Harbourside Strategic Employment Site (Platform Preparation) Ecological Assessment November 2019

by

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CONTENTS

DECLARATION 3

EXECUTIVE SUMMARY 4

1 INTRODUCTION 5

1.1 SITE LOCATION 5

1.2 DESCRIPTION OF DEVELOPMENT 6

1.3 SCOPE OF SURVEY 7

2 DESK STUDY 8

2.1 DESIGNATED SITES 8

2.1.1 STATUTORY SITES 8

2.1.2 NON-STATUTORY SITES 8

2.2 SPECIES RECORDS 9

2.2.1 LOCAL RECORDS CENTRE DATA SEARCH (UPDATED SEARCH) 9

2.2.2 OTHER RECORDS 10

3 BASELINE SURVEY RESULTS 12

3.1 PHASE 1 HABITAT SURVEY 12

3.1.1 SURVEY METHOD 12

3.1.2 LIMITATIONS 12

3.1.3 SURVEY RESULTS 12

3.2 PROTECTED SPECIES 14

3.2.1 MAMMALS 14

3.2.2 AMPHIBIANS 18

3.2.3 REPTILES 19

3.2.4 BIRDS 22

3.2.5 INVERTEBRATES 23

4 IMPACT ASSESSEMENT 25

4.1 IMPACTS ON DESIGNATED SITES 25

4.1.1 STATUTORY SITES 25

4.1.2 NON-STATUTORY SITES 25
4.2 IMPACTS ON HABITATS 26
4.3 IMPACTS ON SPECIES 27
4.3.1 MAMMALS 27
4.3.2 AMPHIBIANS 27
4.3.3 REPTILES 28
4.3.4 BIRDS 28
4.3.5 INVERTEBRATES 29
4.4 SUMMARY OF IMPACT ASSESSMENT 30
5 RECOMMENDATIONS FOR MITIGATION 32
5.1 SITE CLEARANCE METHOD 32
5.2 HABITAT MITIGATION PLAN 36
5.3 WORK TIMING RESTRICTIONS 37
5.4 OTHER REQUIREMENTS 37
6 MANAGEMENT AND MONITORING 38
7 REFERENCES 39
8 APPENDICES 40
APPENDIX A – BOTANICAL SPECIES RECORDS (DR. CHARLES HIPKIN) 40
APPENDIX B –PHASE 1 HABITAT SURVEY SPECIES LIST 42
APPENDIX C –PHASE 1 HABITAT SURVEY PLAN & TARGET NOTES 46
APPENDIX D – WILDFLOWER SEED MIX 48
APPENDIX E – GENERAL BIODIVERSITY TIMING CONSTRAINTS 50
SURVEY TIMINGS 50
MITIGATION TIMINGS 51

DECLARATION

The information, advice and opinions which we have prepared and provided is true, and has been prepared and provided in accordance with the CIEEM's Code of Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Signed

Miss Wendy J Larcombe – Habitat Surveyor, NPTCBC

The report has been revised and edited November 2019 by Megan Price – Graduate Ecologist to ensure it the information contained within is up to date and correct based on the lasted design information.

The following report is considered a reasonable and true representation of the ecological situation on the site assessed. The report is however just a snapshot assessment therefore the authors are unable to guarantee that all biodiversity interest has been identified. In addition, if works are not undertaken as programmed re-assessment will be required. The survey information is considered applicable for one year from the date of the survey. The mitigation proposals are only applicable to works undertaken prior to the reptile hibernation season, if site clearance works are to be undertaken during winter months the mitigation proposals will need to be re-visited.

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EXECUTIVE SUMMARY

The Countryside and Wildlife Team of Neath Port Talbot CBC have undertaken an ecological survey and assessment of an area of land near to Port Talbot docks, which is to be prepared for future development. The site is located between the old Court building and the new Justice Centre, off Cramic Way.

The site is over 5km from the nearest statutory designated sites at Margam Moors SSSI, Eglwys Nunydd Reservoir SSSI and Crymlyn Burrows SSSI. A number of water based sites that meet the criteria as Sites of Importance for Nature Conservation are however within 300m. A large number of records for protected and priority species within 1km of the site were reported as part of the desk study, some of which were considered to have potential to be present on site. The extended phase 1 habitat survey undertaken confirmed the presence of Local Biodiversity Action Plan habitat (Previously Developed Land of Biodiversity Interest) which also meets the criteria as a Site of Importance for Nature Conservation (SINC) and as a habitat listed under (S7 Environment Act 2016 formerly S42 NERC). The survey also noted Small Blue, a protected butterfly species, which is a primary indicator for SINC status. The site is also the subject of a Reptile survey (where a small population of Slow Worm was recorded) and has been assessed in relation to suitability for other species, and particularly noted potential for invertebrates such as Shrill Carder Bee.

The loss of the SINC/Local Biodiversity Action Plan habitat on site and habitat supporting protected and priority species was considered to be the main likely impact from the scheme. Additionally, the potential to kill or injure reptile species afforded protection under legislation.

A number of mitigation measures, including habitat replacement, seeding and planting of plug plants along with habitat manipulation methods for reptiles are proposed to offset the reported likely impacts. The proposed layout of the scheme also has the potential to increase the ecological value of the area through removing non-native invasive species, planting/seeding species into areas which are currently un-vegetated (road/hard standing) to attract invertebrates and birds, plus providing reptile refugia/hibernaculum.

With the implementation of the mitigation and enhancement proposals it is considered that the scheme will bring an improvement in the quality and ecological connectivity in the long-term. In the short-term the scheme will result in a loss of SINC habitat, however with the mitigation measures proposed it will result in an overall gain of SINC habitat in the long-term.

1 INTRODUCTION

1.1 SITE LOCATION

The Countryside and Wildlife Team of Neath Port Talbot CBC were asked to undertake an ecological survey and assessment of an area of land near to Port Talbot docks, which is to be used to accommodate new business platforms. The location of the site is shown on Figure 1.

The site is located south of the Port Talbot Parkway station, between the rear of the Old Magistrates Court, and the new Court building.

