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Ynysarwed Mine Water Treatment Works Update Preliminary Ecological Appraisal

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Table 1: Technical Summary

Feature or Species	PEA Recommendations Summary
Habitat	Habitat within the site boundary comprises: ◆ A corrugated steel sheet building, which houses the main treatment plant; ◆ A steel cabin which is used as an office; ◆ Pipework and other control infrastructure. ◆ There is a large concrete slab in the centre of the site, which extends around the main building and the office cabin; ◆ There are two plastic lined overflow ponds, which are disused and the lining has been damaged so that the ponds do not hold water. ◆ Areas around the building, have been surfaced using gravel, which has become covered with leaf litter and a thin layer of topsoil has formed in some places. Pioneering plants, including Himalayan balsam and buddleia are growing in some of these areas. Land to the SE of the site is occupied by the Neath Canal, with a narrow belt of semi-mature trees between the site and the canal. On the opposite side of the canal is a tow path and beyond this a line of mature trees, separating the canal from the agricultural fields beyond. There is extensive Japanese knotweed along the boundary with the canal. On the opposite side of the A4242 Neath Road is a woodland belt of mature trees, some of which overhang the road. Beyond the trees, the land rises steeply to the north, onto Neath Mountain. A small amount of vegetation clearance will be required along the boundary with the canal to enable the replacement of the existing fence. If possible a vegetated buffer will be maintained between the site and the canal. INNS plants will be controlled as part of the contract which will improve the habitat surrounding the site. There is no landscaping proposed as part of the scheme as works will be undertaken within the current footprint and there will be no room for landscaping. Vegetation around the boundaries will be allowed to regrow.
Designated Sites	There are no statutory designated sites within 2km of the site boundary. There are 4 non-statutory designated sites within 2km of the site boundary, including: ◆ Neath Canal SINC which is 3m from the sites SW boundary ◆ Ancient Semi Natural Woodland SINC on the opposite side of Neath Road ◆ Sarn Helen SINC 365m from the site ◆ Wildlife Trust Reserve – 1100m from site. The presence of the Ancient Semi-natural woodland SINC is considered to be important in terms of disturbance due to construction activity. Any species within the SINC would be accustomed to human activity due to the traffic on Neath Road, with HGVs clipping the outermost branches of trees along the edge of the road. There will be no direct impact but there is potential for indirect impacts from construction i.e noise, dust, light. There is potential for direct impacts on the Neath Canal SINC, as this is directly adjacent to the site. Ground investigations at the site have identified a gabion basket retaining wall, along the edge of the canal, which has been assessed as being in good condition. This will be retained as

Feature or Species	PEA Recommendations Summary
	part of the new development and the development has therefore been moved towards Neath Road and away from the canal. The gabion wall will be retained and will form a buffer between the site and the canal. There will be no direct impact on the canal or the SINC woodland on the opposite side of Neath Road, but there is potential for indirect inputs. Construction good practice should be employed to ensure these impacts are minimised, please refer to Section 5.1.
Otters and Watervole	During the Aecom Otter and Watervole Survey an otter holt was identified on the bank of the River Neath. That report was prepared for the original scope of works, which included the construction of reed beds to the SW of the site. These have been deleted from the current scope of works and the works will not be undertaken within this area. The Neath Canal is suitable for use by otters and it is likely that otters feed and commute along the canal. No features relating to otters have been found within the sphere of influence of the site. No evidence of watervole was found. Construction best practice should be used to mitigate potential construction impacts.
Reptiles	No reptile surveys have been undertaken for this Site. A Preliminary Ecological Appraisal of the original development site, which included reedbed areas to the west of the current site, undertaken by RSK (2019) confirmed suitable habitat for common reptiles on Site, in particular grass snake (<i>Natrix helvetica</i>) within the reedbed. RSK (2019) also identified areas of rough grassland and wet ditches suitable for supporting grass snake that are now outside of the Site boundary. RSK (2019) identified suitable habitat for common reptiles within the longer grassland in the arable fields which are now outside of the Site boundary. AECOM identified suitable habitat for slow-worm (<i>Anguils fragilis</i>) and viviparous lizard (<i>Zootoca vivipara</i>) along the grassland verges of the access track and canal footpath and the woodland habitats within the Site as offering potential as refugia for common reptiles. Since these surveys were undertaken, the site footprint has been significantly reduced to only include the existing Mine Water Treatment Facility. This has significantly reduced the area of reptile habitat which will be affected by the works. It has also removed all optimal habitat from the scheme, which will minimise impacts on reptiles. The area surrounding the site has high suitability for use by reptiles. The development site has a low potential for use by reptiles with no reptiles observed during the survey. However, there is potential that reptiles may use open gravel areas within the site for basking. Due to the scope of works being restricted to the existing treatment plant footprint, no formal survey for reptiles was undertaken. There is a buried gabion wall along the site boundary with the canal. There is potential that reptiles may use this wall as a hibernation site, although this was not confirmed during the survey. This will be largely dependent of the volume of fines within the backfill material, which would have filled voids within the gabions. Precautionary methods described in Section 5.8 should be implemented.
Great Crested Newt	The desk study did not contain any records of great crested newt within 1 km of the Site. The woodland provides suitable terrestrial habitat for great crested newt. RSK undertook Habitat Suitability Index assessments of the two ponds within the proposed reedbed area, in 2019 and followed this with eDNA analysis of the ponds and manual surveys. The HSIs scored the ponds as having moderate suitability for GCN but the eDNA results were indeterminate for one of the visits and negative for the other. Surveys did not identify evidence of great crested newt.

Feature or Species	PEA Recommendations Summary
	It is considered that this species is likely absent from the site.
Bats	There are records for common and soprano pipistrelle, noctule and myotis bats within 2km of the site. During the Aecom, Preliminary Bat Roost Assessment and Ground-level Tree Assessment, undertaken in 2021, the buildings at the site were assessed as offering Negligible potential for use by roosting bats. These buildings have been maintained and this status has not changed. The Aecom report, identified three trees within the survey area as having Moderate potential to support roosting bats. None of these will be directly impacted by the scheme and potential impacts on roosting and foraging bats can be controlled through construction good practice.
Bird Species	The survey was undertaken within the traditional bird breeding season (March – August inclusive) and no nests, or birds displaying nesting behaviour, were noted within or immediately adjacent to the site. Habitat within the site is sub optimum i.e. the tree belt along the edge of the canal is immature with many of the trees being unsuitable too support nesting birds. Surrounding vegetation to the north and south and on the opposite side of Neath Road is optimal, with mature trees, with a dense scrub under layer, with many roosting points and fresh water nearby. Within the data search, there are numerous bird records within 2km (Figure 13). In closer proximity to the site, species such as green woodpecker, mallard, starling, dipper, and cuckoo are present. Several bird of prey species has also been recorded within the 2km search area, including Red Kite, Peregrine and Goshawk. No nesting birds have been identified within or adjacent to the works area. If nesting birds are identified a suitable buffer will be agreed with the scheme Ecologist. Kingfisher has also been recorded within the data search. It should be noted that Kingfisher, Goshawk, Red Kite and Peregrine are a schedule 1 species. Following best practice, if vegetation clearance is required during the main bird breeding season, any vegetation scheduled to be removed must be checked by an ecologist for active nests no more than 48 hours prior to the start of works. If nests are present, then a minimum 5m exclusion zone should be established around the nest(s) and no de-vegetation or other heavy machinery work should be carried out within the exclusion zone(s) until it is confirmed that the nest(s) is completed and that the young have fledged.
Badgers	There are records for badgers within 2km of the site, within the data search, but not within 250m of the site. Habitats within the site boundary have little suitability for use by badgers and due to the nature of the fencing surrounding the site, it is unlikely that badger pass through the site. It is likely that badgers use the neath canal as a route to commute and that they are present in the woodland on the opposite side of the road. No specific mitigation is required in respect of badgers, but it is likely that there are badgers in the wider area, who may enter the site at night and hence construction best practice should be employed for these works i.e. excavations backfilled at the end of the shift or a means of escape included within the excavation, no food waste left on site which could encourage badgers into the works area. Ecological supervision is required during the clearance of dense scrub which could hide a badger sett.

