



**ISSUING OFFICE:**

The Lodge  
Caerphilly Business Park  
Van Road  
Caerphilly  
CF83 3GG

**T: 029 2002 2320**

**E: [info@wildwoodecology.com](mailto:info@wildwoodecology.com)**

**W: [www.wildwoodecology.com](http://www.wildwoodecology.com)**

## **HABITAT MANAGEMENT PLAN**

### **BIKE PARK WALES, MERTHYR TYDFIL**

### **BIKE PARK WALES**

DOCUMENT REF: WWE22067 HMP 2022 UPDATE | 22/06/2022

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## DISCLAIMER

This document has been prepared by Wildwood Ecology Limited for Bike Park Wales solely as a Habitat Management Plan. Wildwood Ecology Limited accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

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

# CONTENTS

|                                                         |           |
|---------------------------------------------------------|-----------|
| List of figures                                         | iii       |
| List of tables                                          | iii       |
| <b>1 Introduction</b>                                   | <b>1</b>  |
| <b>2 Project description</b>                            | <b>2</b>  |
| <b>3 Ecological Baseline Conditions</b>                 | <b>4</b>  |
| <b>4 Woodland Management Considerations</b>             | <b>9</b>  |
| <b>5 Landscape Plan</b>                                 | <b>17</b> |
| <b>APPENDIX I: Updated phase 1 habitat map (2022)</b>   | <b>18</b> |
| <b>APPENDIX II: Previous phase 1 habitat map (2018)</b> | <b>19</b> |

## List of figures

|                                                                                                                                                                                               |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Figure 1 - Previous aerial image of the site (red lines shows the phase one area, blue line shows the phase two area). Image used under licence (©2018 Google). Imagery date 16/08/2016. .... | 2 |
| Figure 2 - Aerial image of the site (red line shows the current site boundary, blue line shows the Phase 3 area). Image used under licence (©2022 Google). Imagery date 20/07/2021. ....      | 3 |

## List of tables

|                                                            |    |
|------------------------------------------------------------|----|
| Table 1 - Statutory sites within 2km of the site .....     | 4  |
| Table 2 - non-statutory sites within 1km of the site ..... | 4  |
| Table 3 - Ecological ground-based tree surveys.....        | 6  |
| Table 4 - Timescale of events.....                         | 13 |

## 1 INTRODUCTION

- 1.1 The land at Bike Park Wales covers 3.02 ha in total, with 1.13ha of undeveloped land present, mostly in the northern and eastern areas of the site. A Preliminary Ecological Appraisal (PEA) was undertaken by Wildwood Ecology in 2018, which found the land to consist of broad-leaved woodland, scrub (dense/continuous), semi-improved acid grassland, standing water, running water and ephemeral/short perennial.
- 1.2 An update PEA survey was undertaken on the 27<sup>th</sup> April 2022 in order to establish where onsite habitats had changed and where they remained the same.