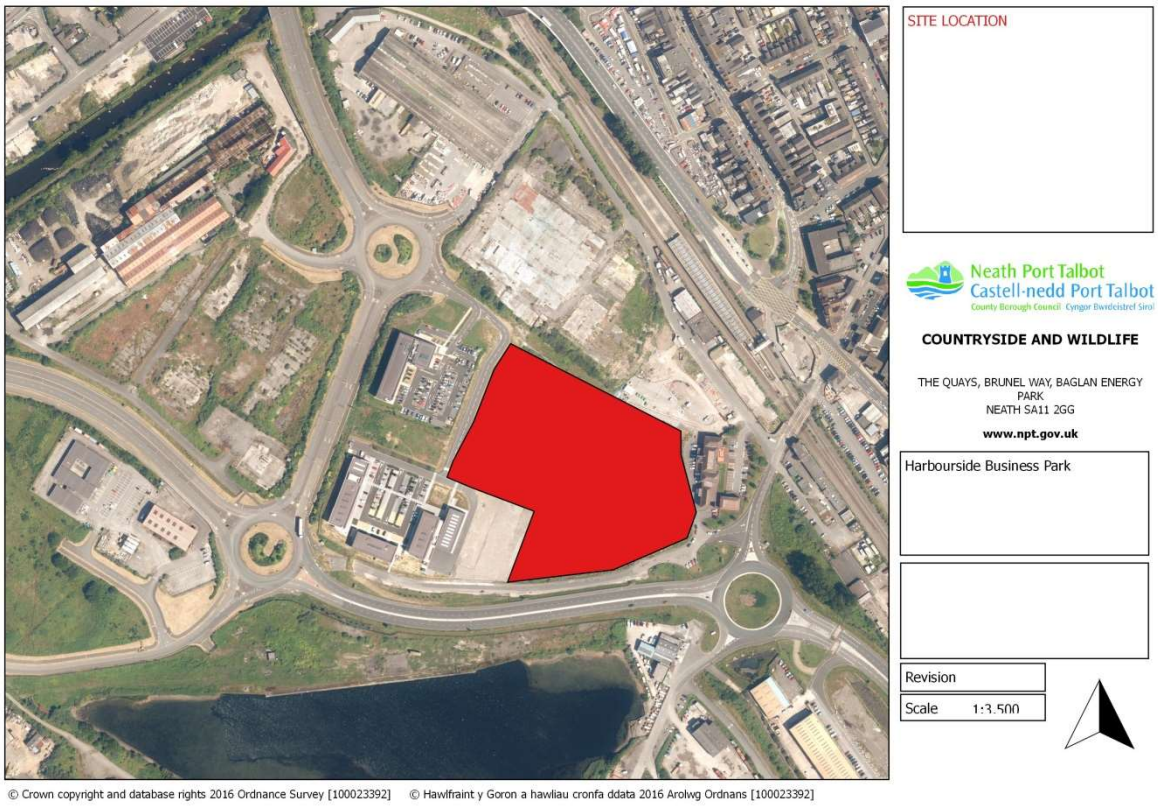


Figure 1: Site Location

1.2 DESCRIPTION OF DEVELOPMENT

The development will involve:

- Construction of new road infrastructure and the upgrading of substandard roads to serve new business development sites
- Remediation of contamination and other site constraints to an area of 3.0 ha to create a site that is ready for development
- Flood mitigation works including the installation of additional drainage measures

Initial preparation will include clearance of vegetation, waste materials, existing hard-standing and fences.

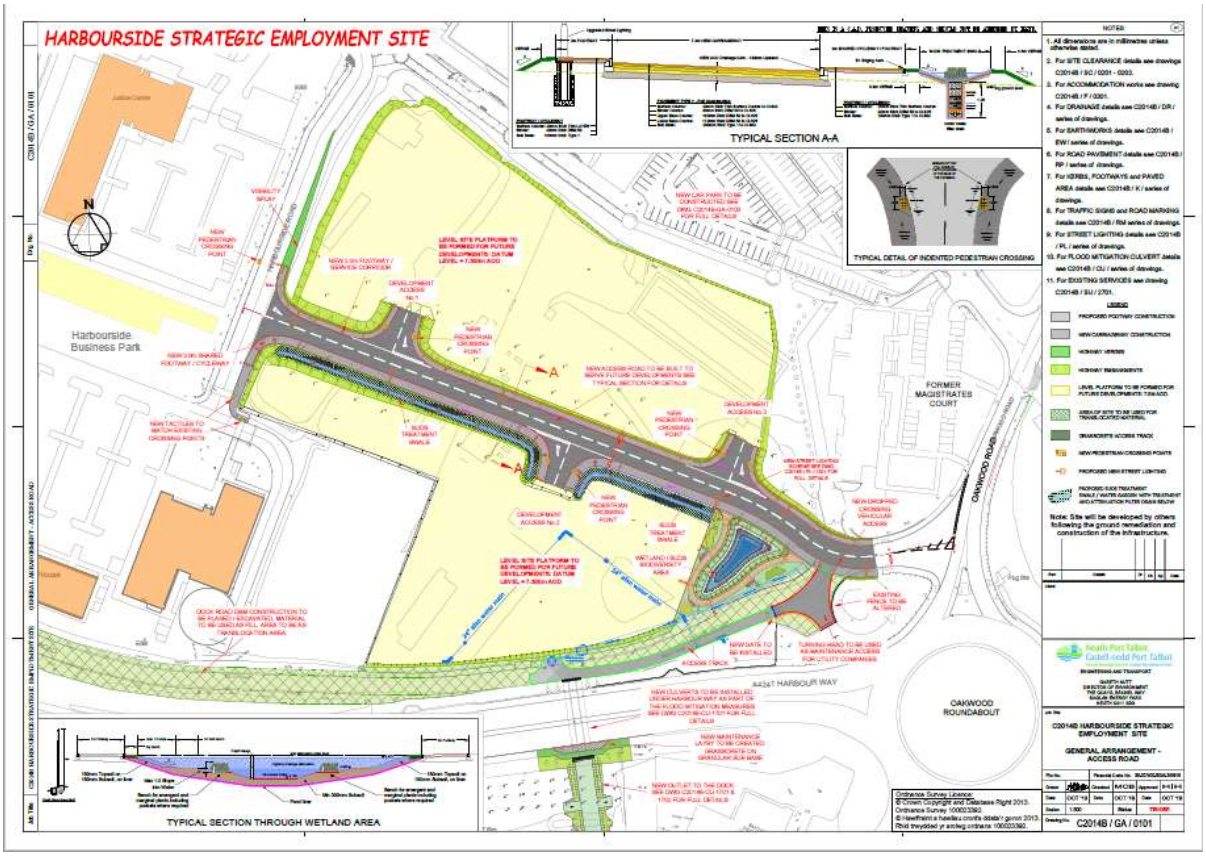


FIGURE 2: Indicative Development Scheme Layout

1.3 SCOPE OF SURVEY

The scope of the survey was to undertake an ecological survey and identify any ecological constraints to the developments. This was to include:

- The identification and assessment of habitat types present within the site
- To identify and assess likely presence of fauna within the site, especially in relation to protected species
- To undertake a reptile survey to assess population size and propose suitable mitigation
- To assess the likely impacts of the development upon the identified habitats and species
- To propose measures to avoid and minimise any adverse impacts upon habitat and species
- To identify any opportunities for enhancement of the ecological value of the site.