Feature or Species	PEA Recommendations Summary
Common Mammal Species	Species records within the LERC data set in this region include: Hedgehog and grey squirrel. No evidence of hedgehog was found during the site walkover, but this was done during daylight and hence their presence should be assumed. Grey squirrel were noted in trees along the canal towpath during the walkover.
Invasive Species (INNS)	There are numerous schedule 9 invasive species within the 2km search area, including Japanese knotweed, Himalayan balsam and montbretia, of these Himalayan balsam is within 250m of the site (Figure 17). Instances of INNS are clustered along the built-up areas of the surrounding valley and River Neath, presenting negligible risk of spread or contamination into the area. During the INNS Survey undertaken by EcoVigour in 2022, Japanese knotweed and areas of Himalayan balsam were identified and mapped. Knotweed was recorded at four locations within the site. During this survey extensive Himalayan balsam was identified within the site boundary and immediately adjacent to it, particularly in the area to the north of the existing treatment plant building, with many small plants identified in this area. Sporadic Himalayan balsam was identified across the site. There is extensive Japanese knotweed north of the site, along the boundary with the Neath Canal and along the southern boundary in the area that the new plant is to be connected into the existing manhole. There is also sporadic Himalayan balsam within this area. Treatment is detailed within the INNS Control Plan (EcoVigour 2022) and will include: ◆ Pulling / cutting of Himalayan balsam prior to it flowering in late June / early July. If Himalayan balsam has started to flower, it should be bagged and removed to a site permitted to receive it. This will prevent plants within the site setting seed and will reduce the growth of Himalayan balsam during the 2024 growth season. ◆ Herbicide treatment of Japanese knotweed adjacent to the site boundary to prevent growth onto the site; ◆ Excavation of Japanese knotweed within the works footprint and disposal to a waste management facility, permitted to accept it. Installation of a vertical root barrier along the site boundary, to prevent Japanese knotweed growing back onto site. ◆ Within areas affected by Himalayan balsam, if excavation is required, the top 60mm of soil should be excavated and removed from site as 'soil containing incidental Himalayan balsam (Schedule 9 Invasive Species) seeds'. This should not affect the landfill acceptance criteria as it only requires shallow burial but will require specific biosecurity measures on arrival at the tip. If this material is reused within the project, it will require ongoing treatment for Himalayan balsam. ◆ Ongoing treatment for Japanese knotweed and Himalayan balsam will be required, as the surrounding area is contaminated, which will result in re-contamination of the site, if treatment is not undertaken.

2 INTRODUCTION

2.1 PROJECT BACKGROUND

- 2.1.1 EcoVigour was instructed by Kier Infrastructure to undertake an Update Preliminary Ecological Appraisal (PEA) of Ynysarwed Mine Water Treatment Works in Resolven, Neath, prior to the construction of a new treatment plant and the de-commissioning of the existing plant, following the commissioning of the new plant. The new plant will be constructed within the footprint of the current plant, in an area currently occupied by two redundant overflow ponds. EcoVigour Ltd have been commissioned to assess the ecological status of the site and surrounding area.
- 2.1.2 This survey builds on previous surveys undertaken by Aecom in 2021. EcoVigour have been issued the following previous survey reports:
- ◆ Reptile Method Statement
 - ◆ Otter and Water Vole Survey Report
 - ◆ Preliminary Bat Roost Assessment and Ground Level Tree Assessment.
- 2.1.3 It is worth noting that since these reports were prepared, the scope of the scheme has been significantly reduced. Originally it was proposed to undertake minor drainage works to the existing reed beds on a site to the west of the existing Mine Water Treatment Site, but this is not within the current scope of works. The current scope of works is confined to the existing site footprint, with the exception of a small areas to the SW of the current site, where a connection is to be made to an existing manhole.
- 2.1.4 The objectives for the survey were:
- ◆ To undertake an ecological assessment of the site;
 - ◆ To identify ecological features within the site that could pose a constraint to the proposed development;
 - ◆ To assess the site's potential to support protected species and make recommendations for further survey, where required to clarify potential ecological constraints;
 - ◆ To make recommendations for any valuable habitats to be considered, through retention or enhancement, or if this is not possible, by habitat mitigation or compensation;
 - ◆ To identify the presence of any invasive non-native species on site.
- 2.1.5 The ecological report has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance document 'Guidelines for Preliminary Ecological Appraisal - Second Edition' (CIEEM, 2017). The objective of the report is to provide a preliminary ecological assessment of the site based on the currently anticipated design.
- 2.1.6 An initial ecological overview of the site is provided and potential ecological constraints and impacts of the current proposals are assessed. Recommendations for further surveys are provided where necessary.
- 2.1.7 This report should be read in conjunction with the Reptile Method Statement, Otter and Water Vole Survey Report and Preliminary Bat Roost Assessment and Ground Level Tree Assessment, previously undertaken for the site.

2.2 SURVEY AREA DESCRIPTION

- 2.2.1 The survey area concerns the existing Mine Water Treatment Plant and the area immediately surrounding this, including the Neath Canal, which is directly to the SE of the site.



Figure 1: Site Location



Figure 2: Site Extents

- 2.2.2 The site consists of the existing buildings, concrete slabs, gravel areas between the buildings and two plastic lined attenuation ponds, which were drained some time ago and the plastic liners have since been damaged to an extent that the ponds do not hold water.

- 2.2.3 There is a line of trees along the SE site boundary and the northern bank of the Neath Canal. These are semi-mature and are interspersed with scrub and Japanese knotweed.
- 2.2.4 There is a line of mature trees along the opposite (northern side) of the B4242 Neath Road. Beyond this, the land rises sharply onto Neath Mountain.
- 2.2.5 The towpath on the southern bank of the Neath Canal is lined with mature trees and beyond this are agricultural fields, leading to the A465 Trunk Road.
- 2.2.6 North and south of the site are areas of tree belt, between the canal and Neath Road, providing connectivity along the canal corridor.

2.3 WORKS REQUIRED

- 2.3.1 The project requires the replacement of the existing mine water treatment works with a new works. This will be constructed within the footprint of the existing works. There are two defunct overflow ponds in the western section of the site, which are to be demolished and the new treatment plant building is to be constructed in this area. There is an existing cabin which is currently used as an office, this will be relocated and then removed from site, following the construction of the new facility. The existing treatment building will be retained but the plant within the building will be decommissioned and removed and the building will be used for office and storage space, as previously approved under Application Ref: P2021/0551.
- ◆ Removal of existing fences around the plant;
 - ◆ Demolition of the existing settling ponds and excavation to expose the gabion basket retaining wall along the edge of the canal, to allow the installation of drainage and reinforcement,
 - ◆ Construction of the slab for the new treatment building;
 - ◆ Connection for the outfall into the existing reedbeds southwest of the site, connecting into an existing manhole SW of the site.
 - ◆ Construction of the new building.
 - ◆ Construction of the new treatment plant and commissioning. Other M&E around the site.
 - ◆ Decommissioning of the existing plant.
 - ◆ Conversion of the existing building into offices and other facilities.
 - ◆ Construction of carparking.

3 METHODOLOGY

3.1 DESK STUDY

- 3.1.1 A desk study was conducted to assist with the overall site assessment. Statutory and non- statutory designated sites within 2km of the site boundary were identified. Broad habitat boundaries and types were identified from online aerial imagery.
- 3.1.2 The relevance of the reasons for designation of the protected sites within 2km of the site boundary has been considered during subsequent assessment of whether the proposed works will have any impact upon the biological integrity of such sites.

The desk study also included the following sources:

- ◆ A review of previous ecological surveys undertaken of the site;
- ◆ Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) website;
- ◆ Online aerial imagery resources;
- ◆ Natural Resources Wales (NRW);
- ◆ Joint Nature Conservation Committee (JNCC) and
- ◆ A review of OS mapping for waterbodies within 250-500 metres of the site.
- ◆ South East Wales Biodiversity Records Centre (SEWBReC) Data Search.

