptiles

In 2013 there was a large slow-worm population, with more than 20 individuals recorded on one visit, qualifying as an exceptional population (Froglife Advice Sheet 10). The open grassland to the north of the manor house is now scrubbing over, and the quality of habitat for slow-worms is deteriorating. Nevertheless, they were found during 2018 during an ecological walkover survey, with two young individuals recorded.

The survey was repeated in May and early June 2020. The full report is included as Appendix C1. The most recent survey shows that slow-worms continue to be present in moderate numbers, despite the changing habitat. They have been recorded in the two main areas previously recorded, to the east and north of the manor, but they are now also present in the young scrub and rough grass to the west of the manor, an area previously classified as bare ground. No slow-worms were recorded within the mature woodland areas.

The maximum number of slow-worms recorded on one visit was nineteen individuals. They were a mix of young and mature individuals, indicating that an active breeding population remains on site. The areas where slow-worms were recorded in 2020 are shown in the map below. This shows that as well as being in the former garden areas to the north and east of the manor slow-worms have spread into an area to the west, previously classified as bare ground.

Numbers of slow-worms have halved since the 2013 survey, but the population has fallen from exceptional to a good level, as defined by Froglife. The decline in population can be attributed to a gradual scrubbing over of the old gardens, which has reduced rough grass and sunny basking sites.



**Figure 26: Location of slow-worms recorded in 2020**

Red: no slow worms.

Green: slow worms recorded (number = maximum number at one time)

## 6.2 Breeding Birds

No nesting sites were identified during the survey but there were a significant number of suitable nesting habitat areas within the woodland areas. All buildings, sheds and mature trees were checked for possible barn owl nesting sites. No nesting sites were recorded. No owl pellets or feathers were identified.

## 6.3 Bats

An internal and external survey of all the manor house was undertaken to identify potential roosting features and entrances to the roof space. The buildings were assessed as having medium to high suitability to support roosting bats. The manor grounds and surrounding area provide excellent habitat for roosting and foraging bats. Two bat species have been recorded within 1km of the site.



An internal inspection of the building and external emergence surveys was undertaken in 2013 by Tamar Consulting. This concluded that Polvellan Manor is being used by low numbers ( $\leq 4$ ) of Common Pipistrelle bats as a day-time roost. Additionally, Lesser Horseshoe bats appeared to be using the building as an occasional night-time feeding perch although a remote recording survey did not record any night-time activity by this species. The 2013 survey also undertook some woodland survey work, which only picked up low levels of Pipistrelle activity, possibly due to the proximity of highly illuminated and well used roads.

Further surveys of the manor house in 2015, 2016 and 2017 showed continued low use of the building, but no signs of either breeding or hibernating. Some use by Lesser horseshoe bats and one record of a Greater horseshoe bat were found in these surveys. The level of bat use has remained relatively low throughout the 4 years of survey work with 4 species recorded over the period.

The manor was further surveyed in 2018, by Penpont Ecological Services, to keep results up to date. Within the manor building levels of internal bat activity had dropped from the previous year, with only one record of an unidentified bat and few fresh droppings during an extensive internal survey. The internal survey was supplemented by an emergence survey, to further check for bats in hidden crevices and between the slates and roofing felt. The emergence survey recorded one Common Pipistrelle and one Brown long-eared bat emerging from the building. There was also limited foraging activity in the vicinity, including one Lesser Horseshoe record.

A building inspection was carried out on 11 June 2020. Many of the windowpanes of the house have been broken and the windows now provide multiple permanently open apertures. Some disturbance to the loft voids has occurred through trespass. Bat droppings were identified within the westerly loft space, below a section of torn roofing felt.

A dusk emergence survey was carried out on 29 June 2020. One Common Pipistrelle was identified emerging from slate verges to an easterly elevation, one Lesser Horseshoe was identified emerging from a window to the south elevation, and one Long-eared bat was identified emerging from a window to the south elevation.

It is considered likely that low numbers of Common Pipistrelle and Long-eared species are currently using the building as a non-breeding, day-time roost.

It is considered likely that low numbers of Lesser Horseshoe are currently using the building as a non-breeding, day-time roost.

Further survey work will be undertaken to confirm current bat species assemblage, and the conservation status of the roosts present. This survey work will include DNA analysis of the Long-eared droppings. The further survey work will inform a Natural England European Protected Species Mitigation Licence.



**Figure 27: bat droppings in roof space, coming from between slates and roofing felt**

Emerging bats were recorded feeding over the adjacent woodland. Additionally, a number of Common Pipistrelles were identified commuting into the grounds of Polvellan Manor from the west of the site. These were recorded foraging over adjacent woodland.

Three trees were identified as having potential to support roosting bats. Further survey work will be undertaken to determine presence/likely absence of bat species, and the conservation status of any roost presence.

| Tree number<br>(from BS 5837) | Tree Location                   | Species  | Potential Roost features                                 |
|-------------------------------|---------------------------------|----------|--|
| 53                            | East end of former parking area | Ash      | Dead tree with ivy, tree leaning and hung up             |
| 118                           | Next to Polean lane entrance    | Sycamore | Numerous broken branches caused by fallen sweet chestnut |
| 177                           | Near former bus turning area    | Oak      | Hollows and lifting bark on main trunk (fig 22)          |

Trees are regularly used by bats, and tree-dwelling species are known to regularly move between tree roosts in response to environmental conditions. Therefore determining absence of bat species in trees is very difficult. As a best practice, cautionary measure, all trees earmarked for removal should be checked immediately prior for bats, and be removed carefully and incrementally.

Bats will also be using the woodland, and Common pipistrelles were recorded as actively foraging there during the 2020 emergence surveys. Trees were inspected for potential roost features for bats, and three trees were identified as having significant bat roost potential and requiring further inspection:

Further survey results are in the separate bat report.

The overall use of the woodlands is low. This is possibly because of the isolated nature of the site. Heavy traffic on the A387 and Millpool car park and access road, and also high levels of artificial lighting, make the area less attractive to bats than the habitat might suggest.

## 6.4 Badgers

Previous surveys have identified likely badger runs through the woods, but no conclusive tracks were found during the 2020 survey. Searches failed to locate any latrines or setts within the site. Given the large areas of nearby woodland it is nevertheless likely that badgers will pass through the woods here on an occasional basis.

## 6.5 Dormice

No signs of dormice have been recorded (i.e. nests or hazelnuts). Food sources at Polvellan are limited but dormice have previously been recorded in Kilminorth Wood in 2012. Despite regular volunteer surveys, no recordings have been made since then. Full dormice surveys of the adjoining Polean light industrial site were undertaken in 2012 finding no dormice to be present (pers. comm.). Dormouse



nest boxes were located within 30m of Polvellan woods in similar habitat. The presence of dormice is therefore thought to be unlikely.

## 6.5 Otters

There are no close records for otters but their presence in the Looe rivers is likely, and they have been recorded further upstream. No suitable otter habitat was recorded at Polvellan which is separated from the river by the busy Mill Pool car park.

## 6.6 Other species

No other protected species were identified during the surveys.

## 6.7 Invasive Weeds

A small area of Japanese Knotweed was identified alongside the road (Target Note 5) during both site surveys. It is an offence to cause the spread of Japanese Knotweed in the wild under the Wildlife and Countryside Act 1981 and all waste containing Japanese knotweed comes under the control of Part II of the Environmental Protection Act 1990. Winter heliotrope (*Petasites fragrans*) is widespread along the roadside. Steps should be taken to restrict its spread around the site.

## 6.8 General Observations – Existing impacts

The site has been studied over a seven-year period providing sufficient time to observe wildlife activity and habitat changes. Although Polvellan is located relatively close to a range of large and important habitats, the site is clearly constrained by the proximity of the large Mill Pool car park, busy roads, lighting and urban development. These factors limit the ecological potential of the site.

The regular loss of mature trees due to storm damage is also of concern. Natural regeneration on the site is limited and gradual erosion of this resource is likely to accelerate over time without active positive management.



## 6.9 Value of Site In Biodiversity Units

The baseline number of biodiversity units on site have been calculated using the Defra BNG calculator tool. The following judgements were made in deriving the figures:

- Polvellan is moderately ecologically connected
- The site location is ecologically desirable but not in a local strategy
- All habitats have been classed as urban
- Habitat condition has been classified as moderate for each habitat

The baseline number of biodiversity units on site has been calculated as 12.54, as summarised in the table below. Full details can be found in the BNG spreadsheet.

| Phase 1 habitat     | BNG classification                                 | Area (ha) | Biodiversity units |
|---------------------|--|-----------|--------------------|
| Woodland plantation | Urban woodland                                     | 1.30      | 10.02              |
| Dense scrub         | Urban woodland                                     | 0.08      |                    |
| Scattered scrub     | Urban mosaic habitats on previously developed land | 0.17      | 2.47               |
| Introduced shrubs   | Urban - introduced shrub                           | 0.005     | 0.05               |
| Buildings           | Urban developed land - sealed surface              | 0.08      | 0                  |
| Bare ground         | Urban developed land - sealed surface              | 0.08      |                    |
| <b>TOTAL</b>        |  |           | <b>12.54</b>       |



## 7. Ecological Impact Assessment of Proposed Development

The proposed development consists of the following main elements:

- Restoration of the original manor house and conversion into four dwellings.
- Demolition of more modern buildings to the rear of the manor.
- The construction of a single development unit at the eastern end of the site.
- The construction of 10 units in a new west courtyard development.
- Additional hard standing parking will be provided around the main house and developments.

The proposed layout is shown in figures 28 overleaf. Extensive changes have been made to the layout in response to previous arboricultural and ecological surveys and the resulting need to reduce impacts to the woodland area and individual notable trees. The current Scheme reduces the number of trees that will need to be removed and will have less effect on the landscape. Features such as open undercrofts below the housing units, provide additional space for landscaping and ecological mitigation.