2 DESK STUDY

2.1 DESIGNATED SITES

2.1.1 STATUTORY SITES

The site does not lie within, nor is adjacent to any statutory protected sites, such as Special Areas of Conservation (SAC), Ramsar Site, Sites of Special Scientific Interest (SSSI), National Nature Reserve (NNR) or Local Nature Reserve (LNR). The closest statutory sites are Egwlys Nunydd Reservoir SSSI and Margam Moors SSSI, which are approximately 5km to the south east of the site, and Crymlyn Burrows SSSI 5.2km to the North West.

2.1.2 NON-STATUTORY SITES

Neath Port Talbot CBC have now adopted the Sites of Importance for Nature Conservation (SINC) Guidelines as part of the newly adopted Local Development Plan, and the process of identifying sites that meet the criteria is an ongoing process. This site meets the SINC criteria (see Results section) and there are a number of sites that meet the criteria which are located within 500m of the site:

- Port Talbot Docks (270m to the south of the site)
- River Afan (350m to the west of the site)

Both of these sites meet the criteria in respect of watercourses/waterbodies. There are other SINCS which are designated for various habitats including woodland edge, sand dune and estuary, but they are in excess of 1.5km away and are not considered to be in the vicinity of the area of impact of the development.

The closest Wildlife Trust Nature Reserve is situated in Baglan over 2km away from the site.

All designated sites are mapped on Figure 3.

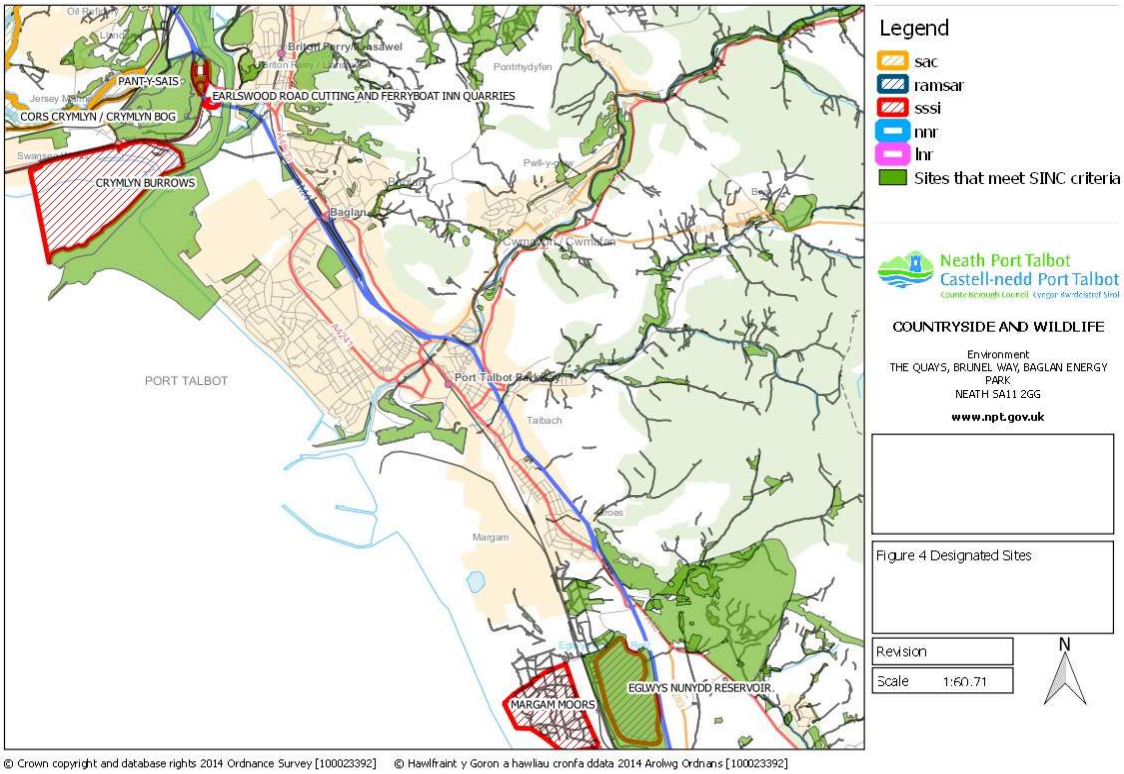


FIGURE3. Designated sites

2.2 SPECIES RECORDS

2.2.1 LOCAL RECORDS CENTRE DATA SEARCH (UPDATED SEARCH)

A biodiversity records search was requested from the South East Wales Biodiversity Records Centre. The full report is included as a confidential annex to this report. Of the 306 records of priority or protected species within approximately 1km of the site it was considered that the habitats on the site had potential to support or have some value to the following species:

Mammals

- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Noctule (*Nyctalus noctula*)

Reptiles

- Grass Snake *(Natrix natrix)*
- Slow Worm *(Anguis fragilis)*

Birds

- Common Linnet *(Carduelis cannabina subsp. autochthona/cannabina)*
- House Sparrow *(Passer domesticus)*
- Dunnock *(Prunella modularis subsp. occidentalis)*
- Common Starling *(Sturnus vulgaris subsp. vulgaris)*
- Song Thrush (*Turdus philomelos subsp.clarkei*)
- Barn Owl (*Tyto alba*)
- Kestrel *(Falco tinnunculus)*
- Redwing (*Turdus iliacus*)
- Fieldfare (*Turdus pilaris*)

Invertebrates

- Grayling (*Hipparchia semele*)
- Small Blue Butterfly *(Cupido minimus)*

- Brown-banded Carder Bee *(Bombus humilis)*
- Shrill Carder Bee (*Bombus sylvarum*)
- Dingy Mocha (last record in area 1917; so highly unlikely still present in vicinity) *(Cyclophora pendularia)*
- White-Line Dart (*Euxoa tritici*)
- Sword-grass (last record in area 1917; so highly unlikely still present in vicinity) (*Xylena exsoleta*)