Note: Records outlined below are not for the public domain and should not be forwarded to unauthorised third parties. The records below are intended for project purposes only.

3.2 WALKOVER SURVEY

- 3.2.1 The walkover was conducted by Julian Gregory an experienced EcoVigour Ltd Ecologist on 1st June 2023. The survey was conducted using methods outlined in the Joint Nature Conservation Committee (JNCC)'s 'Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit' (JNCC, 2010). The survey consisted of a visual survey of the site, identifying the broad habitat types present, identifying the suitability of the site to support protected and priority species.
- 3.2.2 Incidental observations of protected and/or priority species and the potential for such species to occur on site (and in the surrounding landscape where relevant) were also noted, however no specific protected/priority species surveys were undertaken as part of this preliminary ecological assessment.
- 3.2.3 A search for plant species as included in Schedule 9 of the Wildlife and Countryside Act (1981) as amended, was made during the survey. Under the Act it is an offence to spread, or cause the spread of, these species.

3.3 LIMITATIONS

- 3.3.1 Third party biological records do not represent a full species list for the area. The absence of records does not necessarily indicate absence of a species or habitat but rather that these have not been recorded or are perhaps under-recorded within the search area. The results of the survey and assessment undertaken by EcoVigour Ltd are representative at the time of survey.
- 3.3.2 This document does not contain a comprehensive list of botanical species on site with only plant species characteristic of each habitat and any incidental observations of notable plant species recorded. In addition, many plant species are only evident at certain times of the year; therefore, some plant species may have been undetected. No targeted ecological surveys were undertaken as part of this assessment to determine the presence of specific species.

4 RESULTS

4.1 DESIGNATED SITES

- 4.1.1 There are no statutory designated sites within 2km of the site boundary.
- 4.1.2 There are **4** non-statutory designated sites within 2km of the site boundary.

Table 2: Non-Statutory sites

Site Name	Designation	Reason for Designation	Distance from Site (m)
Neath Canal	SINC	Biological	3m
Wildlife Trust Reserve	Local Non-statutory		1100m
Ancient Semi Natural Woodland	SINC	Woodland	Borders the site on the opposite side of Neath Road
Sarn Helen SINC.	SINC		365m

4.2 ANCIENT WOODLAND

- 4.2.1 There are **2** Ancient Semi Natural Woodland (ASNW), **15** plantations on ancient woodlands and **2** Restored Ancient Woodland sites within 2km of the project area, of which the closest is 250 metres Southeast of the works area.

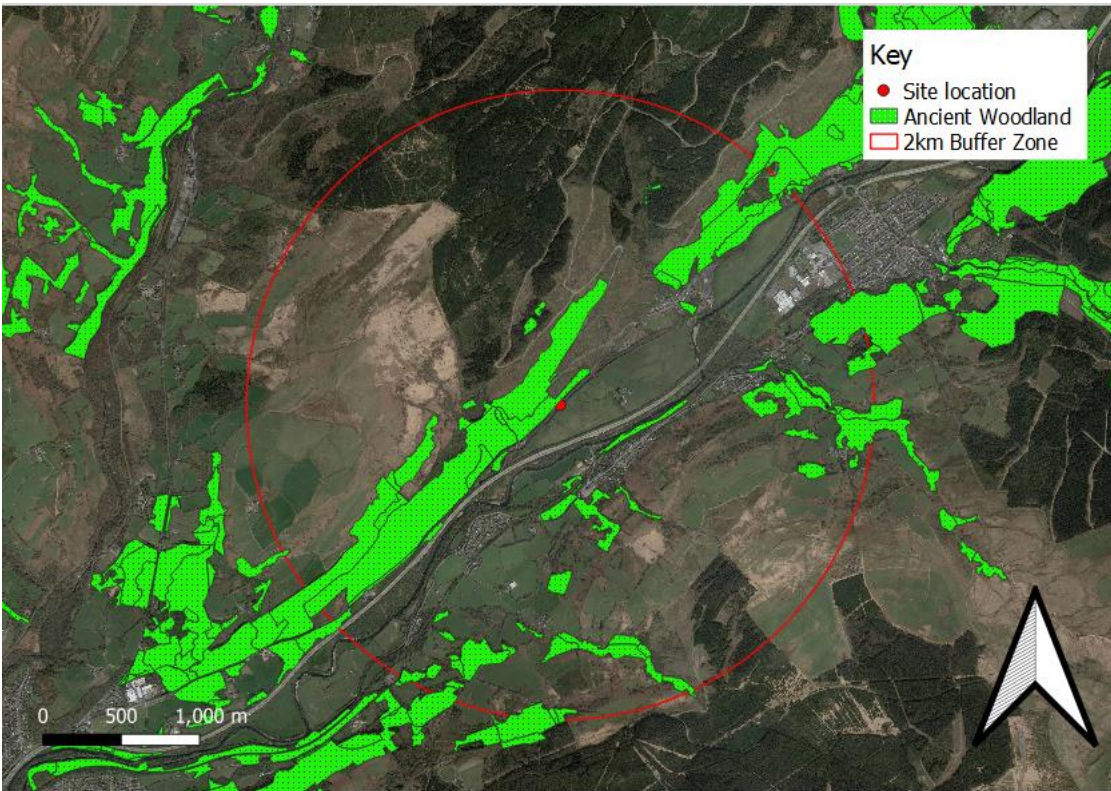


Figure 3: Ancient Semi-Natural Woodlands

4.3 TREE PROTECTION ORDERS

4.3.1 There are no trees with TPOs within or adjacent to the site.

4.4 WATERBODIES AND WATERCOURSES

4.4.1 The Neath Canal SINC runs in a NE – SW direction along the sites SE boundary. The canal is not navigable at this point as it is choked with aquatic plants and the base has become silted.

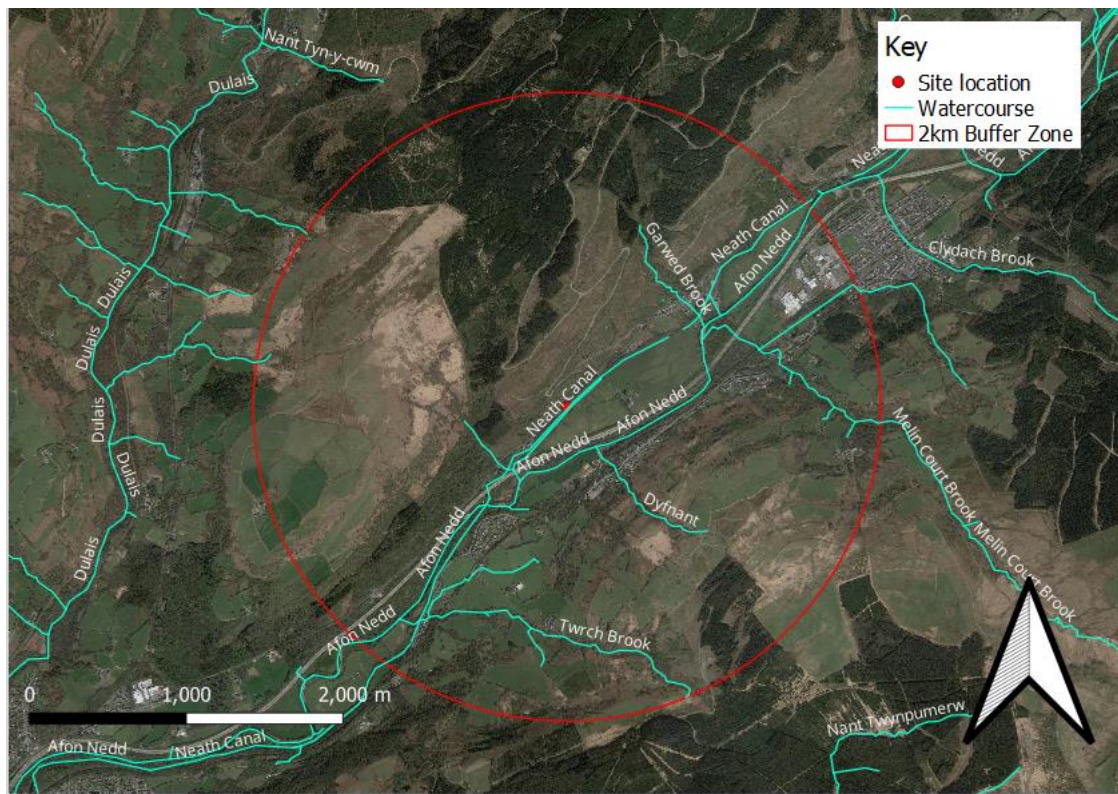


Figure 4: Local watercourse within the 2km buffer zone.