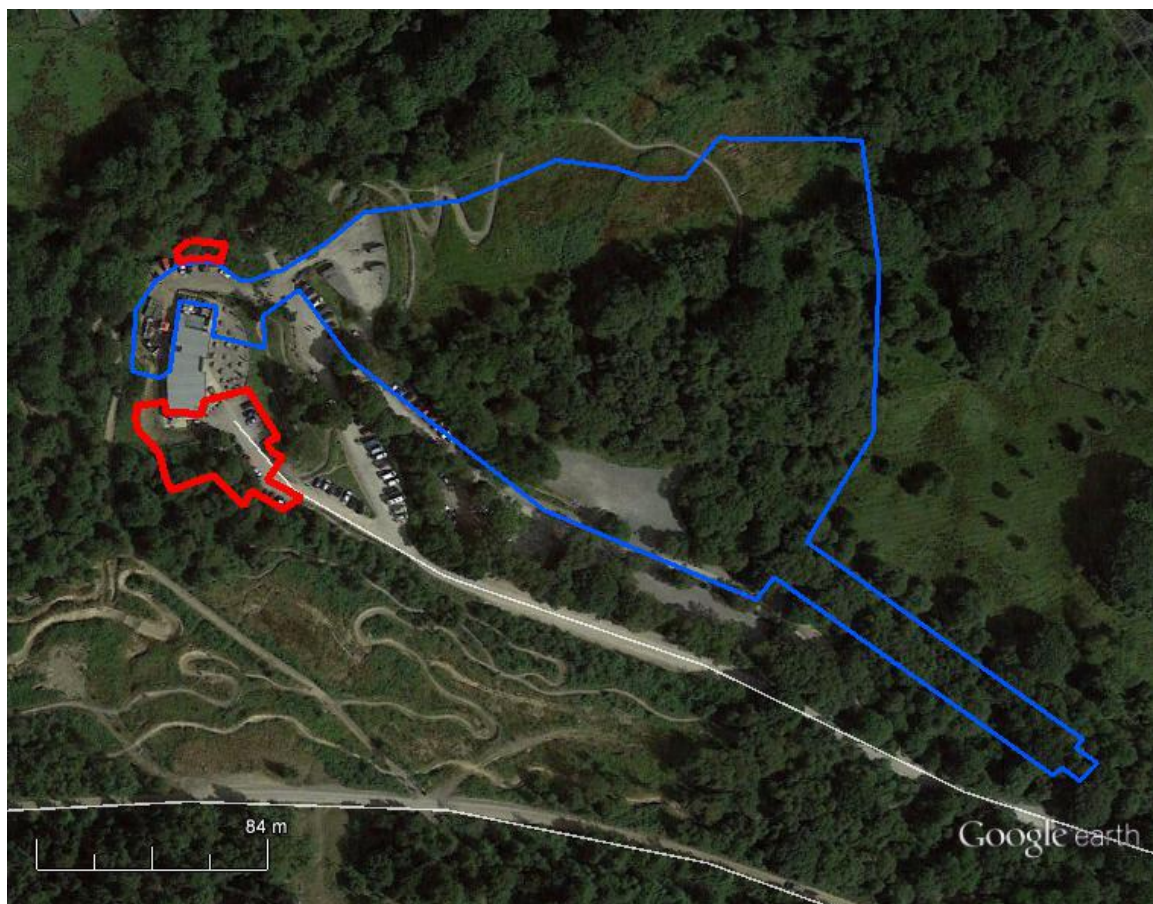
### Scope of the Management Plan

- 1.3 The purpose of this plan is to describe the ways in which the proposed development will be controlled to safeguard ecological features and mitigated the adverse effects of the development during site preparation and construction. It also addresses, where appropriate, any beneficial measures that will be taken to enhance the nature conservation value of the site.
- 1.4 The Management Plan is designed to be flexible and to allow for periodic reviews and updates when necessary. As a minimum, after 5 years post construction it is proposed to review the Management Plan and address any major issues, objectives that are not being met or changes at the site, in consultation with the Local Planning Authority (LPA) as necessary. The requirement for more frequent interim reviews would be distracted by the success/progress of management and the need for more regular alteration to management prescriptions in accordance to changing conditions at the site.
- 1.5 This document should be read in conjunction with the ecological survey reports carried out at the site to date, as well as the Landscape Management and Maintenance Plans.

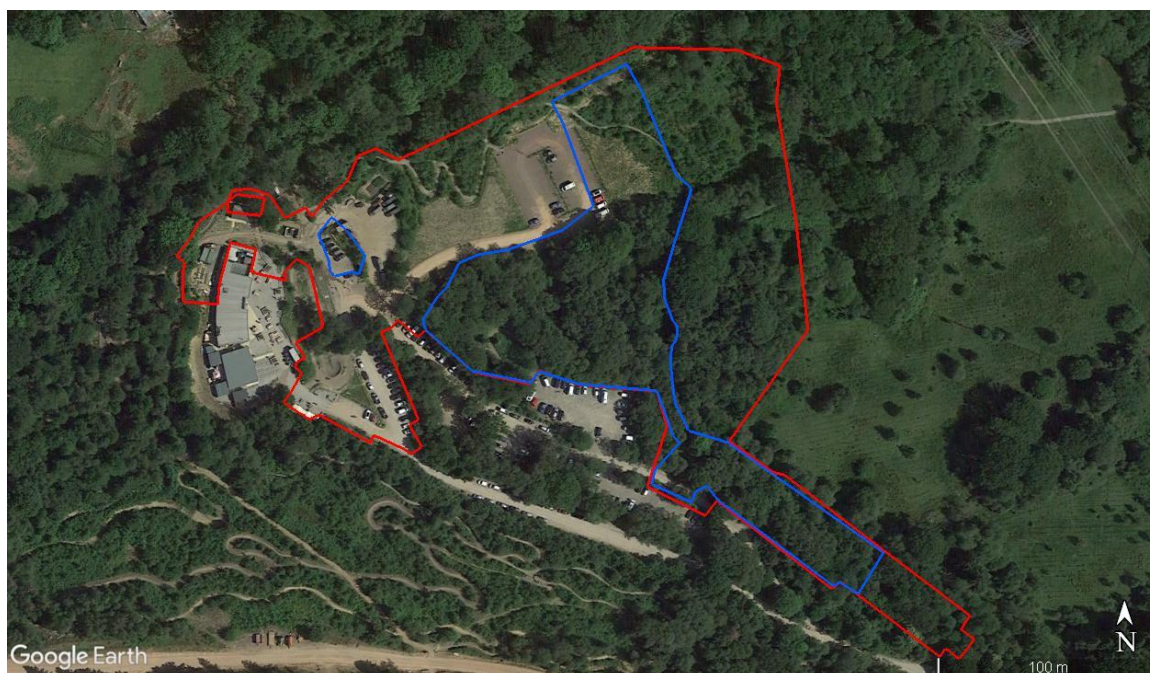
## 2 PROJECT DESCRIPTION

### Project overview

- 2.1 This Habitat Management Plan has been created to ensure that any potential ecological impacts of the proposed development can be successfully avoided or mitigated. The proposed development will include the construction of a new bike hire centre, a new small office building and catering outlet in a first phase; and provision of camping pods, chalets and shepherds' huts, increased parking areas and other associated works within a second phase.
- 2.2 Mature trees across the site have been assessed as part of a tree survey undertaken by Treescene Ltd. In September 2019. Trees were assessed for their current condition and for their potential to present hazards during and after the commencement of the development. As a result of this survey, at least 19 trees were identified for removal due to the high likelihood of imminent failure or due to severe infection of ash die-back disease.
- 2.3 Previous works at the site have been completed in recent years – Phase 1 involved the construction of the bike hire centre, and Phase 2 was construction of 2no. new car parking bays (visible near the centre of the site next to the northern boundary). The changes at the site are visible using aerial imagery (see figures 1 and 2 below).