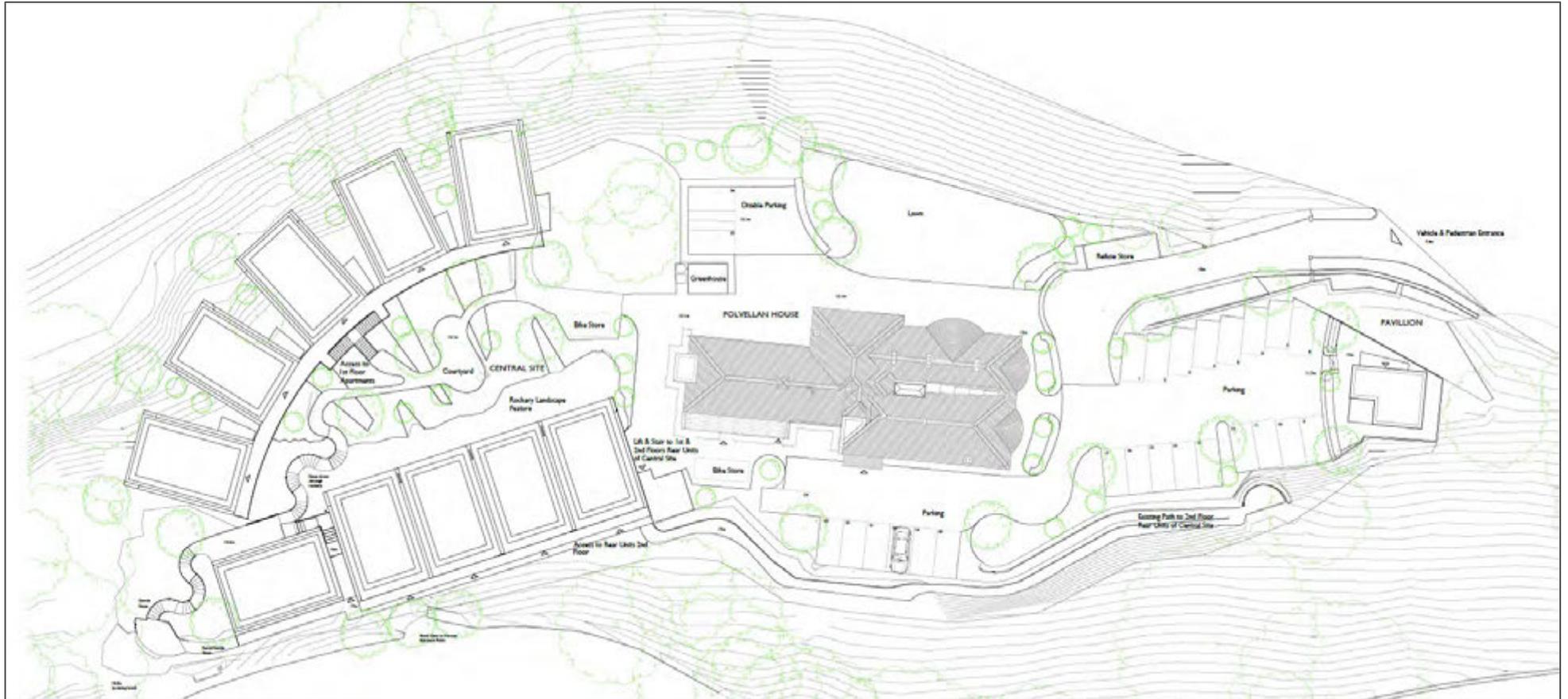


Figure 28: Summary layout of proposed development (architect plans)

### Protected Sites

No protected sites will be directly affected by the development. There will be minimal indirect impacts from increased recreational pressure on the Plymouth Sound and Estuaries SAC.

### Protected Species

The need to update surveys for bats and for reptiles was identified during the preliminary ecological appraisal and these have been carried out. Detailed reports are provided as appendix C to this report, and recommendations within those reports are also covered in the overall recommendations below.

Likely impacts from the proposed development will include:

1. The more modern rear block to Polvellan Manor will be demolished, with impacts on roosting bats.
2. Extensive repairs are proposed to the existing House. Four species of bat have been recorded within the roof space over a 5-year period and works should follow strict mitigation guidelines and licensed supervision to avoid disturbance.
3. The development will result in the permanent and temporary loss of areas of ecological habitat:

| Development  | Development footprint (m <sup>2</sup> ) | Plus adjacent habitat loss (m <sup>2</sup> ) ** | Total loss (m <sup>2</sup> ) |
|--|---|---|------------------------------|
| Main house and western courtyard, pavilion and car parking areas | 5200                                    | 500   | 5700                         |

\*\* This assumes a working margin of 5 metres margin around the developments, except the southern boundary of the main development, which is defined by the existing stone retaining wall. This will restrict the temporary construction areas to areas demarcated as car parking or access routes. In practice, all habitat areas will be protected either by tree protection fencing (see Tree Protection Plan in the Arboricultural Report) or by the steep topography of the site.

Habitat loss from main central development can be broken down as follows:

- Scattered scrub: 1500 square metres
- Bare ground and buildings: 1600 square metres
- Introduced shrubs: 100 square metres
- Broadleaf Plantation Woodland and dense scrub: 2500 square metres

The overall loss of broadleaved plantation woodland is 0.25 hectares or 18 % of the woodland area (1.38ha). All of the scattered scrub (classed as urban mosaic habitats on previously developed land for BNG calculations) will also be lost.

4. The construction phase will lead to a temporary loss of bird nesting habitat. Tree and shrub clearance works will need to be timed to avoid direct disturbance.

5. There will be temporary disturbance and loss of slow-worm habitat which requires mitigation.
6. Impacts on dormice are unlikely but a precautionary approach is recommended.
7. The proposed construction area will not affect migrating badgers but measures to protect badgers during construction should be adopted as a precautionary measure.
8. The new development will increase the general level of disturbance within the site, which could impact on bat foraging without suitable mitigation.
9. It is assumed that all space allocated to parking and subsequent soft landscaping will be required for temporary site accommodation and storage.
10. An assessment of potential impacts to the veteran Sweet Chestnut tree have been made in the arboricultural report.

The combined impact of these works is a net loss of 4.05 biodiversity units. The calculated loss is broken down in the table below. Full details can be found in the BNG spreadsheet.

| BNG Habitat   | Area lost (ha) | Biodiversity Units Lost |
|---|----------------|-------------------------|
| Urban woodland  | 0.25           | 1.82                    |
| Urban open mosaic habitats on previously developed land | 0.15           | 2.18                    |
| Urban introduced shrub                                  | 0.01           | 0.05                    |
| Urban developed land, sealed surface                    |                | 0                       |
| <b>TOTAL</b>  |                | <b>4.05</b>             |

## 8. Mitigation Measures

### 8.1 Broadleaf Plantation

The construction works will result in the permanent loss of up to 18% of the broadleaf plantation woodland or dense scrub, but there is major scope to enhance the biodiversity of retained woodland. It is essential that works to enhance the woodland are planned and implemented in order to meet biodiversity net gain requirements.

The following ecological issues have been identified with the woodland and should be addressed to help achieve biodiversity net gain:

- The woodland is a relatively even aged plantation dating from the late nineteenth century.
- This has led to an even aged structure, dense canopy and very limited natural regeneration.
- There are large areas of introduced rhododendron (*Rhododendron ponticum*) which is smothering the native ground flora and preventing natural regeneration of trees.

- The even aged stand has become prone to storm damage, with the loss of mature trees. Opening up of some woodland edges, will increase the risk of storm damage, unless suitable mitigation measures are put in place.
- There are small areas of invasive species, with Japanese Knotweed (*Fallopia japonica*) a particular risk.

The changes and losses to the woodland plantation are the main ecological effect of the proposed development. To ensure no net loss of biodiversity and an overall net gain, it is essential that the woodland is managed to higher standards than have been apparent for at least the last twenty-five years.

Mitigation for the development must include a range of measures, which are included more fully in section 9, which lists recommendations to enhance the woodland habitat. Felling or coppicing some trees on the edge of the development will help structural diversity and filter winds through the woodland, enhancing overall stability. Specific measures for individual trees are also included in the separate BS5837 arboricultural report.

## 8.2 Nesting Birds

1. Vegetation clearance and tree work should be avoided between March and September which is recognised as the bird nesting season. If vegetation clearance needs to take place during this period an ecological watching brief will be required, however delays could be encountered if nesting birds are found. Vegetation clearance and construction work will not be able to take place within 5 metres of any nesting sites.
2. Due to the removal of trees, there will be a temporary loss of bird breeding habitat until the replacement landscaping works mature. Alternative nest sites should be provided in the form of ten nest boxes located in areas where trees and scrub are retained, and on the edges of the woodland.

Due to the permanent loss of broadleaf plantation habitat there will be a need to provide alternative bird breeding habitat. This will include:

3. Parts of the southern boundary will require new hedgerow planting as part of the landscape scheme and additional shrub planting is proposed for the courtyard scheme, both within the courtyard and in the storm damaged woodland below it. This will provide nesting sites for a range of bird species. 100 native hedgerow plants are recommended to be planted along the southern boundary (Polean Lane):

|            |               |                           |
|------------|---------------|---------------------------|
| 50         | Beech         | <i>Fagus sylvatica</i>    |
| 25         | Hazel         | <i>Corylus avellana</i>   |
| 25         | Hawthorn      | <i>Crataegus monogyna</i> |
| <b>100</b> | <b>plants</b> |                           |



Plant as 60-90cm transplants in 60 cm tree shelters, keep weed-free for at least three years, replace any losses.

### 8.3 Bats

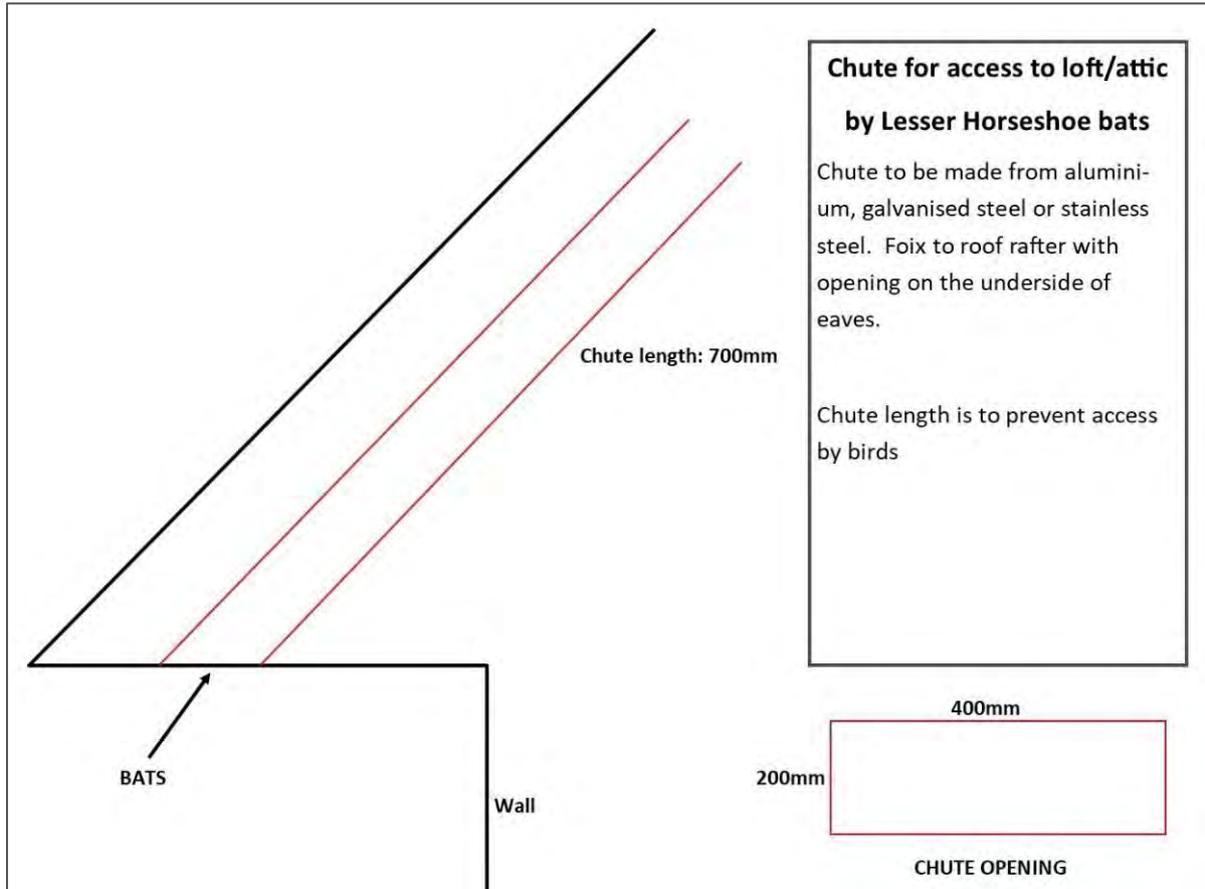
The following recommendations are made to mitigate against effects on bats.