4.5 SURVEY FIGURES

4.5.1 The figures below provide a visual summary of the walkover. This is not an extensive collection of the images collected from the survey. Additional images are available upon request.



Figure 5: SW façade of current treatment building.



Figure 6: Himalayan Balsam growing along NE boundary.



Figure 7: Japanese knotweed growing along the site boundary with the canal.

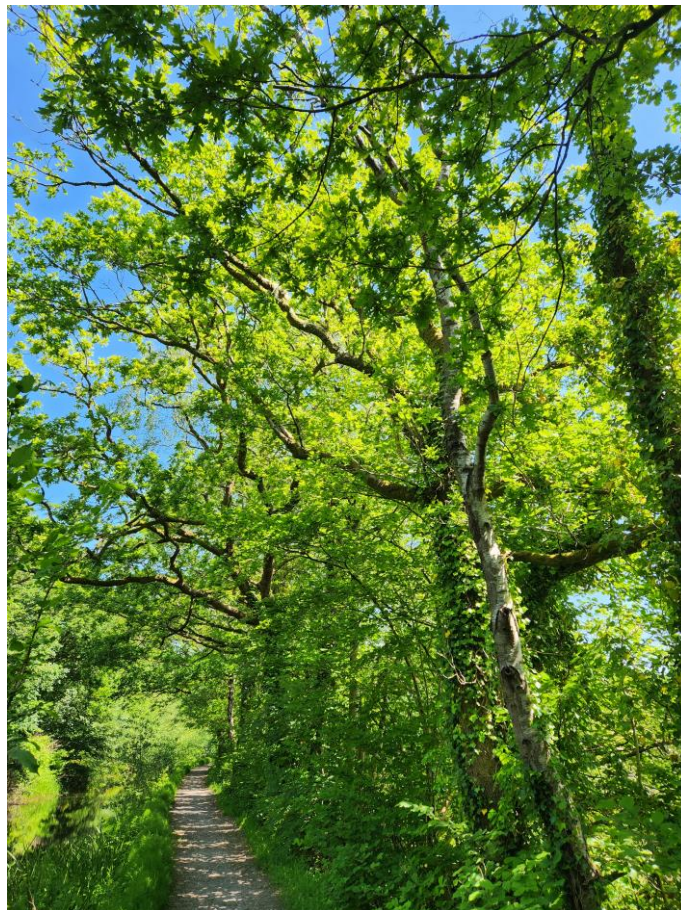


Figure 8: Mature Trees along the canal towpath (opposite side of the canal)



Figure 9: Japanese knotweed growing on the SW boundary near discharge manhole.

4.6 HABITAT ASSESSMENT

4.6.1 A full updated Phase I survey of the entire survey area has not been undertaken to date.

Habitat within the site boundary comprises:

- ◆ A corrugated steel sheet building, which houses the main treatment plant;
- ◆ A steel cabin which is used as an office;
- ◆ Pipework and other control infrastructure.
- ◆ There is a large concrete slab in the centre of the site, which extends around the main building and the office cabin;
- ◆ There are two plastic lined overflow ponds, which are disused and the lining has been damaged so that the ponds do not hold water.
- ◆ Areas around the building, have been surfaced using gravel, which has become covered with leaf litter and a thin layer of topsoil has formed in some places. Pioneering plants, including Himalayan balsam and buddleia are growing in some of these areas.

4.6.2 Land to the SE of the site is occupied by the Neath Canal, with a narrow belt of semi-mature trees, including silver birch, ash, sycamore and oak, between the site and the canal. The canal is not navigable and is overgrown with aquatic plants. On the opposite side of the canal is a tow path and beyond this a line of mature trees, separating the canal from the agricultural fields beyond.

4.6.3 The canal has small areas of open water with extensive growth of, branched bur-reed *Sparganium erectum*, common duckweed *Lemna minor*, floating sweet grass *Glyceria fluitans* and water figwort *Scrophularia auriculata*.

4.6.4 On the opposite side of the A4242 Neath Road is a woodland belt of mature trees, some of which overhang the road. Beyond the trees, the land rises steeply to the north, onto Neath Mountain.

4.7 OTTERS AND WATERVOLE

- 4.7.1 During the Aecom Otter and Watervole Survey an otter holt was identified on the bank of the River Neath. That report was prepared for the original scope of works, which included minor works to the existing reed beds to the SW of the site. These have been deleted from the current scope of works and the works will not be undertaken within this area.
- 4.7.2 The Neath Canal is suitable for use by otters and it is likely that otters feed and commute along the canal. No features relating to otters have been found within the sphere of influence of the site.
- 4.7.3 No evidence of watervole was found.

4.8 REPTILES

- 4.8.1 No reptile surveys have been undertaken for this Site. A Preliminary Ecological Appraisal of the original development site, which included reedbed areas to the west of the current site, undertaken by RSK (2019) confirmed suitable habitat for common reptiles on Site, in particular grass snake (*Natrix helvetica*) within the reedbed. RSK (2019) also identified areas of rough grassland and wet ditches suitable for supporting grass snake that are now outside of the Site boundary. RSK (2019) identified suitable habitat for common reptiles within the longer grassland in the arable fields which are now outside of the Site boundary. Two grass snake records were returned from the desk study within 100 m of the Site. No other reptile records were returned within 1 km of the Site.