**Figure 1 - Previous aerial image of the site (red lines shows the phase one area, blue line shows the phase two area). Image used under licence (©2018 Google). Imagery date 16/08/2016.**



**Figure 2 - Aerial image of the site (red line shows the current site boundary, blue line shows the Phase 3 area). Image used under licence (©2022 Google). Imagery date 20/07/2021.**

#### Construction phasing

2.4 The following is the indicative construction phasing:

- Habitat creation within retained areas
- Installation of protective fencing around trees
- Site preparation, including ecological supervision of trees with low suitability for use by bats prior to felling
- Construction phase, including installation of outstanding wildlife features
- Operational phase

### 3 ECOLOGICAL BASELINE CONDITIONS

- 3.1 Multiple ecological surveys have been undertaken at the site, comprising an extended Phase 1 Habitat survey undertaken by Corylus ecology 2012 and a Preliminary Ecological Appraisal and Great Crested Newt Survey undertaken by Acer Ecology in 2018 (this survey was undertaken for an alternate proposal which encompassed a portion of the current proposal area).
- 3.2 Additionally, an initial site survey (PEA) by Wildwood Ecology was conducted on the 22/06/2018, with further surveys undertaken for breeding birds (nightjar) on 03/07/2019, bats (transect) on the 03/07/2018, 14/08/2018 and 12/09/2018; reptile surveys between the 27/08/2018 and the 24/09/2018 (nine visits); ground-based tree assessment for bats on the 14/08/2018; 27/08/2018 and 24/10/2018; static monitoring for bats from the 03/07/2018 to the 07/07/2018, 31/08/2018 to the 07/09/2018; and 14/09/2018 to the 19/09/2018.
- 3.3 A summary of the 2018 PEA and the 2022 PEA update by Wildwood Ecology is provided below, along with a summary of results from the further surveys.

#### Designated sites

##### *Statutory designated sites*

- 3.4 One statutory designated site was found within 2km of the site. No sites designated for their bat populations were within 10km.

**Table 1 - Statutory sites within 2km of the site**

| Site Name                | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                           | Important Ecological Value | Distance |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
| Cwm Glo a Glyndyrys SSSI | Cwm Glo a Glyndyrys is of special interest for its extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, and for the association of these habitats with others including woodland and heath. It is also of special interest for its outstandingly diverse assemblage of grassland fungi, including 32 species of waxcap <i>Hygrocybe</i> spp, making it one of the best sites in Britain. | High                       | 0.946km  |

##### *Non-statutory designated sites*

- 3.5 In total, seven non-statutory designated sites (all SINCs) were found within 1km of the site.

**Table 2 - non-statutory sites within 1km of the site**

| Site Name              | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Important Ecological Value | Distance |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
| Abercanaid Fields (20) | Series of fields laying either side of the A470 containing mainly species-rich semi-improved grasslands and marshy grasslands. Also some small areas of semi-natural oak/birch woodland, scattered scrub and trees. Site also includes Webber's pond, a private nature reserve with well-developed marginal emergent vegetation, a section of the Glamorganshire Canal and an adjacent disused railway embankment which supports unimproved and semi-improved acid grassland, bracken slopes and trees. | Medium                     | onsite   |
| Graig Gethin (30)      | Wooded ffridd slopes, supporting extensive ancient semi-natural woodland and bracken                                                                                                                                                                                                                                                                                                                                                                                                                    | Medium                     | onsite   |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |         |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------|
|                     | slopes with large trees, together with some scree areas supporting lichen heath. The bracken slopes support abundant bluebell. Also includes an area of wet heathland which extends along a ride within a conifer plantation and supports plant species of interest. The site supports a good range of breeding bird species and brown hare has also been recorded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |         |
| Rhydycar West (36)  | Very extensive mosaic of ffridd enclosures supporting complex of semi-upland and lowland habitats, partly contained within conifer plantation. Main components are ancient semi-natural woodland fragments, other semi-natural woodlands, wet heathland, dry heathland, marshy grassland and semi-improved neutral grasslands. Also there are some bracken slopes, scrub, small ponds, streams and sections of dismantled railway. There are areas of semi-improved acid grasslands to the south especially. The habitats intergrade to form a complex mosaic, and may therefore also include some small areas of improved or low diversity semi-improved grassland, but any such areas are a very minor component. Great crested newt occurs in small pools; noctule and pipstrelle bats have both been recorded. Nationally rare and scarce invertebrates are varied and common throughout the area. | Medium | 0.07 km |
| Gethin Forest (61)  | Mosaic of upland and semi upland habitats comprising conifer plantation, semi natural broad leaved, wet and replanted ancient woodland, heathland, acid grassland, water courses, standing open water, flushes and supporting scrub, neutral grassland and ffridd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Medium | 0.22 km |
| Cwm Woods (37)      | Area of ancient semi-natural woodland within a much larger conifer plantation. The grassy field layer has locally abundant bluebell. Also includes some associated areas of bracken, dry heathland, scrub, marshy grassland and acid grassland. A range of localised bird and moth species have also been recorded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Medium | 0.45 km |
| Buarth-Waunydd (26) | Series of semi-upland ffridd fields containing a mosaic of several locally important habitats, notably acid and marshy grasslands, wet heaths, acid flushes, bracken slopes and semi-natural broadleaved woodlands. There are also areas of neutral grassland and scrub.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Medium | 0.56 km |
| Afon Taf (58)       | The major river in the County Borough. Includes areas of bankside habitats, particularly towards the south where the river corridor is less industrialised than further north. Associated habitats are chiefly semi-natural woodland, including areas of ancient semi-natural woodland and linear wet woodlands. There are also numerous neutral grasslands, scrub patches and bracken stands, as well as small areas of marshy grassland and tall herb vegetation. Notable features of the river course include cobble banks which support localised plants. Otter occurs throughout the length of the river                                                                                                                                                                                                                                                                                          | Medium | 0.63 km |

|  |                                                                                    |  |  |
|--|------------------------------------------------------------------------------------|--|--|
|  | which is known to be of value to a wide variety of birds, fish, bats and reptiles. |  |  |
|--|------------------------------------------------------------------------------------|--|--|