#### **The Manor Renovation**

A Natural England European Protected Species Mitigation licence will be required to permit the proposed works to be undertaken lawfully. The licence can only be applied for once planning consent has been given.

Following the results of the further survey work the licence is likely to include the following mitigation measures:

1. The manor is considered unlikely to be suitable for hibernating bats. Therefore, the roof stripping works will take place in the winter period (1<sup>st</sup> September to 1<sup>st</sup> May).
2. Prior to works commencing the licensed bat ecologist will erect a bat box (suitable for crevice dwelling bats) in an adjacent tree within the grounds.
3. Immediately prior to works commencing the bat ecologist shall inspect the building to ensure bats have departed. If bats remain in the building after 1<sup>st</sup> September these bats will be translocated into the bat box provided, and any horseshoe bats remaining be excluded. The licence shall include detailed methodology relating to suitable exclusion methods.
4. Works to dismantle the roof shall be carried out under an ecological watching brief. The licensed ecologist shall provide a toolbox talk prior to removal of key features of the roof including the ridge and hips, soffits and the fascias.
5. Provision for crevice dwelling bats shall be made in the final design. This will be achieved by
  - leaving small gaps (15-20mm) between the soffits and walls
  - leaving small gaps in masonry, soffit gaps and raised flashing
  - by installing two purpose built integrated bat boxes.
6. Provision for free flying bats shall be retained in the existing loft sections over the northern parts of the manor building. Brown long-eared access to one loft void shall be made via the gable end soffit / verges. Horseshoe access to the other loft must be via a shute to the roof slope (see figure 20).



**Figure 18: Chute for loft access by Lesser Horseshoe bats**

7. If it is not possible to make Horseshoe bat provision within the manor house, alternative structures may be considered.
8. Traditional Type 1F bitumastic underfelt shall be made and the use of modern breathable membranes rejected. This is due to known research that bats can be entangled in worn fibres of modern membranes.
9. Should remedial timber treatments be required against wood-boring insects these must be safe for bats, such as pyrethroids, and boron compounds (e.g. Permethrin, Flurox).
10. Following completion of licensed works the acting ecologist shall inspect the structures to ensure that the provision is suitable and has been undertaken in accordance with the licence method statement and mitigation strategy. In accordance with Natural England mitigation guidelines a period of monitoring shall be undertaken to assess the uptake of the new bat provision.
11. External lighting should be directional LED, mounted low level and working from time-limited motion sensors. Lighting should follow Bat Conservation Trust Guidance Note 08/18 Bats and Artificial Lighting in the UK.

### The Woodlands

12. Soft felling of trees: trees must be felled by sectional dismantling, as per the separate arboricultural report. Climbers must be briefed about the possibility of bat roosts and inspect potential bat roosts with an endoscope prior to felling. Cease work and seek immediate support from the site ecologist or ecological clerk of works if any bats are found.

## 8.4 Reptiles

1. The areas of old garden to the east, north and west of the manor house must be cleared of slow worms prior to the commencement of any construction works. Reptiles must be translocated to a temporary receptor site and held there for the duration of construction works, before being returned on completion of the development.
2. Initial site clearance must include brushcutting / strimming ground vegetation to a height of 100mm. It must either be undertaken prior to the bird nesting season (before 14th February) or a competent ornithologist must inspect and ensure no birds are nesting in the ground vegetation and brambles prior to cutting.
3. Fifty reptile tile traps should be placed across the scrub areas where slow-worms were recorded in 2020. Trapping should be undertaken between April and early October during suitable weather conditions.
4. Slow worms must be relocated to a suitable nearby site, with rough grassland and some unshaded areas. It must be fenced for the duration of the project, contain a temporary hibernaculum and cover an area of 750 square metres (equivalent to the area of habitat currently occupied).
5. The site will not be deemed to be clear of slow worms until a zero-survey score has been achieved on at least 5 consecutive visits.
6. Recapture and return at least twenty individual slow-worms to the Polvellan grounds on completion of the development.
7. Construct two reptile hibernacula and install composting areas within the landscaping scheme, as per reptile report.

## 8.5 Badgers

There are signs of badger tracks through the western section of the woodland only, but no setts or latrines have been recorded. No sign of badger activity has been recorded within 45m of the proposed development area. All excavations must be covered overnight to prevent badgers falling in, or a suitable ramp provided for badgers and other small mammals to escape.

## 8.6 Dormice

Surveys undertaken nearby would suggest that the presence of dormice is unlikely.

1. As a precautionary measure, it is recommended that any ground excavation work within the woodlands takes place during April/May or September/October when dormice are active and can move away from the disturbance. The main area of disturbance is to the woodland edge in the centre of the site. Undertaking work at these times of year enable dormice to safely move away to the main area of woodland which will not be affected by the works. This follows Forestry Commission best practice.
2. Removal/clearance of trees and shrubs must be planned for the winter months to avoid nesting birds. Careful removal of the trees during the winter is also less likely to impact on any hibernating dormice.

## 8.7 Invasive species

The small area of Japanese Knotweed is close to the proposed construction area.

1. Control with suitable herbicide is recommended prior to building commencement. Spray with a solution of glyphosate (5 litres per hectare equivalent at 360g/l) e.g. Round-up Pro Bi-active, together with a surfactant e.g. Mixture B. Spray annually in early to mid-September, as the stems draw nutrients back into the root system for winter. Repeat in subsequent years until eliminated. Cornwall Council maintain a list of qualified Japanese Knotweed control companies.
2. Repeat annually for at least three years and continue inspections until three years with no leaf growth observed.

Rhododendron control is also recommended as part of woodland ecological enhancement works.

## 8.8 Timing of pre-commencement works

Due to the presence of protected species, preparing the site for construction work will take several months.

Felling of trees should be undertaken outside of the bird breeding season (avoiding March to September) while ground excavation should be undertaken in April / May, or September / October.

Reptile translocation can be undertaken between April and June and during September/early October only.



## 8.9 Roles and Responsibilities

We recommend the appointment of a Project Ecologist to co-ordinate and oversee all ecological mitigation and enhancement works.

We recommend the production of a Construction and Environment Management Plan to provide additional detailed recommendations and methodologies to inform the main building contractors. This must also include recommendations and protection methods outlined in the BS5837 Arboricultural Report.

After the build phase, long term supervision is key to ensuring ecological mitigation and enhancement measures are effective. During the construction phase it is recommended that a project ecologist is appointed by the contractor to oversee all the mitigation and enhancement measures. Many of these will need to be completed at the pre-commencement stage. This will include reptile capture and translocation, bat surveys and mitigation, and supervision of tree felling works. The ecologist should also take responsibility for ensuring that operations are undertaken in a timely manner and that all unforeseen issues are dealt with correctly and promptly. All site staff should be aware of the presence of protected species on site and the statutory protection given to the trees and woodlands.

The scheme proposes that the overall site will continue to be managed by a single management company. This company will retain responsibility for all ground's maintenance including trees and shared garden space. They will also have responsibility for post completion monitoring, knotweed control and completing the 25-year woodland restoration scheme.

| Species                  | Location                      | Measure   | Timing   |
|--------------------------|-------------------------------|---|--|
| Bats                     | Manor House roof              | 11 measures recommended   | Roof stripping works in winter   |
| Bats<br>Precautionary    | Woodland                      | Soft felling of trees in sections   |  |
| Breeding<br>Birds        | Woodland                      | Provision of temporary and permanent nest boxes and new hedges.   | No vegetation cutting between March and September  |
| Slow worm                | North and east of Manor House | Trap and translocate entire population.   | Translocation between April and early October prior to main construction works                       |
| Broadleaf trees          | Construction zones            | Heras fencing, further details in BS5837 report. Specific tree surgery measures if required. Some understorey planting. | Minimise work during nesting season.   |
| Dormice<br>Precautionary | Construction zones            | Timing of vegetation clearance  | Vegetation clearance in winter. Ground excavation in woodland areas April/May or September / October |
| Japanese Knotweed        | Northern boundary             | Treat with herbicide  | September annually   |

**Mitigation Summary Table**



## 9. Ecological Enhancement

The following recommendations have been made to further enhance the ecological value of the application site in line with the current National Planning Policy Framework (2018).

### 9.1 Woodland Management

A woodland management plan was drawn up and approved as part of an England Woodland Grant Scheme (EWGS) in conjunction with the Forestry Commission in 2014. The management plan aims to regenerate significant sections of the woodland over a 25-year period in order to sustain the character of the landscape.

The objectives of the plan are:

- To maintain Polvellan Woods as an important landscape and wildlife feature
- To encourage woodland regeneration to ensure both habitat and landscape features are sustained.
- To protect key habitat features such as veteran trees and trees with bat roost potential.
- To remove invasive species which threaten the health and biodiversity of the woodland.
- To encourage a wider age structure of trees and more diverse shrub and ground flora layers.

The objective of the proposed woodland enhancements is to improve the condition assessment of the retained broadleaved woodland from "medium" condition assessment to "fairly good" condition, as defined by BNG Defra 2.0 methodology. This will achieve a net gain of 11.72 biodiversity units for the woodland area (see section 9.7).

The woodland management plan will enable the woodland to evolve from an essentially even-aged plantation to a structure that much more closely resembles semi-natural woodland, which is of higher biodiversity value. The woodland management plan, fully implemented, will ensure a more diverse structure and long-term sustainability. The diverse structure will support a healthy woodland understorey, younger trees coming into the canopy, a richer and more extensive groundflora with greater opportunities for nesting birds. It will enable gains in biodiversity within the woodland.

The woodland management plan, written in 2014, has not been implemented to date, due in part to ongoing planning consultations and a series of changes or potential changes in ownership. A clear and agreed way forward for the site will provide a platform to enable this active management to be programmed and delivered. However, the current development proposal has very much taken on board the aims of the woodland management plan, and the current landscape proposals by MeiLoc were drawn up in close collaboration with Land and Heritage, to ensure integration and provide a platform for delivery going forward.



Rhododendrons are non-native and in places they are suppressing native woodland species and regeneration of young trees. The initial five-year plan concentrates on tree safety and rhododendron control, with measures to encourage natural regeneration and replanting. Further felling and re-stocking will take place at five-year intervals over the following 20 years.

Storm damage at Polvellan during the past 7 years has severely affected over 10% of the woodland. Given the largely even aged structure of the woodland, it is essential that a proactive approach to management is adopted to avoid large scale or even catastrophic storm damage in the future. This is also essential for public safety as well as long term conservation of the woodland.