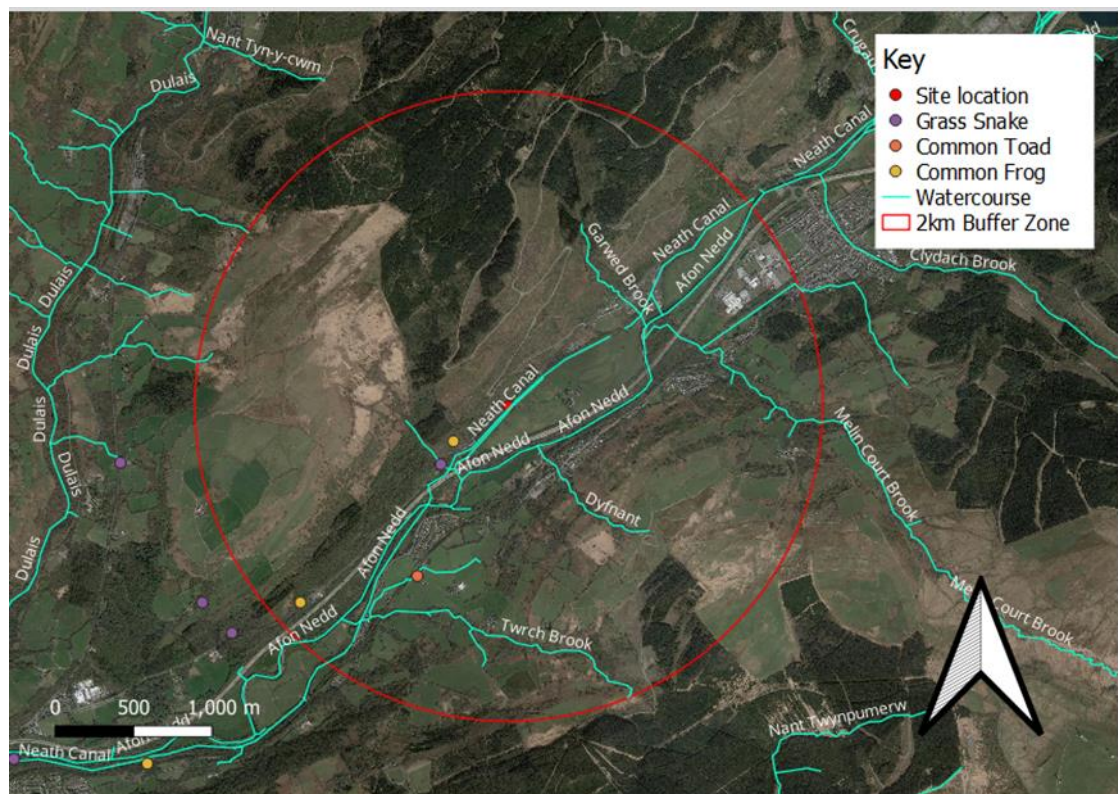


Figure 10: Amphibian and reptile species in search area

- 4.8.2 AECOM (2021) identified suitable habitat for slow-worm (*Anguils fragilis*) and viviparous lizard (*Zootoca vivipara*) along the grassland verges of the access track and canal footpath and the woodland habitats within the Site as offering potential as refugia for common reptiles. Since these surveys were undertaken, the site footprint has been significantly reduced to only include the existing Mine Water Treatment Facility. This has significantly reduced the area of reptile habitat impacted by the scheme and means no works will be undertaken within optimal reptile habitat.
- 4.8.3 The development site has a low potential for use by reptiles with no reptiles observed during the survey. Due to the scope of works being restricted to the existing treatment plant footprint, no formal survey for reptiles was undertaken.
- 4.8.4 The surrounding area has high suitability for reptiles and reptiles may use open gravel areas within the site for basking.
- 4.8.5 There is a buried gabion wall along the site boundary with the canal. There is potential that reptiles may use this wall as a hibernation site, although this was not confirmed during the survey. This will be largely dependent of the volume of fines within the backfill material, which would have filled voids within the gabions.

4.9 GREAT CRESTED NEWT

- 4.9.1 The desk study did not contain any records of great crested newt within 1 km of the Site. The woodland provides suitable terrestrial habitat for great crested newt. RSK undertook Habitat Suitability Index assessments of the two ponds within the proposed reedbed area, in 2019 and followed this with eDNA analysis of the ponds and manual surveys. The HSIs scored the ponds as having moderate suitability for GCN but the eDNA results were indeterminate for one of the visits and negative for the other. Surveys did not identify evidence of great crested newt.
- 4.9.2 It is considered that this species is likely absent from the site.

4.10 BIRD SPECIES

- 4.10.1 The survey was undertaken within the traditional bird breeding season (March – August inclusive) and no nests, or birds displaying nesting behaviour, were noted within or immediately adjacent to the site. Habitat within the site is sub optimum i.e. the tree belt along the edge of the canal is immature with many of the trees being unsuitable too support nesting birds.
- 4.10.2 Surrounding vegetation to the north and south and on the opposite side of Neath Road is optimal, with mature trees, with a dense scrub under layer, with many roosting points and fresh water nearby.
- 4.10.3 Within the Preliminary Bat Roost Assessment. Aecom (2021), a bird's nest was identified in a hole within the cabin in the centre of the site, which is currently used as an office. There was no evidence of this during the survey.
- 4.10.4 Within the data search, there are numerous bird records within 2km (Figure 11). In closer proximity to the site, species such as green woodpecker, mallard, starling, dipper, and cuckoo are present.
- 4.10.5 Several bird of prey species has also been recorded within the 2km search area, including Red Kite, Peregrine and Goshawk. No nesting birds have been identified within or adjacent to the works area. If nesting birds are identified a suitable buffer will be agreed with the scheme Ecologist. Kingfisher has also been recorded within the data search. It should be noted that Kingfisher, Goshawk, Red Kite and Peregrine are a schedule 1 species.

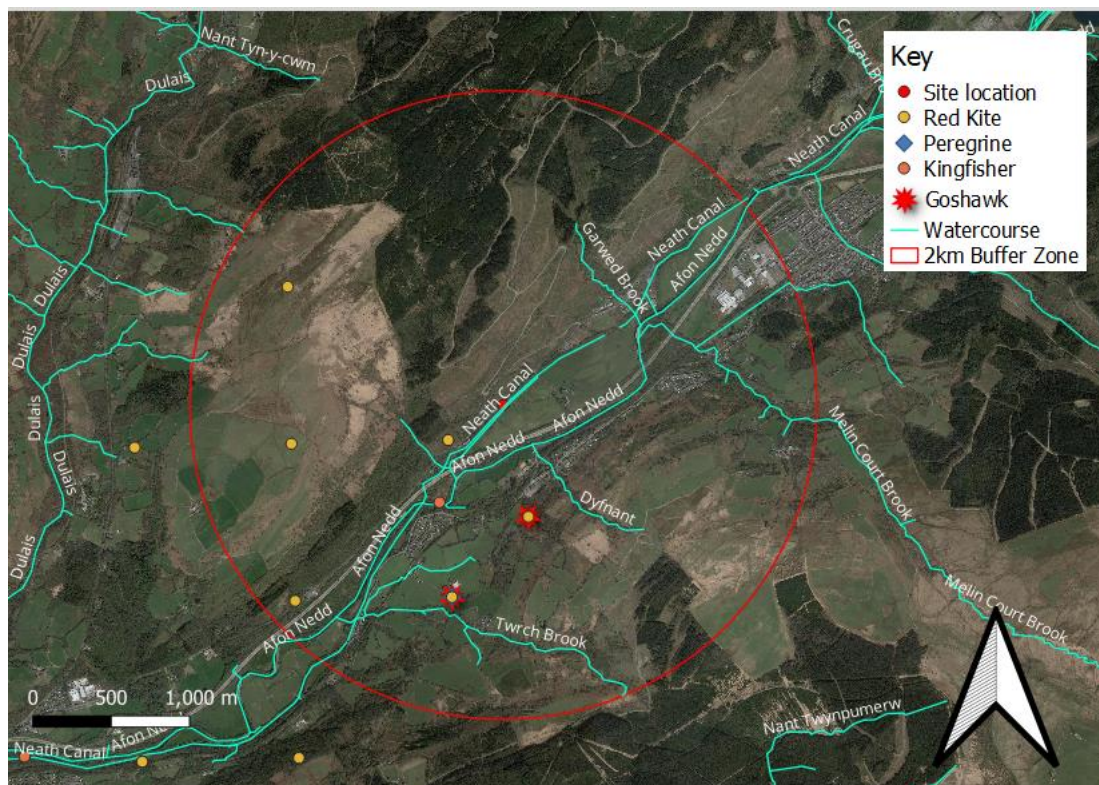


Figure 11: Bird Species Data

4.11 BAT SPECIES

- 4.11.1 There are records for common and soprano pipistrelle, noctule and myotis bats within 2km of the site.
- 4.11.2 During the Aecom, Preliminary Bat Roost Assessment and Ground-level Tree Assessment, undertaken in 2021, the buildings at the site were assessed as offering Negligible potential for use by roosting bats. These buildings have been maintained and this status has not changed.
- 4.11.3 The Aecom report, identified three trees within the survey area as having Moderate potential to support roosting bats. These were:
- ◆ A dead silver birch (*Betula pendula*) on the opposite side of the B4242 (Neath Road) to the Site, just within the woodland boundary. T03 is adjacent to T04. There is a broken branch on the west face, with the potential for a cavity, at approximately 7 m from the ground. There is a dense covering of ivy, especially as the base, which may be obscuring additional cavities or form a suitable a feature itself – On the opposite side of Neath Road approximately 20m south of the site.
 - ◆ An oak tree on south facing bank of Neath Canal. It has a large split on the north side of the trunk which likely leads into a cavity in the tree. This extends upwards from 1 m from the ground. There is also a knot hole 3 m from the ground on the north side with a gap under which may provide another entrance for bats – on the opposite side of the Neath Canal, along the tow path.
 - ◆ A downy birch (*Betula pubescens*) tree with two holes on the north side of trunk where branches have been removed 4 m from the ground. These holes extend into cavities in the tree and could provide shelter for several bats – on the opposite side of the Neath Canal, along the tow path.