2.2.2 OTHER RECORDS

A number of surveys have been undertaken on behalf of NPTCBC for various purposes including: the Habour Way road scheme, surveys to inform the Local Development Plan. A number of key species have been noted to occur around the Port Talbot Docks area that may similarly be present on the site:

- Shrill Carder Bee (recorded 470m to the west of the site)
- Small Blue Butterfly (recorded approximately 600m to the south east)
- Significant numbers of reptiles (recorded within Tata land 2km to south east of site)

- Anecdotal/historical records of Brown Hare in the Baglan Energy Park and Baglan Burrows.
- A list of botanical species recorded on the site and surrounding area by Dr. Charles Hipkin and Hilary Hipkin in 2014 is also included in Appendix A.

3 BASELINE SURVEY RESULTS

3.1 PHASE 1 HABITAT SURVEY

3.1.1 SURVEY METHOD

The site was surveyed on 25th May 2017 by Wendy Larcombe (Habitat Surveyor); and further notes taken during subsequent Reptile checks. All visits were undertaken in dry weather conditions.

An extended phase 1 habitat survey was undertaken for the site. The habitat types present on the site were assessed using the habitat classification system as set out in the Joint Nature Conservation Committee Handbook for Phase 1 habitat survey – a technique for environment audit (JNCC, 1993). Habitats were mapped and classified based largely on vegetation composition, with target notes used to demarcate features of interest. In addition to the habitats, conspicuous fauna particularly protected species, were also recorded.

The results of the survey, including habitat descriptions are presented below and mapped Appendix B with target notes also presented. A species list was compiled and presented in full in Appendix C.

3.1.2 LIMITATIONS

The surveys were undertaken at suitable times of year to assess habitat types, with most flora being conspicuous.

The survey is a snapshot of what was observable on the survey visits, further species (particularly mobile faunal species) may be missed if not present during the survey visits.

However, we believe that the survey provides a good appraisal of the ecological value of the site.

3.1.3 SURVEY RESULTS

The results of the phase 1 habitat survey are presented on a plan at Appendix B. The below sets out descriptions of each habitat type represented on the site. A full species list is presented in Appendix C.

Dense Continuous and Scattered Scrub

The majority of the continuous scrub forms boundaries both around the margins and within the site. This scrub is species poor and largely dominated by non-native landscape planting,

with patches of Bramble (*Rubus fruticosus agg*.), and invasive species such as Buddleia (*Buddleia davidii*), Japanese Knotweed (*Fallopia japonica*), *Cotoneaster sp.* and Willow species (*Salix spp*.) Scattered scrub throughout the site mainly consists of Buddleia and Willow. See plates 1 &2.

Plate 1: Dense continuous Scrub boundaries ***Plate 2: Scattered Scrub***

Previously Developed Land Mosaic (Ephemeral/Short Perennial, Bare Ground, Scattered Scrub)

The remainder of the site is dominated by a mosaic of ephermeral/short perennial grassland with coastal grassland elements and bare substrate on previously developed land. See Plates 3 and 4. Key species recorded included: Restharrow *(Ononis repens)*, Kidney Vetch *(Anthyllis vulneraria)*, Bird's Foot Trefoil *(Lotus corniculatus)* and Red Bartsia *(Odontites vernus).*

Plates 3 and 4: Habitat Mosaic

3.2 PROTECTED SPECIES

3.2.1 MAMMALS

Bats

Most, if not all, British bat species are believed to be in decline, and all of the 17/18 species are protected by European and UK legislation: the Conservation of Habitats and Species Regulations 2010 as amended and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This affords complete legal protection to all bats and their roosts. The protection provided by these laws means that it is illegal to:

- Kill, injure or handle a bat
- Disturb bats when they are roosting
- Obstruct, damage or destroy the places where bats live (this applies even if the bats are not in residence)
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat
- Keep bats in captivity

A derogation licensing system is in place that may permit works that may impact bats if certain criteria are met. These licenses are issued by Natural Resources Wales.

Barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), Noctule (*Nyctalus noctula*), Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Brown long-eared (*Plecotus auritus*), Greater Horseshoe (*Rhinolophus*

ferrumequinum), and Lesser Horseshoe bats (*Rhinolophus hipposideros*) are all listed under S7 Environment Act 2016, as species of principal importance for conservation of biological diversity in Wales. All bat species are also included in the Local Biodiversity Action Plan for Neath Port Talbot.

The life-cycle of the different species of bat varies but generally they all require the following:

- Hibernation roost sites ; to enable bats to enter into a period of torpor over winter these sites need to have a stable winter temperatures (e.g. caves, mines, adits or crevices and hollows in mature trees),
- Maternity/Nursery roost sites; these sites are where females give birth and rear their offspring in spring/summer,
- General roost sites for individuals or small numbers of bats, particularly males, through spring-autumn,
- Foraging grounds; areas that support good numbers of insects.
- Some species may also require social-gathering sites at certain times of the year, such as during the autumn mating season (however this requirement is not well understood at present).

Summer roosts, including maternity and male roosts, are often found in roof spaces and mature trees.

<u>Survey/assessment</u>

The desk study suggests that Common Pipistrelle, Soprano Pipistrelle and Noctule may be present in the general area. Pipistrelles generally prefer to roost in buildings and it could be the case that they use some of the buildings towards the centre of Port Talbot, such as the old Magistrates Court. Whilst Noctule prefer to roost in trees, they are a large bat and therefore require roosting space within larger and mature trees.

There are no buildings on site that may support bats. All trees on site were visually assessed for features that may support bats. All trees on site were considered too young/small to provide any suitable features for bats to use. However, bats may forage on the site, but due to the open and exposed nature of the site any such use is considered likely to be limited.