### Onsite Habitats

- 3.6 The habitats recorded at the site are detailed below and are shown in the Phase 1 Habitat Map located in Appendix I. The figure illustrates the location of target notes referred to in the text. An update phase 1 habitat plan from the April 2022 update survey has been included in Appendix II to give reference to how the site has changed.
- 3.7 The majority of the site is composed of broad-leaved woodland, found from the centre of the site, southwards, and surrounding the site boundary also. The understorey of the woodland is mostly open, with areas of more cluttered vegetation of steeper topography. In some areas, there are paths running through the woodland (TN 2).
- 3.8 Dense/continuous scrub is present along the woodland margins and as understorey, encroaching onto the acid grassland area towards the north of the site. An area of acid grassland that was encroached by scrub and bracken throughout has now been cleared and is used as a carpark (TN 4), however significant areas of acid grassland and encroaching scrub habitat are still present (TN5)
- 3.9 Standing water is present close to the north-western site boundary where there are reed bed filtration ponds and a small area of open water. The filtration ponds had been newly created at the time of the previous survey and now these have become more established. A small stream (TN 1) is also present along with land drains within the woodland to the south-east, culverted under the main access road.
- 3.10 Additionally, small areas of ephemeral/short perennial are present around the edge of the car parks at the site.

### Protected and Notable Species

#### Bats

#### *Ground based tree surveys*

- 3.11 A total of seven trees were assessed during ground-based tree surveys – two alder, one crab apple, one birch and three oak.

**Table 3 - Ecological ground-based tree surveys**

| Species       | Findings (visit 1 – 14/08/18)                                                                                                                                                | Findings (visit 2 – 27/08/18)            | Findings (visit 3 – 24/10/18)                                                                    |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|
| Alder         | Low roost suitability – snag ends with upward facing wounds                                                                                                                  | n/a                                      | n/a                                                                                              |
| Crab apple    | Moderate roost suitability – cavities on south and north facing aspects (linked); extensive fungus growth (white rot) apparent. No signs of bats present, or bats themselves | As before – no bats or their signs noted | n/a                                                                                              |
| Birch sp      | Moderate roost suitability – fluting on main stem present on all aspects. No bats or their signs observed.                                                                   | As before – no bats or their signs noted | n/a                                                                                              |
| Alder (T1588) | n/a                                                                                                                                                                          | n/a                                      | Low roost suitability – snag ends with some small features and decay on limbs; some ivy covering |

|             |     |     |            |
|-------------|-----|-----|------------|
| Oak 150 (1) | n/a | n/a | Negligible |
| Oak 200     | n/a | n/a | Negligible |
| Oak 150 (2) | n/a | n/a | Negligible |

#### *Building survey*

- 3.12 The existing visitor centre and security lodge were assessed as having negligible suitability for roosting bats.

#### *Transect Activity Surveys*

- 3.13 Transects followed a route through the differing onsite habitats.
- 3.14 Species recorded during the transects were *Myotis sp*, noctule, brown long-eared, common pipistrelle and soprano pipistrelle.
- 3.15 The earliest passes were noted within the central woodland (both common and soprano pipistrelle) with roosts likely to be present within the larger trees to the eastern part of this woodland.

#### *Static monitoring*

- 3.16 There were several nights during the recording periods where no bat activity was recorded (3 out of 19 nights), and several nights recordings had only a few bat calls.
- 3.17 Species recorded in July were noctule, *Myotis sp*, common pipistrelle, soprano pipistrelle and brown long-eared bat. The earliest/latest recordings were from common and soprano pipistrelles (earliest at 20 minutes after sunset; last activity at 1 hour before sunrise).
- 3.18 Species recorded in August/September were noctule, *Myotis sp*, and common pipistrelle with some pipistrelle social calls. The earliest and latest activity was from common pipistrelle at 20 minutes after sunset and 25 minutes before sunrise).
- 3.19 Species recorded in September were pipistrelle social calls and noctule, with the latest activity recorded for noctule at 30 minutes before sunrise. All other calls were recorded in the middle of the night.

#### Reptiles and amphibians

- 3.20 The reptile survey found common lizard present onsite within the northern edge of the acid grassland. This population was estimated to be of a low-medium size.
- 3.21 Incidental records of common toad and palmate newt were noted during the reptile refugia checks; and common frog was observed during the bat activity transects.

#### Breeding birds

- 3.22 Nightjar (at least two churring males) were heard offsite to the south-west of the site within the Gethin Forest/Graig Gethin SINC. No nightjars were heard or seen onsite during the nightjar survey, or any other survey undertaken.
- 3.23 Incidental records of swallow, robin, wren, dunnock, goldcrest, chiffchaff, blackcap, blackbird, magpie, nuthatch, goldcrest, chaffinch, common whitethroat, great spotted woodpecker and tawny owl were obtained during the surveys at the site.

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### Dormouse

- 3.24 There are habitats onsite which may support dormice – e.g. hazel, oak, bramble and ash within woodland, however there has been extensive survey for this species to the north of the site with no positive results (S. Hand, pers. comm.). No records for dormouse were returned in the Acer Ecology report findings.
- 3.25 There will be the removal of understorey within the woodland and woodland edges, within areas of the site that are relatively well disturbed at present. The majority of scrub habitat that is present is relatively open structured bramble with few opportunities for nesting within. There will remain crevices and gaps in larger trees for use by small mammals.
- 3.26 Given that there is a lack of dormice observations near to the site despite effort being made, there is unlikely to be a negative impact on the favourable conservation status of common dormouse as a result of the proposed development. A precautionary approach is advised with respect to dormice and any vegetation clearance works proposed.