Felling or coppicing some trees on the edge of the development will help structural diversity and filter winds through the woodland, enhancing overall stability.

The changes and losses to the woodland plantation are the main ecological effect of the proposed development. As a result there has been close co-ordination between the ecological reports, the arboricultural survey and the landscaping proposals. To ensure no net loss of biodiversity it is essential that the woodland is managed to higher standards than have been apparent for at least the last twenty-five years.

The following planting is recommended below (to the north of) the central apartments. This is in an area partly created by felling of mature trees, and partly in an area of severe storm damage.

|            |                |                           |
|------------|----------------|---------------------------|
| 10         | Beech          | <i>Fagus sylvatica</i>    |
| 10         | Oak            | <i>Quercus robur</i>      |
| 10         | Sweet Chestnut | <i>Castanea sativa</i>    |
| 15         | Holly          | <i>Ilex aquifolium</i>    |
| 20         | Hazel          | <i>Corylus avellana</i>   |
| 10         | Spindle        | <i>Euonymus europaeus</i> |
| 10         | Hawthorn       | <i>Crataegus monogyna</i> |
| 5          | Mountain Ash   | <i>Sorbus aucuparia</i>   |
| <b>100</b> | <b>plants</b>  |                           |

Plant as 60-90cm transplants in 60 cm tree shelters, keep weed-free for at least three years, replace any losses.

We recommend that the 2014 Woodland Management Plan is updated to guide future long-term management.

## 9.2 Features for Birds

Cornwall Council standards require the installation of one bird or bat box per new dwelling. The loft space within the conversion of the Manor will continue to provide opportunities for bat roosting, but provision will need to be made for the new apartments planned in this development. Overall this means a requirement for 38 boxes in relation to the new apartments. In practice bats will be catered for by existing loft spaces and mitigation measures listed in section 8.3. The focus in this development will therefore be on the installation of the following bird boxes, over and above the ten listed for mitigation measures in section 8.2. The boxes recommended below are of durable cement-based materials. See for example <https://www.nhbs.com/search?q=bird+boxes>

- House martin: four double boxes to be installed under the House and new apartment eaves (eight nests)
- Swallow: eight No. 10 Schwegler swallow nest boxes, also erected under eaves
- House sparrow: four Vivara Pro WoodStone house sparrow nest box pairs to be installed on the new apartment buildings and Polvellan House eaves (eight nests)
- Robin: Install six 2H Schwegler robin boxes within the retained woodland (also suitable for wrens)
- Tit boxes: install six Vivara Pro Seville 28mm WoodStone nest boxes within the broadleaved woodland
- Woodpecker: install two boxes designed for woodpeckers, within woodland area.

The proposed woodland management improvements will also enhance nesting opportunities for nesting birds.

## 9.3 Features for Reptiles

Ecological succession in the last six years has made the site less attractive for reptiles, with less open space for basking and thermoregulation. The renewal of the informal and semi-informal landscaping will provide fresh habitat and opportunities for the slow-worm population. The following opportunities are identified from the landscaping master plan:

- The re-landscaped gardens include some retaining walls. It is recommended that these are constructed as single sided Cornish hedges finished without mortar in local slate stone. These walls will be suitable habitats for slow worms and will provide excellent hibernacula for overwintering.
- Garden shrubberies are frequently good slow-worm habitat as can be compost heaps. The rougher transition from natural woodland to formal gardens will also be good slow-worm habitat.



## 9.4 Features for Bats

The improved woodland management will provide improved foraging for bats, with more light opening up the wood to a greater invertebrate assemblage.

The renovation of the manor, which includes providing access to the loft spaces for bats, will enhance the value of the manor for roosting bats. That is significantly limited at present by the broken windows and sub-optimal microclimate.

The removal of the modern roofing felt, and replacement with Type 1F bitumastic roofing felt is another small enhancement. The current roofing felt is of a type known to cause problems, with bats getting tangled and trapped in worn fibres.

One permanent bat box will be provided for temporary roosting during building works and left in situ as a permanent gain.

However, these gains are small. The grounds have relatively low use by bats, and in our opinion lack of roosting sites is not a factor. Therefore we have focussed our proposals for nesting boxes on provision for birds (see section 9.2 above). Improved woodland management will be the key factor in maintaining and enhancing the local bat population.

## 9.5 Other Features

To meet current Cornwall Council biodiversity guidelines, we also recommend the installation of bee bricks at the rate of one per two new dwelling units. They prefer boxes to be permanent and inbuilt, not shorter lifespan wooden boxes. <https://greenandblue.co.uk/product/bee-brick/>

These features will also reduce the time required for the new landscape areas to support bees and other invertebrates.

## 9.6 Landscape Plans

The wider landscape plans drawn up by Mei Loci include a wide range of shrub planting and some semi-formal beds. An outline landscape plan (below includes a range of native species, which are generally support a wider range of wildlife. The new shrub beds provide a range of opportunities for more wildlife to flourish e.g. shrubs providing food for butterflies and birds.

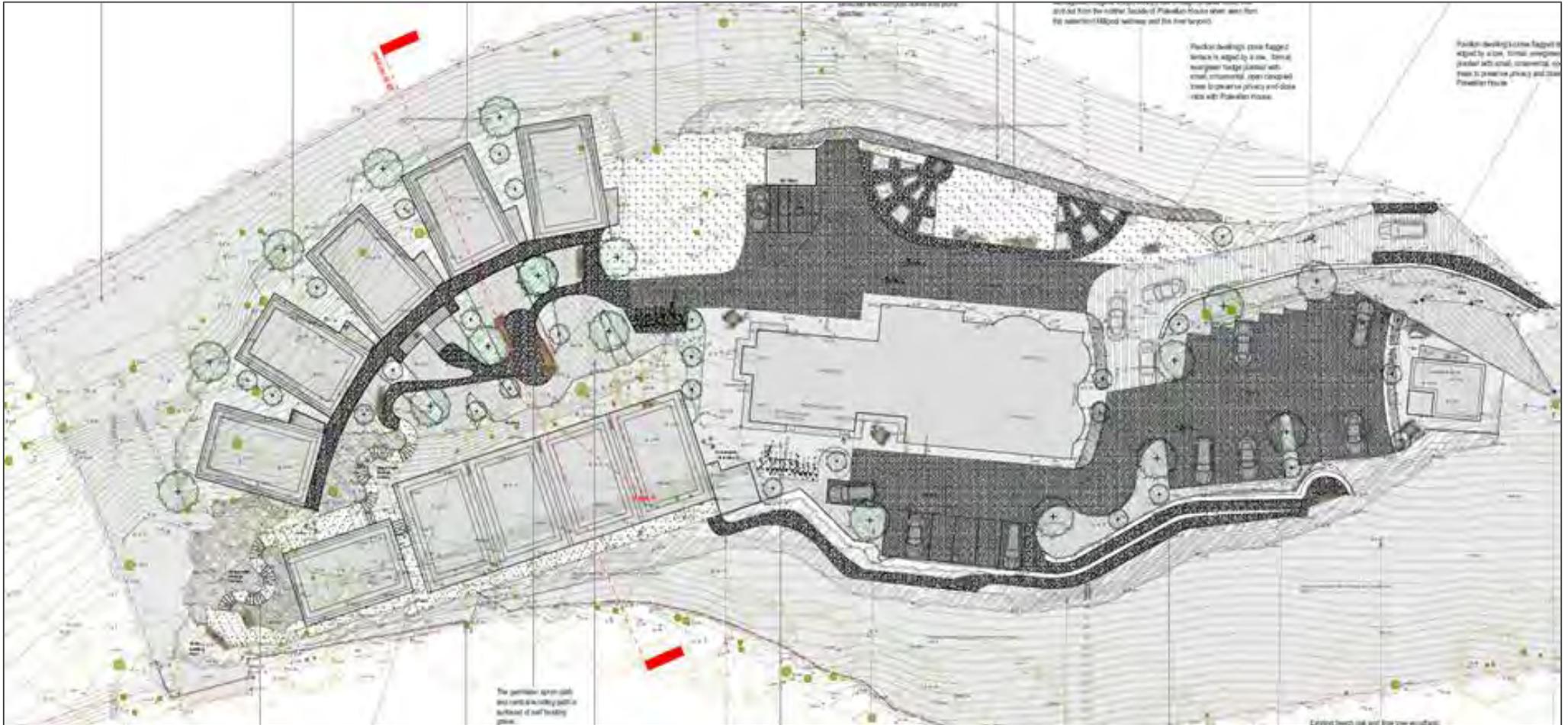


Figure 19: landscape plans for the site



In addition to the framework planting of native trees and shrubs around and below the central courtyard, there will be additional planting of woodland and shade tolerant native wildflower bulbs and plugs.

There will also be planting of a range of ferns in pockets on the exposed rock faces, and in shaded undercroft areas. We recommend that at least 50% should be of native species.

There is an opportunity to provide enhanced ecological habitat in the transition zones from native woodland to more formal landscaped gardens. In section 8.2 additional native shrub planting has been recommended. We further recommend that the transition zones have native wildflowers planted, including the following:

|     |                  |
|-----|------------------|
| 500 | Primrose         |
| 500 | Bluebell         |
| 100 | Hedge Garlic     |
| 100 | Foxglove         |
| 100 | Red Campion      |
| 100 | Lesser Celandine |
| 100 | Hedge Parsley    |

The recreation of formal gardens around the development also offers some additional biodiversity gain, with the planting of new shrub beds and sowing of areas of amenity grassland.

## 9.7 Biodiversity Net Gain

For a development of this size, Cornwall Council planning policies require a 10% net gain in biodiversity. Calculations using the Defra trial biodiversity metrics (Version 2.0, July 2019), excluding buildings and asphalt areas, calculate the following numbers:

Improved woodland management is expected to increase the ecological value of the woodland and its overall condition, from a condition score of 2 to a condition score of 3. Set against this is the loss of approximately 2650 square metres of woodland or 20% of the total woodland area.

Other changes and losses from the development are summarised as:

- Loss of dense scrub and scattered scrub from both the development and associated landscaping
- The creation of formal garden areas
- Buildings will increase in number, size and scope, but bat roosts and habitats will be protected and there will be no losses, with some scope for gain.
- There will be a net increase in hard standing / bare ground.