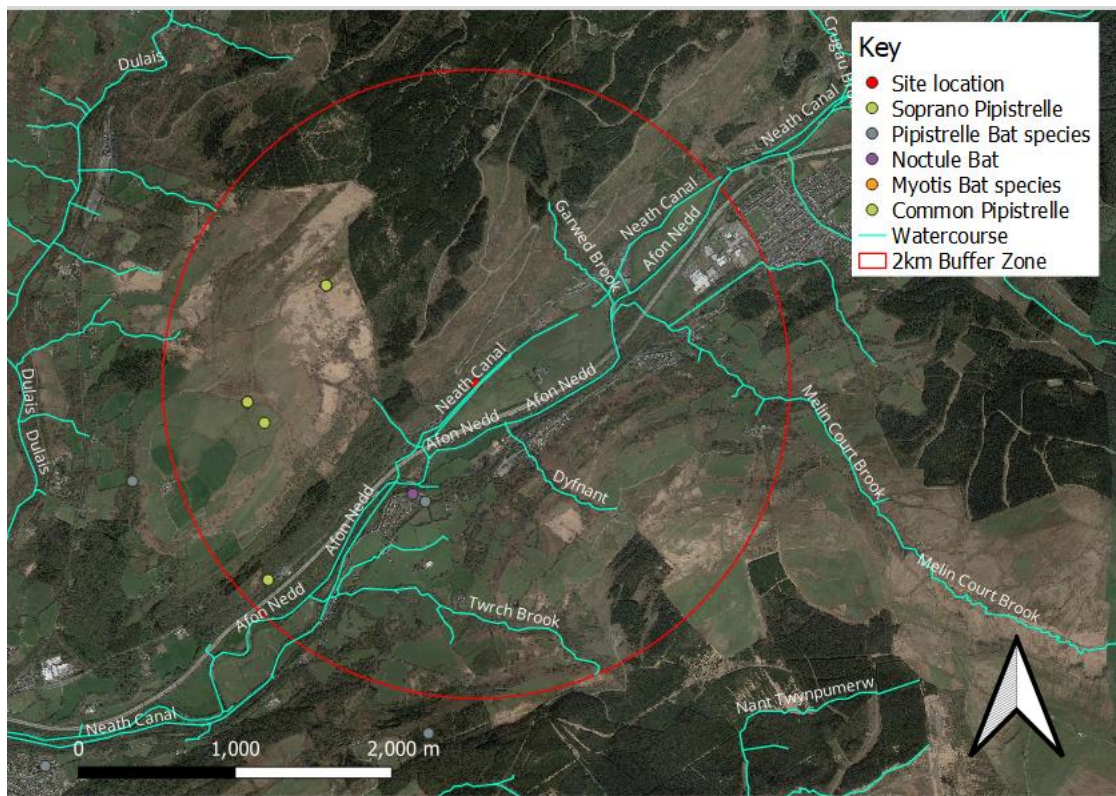


Figure 12: Bat Species Data

4.12 COMMON MAMMAL SPECIES

- 4.12.1 Species records within the LERC data set in this region include: Hedgehog and grey squirrel. No evidence of hedgehog was found during the site walkover, but this was done during daylight and hence their presence should be assumed. Grey squirrel were noted in trees along the canal towpath during the walkover.

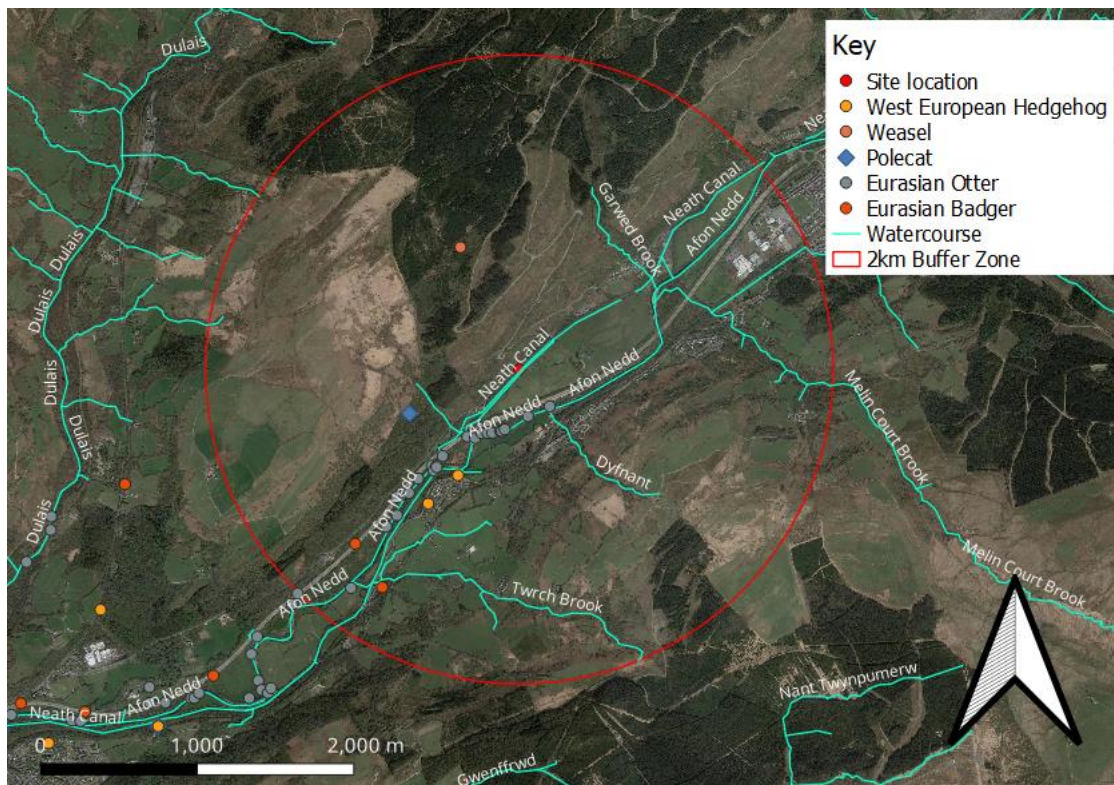


Figure 13: Mammal species in search area

4.13 BADGERS

- 4.13.1 There are records for badgers within 2km of the site, within the data search, but not within 250m of the site (Figure 13). Habitats within the site boundary have little suitability for use by badgers and due to the nature of the fencing surrounding the site, it is unlikely that badger pass through the site.
- 4.13.2 It is likely that badgers use the neath canal as a route to commute and that they are present in the woodland on the opposite side of the road.

4.14 INVASIVE NON-NATIVE PLANT SPECIES -

- 4.14.1 There are numerous schedule 9 invasive species within the 2km search area, including Japanese knotweed, Himalayan balsam and montbretia, of these Himalayan balsam is within 250m of the site (Figure 17). Instances of INNS are clustered along the built-up areas of the surrounding valley and River Rhondda, presenting negligible risk of spread or contamination into the area.
- 4.14.2 During the INNS Survey undertaken by EcoVigour in 2022, Japanese knotweed and areas of Himalayan balsam were identified and mapped. Knotweed was recorded at four locations within the site.
- ◆ Japanese knotweed – *Reynoutria japonica*;
 - ◆ Himalayan balsam – *Impatiens glandulifera*;
- 4.14.3 During this survey extensive Himalayan balsam was identified within the site boundary and immediately adjacent to it, particularly in the area to the north of the existing treatment plant building, with many small plants identified in this area. Sporadic Himalayan balsam was identified across the site.
- 4.14.4 There is extensive Japanese knotweed north of the site, along the boundary with the Neath Canal and along the southern boundary in the area that the new plant is to be connected into the existing manhole. There is also sporadic Himalayan balsam within this area.