### European Otter

- 3.27 The Afon Taf is known to be used by otters and there is a small tributary running along the northern part of the site (offsite) which links to the river. It is therefore possible that otter use some undisturbed and quieter areas of scrub in the local area to lie up.
- 3.28 No evidence of holts or otter use was found during the onsite surveys though precautionary methods are recommended for construction and operation with respect to otter.

### European badger

- 3.29 There were no setts, latrines, hairs or snuffle holes indicative of badger use on site. There were several mammal paths through the woodland, however these could be attributed to fox.
- 3.30 As there is a possibility of badgers being present in the wider area and coming onsite to forage or commute, there may be a negative impact on European badger as a result of the proposed development, during construction and operation, (i.e. falling into excavations).

### West European hedgehog

- 3.31 The habitats present on site may support hedgehogs, though no field signs were found for this species. There will be leaf litter present after autumn and therefore suitable areas for resting are likely to be present.

## 4 WOODLAND MANAGEMENT CONSIDERATIONS

### Works arising

- 4.1 Over the course of the management period, it is likely that issues may arise within the woodland that will require immediate remediation, to remove or prevent a danger to public safety. As such, all trees (including those planted as part of the development and those previously established on the site within the area of maintenance) are to be inspected from the ground in January every two years, starting the first year after commencement of the maintenance operations by a suitably qualified person with a working knowledge of trees and their defects, as discussed in the 10 year landscaping plan for the site (Peter Quinn Associates, 2019).
- 4.2 In addition, extraordinary inspections to be carried out after gales (mean wind speed in excess of 37 knots/42mph), during and after prolonged drought (once a hose-pipe ban has been enforced in the area) and after any reported incident likely to significantly affect tree health or general safety (vehicle damage, fire, serious disease outbreaks etc.).
- 4.3 An arboriculturalist will be commissioned to inspect and report on any large branches or trees which appear to be significantly damaged, diseased or unstable. Any works recommended by the arboriculturalist are to be carried out by local-authority -approved tree surgeons. Works to smaller trees and branches may be carried out by suitably qualified landscape maintenance contractors.
- 4.4 If immediate works to a tree are required as a recommendation from an inspection of the trees, the works should not be undertaken within the nesting bird season (March – August inclusive) without the tree first being inspected by a suitably qualified ecologist. Furthermore, if damage caused to trees is left more than a year before remedy, a close inspection of the feature by a suitably qualified ecologist should be conducted prior to any works on the feature. Their advice will be acted upon.

### Root protection measures

- 4.5 As discussed in the tree survey provided by Treescene (2019), there is a high risk to established trees at the site and thus the installation of protective fencing is recommended. Trees should be protected using a scaffold frame supporting weld mesh panel fencing sited on the edge of the Root Protection Area as defined in BS5837:2012. It is worth noting recent evidence that suggests that the calculation of previous Root Protection Areas may not be sufficient to protect the full root areas of some tree species, please see (Andrews *et al.*, 2019) for more details. These fenced areas should not be used for the storage of any plant machinery or materials and personnel should be excluded at all times; these fences should remain in situ until after final landscaping has been carried out, and removed by hand with great care to prevent compaction or root damage to established trees.

### Soil and bank erosion protection

- 4.6 Soil and bank erosion on the site will predominantly be caused by vegetation clearance and the movement of large construction vehicles, especially for works close to the stream in the south-east corner of the site. The consequence of increased soil erosion at the site may result

in damage to mature, in situ trees, an increase in the time taken for newly planted trees to grow, or a failure for them to grow at all and pollution of nearby waterbodies via run off.

- 4.7 In order to control soil erosion at the site, tree felling and vegetation clearance should be managed appropriately to minimise impact on the nearby soil structure. Additionally, there will be no large vehicular access to unstable track or ground to prevent accelerated erosion.
- 4.8 Ongoing erosion as a result of trail use by bikes and walkers is advised to be managed through the use of vegetated bunding, to encourage the use of the designated pathway/trail only. Planting of tussocky (or encouraging) species and structural diversity will aid this by both stabilising bunds/banks and discouraging unauthorised access/trespass.
- 4.9 Adequate protection of watercourses will be in place, with responsive action taken to changes in climate i.e. increased levels of water run-off due to more extreme weather events; and any other factors that may cause an increase in run off (cumulative effects of felling of offsite trees, for example). Protection measures (in terms of soil and bank erosion) will include widening the course to allow pooling, and resultant slowing of the flow.

#### Avoidance of lighting in sensitive areas

- 4.10 Dark corridors will be retained across the site at night with no lighting of any tree, vegetated corridor, water feature or bat feature (enhancement or otherwise).
- 4.11 Any lighting that is present will be low level, low wattage and with no upward spill in line with ILP and BCT (2018) guidance.
- 4.12 To mitigate for disturbance to bats and other wildlife by artificial illumination, the following recommendations will be considered. The aim of these recommendations will be to avoid light spill and of any projected illumination, for any intended purpose, outwards from buildings and outdoor lighting onto the surrounding trees and landscaping.
- 4.13 Firstly, suggestions for mitigating external lighting are outlined in best practice guidance by the Bat Conservation Trust (Gunnell et. al., 2012). A summary of these recommendations is included here, and any proposed artificial illumination should therefore seek to:
- eliminate bare lamps and any upward pointing light;
  - spread of light should be at or near the horizontal. Flat cut off lanterns are best;
  - use narrow spectrum lamps. Using lamps with the lowest UV output possible, avoid white and blue spectrums of light; lights should peak higher than 550nm or use glass lanterns to filter UV light;
  - direct lighting to where needed and avoid spillage e.g. direct lighting towards the building front/road/car park/foot path and design the luminaire appropriately, including the use of hoods, cowls, shields etc to avoid spillage onto tree lines and gardens.
  - avoid aesthetic up lighting of buildings and trees;
  - only light areas which need to be lit, and use the minimal level of lighting required to comply with guidance such as Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005);
  - use movement sensors or timers on security lighting;
  - limit the times that the lights are on to provide some dark periods;