The net gains and losses from the development are shown in the table below. Full details can be found on the Polvellan BNG Metric spreadsheet.

| Habitat   | Losses (m <sup>2</sup> ) | Losses (biodiversity units) | Gains  |                            |  |
|---|--------------------------|-----------------------------|--|----------------------------|--|
|   |                          |                             | Gains (m <sup>2</sup> )                        | Gains (biodiversity units) | Gains from Enhancement   |
| Urban broadleaved woodland plantation and dense scrub | 2500                     | 1.82                        | 300<br>Replanting around completed development | 0.11                       | 13.01<br>Improved woodland management and structural diversity of retained woodland. |
| Intermittent scrub /open mosaic habitat               | 1500                     | 2.18                        | 0  | 0.00                       |  |
| Introduced shrubs                                     | 100                      | .05                         | 500  | 0.23                       |  |
| Amenity grassland                                     | None                     |                             | 1000   | 0.23                       |  |
| Bare ground and tarmac                                | Not applicable           |                             | Not applicable                                 |                            |  |
| Bee bricks  |                          |                             | 19 in total                                    |                            |  |
| Bird boxes  |                          |                             | 38 in total                                    |                            |  |

|  |                                 |
|--|---------------------------------|
| <b>Baseline biodiversity units:</b>              | <b>12.54</b>                    |
| Biodiversity units lost:                         | 4.05                            |
| Biodiversity units retained:                     | 8.49                            |
| Biodiversity units created:                      | 0.57                            |
| Biodiversity units gained by enhanced management | 13.01                           |
| <b>Site potential</b>                            | <b>22.07 biodiversity units</b> |

However, due to risks in habitat creation and timeframes for woodland enhancement, the BNG calculator tool reduces the calculated gain:

|   |              |
|---|--------------|
| <b>Biodiversity Units On Site Post Intervention</b> | <b>13.88</b> |
|---|--------------|

The overall conclusion, therefore, is that the proposed development will lead to a 10.72% gain in biodiversity.

## 10. Conclusions

The site is located close to a range of designated sites including a local nature reserve and a range of non-statutory sites. The proposed development will have no impacts on the protected sites.

Since 2013, a total of twelve individual ecological surveys have been completed with over 20 site visits undertaken. This has provided a detailed knowledge of the site and protected species. Habitat types recorded on site include broadleaf plantation woodland, dense scrub, intermittent scrub, introduced shrubs, buildings, and bare ground. There will be significant impacts from the development on the woodland.

Additional protected species surveys have been undertaken with respect of reptiles and bats. Evidence of 4 bat species has been recorded within the Manor House in five separate surveys undertaken between 2013 and 2020. A full report of the 2020 surveys will be available by 31st August 2020. Low numbers of bats mean that the works can be supervised under a low impact class bat licence. Slow worms were recorded in 2013, 2017 and 2018.

Measures to mitigate impacts on protected species have been provided. Additional recommendations to enhance the ecological value of the site are provided.

Key recommendations include:

- A project ecologist is appointed to the scheme to ensure that the protection and mitigation measures are adhered to.
- A Construction and Environmental Management Plan is written to provide additional detailed recommendations and methodologies to inform the main building contractors.
- The 2013 Woodland Management Plan is updated to provide a framework for the long-term management and monitoring of the wood.
- A project arborist (see separate arboricultural report) is also appointed to manage detailed tree and woodland protection measures.

The overall biodiversity net losses and gains for the site and this development have been calculated. The Defra 2.0 metric calculations demonstrate a net gain of 10.72% providing enhanced woodland management is achieved. Cornwall Council planning requirements require a net gain of 10% for biodiversity for a development of this scale, and this test is clearly met by the current proposals.

On completion, the grounds and woodlands will be managed by a single management company. Trees will be replaced as part of the woodland management plan which aims to diversify the range of tree ages throughout the site.

**Key Ecological Constraints:**

- Presence of European Protected Species: 4 bat species, breeding birds.
- Presence of UK Protected Species: slow worms, potentially commuting badgers.
- Permanent loss of an area of broadleaf woodland habitat

**Ecological Opportunities**

- Long term woodland restoration and management
- Ecological enhancement measures for bats, birds and reptiles

## 11. Ecological Report Limitations

The information reported herein is based only, on the interpretation of data collected during the desk study investigations and the site visit. This work pertains specifically to the identification of protected species on the proposed site. Information provided to Land and Heritage by Biodiversity Records Centres and other statutory information sources has been accepted as being accurate and valid.

This report has been prepared by Land and Heritage with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Additional information has been drawn from previous surveys undertaken for previous planning applications.

The evaluation and conclusions do not preclude the existence of protected species, which could not reasonably have been revealed by the comprehensive desk studies and site visit. Hence, this report should be used for information purposes only and should not be construed as a comprehensive characterisation of all site habitats.

In addition, this report details only the conditions on site, at the time of reporting. The dynamic nature of the natural environment will result in changes to the surrounding environment as seasons change. No responsibility is taken by Land and Heritage to the existence of additional species identified on this site later.

This report has been prepared solely for the use of PAG Ltd and their professional advisors and may not be relied upon by other parties without written consent from Land and Heritage. In addition, it must be understood that this report does not constitute legal advice.

Land and Heritage disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.



## 12. References

Arboricultural Report for Polvellan Manor, Land and Heritage, 2018

Bat Conservation Trust 2018: Guidance Note 08/18 Bats and Artificial Lighting in the UK.

Bat Surveys for Professional Ecologists, 3<sup>rd</sup> edition, Bat Conservation Trust (2016)

Barn Owl Trust: Guide to surveys: leaflet no 8.

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<https://map.cornwall.gov.uk/website/ccmap/?zoomlevel=1&xcoord=162690&ycoord=64380&wsName=ccmap&layerName=>

Cornwall Council 2017: Biodiversity Supplementary Planning Document

English Nature 2<sup>nd</sup> Ed 2006: *Dormouse Conservation Handbook*. Peterborough

Froglife Advice Sheet 10: Reptile Survey (1999)

Institute of Environmental Assessment. 1995. *Guidelines for Baseline Ecological Assessment*. London: E & FN Spon.

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## Appendices

Appendix A Ecological Records

Appendix B Ecological Constraints and Opportunities Plan

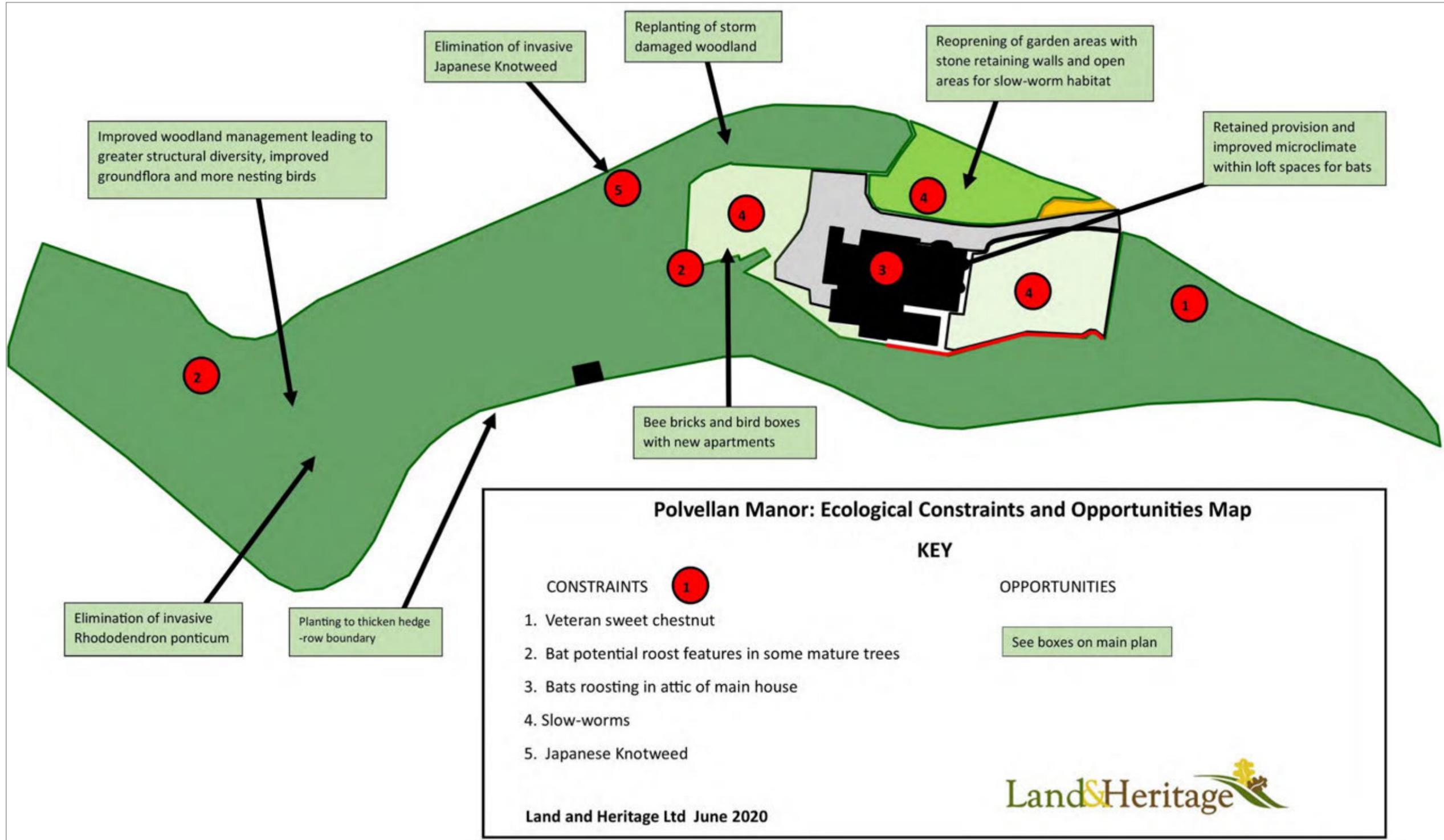
Appendix C Protected Species Survey: Reptiles

Appendix E Nature Conservation Legislation and Policies

## Appendix A Selected ERCCIS Ecological Records

| Species          | Scientific name                 | Location                             | Date          | Grid ref | Comment  |
|------------------|---------------------------------|--------------------------------------|---------------|----------|--|
| Slow-worm        | <i>Anguis fragilis</i>          | Records from East Looe and Hannafore | 1986 and 1989 | SX5059   |  |
| Common Lizard    | <i>Zootoca vivipara</i>         | Hannafore                            | 1985          |          |  |
| Barbastelle Bat  | <i>Barbastella barbastellus</i> | South west of site                   | 19/08/1988    | SX2452   | Confidential roost record                          |
| Bat              | No species ID                   | Possibly Kilminorth Wood             | 31/12/2006    | SX2453   |  |
| Lesser Horseshoe | <i>Rhinolophus hipposideros</i> | Town centre                          | 10/09/2007    | SX2553   |  |
| Badger           | <i>Meles meles</i>              | Kilminorth Wood                      | 02/05/2009    | SX245532 | Clearly an active badger colony in Kilminorth Wood |
| Badger           | <i>Meles meles</i>              | Kilminorth Wood                      | 16/06/2009    | SX239533 |  |
| Badger           | <i>Meles meles</i>              | Kilminorth Wood                      | 04/10/2009    | SX239533 |  |
| Badger           | <i>Meles meles</i>              | Kilminorth Wood                      | 27/05/2008    | SX2453   |  |
| Badger           | <i>Meles meles</i>              | Kilminorth Woods                     | 12/10/2008    | SX244538 |  |
| Badger           | <i>Meles meles</i>              | Kilminorth Woods                     | 14/06/2008    | SX239533 |  |
| Badger           | <i>Meles meles</i>              | West Looe                            | 18/06/2007    | SX254532 |  |
| Dormouse         | <i>Muscardinus avellanarius</i> | Kilminorth Woods                     | 02/11/2012    | SX245537 |  |
| Dormouse         | <i>Muscardinus avellanarius</i> | Kilminorth Woods                     | 04/06/2011    | SX247537 |  |
| Otter            | <i>Lutra lutra</i>              | East Looe                            | 26/03/1992    | SX2553   | Road casualty                                      |

## Appendix B Ecological Constraints and Opportunities Plan





Appendix C      Protected Species Survey: 2020 Reptile Survey

## Reptile Survey, Polvellan House

June 2020



Slow-worm recorded 22nd June 2020

Author: Stephen Lees MCIEEM

Date: 22nd June 2020

Approved: Simon Humphreys CEnv MCIEEM

Date: 29th June 2020

Project No: J000155

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## 1. Site and Location

The site is located on OS grid reference SX 250 537 which is shown in Figure 1 and extends to an area of approximately 1.7 hectares.