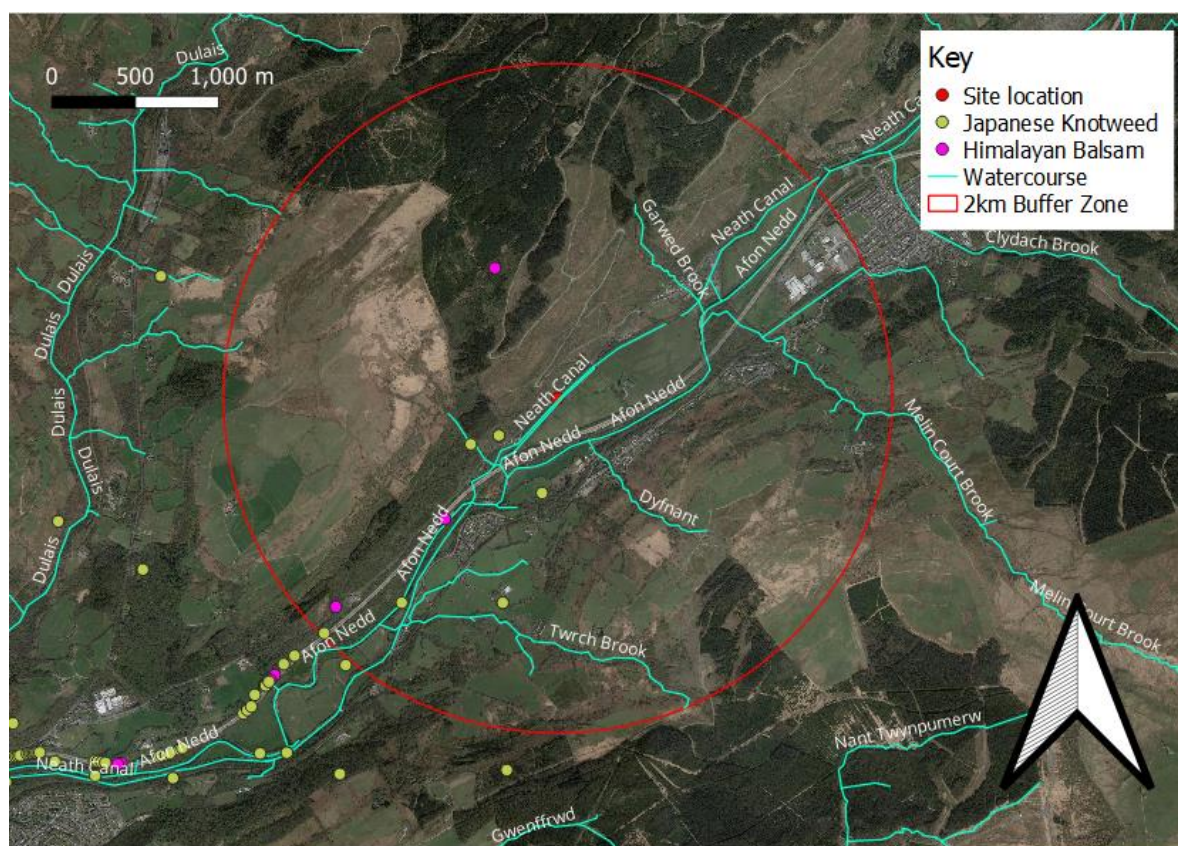


Figure 14: INNS found in the search area.



Phase 1 Habitat Map

Individual Invasive Species

himalayan balsam

Japanese Knotweed

Invasive Species areas

himalayan balsam

Japanese Knotweed

Works areas

Google Satellite Hybrid

Kier Highways Limited
Preliminary ecological appraisal
Invasive Non-Native Species
Survey210508 - Crest drainage
sites :
Ynysarwed Mine water
treatment facility

species	area
himalayan balsam	210.61
Japanese Knotweed	1408.92
Japanese Knotweed	60.32
himalayan balsam	1.52
Japanese Knotweed	27.45

Source: QGIS. Ordnance survey data Crown and database copyright 2021

EcoVigour Ltd, Hardwick Farm, Five Lanes, Caerwent, Monmouthshire NP26 5PH

Figure 15: INNS survey showing large patches of invasive species and single or smaller patches separately.

5 ASSESSMENT AND RECOMMENDATIONS

This section provides a broad assessment of the information gathered and scopes out potential ecological vectors before remaining considerations and actions are proposed in the following recommendations and opportunities sections below.

5.1 DESIGNATED SITES

- 5.1.1 The presence of the Ancient Semi-natural woodland SINC is considered to be important in terms of disturbance due to construction activity. Any species within the SINC would be accustomed to human activity due to the traffic on Neath Road, with HGVs clipping the outermost branches of trees along the edge of the road. There will be no direct impact but there is potential for indirect impacts from construction i.e noise, dust, light.
- 5.1.2 There is potential for direct impacts on the Neath Canal SINC, as this directly adjacent to the site. Ground investigations at the site have identified a gabion basket retaining wall, along the edge of the canal, which has been assessed as being in good condition. This will be retained as part of the new development and the development has therefore been moved towards Neath Road and away from the canal. The gabion wall will be retained and will form a buffer between the site and the canal. There will be no direct impact on the canal, but there is potential for indirect inputs.
- 5.1.3 Indirect impacts can be controlled through construction good practice:
- ◆ Silt contaminated runoff from the site will be controlled, with suspended solids either filtered or attenuated;
 - ◆ Bulk fuels to be stored in double skinned / bunded tanks;
 - ◆ No night time works;
 - ◆ Canal corridor to be maintained in darkness;
 - ◆ Fuelling of plant and equipment to be undertaken by trained competent personnel, with plant nappies placed below the fuelling aperture.
 - ◆ Plant nappies to be placed beneath all static plant;
 - ◆ Spill kits to be maintained in site stores and works vehicles;
 - ◆ All COSHH materials to be stored within a secure COSHH container;
 - ◆ Dust suppression to be implemented to minimise airborne dust.

5.2 HABITATS

- 5.2.1 A small amount of vegetation clearance will be required along the boundary with the canal to enable the replacement of the existing fence. If possible a vegetated buffer will be maintained between the site and the canal.
- 5.2.2 INNS plants will be controlled as part of the contract which will improve the habitat surrounding the site.
- 5.2.3 There is no landscaping proposed as part of the scheme as works will be undertaken within the current footprint and there will be no room for landscaping.

5.3 PROTECTED SPECIES - BATS

- 5.3.1 All British bats and any place used for shelter or protection or breeding site or resting place (their roosts) are fully protected by law under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended).

5.3.2 Together these protect bats from:

- ◆ Selling, offering for sale, possessing or transporting for the purpose of the sale or publishing advertisements to buy or sell a protected species.
- ◆ Deliberate, intentional or reckless killing, injury or taking of bats.
- ◆ Damage to or destruction of or, obstruction of access to any place of shelter, breeding (roost) or rest.
- ◆ Disturbance of an animal occupying a structure or place.
- ◆ The deliberate disturbance of any bat species in such a way as to be significantly likely to affect;
 - their ability to survive, hibernate, migrate, breed, or rear or nurture their young; or
 - the local distribution or abundance of that species.

5.3.3 The buildings within the site have been assessed as having negligible potential for use by roosting bats.

5.3.4 Three trees within the survey area have been identified as having Moderate potential for use by roosting bats. These trees will not be directly impacted by the works and the habitats in which they are located will be un-altered. There is potential for indirect impacts on roosting bats if they were to be present. These potential impacts can be controlled through construction good practice, including:

- ◆ No night time working and ceasing works 30mins before dusk during the bat active season (May to September)
- ◆ Controls on noise and dust emissions from the works.
- ◆ Development of a low level lighting scheme for the site, which maintains the adjacent Neath Canal as a dark corridor.

5.4 OTTERS AND WATERVOLE

5.4.1 The Neath Canal is suitable for use by otters but no features relating to otters have been found within the sphere of influence of the site.