- avoid using reflective surfaces under lights; and,
- do not use a lamp greater than 150W for security lighting

4.14 Motion sensors may not be appropriate in autumn (due to leaf fall) – at this time the lights will be manually turned off if not required to be on to conserve energy; and will be on a timer to light only the required time i.e. there will be times where the lights are not on and the area will be in darkness.

#### Conservation management to enhance and ensure resilience of the existing woodland

- 4.15 Management of the woodland will be considered separately to the management of the rest of the landscape at the site, which is discussed in the landscape management plan (Peter Quinn Associates, 2019).
- 4.16 Management practices such as selective thinning and the control of grey squirrels and deer should be considered where necessary. Additionally, removal of invasive species such as Japanese knotweed, Himalayan balsam and giant hogweed (and any other non-native species found) should be conducted immediately after the discovery of the invasive species. These species are classed as controlled waste under the Environmental Protection Act 1990 and require disposal at licensed landfill sites, and specialist contractor advice will be sought.

#### Avoidance of impacting protected species resident in woodland

##### *Bats*

- 4.17 All larger trees highlighted as having suitable roost features for bats will be retained and remain unlit. There will be no blocking or impedence of potential flight lines to and from the roost features.
- 4.18 Five Schwegler Type 2FN bat boxes will be installed within wooded areas on trees that do not already have bat features on them. The project ecologist will provide on the ground guidance for the elevation and height of installation.

##### *Common dormouse*

- 4.19 Precautionary vegetation removal methods advised with works completed under ecological supervision.
- 4.20 Removal of vegetation to be undertaken outside of the bird breeding season (i.e. after mid-September) with only above ground level vegetation removed in the winter period. A check will be made by a licenced dormouse ecologist. If there are any rootballs present and suitable for use by small mammals, these will be left in situ until temperatures are regularly above 10°C (May). They may then be removed following a further ecologist-led check.

##### *European otter, badger and other mammals*

- 4.21 All excavations or trenching will that are not covered will include a means of escape for any animals that may fall into them. This may be a plank set at 30° to allow escape.
- 4.22 All chemicals and fuel will be stored safely away from any area which may be accessible to animals such as badger, for example, within a locked store.

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### *Amphibians and reptiles*

- 4.23 A reptile mitigation strategy has been created for the site and will be followed. The details on the reptile mitigation strategy can be found in Appendix V of the update Ecological Impact Assessment report produced by Wildwood Ecology in April 2022.

### Pollution control measures (including litter, fuel, dust, contaminated run-off and other chemicals)

- 4.24 All materials/ fuel chemicals will be stored away from natural habitats, preferably within a secure storage space within or close to one of the buildings onsite. This space should be properly secured to prevent animal access.
- 4.25 Silt fencing, or other similar pollution control measures, will be installed by the edges of the stream located in the south-east and northern parts of the site, as well as in any areas where significant soil erosion is considered likely as a result of the felling or other works planned at the site. This will be done prior to works commencing to prevent the discharge of soil into nearby watercourses and causing a subsequent decline in water quality.
- 4.26 Litter picking should be conducted following a similar schedule to that outlined in the landscape maintenance plan (Peter Quinn Associates, 2019). However, within the woodland fallen leaves should not be cleared but if piles of leaves begin to aggregate, should be spread out over the woodland. Fallen leaves collected from the roads and footpaths should be spread evenly and not piled up in one place.
- 4.27 NB If there is evidence of disease in any tree at any time, the leaf litter around the tree should be removed to reduce the risk of spread of spores contained within the leaf litter to other healthy trees (e.g. Chalara, or ash die-back caused by *Hymenoscyphus fraxineus*).
- 4.28 A litter picking schedule should be followed allowing for weekly picks (and as noticed) in the peak season (May to September) and monthly in the off-peak season (October to April).

### Ground flora management

- 4.29 After any additional vegetation clearance, wildflower and grass seeds should be sown over the bare land. This will help to stabilise the soil and increase biodiversity at the site.
- 4.30 The seed mix used will focus on BS8M: woodland and heavy shade wildflowers to allow for continued presence once newly planted trees have grown up.
- 4.31 Mixes of BS7M: Hedgerow and light shade wildflowers may be preferred in some areas of the site at the edge of wooded areas or along newly planted lines of trees.
- 4.32 Sowing will be completed to nursery guidelines with approximately 5g per m<sup>2</sup>.
- 4.33 Sowing will be completed in autumn or spring, between March and November, with seed hand-sown, and rolled or treaded in.
- 4.34 In the first year, the seed will be topped in March and May to promote target species growth with arisings removed immediately. A late summer (September) cut will be taken down to 150mm post-flowering and seed setting. Arisings will be allowed to remain on site for one week (to allow seed to drop) before removal.
- 4.35 Once established, cuts in early spring and later summer (post-seed dropping) will be undertaken. Arisings will be removed. Arisings may be used to enhance the reptile habitat piles as and when required.