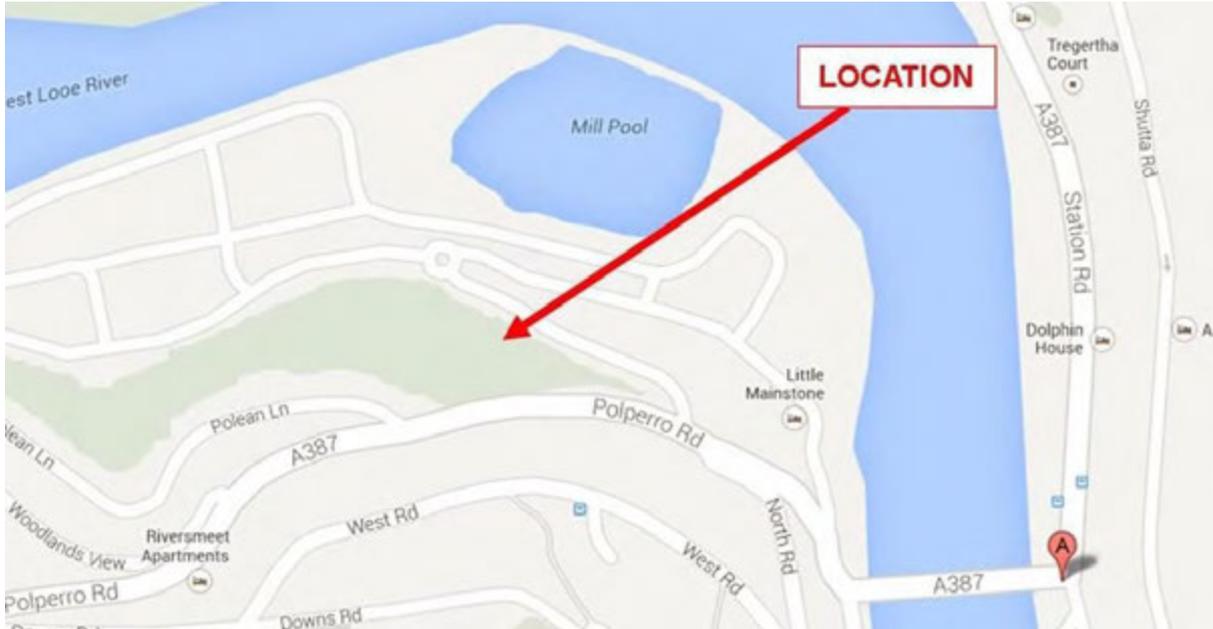


Figure 1: Site Location



Figure 2: Site outline (in yellow)

## 2. Purpose and Extent of Report

ERCCIS data contain the following reptile records for within a 1km radius:

- Slow-worm recorded in 1986 (1 record) and 1989 (1 record)
- Common Lizard: 1 record from 1985
- Leatherback Turtle: 1 record from 1984

A reptile survey of the area was undertaken in 2013 by the author, as part of previous work to develop the site. In 2013 there was a large slow-worm population, with more than 20 individuals recorded on one visit, qualifying as an exceptional population (Froglife Advice Sheet 10). Moderate numbers of Slow Worms were recorded across the open area to the east of the main house and in the grass area immediately in front of Polvellan House. The maximum number of individuals recorded on one visit was 34. Recommendations were made for excluding slow worms from these areas during construction works and for long term habitat enhancement.

Slow worms were found again in 2017 and in 2018, during further field survey work for previous potential developments, including juveniles indicating a breeding was still present.



**Figure 3: Male Slow-worm in Polvellan grounds, 2018**

However, the habitats have evolved since 2013, with more open areas developing into dense woodland scrub. In contrast an area of waste ground to the west of the main house is now sheltered and sunny rough grassland, and storm damage has left some sections of woodland more open, allowing in sunlight and herbaceous growth.



Reptiles were last recorded in 2018, but with habitat change and ecological succession the Preliminary Ecological Appraisal recommended that the reptiles were re-surveyed in order to ascertain the current status of reptiles on the site.

### 3. Survey Methodology

The survey was undertaken in accordance with the Reptile Habitat Management Handbook (Paul Edgar, Jim Foster and John Baker (2010), Amphibian and Reptile Conservation), and Froglife Advice Sheet 10.

Thirty-five artificial refuges were placed in the main survey area, consisting of a mix of 1 metre squares of heavy-duty roofing felt and corrugated felt roofing sheets. These were placed in a representative sample of habitats spread across the whole site, with a focus on both most suitable habitats (rough grass and sunny locations) and on areas for proposed development. Consideration was also given to the locations slow-worms had been recorded on a previous survey (20-13) and ecology monitoring visits (up to 2018).

The survey was set up on 28th May 2020, and seven subsequent visits were made to the site for monitoring purposes.

Mat locations can be grouped as:

- Mats 1 to 9: more open sunny ground to the east of the main house and site of main courtyard development. Potentially the best current reptile habitat on site.
- Mats 10 to 14: track and land leading up to proposed woodland dwelling.
- Mats 15 to 25: front of house and old garden area to east of house. The old garden area had significant numbers of slow-worms recorded in 2013.
- Mats 26 to 28: north side of main drive: again where slow-worms were recorded in 2013, but now dense young scrub.
- Mats 29 to 33: Proposed location of boathouses development
- Mats 34 and 35: lower woodland slopes subject to recent disturbance and planned landscaping.

Locations are shown in figure 4 on the following page.



Figure4: Location of Reptile Survey Mats

## 4. Survey Results

### 4.1 Weather Conditions

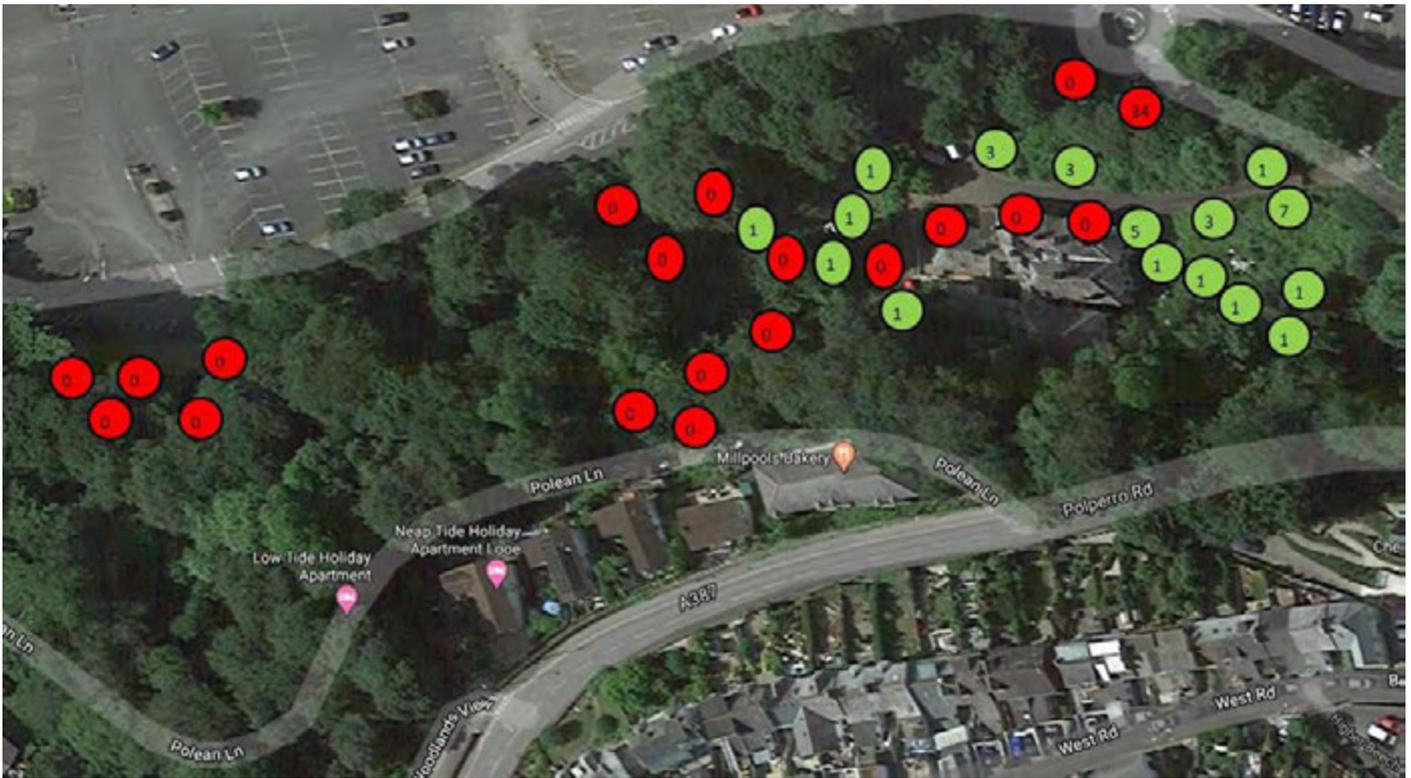
| Date     | Time  | Weather          | Temperature in shade (°C) | Temperature in full sun (°C) |
|----------|-------|------------------|---------------------------|------------------------------|
| 08.06.20 | 16.00 | Cloudy           | 18                        | 18                           |
| 11.06.20 | 17.00 | Cloudy, 20% sun  | 18                        | 20                           |
| 13.06.20 | 11.00 | Cloudy, no sun   | 16                        | 16                           |
| 15.06.20 | 13.00 | Sunny, 50% cloud | 18                        | 21                           |
| 17.06.20 | 09.00 | Cloudy, dry      | 20                        | 20                           |
| 19.06.20 | 16.30 | Cloudy, dry      | 17                        | 17                           |
| 22.06.20 | 13.00 | Sunny, 50% cloud | 18                        | 21                           |

### 4.2 Survey Results

| Date     | Results  |
|----------|--|
| 08.06.20 | 7 slow worms in total, mats 2, 19, 25 and 27.  |
| 11.06.20 | 11 slow worms recorded, mats 5, 18 (4 young), 22, 24 (two), 24 (two) and 25                            |
| 23.06.20 | 10 slow worms; mats 18 (4), 21, 24, 25 (2) and 27 (2).   |
| 15.06.20 | 14 slow worms, 2 near mat 5 (under rubbish), mat 18, 22, 24 (two), 25 (three), 27 (two) and 28 (three) |
| 17.06.20 | 18 slow-worms, mats 1, 3, 5, 18 (five), 20, 24 (three), 25 (seven) and 27 (two).                       |
| 19.06.20 | 12 slow-worms, mats 18 (five), 20, 21 (three), 24 (1) 27 (two).  |
| 22.06.20 | 19 slow-worms, mats 1, 2, 14, 20, 23, 24 (two), 25 (six), 26, 27 (three) and 28 (two)                  |



**Figure 5: Slow-worms photographed 8th June 2020**



**Figure 6: Distribution of slow-worm records**

**Red: no slow-worms recorded**

**Green: slow-worms present, number = maximum number at that location.**

## 5. Assessment

There is a healthy breeding population of slow-worms on site, but it is likely that the population has fallen since 2013. The maximum number recorded in one visit fell from 34 in 2013 to 19 in this survey. This is probably linked to increasing scrub and shade and less rough herbaceous vegetation. Slow-worms were not recorded in the woodland areas.