Badger

Badgers (*Meles meles*) are social animals and live in family units, called 'clans'. The same pathways to feeding grounds are used by the family throughout their lives, even when obstacles such as fences, roads and buildings encroach on them. Badgers are omnivorous and eat a variety of foods, including earthworms (their main diet), small mammals, grubs,

fruits, bulbs and berries. They normally chose wooded areas to sett in and often forage in improved pastures for earthworms. Their territories can range from 10ha -300ha with an average of about 50ha. Setts consists of a network of tunnels and chambers. A number of types of sett are recognized: the main sett (continuously used, including for breeding); annexe setts (smaller setts close to the main sett that are used temporarily or less frequently to the main sett, including by individuals of the clan that have been excluded from the main sett); outlier and subsidiary setts (usually only one or two holes, used infrequently and can be anywhere within the territory). The Badger is protected under the Protection of Badgers Act 1992, which includes protection of the sett, and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended). Appendix III, Article 7 of the Bern Convention states that the British Badger population has high value in international conservation of the species. Some protection of Badgers is also given under the Hunting with Dogs Act 2004. Badgers are included in the Neath Port Talbot Biodiversity Action Plan.

The protection afforded badgers under law was based mainly on the need to protect them from badger baiting and deliberate harm. The following would constitute an offence under the Protection of Badgers Act 1992.

- to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so
- damaging or destroying a sett
- obstructing access to a sett
- disturbing a badger when occupying a sett
- plus, offences in relation to persecution.

Any development to be carried out within the vicinity of a sett may require a license from Welsh Government. Generally use of heavy machinery within 30m of an active sett would need a license.

<u>Survey/assessment</u>

Signs of badger use were checked for during the habitat survey site visit, these include: pathways, badger hair or footprints, setts, latrines and feeding signs, such as digging and disturbed ground. No signs of badgers were noted on the site. The site provides little suitable habitat for either setts or foraging. Areas of bare ground and a sandy/gravelly substrate, such as that on the site, would not be likely to support sett digging or provide a significant earthworm foraging resource. The site is also surrounded by development or previously developed land that holds little suitable connectivity habitat for this species to use.

Brown Hare

The Brown Hare (*Lepus europaeus*) is occasionally seen, but is an inconspicuous species in the Glamorgan countryside. Nationally the Brown Hare is thought to have undergone a substantial decline in numbers since the early 1960s. The Brown Hare is listed S7 of the Environment Act (2016), as a species of principal importance for conservation of biological diversity in Wales; and is included in the Local Biodiversity Action Plan for Neath Port Talbot.

Brown Hare have been recorded occasionally in coastal areas of Neath Port Talbot; utilising sand dune and large areas of brownfield land; otherwise it is more commonly found in areas of open upland habitat, especially on common land.

Survey/assessment

No specific survey was undertaken for Brown Hare; however any observed during the habitat survey would have been noted. None were recorded. The habitat and the location of the site, situated in an area surrounded by development; was considered to hold limited suitability for this species. Brown Hare prefer large areas of open habitat. The surrounding developments, roads and buildings were considered to significantly reduce the suitability of the site for this species.

Other Species

Otter and Dormouse are both European Protected Species afforded protection under the Conservation of Habitats and Species Act 2010 and the Wildlife and Countryside Act 1981 (as amended). Both are listed under S7 of the Environment Act (2016), as species of principal importance for conservation of biological diversity in Wales; and are also included in the Local Biodiversity Action Plan for Neath Port Talbot.

Water Vole are afforded protection under the Wildlife and Countryside Act 1981 (as amended); is listed under S7 of the Environment Act (2016), as species of principal importance for conservation of biological diversity in Wales; and is also included in the Local Biodiversity Action Plan for Neath Port Talbot.

The site is not considered to support suitable habitat for Otter, Water Vole or Dormouse. The nearest watercourse is the River Afan, which is over 300m to the North West of the site, in addition Port Talbot Docks are 300m to the south of the site. Both may be utilized by Otter, but the distance from the site and the lack of suitable habitat for foraging or shelter suggest that the site is unlikely to hold any value for this species. Similarly, for Water Vole no suitable habitat for this species is present on site to indicate that presence would be likely.

No significant areas of woodland are present on the site or surrounding area to provide any habitat for Dormice. The scrub on site is relatively isolated and limited in extent, with no connectivity to any surrounding suitable habitat.

3.2.2 AMPHIBIANS

Great Crested Newts

Adult Great Crested Newts (*Triturus cristatus*) spend most of the year on dry land, returning to ponds only to breed, generally between March/April and July. Britain supports a significant proportion of the European population and the species can be found throughout much of England and Wales, having a more restricted distribution in Scotland and apparently being absent from south-west England and western Wales. There are only 2 confirmed sites in Neath Port Talbot. The Great Crested Newt has a complex set of habitat requirements; including waterbodies for breeding, suitable foraging habitat including rough grassland, hedges and pasture; and suitable hibernation sites, such as under leaf litter and undergrowth or deadwood.

The Great Crested Newt is a European protected species and is afforded protection under the Conservation of Habitats and Species Act 2010 and the Wildlife and Countryside Act 1981 (as amended). The protection under the listed legislation means that it is illegal to:

- Kill, injure or capture a great crested newt
- Disturb a great crested newt in its place of shelter or breeding
- Obstruct, damage or destroy the places where great crested newts live
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead Great Crested Newt or any part of a Great Crested Newt.

Great Crested Newt is also listed under S7 of the Environment Act (2016), as species of principal importance for conservation of biological diversity in Wales; and are also included in the Local Biodiversity Action Plan for Neath Port Talbot.

<u>Survey/assessment</u>

There are no suitable waterbodies on or close to the site that would support Great Crested Newts. The habitat on site would provide suitable hibernacula but due to limited connectivity of surrounding good quality habitat, the extent of bare ground and open nature of the habitat the site is considered sub-optimal for this species. The limited distribution of Great Crested Newts in Neath Port Talbot also suggest that the presence of this species on site is unlikely, the nearest record being well over 5km from the site.

Other Amphibians

The Common Toad *(Bufo bufo)* is widespread and native to Britain. The Toad's diet consists of insects, larvae, spiders, worms and slugs. Toads tend to breed in large water bodies, including lakes and slow moving rivers (especially behind weirs) where water quality is good. Although vegetation is necessary for spawning, heavily shaded sites tend to be avoided. Common Toads tend to occur in areas of mixed farmland, woodland, flowing and still water, scrub and worked out mineral extraction sites. On land, Toads bury themselves within soil or leaf litter or hide beneath dead wood and vegetation. Movements towards breeding ponds (usually their birth ponds) occur during spring, after dusk on mild, damp nights, when the air temperature is above 4°C. Road traffic mortality is a common threat at this time. Toads are also at risk from pond loss and destruction of breeding sites, particularly as they are 'site faithful'. Toads receive some protection under Appendix III of the Bern Convention and under Schedule 5 of the Wildlife and Countryside Act 1981.