### Monitoring strategy (performance indicators)

- 4.36 The aim is to have a healthy woodland of mixed age, species and structural diversity maintained. This will require ongoing management and review to ensure young growth is allowed to survive post-construction. Given the longevity of trees, consideration of young growth will be appropriate towards the end of the first management period i.e. in January 2027.
- 4.37 The monitoring in January 2027 will take into consideration the new growth of saplings since the 2019 tree survey. This will form the basis of ensuring ongoing age diversity within the woodland, as appropriate for the species present, and within certain areas. Translocation or thinning may be appropriate.
- 4.38 NB Where areas of woodland contain older growth only, with mature specimens present, this may be appropriate for that area due to the mature tree suppressing young growth. These areas will be marked upon the new management plan.
- 4.39 All onsite trees will be inspected every 2 years by an experienced and suitably qualified arboriculturalist, with any signs of dead or dying trees being noted. If any areas where there is significant dieback or impact to trees are identified, the management plan may need amending to prevent further degradation of the woodland.
- 4.40 Reactive and remedial measures will be implemented as appropriate and dictated by the onsite requirements and conditions, in order to maintain a healthy woodland.
- 4.41 New tree plantings will have their stakes removed once established to prevent damage to the plant, with all new plantings checked for health. Any dead or dying trees will be removed and replaced, like-for-like (in terms of age, species, structure) in the next available and suitable planting season. This will be continued for 5 years within the current management plan phase.
- 4.42 Any deadwood removed will be allowed to stand (if safe) or felled and retained onsite to promote fungal growth and support invertebrate communities.
- 4.43 The bat boxes installed at the site should be inspected every 2 years (between May and September) by a suitably qualified ecologist.
- 4.44 Hibernacula constructed for use by reptiles should be maintained, with inspections at least once every 2 years to ensure that the hibernacula are still suitable for use by reptiles.

### Timescale of events

**Table 4 - Timescale of events**

| Date              | Activity                                                                  | Details                                                                                                                                                                                               | Responsible persons                                                                       |
|-------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| July 2022 onwards | Site preparation, including inspection of suitable trees prior to felling | This will include checks for nesting birds and roosting bats inside of trees proposed for felling. This period will also include the erection of fences around trees to create root protection zones. | Bike Park Wales appointed contractor under guidance of project ecologist (as appropriate) |

|                              |                                                                             |                                                                                                                                                                                                                                       |                                                                                           |
|------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| August 2022 - onwards        | Construction phase; tree planting and wildflower seeding/planting           | The appropriate avoidance measures, root protection measures and pollution control measures will be considered throughout the construction phase.                                                                                     | Bike Park Wales appointed contractor under guidance of project ecologist (as appropriate) |
| Immediately post-development | Operational phase. Installation of 5x bat boxes; protective fencing removal | Checks will be made of all new root stock and plantings to ensure no failures; and to promote healthy growth. Protective fencing will be removed.                                                                                     | Bike Park Wales appointed contractor under guidance of project ecologist (as appropriate) |
| Spring and summer 2024       | Mowing                                                                      | Cuts to 150mm; directionally to minimise impacts on reptiles; using hand operated machinery (strimmers) with contractor maintaining good visual contact with ground to avoid impacting upon reptiles or other fauna. Arisings removed | Bike Park Wales appointed contractor                                                      |
| January 2025                 | Tree health check                                                           | Remedial measures as appropriate                                                                                                                                                                                                      | Bike Park Wales appointed contractor                                                      |
| Spring and summer 2025       | Mowing; checks of bat boxes and hibernacula                                 | Cuts to 150mm; directionally to minimise impacts on reptiles; using hand operated machinery (strimmers) with contractor maintaining good visual contact with ground to avoid impacting upon reptiles or other fauna. Arisings removed | Bike Park Wales appointed contractor; ecologist                                           |
| Spring and summer 2026       | Mowing                                                                      | Cuts to 150mm; directionally to minimise impacts on reptiles; using hand operated machinery (strimmers) with contractor maintaining good visual contact with ground to avoid impacting upon reptiles or other fauna. Arisings removed | Bike Park Wales appointed contractor                                                      |
| January 2027                 | Tree health check                                                           | Remedial measures as appropriate                                                                                                                                                                                                      | Bike Park Wales appointed contractor                                                      |

|                        |                                             |                                                                                                                                                                                                                                       |                                                               |
|------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Spring and summer 2027 | Mowing; checks of bat boxes and hibernacula | Cuts to 150mm; directionally to minimise impacts on reptiles; using hand operated machinery (strimmers) with contractor maintaining good visual contact with ground to avoid impacting upon reptiles or other fauna. Arisings removed | Bike Park Wales appointed contractor; ecologist               |
| January 2028           | Tree health and diversity check             | A plan will be updated with the new growth, which will help to inform the next 2025-2030 management plan.                                                                                                                             | Bike Park Wales appointed contractor                          |
| Spring and summer 2028 | Mowing                                      | Cuts to 150mm; directionally to minimise impacts on reptiles; using hand operated machinery (strimmers) with contractor maintaining good visual contact with ground to avoid impacting upon reptiles or other fauna. Arisings removed | Bike Park Wales appointed contractor                          |
| Autumn 2028            | Management plan review                      | Review and collation of the data accumulated in relation to the management plan; formulation of the next period 2025-2030 and agreement with the LPA.                                                                                 | Bike Park Wales management team; arboriculturalist; ecologist |

#### Responsible persons

- 4.45 Bike Park Wales is responsible for ensuring that all management and maintenance requirements are met, Furthermore, they are responsible for reviewing the management plans based on evidence gathered during regular inspections and, if necessary, make the appropriate changes to the plans to ensure continued functionality of the woodland.
- 4.46 Bike Park Wales will engage specialist advice and contractors when required, see Table 4 above.
- 4.47 A log of all visits made for contractors' work to the woodland/trees/vegetation will be kept. This will detail the nature of the work, by who, the date and time of the work and reasoning behind it. The contractor will have access to the management plan and will sign to confirm that the works to be undertaken are in line with this agreed document.