Froglife Advice Sheet 10 (Reptile Surveys) [provides the following indication of population size, based on numbers of slow-worms recorded on a single survey visit:

- Under 5 individuals      low population
- 5-20 individuals        good population
- Over 20 individuals    exceptional population

The slow-worm population is therefore classed as good.



The population appears to have halved since the last detailed survey in 2013 but has spread to include land to the west of the manor, which used to be bare ground. Higher numbers remain in the old garden areas to the north and east of the manor house, which was the previous location of the slow-worms, but the loss of open habitat and increasing scrub growth is reducing the habitat suitability.

No other reptiles or amphibians were recorded and it is unlikely other species are present.

The proposed development is shown in figure 7.

Slow worms are very unlikely to be present in the vicinity of the proposed woodland dwelling or the boathouse development. They are, however, frequent in areas that will be affected by restoration of the manor house, the roundhouse development and the western courtyard development. Indeed, the proposed development will take away all the slow-worm habitat during the construction phase.

The final development will have extensive landscaped grounds capable of supporting a sustainable slow-worm population, but the current population on site will require capturing and relocating to another local site prior to construction work commencing.



Figure 7: Proposed layout of development

## 6. Conclusions and Recommendations

There are two different levels of legal protection for reptiles in the UK. The sand lizard and smooth snake and their respective habitats are fully protected under Schedule 5 (Section 9) of the Wildlife and Countryside Act 1981 (as amended) and under Conservation of Habitats & Species Regulations 2010. It is illegal to kill, injure, capture, handle or disturb them, and the places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed. It is also illegal to obstruct these animals from using such areas. The Smooth Snake is not found in Cornwall and Sand Lizards are only found on the northern coast and will not be present on site.

The adder, common lizard, grass snake and slow worm are protected from killing and injuring under Schedule 5 (Section 9) and of the Wildlife and Countryside Act 1981 (as amended); this prohibits the intentional killing and injuring and trade.

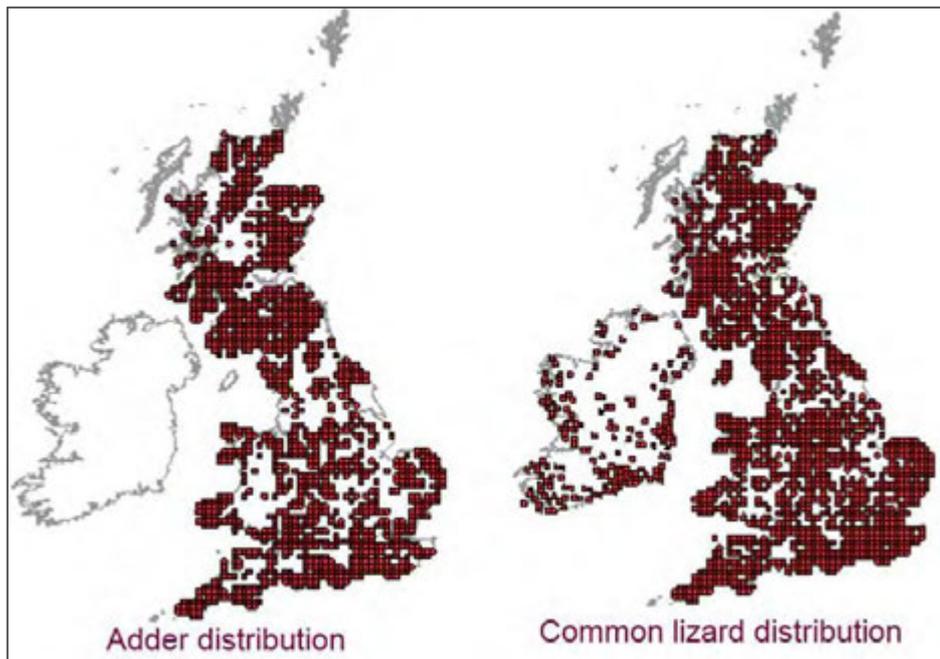
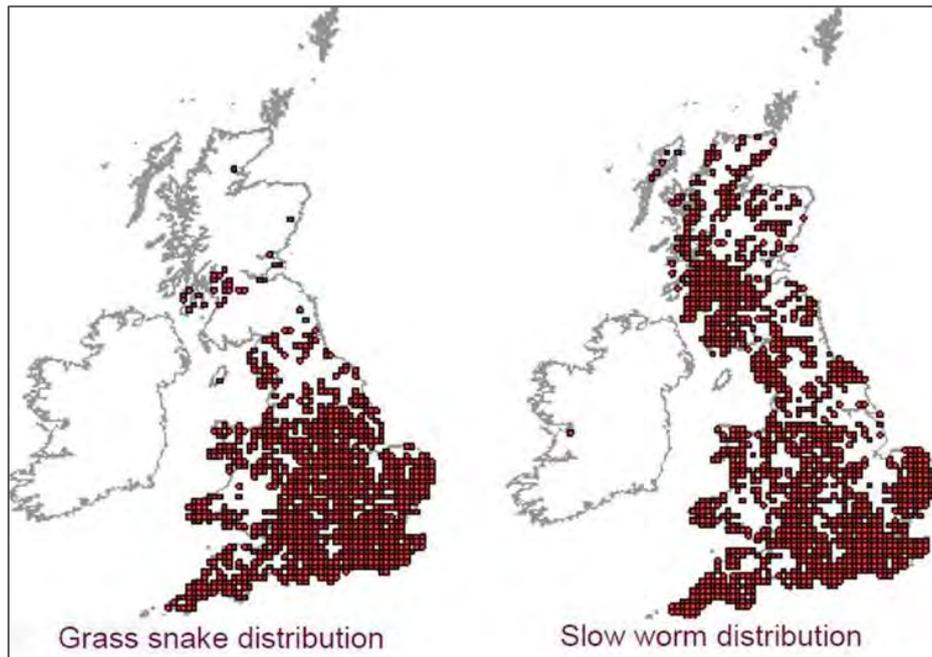


Figure 8a: Reptile Distribution (from Reptiles Advice Sheet, Natural England).



**Figure 8b: Reptile Distribution (from Reptiles Advice Sheet, Natural England).**

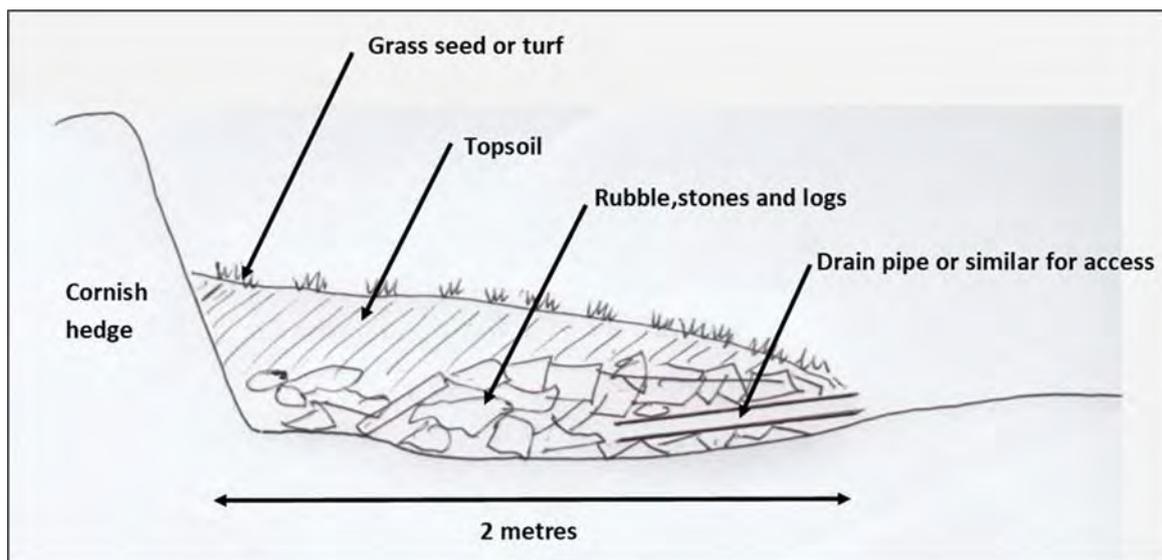
Slow worms are present on site at a population level defined as good by the number of individuals recorded during the survey. The following recommendations are made:

1. The area around the Manor House must be cleared of slow worms prior to the commencement of any construction works.
2. The surrounding roads and the dense woodland provide a significant barrier to migration on to the site by slow-worms. As all potential slow-worm habitat will be lost during the construction phase we do not recommend any reptile barrier fencing.
3. Initial site clearance must include brushcutting / strimming ground vegetation to a height of 100mm. It must either be undertaken prior to the bird nesting season (before 14<sup>th</sup> February) or a competent ornithologist must inspect and ensure no birds are nesting in the ground vegetation and brambles prior to cutting.
4. Following this fifty reptile tile traps should be placed across the old areas of garden where reptiles were recorded in this year's survey. Trapping should be undertaken between April and early October during suitable weather conditions.
5. Slow worms must be relocated to a suitable nearby site, with rough grassland and some unshaded areas. It must be fenced for the duration of the project, contain a temporary hibernaculum and cover an area of 750 square metres (equivalent to the area of habitat currently occupied).
6. Mats must be checked once or twice a day, and any slow-worms carefully picked up and placed in a bucket with grass, and then moved to the new translocation site after all mats have been checked.

7. The site will not be deemed to be clear of slow worms until a zero-survey score has been achieved on at least 5 consecutive visits.
8. All site construction staff to be advised of potential slow-worms via a tool-box talk. If any are found during subsequent site works, they must be placed in a bucket with some grass cover and the ecology team notified for immediate relocation.
9. Once construction and landscaping work is complete, slow-worms must be reintroduced to the new gardens, with reptile mats left in situ as temporary cover. These are to be recaptured from the site to which they were relocated. Recapture and release a minimum of twenty individual slow-worms.