5.4.2 No evidence of watervole was found.

5.4.3 Construction best practice should be employed in respect of otters, i.e.

- ◆ The banks of the canal should not be obstructed to allow otters free passage along the canal.
- ◆ A means of escape i.e. a scaffold board should be placed in any excavations left open over night;
- ◆ Waste food should not be left on site;
- ◆ No works should be undertaken during the night and the canal should be maintained as a dark corridor.

5.5 BADGERS

5.5.1 The Protection of Badgers Act 1992 (as amended) is the main legislation protecting badgers and their habitat in the United Kingdom. Under the Act it is illegal to:-

- ◆ Wilfully kill, injure or take a badger or attempt to do so.
- ◆ Cruelly ill-treat a badger.
- ◆ Interfere with a sett by doing any of the following:
 - (i) damage a badger sett or any part of it,
 - (ii) destroy a badger sett,
 - (iii) obstruct access to a badger sett,
 - (iv) cause a dog to enter a sett,
 - (v) disturb a badger while it is occupying a sett,

5.5.2 No specific mitigation is required in respect of badgers, but it is likely that there are badgers in the wider area, who may enter the site at night and hence construction best practice should be employed for these works i.e. excavations backfilled at the end of the shift or a means of escape included within the excavation, no food waste left on site which could encourage badgers into the works area.

5.5.3 Ecological supervision is required during the clearance of dense scrub which could hide a badger sett.

5.6 BIRD SPECIES

5.6.1 The Wildlife and Countryside Act 1981 (as amended) is the principal legislation affording protection to UK wild birds. All birds, their nest and eggs are protected by law under this legislation, it is an offence (with certain exceptions), to recklessly or intentionally:

- ◆ Intentionally kill, injure or take any wild bird.
- ◆ Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.
- ◆ Intentionally take or destroy the egg of any wild bird.
- ◆ Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependant young of such a bird.

5.6.2 **Note:** Nesting birds found outside of nesting season are protected by the same level of protection as that within the standard nesting period.

5.6.3 No birds nests were identified during the survey, but there is potential that nesting birds could occupy the site between the time the survey was completed and the time the works commence. If the project programme allows, vegetation clearance should be undertaken outside the nesting bird season.

5.6.4 Following best practice, if vegetation clearance is required during the main bird breeding season, any vegetation scheduled to be removed must be checked by an ecologist for active nests no more than 48 hours prior to the start of works.

5.6.5 If nests are present, then a minimum 5m exclusion zone should be established around the nest(s) and no de-vegetation or other heavy machinery work should be carried out within the exclusion zone(s) until it is confirmed that the nest(s) is completed and that the young have fledged.

5.7 GREAT CRESTED NEWT

5.7.1 There are no records of this species within the 2km record buffer. GCN surveys have been undertaken of nearby ponds with no evidence of GCN found. As a precaution, this species should feature in toolbox talks, but the likelihood of it being encountered is considered negligible.

5.8 COMMON REPTILES & AMPHIBIANS

5.8.1 The presence of reptiles and amphibians was not visually confirmed during the ecological assessment (presence or absence surveys have not been undertaken).

5.8.2 Habitat within the site is suboptimal but surrounding habitat are optimal for common reptiles and amphibians and there is potential that reptiles will use hard surfaced and gravel areas within the site for basking. It is likely that when approached by humans, reptiles would move back into the cover of surrounding vegetation.

- 5.8.3 All commonly occurring reptile species (common lizard, slow worm, grass snake and adder) are protected by UK law, making it an offence to injure or kill them. Care must be taken to avoid killing or injuring reptiles & amphibians. All reptile species are partially protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation protects reptiles from:
- ◆ Reckless or intentional killing and injury.
 - ◆ Selling, offering for sale, possessing or transporting for the purpose of the sale or publishing advertisements to buy or sell a protected species.
- 5.8.4 Where these animals are confirmed as present on land that is to be affected by development, guidance recommends that:
- ◆ The animals should be protected from injury or killing during construction operations;
 - ◆ Mitigation should be provided to maintain the conservation status of the species locally.
- 5.8.5 Precautionary methods to avoid injury or death of reptiles potentially present on site may include:
- ◆ Vegetation removal will be supervised by an Ecologist, who will search ahead for reptiles, amphibians;
 - ◆ Vegetation clearance will be directional towards areas of retained habitat;
 - ◆ Dismantling of refugia/hibernacula by hand or carefully by machine and scraping through ballast with a toothed bucket;
 - ◆ During excavation of areas around the gabion retaining wall, care will be taken in case hibernating reptiles are encountered;
 - ◆ If, during the works, a reptile is found, **works will stop (this is a legal requirement)** and the project ecologist will be contacted. To aid accurate species identification, a photograph of the animal should be taken and sent to the project ecologist. The animal (if unharmed) should be allowed to disperse of its own accord;
 - ◆ If possible, works should be undertaken within the reptile active period (March to early October), on warm days, when reptile species are more active and can readily escape any disturbance. If this is not possible due to construction timescales, an ecologist on site will dismantle by hand any hibernation features. Any reptiles discovered in this period should be covered over and remain in situ where possible or moved to a safe place outside of the works area with hibernacula used to shelter them.
 - ◆ If any injured reptiles are found during the works on site, these will be carefully placed into a clean bucket containing some vegetation and covered over in a quiet place away from the works and an ecologist or local wildlife hospital must be contacted immediately.
- 5.8.6 If any non-protected amphibian species are found during the works, then these will be moved to safety by the supervising ecologist.

5.9 OTHER PROTECTED SPECIES

- 5.9.1 Hedgehogs are protected in England under Schedule 6 of the Wildlife and Countryside Act (1981) and are also listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Wales under the Environment (Wales) Act 2016. This species has not been confirmed but is likely present within the wider urban area.
- 5.9.2 The Wild Mammals Protection Act (1996) makes it an offence to crush or asphyxiate any wild mammal. This may apply during site clearance works, particularly where burrowing mammals such as rabbit and fox are present, as such animals could be crushed or asphyxiated in their burrows by heavy machinery. No features pertaining to common mammals has been identified within the likely access routes or the structure itself.
- 5.9.3 Vegetation clearance will be undertaken as described in 5.8.5 above and this process will be used to prevent injury / mortality to hedgehog and other small mammals.

5.10 INVASIVE SPECIES

5.9.1 Schedule 9 invasive species were found within the site boundary as Japanese knotweed was identified in several sections within the works area, however LERC records have also shown Japanese knotweed, Himalayan balsam and cherry laurel and montbretia inside a 2km radius. Invasive species are found throughout the valley and River Rhondda corridor. Additional invasive species within 2km of the site are shown in Figure 15.

5.10.1 An INNS control plan was developed for the scheme by EcoVigour in 2022, with recommendations for the control of INNS at the site. This should be updated as a result of this survey and following discussions regarding the current scope of the works.

5.10.2 Treatment will include:

- ◆ Pulling / cutting of Himalayan balsam prior to it flowering in late June / early July. If Himalayan balsam has started to flower, it should be bagged and removed to a site permitted to receive it. This will prevent plants within the site setting seed and will reduce the growth of Himalayan balsam during the 2024 growth season.
- ◆ Herbicide treatment of Japanese knotweed adjacent to the site boundary to prevent growth onto the site;
- ◆ Excavation of Japanese knotweed within the works footprint and disposal to a waste management facility, permitted to accept it. Installation of a vertical root barrier along the site boundary, to prevent Japanese knotweed growing back onto site.
- ◆ Within areas affected by Himalayan balsam, if excavation is required, the top 60mm of soil should be excavated and removed from site as 'soil containing incidental Himalayan balsam (Schedule 9 Invasive Species) seeds'. This should not affect the landfill acceptance criteria as it only requires shallow burial but will require specific biosecurity measures on arrival at the tip. If this material is reused within the project, it will require ongoing treatment for Himalayan balsam.
- ◆ Ongoing treatment for Japanese knotweed and Himalayan balsam will be required, as the surrounding area is contaminated, which will result in re-contamination of the site, if treatment is not undertaken.

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