#### Long-term plan review

- 4.48 After five years since its creation i.e. in 2027, the woodland management plan will be reviewed in response to the most recent investigations and monitoring data. When necessary, the management works can be amended to support updated objectives or to

alleviate issues that may arise during the five-year period; including in response to climate change; new research; or changes to activity onsite or nearby.

- 4.49 The plan will be updated using the advice and recommendations from an arboriculturalist and an ecologist, and in liaison with the LPA.
- 4.50 Changes will be made to the management schedule to reflect any changes in British or European legislation and standards.

## 5 LANDSCAPE PLAN



APPENDIX I: UPDATED PHASE 1 HABITAT MAP (2022)



Key

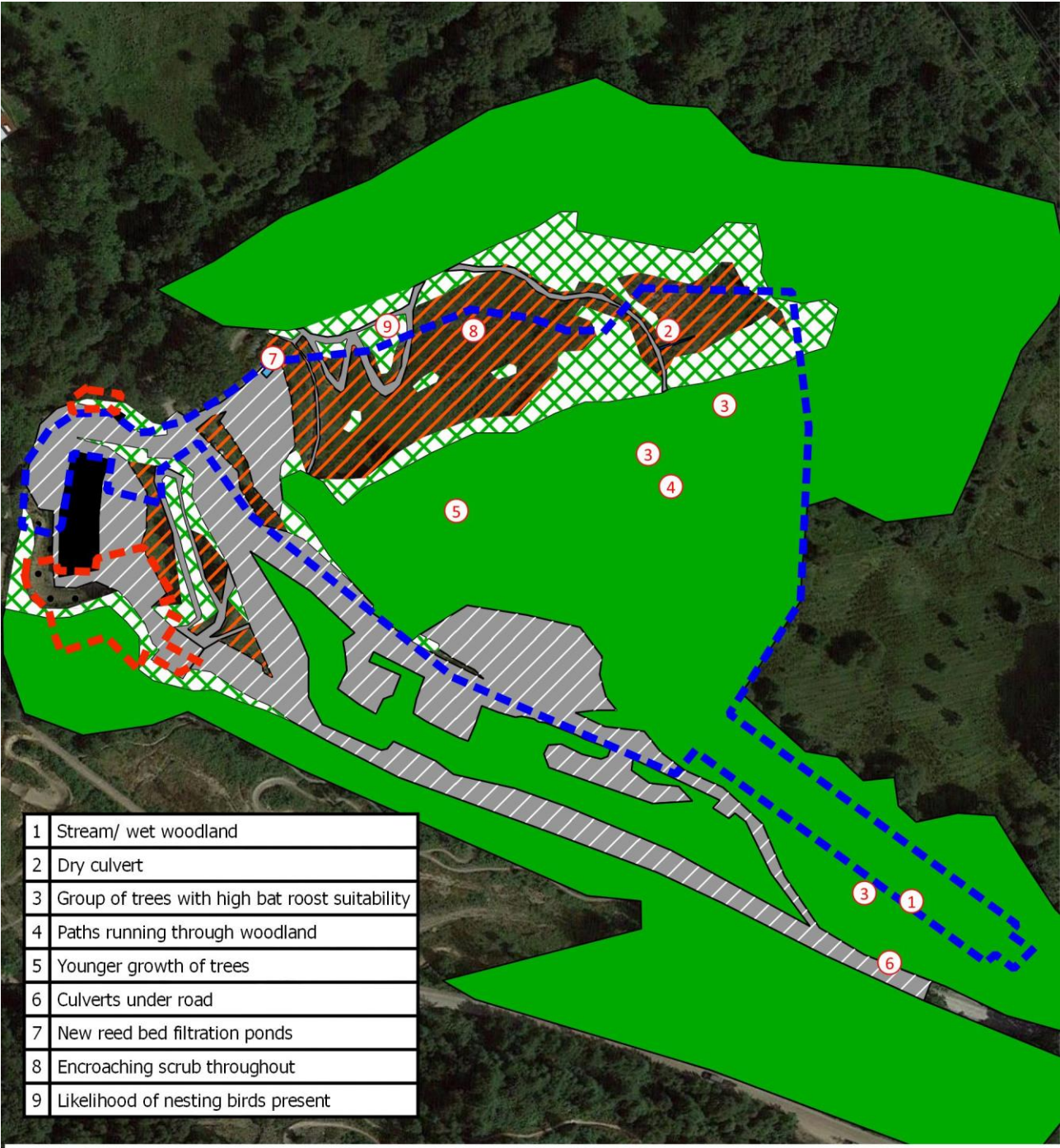
- Target notes

  - Site boundary
  - Phase 3
- Habitats

  - A.1.1 Broad-leaved woodland, semi-natural
- A.2.1 Scrub, dense/continuous
  - B.1 Acid grassland
  - G.1 Standing water
  - G.2 Running water
- J.1.3 Ephemeral/short perennial
  - J.3.6 Buildings
  - Hard standing
  - Path

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APPENDIX II: PREVIOUS PHASE 1 HABITAT MAP (2018)



Key



Phase one boundary  
Phase two boundary  
Target notes

Habitats



A.1.1 Broad-leaved woodland, semi-natural



A.2.1 Scrub, dense/continuous



B.1 Acid grassland



G.1 Standing water



G.2 Running water



J.1.3 Ephemeral/short perennial



J.3.6 Buildings



Hard standing



Path

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