Common Toad is also listed under S7 of the Environment Act (2016), as species of principal importance for conservation of biological diversity in Wales; and is also included in the Local Biodiversity Action Plan for Neath Port Talbot.

The other species of amphibian that occur in Neath Port Talbot; Common Frogs *(Rana temporaria)* , Palmate Newts *(Lissotriton helveticus)* and Smooth Newts *(Lissotriton vulgaris)* are afforded protection from Sale under the Wildlife and Countryside Act 1981 (as amended). All of these species have similar habitat requirements, in relation to suitable waterbodies for breeding and terrestrial habitat for foraging and hibernation.

<u>Survey/assessment</u>

There are no suitable waterbodies on or close to the site that would support the above amphibian species. The habitat on site would provide suitable hibernacula but due to limited connectivity of surrounding good quality habitat, the extent of bare ground and open nature of the habitat the site is considered sub-optimal for these species. It is therefore considered that if present they will be most likely be in low numbers.

3.2.3 REPTILES

Reptiles are widespread within Neath Port Talbot, particularly in the Port Talbot area. Reptiles recorded in the County Borough include the Adder *(Vipera berus*), Grass Snake *(Natrix natrix),* Slow Worm *(Anguis fragilis*) and Common or Viviparous Lizard *(Lacerta vivipara)*. Heathlands, moorlands, acidic grasslands and some areas of brownfield land provide suitable open habitats for these reptiles. Reptiles are cold-blooded and maintain their body temperature externally by sunbathing and moving under cover. Reptiles give birth to their young between June and September and most species' young hatch from eggs.

However, the Common Lizard gives birth to live young. Grass Snakes, usually associated with water, feed mainly on amphibians and fish, whilst Adder feed mainly on rodents and Lizards and are particularly associated with heathland, grassland and woodland edge habitats found on some of the slopes of the upland areas in Neath Port Talbot. Slow Worm are legless Lizards and, like Lizards, can drop their tail to escape from a predator. The Slow Worm is probably the most commonly encountered British reptile. They prefer to hide under stones, logs or pieces of discarded rubbish exposed to the sun. Slow Worms are also keen on compost heaps where they find warmth and plenty of food. They feed on slow moving prey, particularly small slugs. They are often found in gardens and any areas of land that provides enough cover and prey; often in grasslands with scrub. The widespread Common Lizard feeds mainly on spiders and insects; it can be found in more open habitats to the Slow Worm, including brownfield land and heathlands. All British reptiles are protected under of the Wildlife and Countryside Act 1981. The protection under this legislation means that it is illegal to:

- Kill or injure a reptile
- Trade/sell a reptile.

All reptile species are listed under S7 of the Environment Act (2016), Act 2006, as species of principal importance for conservation of biological diversity in Wales; and are also included in the Local Biodiversity Action Plan for Neath Port Talbot.

Survey/assessment

The desk study noted records for reptiles within 1km of the site. Specifically Grass Snake recorded in the area of Port Talbot Docks. It is also known that a large population of Slow Worm was previously recorded alongside the railway line in Tata. The site was initially assessed in relation to whether suitable features and habitat were present that would indicate that reptiles may be present. The brownfield nature of the site was considered to be suitable to support reptiles as it provides a mosaic of areas of scrub, grassland, and bare ground with rubble, rubbish and embankments that provide refugia and basking potential as well as a food source for species such as Common Lizard and Slow Worm. (See Plate 5). With known populations using similar habitats within Port Talbot the presence of reptiles is considered likely; although the connectivity of the site is not necessarily considered ideal. Subsequently, a reptile survey using artificial refugia was undertaken on the site.

A total of 70 corrugated metal sheets were sited in the most suitable areas within the site (see Plates 5 and 6), and checked 7 times when weather conditions were favorable, only 3 Slow worms were observed during the survey.

Plate 5: Potential Reptile Habitat provided by varied height of vegetation

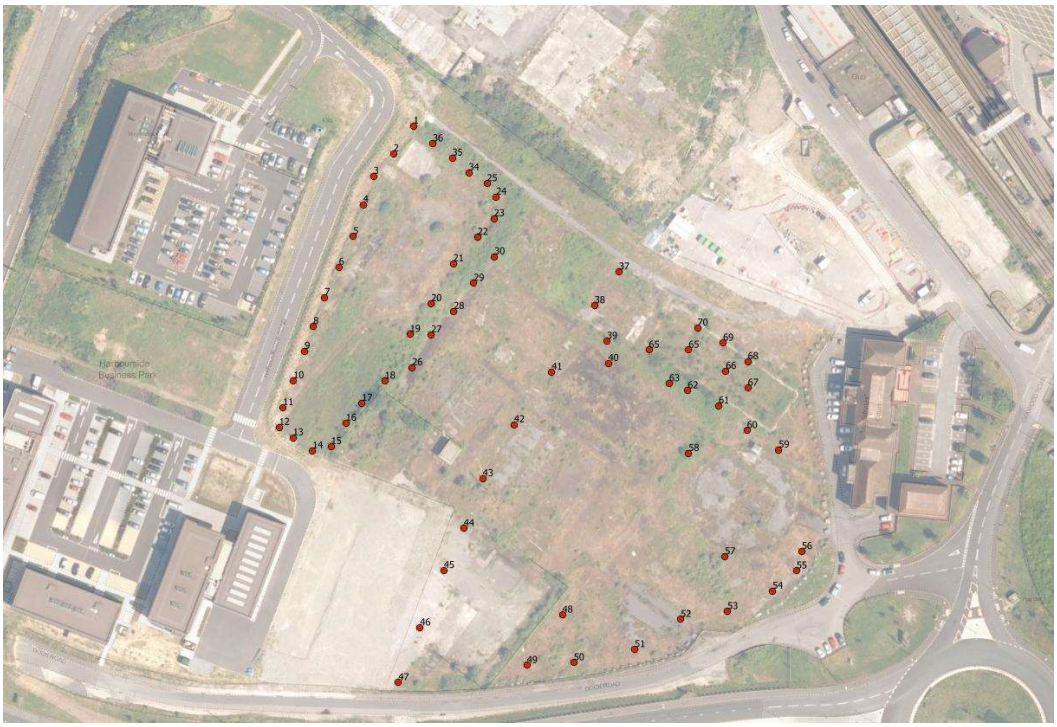


Plate 6 Approximate locations of artificial refugia sheets

3.2.4 BIRDS

All wild birds are protected under law when they are nesting, under the Wildlife and Countryside Act 1981 (as amended). In addition Schedule 1 species are protected at all times. It is an offence under the Wildlife and Countryside Act to:

- Kill, injure or take any wild bird.
- Take, damage or destroy a nest while it is in use or being built.
- Take or destroy eggs.
- Possess or control any wild bird (dead or alive) or any part of a wild bird which has been taken in contravention of the Act or the Protection of Birds Act 1954.
- Possess or control any egg or part of an egg which has been taken in contravention to the Act.
- Possess or control any live bird of prey of any species in the world (with the exception of vultures and condors) unless it is registered and ringed.
- Disturb any wild bird listed on Schedule 1 of the Act while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.
- In addition there are also offences relating to selling, trading, exhibiting, keeping in captivity and registering for possessing/controlling certain species.

The 2012 amendment to the Conservation of Habitats and Species Act 2010 included a duty for appropriate authorities, nature conservation bodies etc. to take appropriate steps in the exercise of their functions to secure: *" the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of Article 2 of the new Wild Birds Directive."*

In addition, a number of species are listed under S7 of the Environment Act (2016), as species of principal importance for conservation of biological diversity in Wales; included in the Local Biodiversity Action Plan for Neath Port Talbot, and listed as a species of conservation concern by the RSPB.

<u>Survey/assessment</u>

No specific bird survey was undertaken on the site. Any birds observed during the habitat were noted in Target notes, specifically recording whether breeding activity or not. The habitats were however assessed as to their suitability to support bird species and the records received as part of the desk study were used to suggest the likely bird use of the site, as follows:

A number of bird species are fully protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); however, the habitats on the site are considered unlikely to support any of the species listed, either in relation to breeding or foraging. It is noted that Barn Owl was included in the desk study results, however the extent of the site is considered unlikely to be able to support this species, the availability of prey items for this specie is likely to be limited by the open nature and bare ground areas of the site.

However, the nature of the site would suggest that common bird species and potentially certain species listed as S7/LBAP/RSPB conservation concern could utilize the site for breeding and foraging; these include:

- Song Thrush (*Turdus philomelos subsp.clarkei*)
- Dunnock *(Prunella modularis subsp. occidentalis)*
- Northern Lapwing *(Vanellus vanellus)*
- House Sparrow *(Passer domesticus)* – foraging only
- Common Bullfinch *(Pyrrhula pyrrhula subsp. pileata)* – foraging only
- Common Starling *(Sturnus vulgaris subsp. vulgaris)* –foraging only
- Common Linnet *(Carduelis cannabina subsp. autochthona/cannabina)* – foraging only
- Kestrel *(Falco tinnunculus)* – foraging only
- Redwing (*Turdus iliacus*) – foraging, winter visitor only
- Fieldfare (*Turdus pilaris*) – foraging, winter visitor only

3.2.5 INVERTEBRATES

Certain invertebrate species are afforded protection by legislation, including the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Act 2010; although species listed in the latter are not known to occur and neither are they likely to occur in Neath Port Talbot, being limited to south-east England. In addition, a number of species are listed under S7 of the Environment Act (2016), Act 2006, as species of principal importance for conservation of biological diversity in Wales and included in the Local Biodiversity Action Plan for Neath Port Talbot.

<u>Survey/assessment</u>

The desk study suggests that the area supports a number of important invertebrate species, including: Grayling, Small Blue Butterfly, Brown-banded Carder Bee, Shrill Carder Bee and White-Line Dart, among others. A comprehensive survey of invertebrates was not undertaken on the site; however any species of particular status were noted during the habitat survey. Of specific interest is the Small Blue Butterfly *(Cupido minimus),* which is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (protected

from sale); and listed under S7 of the Environment Act (2016). (See Plate 7). The general habitat diversity supported various Bumble bees, other Butterflies such as Common Blue *(Polyommatus icarus)* and Meadow Brown (*Maniola jurtina*), day-flying moths and Dragonflies such as Common Darter *(Sympetrum striolatum)* were also observed. Numerous ant hills were also noted, which are key features in supporting the life-cycle of the Small Blue Butterfly. Overall the site is considered likely to support a diverse invertebrate fauna, including S7/LBAP and protected species.

Plate 7: Small Blue Butterfly and Kidney Vetch (principal Food Plant of Small Blue)

4 IMPACT ASSESSEMENT

4.1 IMPACTS ON DESIGNATED SITES

4.1.1 STATUTORY SITES

No statutory sites lie within 5km of the site. The effects of the proposed works are fairly restricted, as no buildings are to be constructed at this time, and only comprise site investigation, ground preparation and infrastructure construction. No air pollutants, other than minor localized dust emission during construction, is likely to result from the proposals. Therefore, it is considered that there is no likely route of impact upon any of the designated sites listed in section 2.1.1.

Impact Assessment: No Impact

4.1.2 NON-STATUTORY SITES

The subject site itself meets the SINC criteria (Site of Importance for Nature Conservation) and is designated for the habitat known as Open Mosaic on Previously Developed Land (H14:3 OMPDLa). It also meets the criteria based on species, due to the population of Small Blue butterfly recorded there. **There will be a short-term impact on the SINC habitat (as per Habitat section below).** Other sites that meet SINC criteria identified in section 2.1.2 are watercourses/waterbodies. These could be impacted if any run-off during construction activities was allowed to enter them. The extent of the works is small and the distance from these non-statutory sites suggest that it is unlikely that any significant quantity of silted water would reach these sites. However, appropriate standard pollution prevention measures will be employed to ensure this impact is prevented.

Impact Assessment: Small short-term loss of a site that meets SINC criteria

Mitigation: As 4.2 below

Residual Impacts: As 4.2 below

Impact Assessment: Minor short-term pollution of a site that meets SINC criteria

Mitigation: Standard Pollution Prevention Measures during construction

Residual Impacts: None

The Wildlife Trust Nature Reserve in Baglan predominantly aims to protect a local Badger population. As stated in section 3.2.1 badgers are considered unlikely to use the site, plus the distance from the reserve and the numerous barriers imposed by the densely populated conurbation of Port Talbot suggest that the Baglan badger population would be isolated from the site.