In addition to the above, to provide for slow-worms after construction, we recommend:

10. The construction of two reptile hibernaculum within the garden landscape (figure 9).
11. The provision of a compost heap or compost bins within the grounds of the development.



**Figure 9: Cross section of reptile hibernaculum**

These recommendations remain valid for two years, providing there is no change in habitat, other than continued development of scrub.

These measures will enable the developers to discharge their obligations under Schedule 5 (Section 9) and of the Wildlife and Countryside Act 1981 (as amended), with regard to reptiles in general, and the surveyed slow worm and grass snake populations in particular.



## 7. Ecological Report Limitations

The information reported herein is based only, on the interpretation of data collected during the desk study investigations and the site visit. This work pertains specifically to the identification of protected species on the proposed site. Information provided to Land and Heritage by Biodiversity Records Centres and other statutory information sources has been accepted as being accurate and valid.

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**Stephen Lees, B.A., M.Sc., M.C.I.E.E.M.**  
Land and Heritage



22nd June 2020



## Appendix D

### Nature Conservation: Legislation and Policies National Legislation (England)

**The Wildlife and Countryside Act (WCA) 1981** (as amended) is the principal mechanism for the legislative protection of wildlife in the UK and is divided into four parts, the first section of which details the protection of wildlife. This legislation protects wild animals listed on Schedule 5 and wild flowers which are listed on Schedule 8. All wild birds and their eggs and nests are protected, with special protection for birds listed on Schedule 1. Invasive plants listed on Schedule 9 must not be spread or propagated in any way.

The Conservation of Habitats and Species Regulations 2017 protects animals listed on Schedule 2 and plants listed on Schedule 5, also known as European Protected Species. The Regulations allow the designation and protection of Special Areas of Conservation (SACs), Special Protection Areas (SPA's) and RAMSAR sites. These are collectively known as Natura 2000 sites. A development which would have an adverse effect on the conservation interests for which a Natura 2000 area has been designated should only be permitted where:

- There is no alternative solution; and
- There are imperative reasons of over-riding public interest, including those of a social or economic nature.

Where a priority habitat or species (as defined in Article 1 of the Habitats Directive) would be affected, prior consultation with the European Commission is required unless the development is necessary for public health or safety reasons. These conditions also apply to any European protected species that may be present.

**The Protection of Badgers Act 1992** provides protection to badgers and their setts from injury/fatality, damage and any form of disturbance; however, this does not extend to the protection of other habitats badgers may utilise.

**The Hedgerows Regulations 1997** set out the criteria that must be used by the local planning authority in determining which hedgerows are important and should therefore be afforded protection by controlling their removal through a system of notification. The criteria relate to the value of the hedgerow from an archaeological, historical, landscape, and wildlife perspective. The Regulations exclude hedgerows which are less than 30 years old. If a hedgerow is at least 30 years old and qualifies under any one of the criteria detailed in Schedule 1 of the Act (available from: [www.legislation.gov.uk/uksi/1997/1160/schedule/1/made](http://www.legislation.gov.uk/uksi/1997/1160/schedule/1/made)), then it is considered important.

**The Natural Environment and Rural Communities (NERC) Act 2006** places an obligation on all Local Planning Authorities to conserve and protect biological diversity and the natural environment. Section 40 of the Act concerns biodiversity and states: 'Every public authority must, in exercising its



functions, have regard, so far as is consistent with the proper exercising of those functions, to the purpose of conserving biodiversity.’ The Act states that: ‘it is important that public authorities seek not only to protect important habitats and species, but actively seek opportunities to enhance biodiversity through development proposals, where appropriate.’ This legislation also details those species for each county that are of Principal Importance for Conservation of Biological Diversity.

**UK Biodiversity Action Plans (UK BAP)** do not provide any legal protection for the habitats or species listed but highlights those that are of conservation concern, detailing why they are of concern and the actions required to prevent further declines and to encourage habitat/population expansion. Three types of Action Plan (Species Action Plans (SAPs), Habitat Action Plans (HAPs) and Local Biodiversity Action Plans (LBAPs)) have been developed by the UK Biodiversity Action Plan steering group which set priorities for nationally and locally important habitats and wildlife. It is this BAP framework that forms the basis of the habitat and, to a certain extent, the species surveyed for this scheme. The BAP Network is further supported by the review of England’s wildlife sites and ecological networks” Making Space for Nature” (Lawton 2010) which requires further consideration of wildlife corridors and habitat connectivity.

The statutory basis for species and habitats listed in BAPs is provided by Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The UK and Cornwall Biodiversity Action Plans are relevant to the area surveyed.

Species of principal importance for the conservation of biodiversity in England (as identified under the Countryside and Rights of Way Act, 2000 (CROW Act, 2000)) should be protected from adverse impacts of development. To ensure that the habitats of these species are not adversely impacted upon, the planning authority may impose planning conditions or obligations.

National Planning Policy

**The National Planning Policy Framework (NPPF 2018)** sets out the Government’s policies on protection of biodiversity through the planning system. These policies are expected to be incorporated into development planning documents at regional and local scales and are also of material worth in considering individual planning applications.

In relation to biodiversity, the NPPF states that *‘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*

The NPPF advises that the following principles should be applied by the Local Planning Authority when determining planning applications:

- 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.*

#### Local Planning Policies

**The Cornwall Local Plan** was formally adopted in November 2017. Policy 23 covers the natural environment.

1. Development proposals will need to sustain local distinctiveness and character and protect and where possible enhance Cornwall's natural environment and assets according to their international, national and local significance.
2. Cornish Landscapes Development should be of an appropriate scale, mass and design that recognises and respects landscape character of both designated and un-designated landscapes. Development must take into account and respect the sensitivity and capacity of the landscape asset, considering cumulative impact and the wish to maintain dark skies and tranquillity in areas that are relatively undisturbed, using guidance from the Cornwall Landscape Character Assessment and supported by the descriptions of Areas of Great Landscape Value. In areas of undeveloped coast, outside main settlements, only development requiring a coastal location and that cannot be achieved elsewhere, will be acceptable.
  - a) The Cornwall and Tamar Valley Area of Outstanding Natural Beauty Great weight will be given to conserving the landscape and scenic beauty within or affecting the setting of the AONB. Proposals must conserve and enhance the landscape character and natural beauty of the AONB and provide only for an identified local need and be appropriately located to address the AONB's sensitivity and capacity. Proposals should be informed by and assist the delivery of the objectives of the Cornwall and Tamar Valley AONB Management Plans including the interests of those who live and

- / or work in them. Major development in the AONB will be refused subject to the tests of exceptional circumstances and where it can be demonstrated that the development is in the public interest as set out in national policy.
- b) The Heritage Coast and Areas of Great Landscape Value Development within the Heritage Coast and / or Areas of Great Landscape Value should maintain the character and distinctive landscape qualities of such areas.
3. Biodiversity and Geodiversity Development should conserve, protect and where possible enhance biodiversity and geodiversity interests and soils commensurate with their status and giving appropriate weight to their importance. All development must ensure that the importance of habitats and designated sites are taken into account and consider opportunities for the creation of a local and county-wide biodiversity network of wildlife corridors which link County Wildlife Sites and other areas of biodiversity importance, helping to deliver the actions set out in the Cornwall Biodiversity Action Plan.
- a) European Sites The highest level of protection will be given to potential and existing Special Protection Areas, candidate and existing Special Areas of Conservation and listed or proposed Ramsar sites. Proposals having an adverse impact on the integrity of such areas that cannot be avoided or adequately mitigated to remove any adverse effect will not be permitted other than in exceptional circumstances. These circumstances will only apply where there are: a) no suitable alternatives; b) imperative reasons of overriding public interest; and c) necessary compensatory provision can be secured to ensure that the overall coherence of the Natura 2000 network of European sites is protected. Development will only be permitted where the Council is satisfied that any necessary mitigation is included such that, in combination with other development, there will be no adverse effects on the integrity of European Nature Conservation Sites.
  - b) National sites Development proposals within or outside an SSSI or Marine Conservation Zone which would be likely to adversely affect the site (either individually or in combination with other developments) will not be permitted unless the benefits of the development, at this site, clearly outweigh both the adverse impacts on the site and any adverse impacts on the wider network of SSSIs and Marine Conservation Zones.
  - c) Local Sites Development likely to adversely affect locally designated sites, their features or their function as part of the ecological network, including County Wildlife Sites, Local Geological Sites and sites supporting Biodiversity Action Plan habitats and species, will only be permitted where the need and benefits of the development clearly outweigh the loss and the coherence of the local ecological network is maintained.
  - d) Priority species and habitats Adverse impacts on European and UK protected species and Biodiversity Action Plan habitats and species must be avoided wherever possible (i) subject to the legal tests afforded to them, where applicable (ii) otherwise, unless the need for and benefits clearly outweigh the loss.

- e) Ancient woodland and veteran trees Development must avoid the loss or deterioration of ancient woodland and veteran trees, unless the need for, or benefits of, development on that site clearly outweigh the loss.
- 4. Avoidance, mitigation and compensation for landscape, biodiversity and geodiversity impacts Development should avoid adverse impact on existing features as a first principle and enable net gains by designing in landscape and biodiversity features and enhancements, and opportunities for geological conservation alongside new development. Where adverse impacts are unavoidable, they must be adequately and proportionately mitigated. If full mitigation cannot be provided, compensation will be required as a last resort.

**The Cornwall Biodiversity Action Plan (BAP)** was produced to complement the UK Biodiversity Action Plan. These date from a commitment made at the United Nations Conference on Environment and Development (UNCED), Rio de Janeiro, 3-14 June 1992. Volume 4 of the Cornwall BAP identifies priority projects for the County for 2010 to 2015. The priority project areas are shown on the map overleaf. Going forward, local guidelines for planning will be delivered through the Supplementary Planning Document for Biodiversity.

**A Supplementary Planning Document for Biodiversity** has been drafted by Cornwall Council. While this remains draft (2018) it is beginning to be used as a framework to advise on and assess current planning applications. It seeks to provide more detailed guidelines to planners and developers to enable implementation of national policy, and provide specific advice relevant to Cornwall, including hedge protection guidelines. The document also seeks the provision of a bird or bat box per dwelling in every new development and a bee brick per every two dwellings, to help meet a requirement for net biodiversity gain from all planning applications.

**Supplementary Planning Guidelines have been prepared for the Cornwall and West Devon World Heritage Site (WHS).** While biodiversity does not constitute part of WHS Outstanding Universal Value (OUV) for this Site, it is acknowledged that former mine sites in Cornwall and West Devon can exhibit rare plant forms of national or other significance which can have statutory protection. Former mine buildings and related shafts and adits are also favoured roosting sites for bats, which also constitute protected species. Building and other conservation works at relict mine sites can impinge on the above and Natural England can have a stakeholder interest in this regard.

From 1<sup>st</sup> February 2020 all major schemes in Cornwall (10 houses or more, or schemes over 1 hectare) will need to achieve a minimum of 10% Biodiversity Net Gain.

<https://www.cornwall.gov.uk/environment-and-planning/planning/planning-policy/adopted-plans/planning-policy-guidance/biodiversity-net-gain/>