Impact Assessment: No Impacts

4.2 IMPACTS ON HABITATS

The scrub has limited botanical diversity and therefore minimal ecological value. It is however, likely that the scrub will support various species, such as nesting birds and reptiles. The mosaic of habitat on previously developed land is reasonably species-rich, supporting elements of coastal grassland. This area is likely to support a diverse invertebrate composition along with reptiles and birds. This habitat would be classed as *'Previously Developed Land of Biodiversity Interest'* under the Neath Port Talbot Biodiversity Action Plan and as stated in 4.1.2, meets the criteria as a Site of Importance for Nature Conservation and as a S7 habitat. Without mitigation this habitat would be lost to the scheme, at least for the short-term.

The current indicative layout of the buildings and parking/infrastructure appears to allow for a considerable amount of landscaped areas which could accommodate replacement habitat (using suitable seed mix), but also additional habitat types in the form of native shrub and tree planting. However, details of such planting may or may not come to fruition depending on future take up of the site. Therefore, the loss of SINC habitat must be mitigated for at this stage, and not be reliant on landscaping schemes of future planning applications.

Presumably, because of the necessity of raising the whole platform, it will not be possible to retain in situ any of the LBAP/SINC habitat within the design of the landscaping elements of the project. Asbestos has been found on site which makes translocation of any of the onsite habitat impossible due to contaminated land issues. Because of this none of the existing habitat is going to be retained. Replacement habitat will be provided to compensate for this loss through seeding (appropriate seed mixes) and the planting of plug plants within biodiversity mitigation areas shown on figure 7.

The biodiversity mitigation areas include on-site and off-site locations. The on-site landscaping scheme for the platform preparation scheme i.e. the verges of the newly constructed highways and embankments of the SUDS drainage channel will aim to re-establish similar habitat either through use of seeding an appropriate seed mix.

Impact Assessment: Short-term loss of LBAP/cSINC/S7 habitat (Circa. 16,200m^2).

Mitigation: Appropriate seeding and habitat enhancement at various biodiversity mitigation areas (Circa. 18,500m^2).

Residual Impact: Short-term loss of habitat (16,200m^2) but with an increase of 2000m^2 in the long-term with habitat likely to re-establish within 5 years.

4.3 IMPACTS ON SPECIES

4.3.1 MAMMALS

Of the mammals investigated only bats were considered likely to use the site. No roosting potential was noted, however it is considered possible that bats may use the site for foraging. Of the species noted in the desk study previously recorded in the vicinity none were considered particularly sensitive to light. The bats are likely to use the site principally for foraging, and although there is a length of scrub habitat which could be used as a flight line, this is quite short (c112m) and does not connect to any other significant area suitable for foraging. Therefore, it is considered that any works on the site are only likely to impact upon them by reducing their food source. It is also noted that the proposals for habitat replacement would ensure that any reduction in prey items as a result on minor habitat loss would be short-lived.

Impact Assessment: Minor short-term reduction in available foraging

Mitigation: As per habitat mitigation above

Residual Impact: Short-term negligible reduction in foraging suitability

4.3.2 AMPHIBIANS

No Great Crested Newts were considered likely to be present in the vicinity and the site was assessed as providing limited potential for other more common species of amphibians. If present they were considered likely to be in low numbers. Risks to these species would be from killing and injuring during construction; as they can be slow moving and often remain partially or entirely buried in the ground or beneath undergrowth. In addition, the removal of habitat would also have potential to reduce available foraging and refugia. Due to the low numbers anticipated and re-establishment/translocation of habitat, it is considered that the latter impact would be addressed. An Ecological Clerk of Works will be on site to supervise the works so will be able to move any amphibians encountered in a similar way to any reptiles discovered.

Impact Assessment: Negligible impact from minimal risk of killing/injury and reduction of habitat availability.

Mitigation: Ecological Clerk of Works to Supervise works and apply method to conserve amphibians and reptiles during site clearance works; plus habitat mitigation as above.

Residual Impact: Short-term negligible reduction in habitat availability but likely to re-establish to similar extent within 5 years.

4.3.3 REPTILES

Reptiles have been found on the site (3 female slow worm observed during survey). Although only low numbers, it has been established that they are present therefore considered that without mitigation, there is a significant risk of reptiles being killed/injured during the works; this would be an offence under the Wildlife and Countryside Act 1981 (as amended). In addition, the removal of vegetation and substrate is also likely to reduce the available suitable habitat, in respect of foraging, hibernacula and basking.

As mitigation, an Ecological Clerk of Works will be on site to supervise the works and will implement a method of site clearance, involving phased habitat manipulation and hand searches to encourage/move any reptiles present into the surrounding suitable habitat during the active season for these species. No works will be undertaken during the hibernation season (November – March). Due to the low numbers found and availability of connecting suitable habitat, habitat manipulation was considered an appropriate method rather than a full capture and release programme. In addition, the habitat replacement and seeding proposed above, will mitigate for a reduction in available habitat for these species.

Impact Assessment: Significant adverse impact from risk of killing/injury; minor impact from reduction of habitat availability.

Mitigation: Ecological Clerk of Works to supervise works and apply method to conserve amphibians and reptiles during site clearance works; plus habitat mitigation as above; and provision of a reptile hibernacula at a suitable point on Dock Road.

Residual Impact: Short-term minor reduction in habitat availability but likely to re-establish to reduced area but improved quality within 5 years.

4.3.4 BIRDS

The dense scrub on site could potentially provide some nesting habitat for common bird species, along with Song Thrush and Dunnock. The type of habitat is relatively common in the vicinity and the extent to be removed is relatively limited, therefore only a small number

of potential breeding sites would be lost to the scheme, which is unlikely to have a significant impact upon the local breeding populations. Similarly, the extent of foraging habitat to be removed on the site is only a small proportion of that available in the immediate environs. The removal of habitat will have a minor impact upon the local populations using the site, however as the habitat will be replaced with appropriate seeding and plug planting it is considered likely that this loss will also partly be short-term. Works are also to be undertaken outside of the bird breeding season (1st March – 31 July) ensuring that no nests will be adversely impacted and breeding success reduced.

Impact Assessment: Negligible long-term loss of breeding and foraging habitat

Mitigation: Habitat re-establishment/seeding as per above, works to be undertaken outside of the bird breeding season.

Residual Impact: Minor loss of breeding habitat, negligible short-term loss of foraging habitat, likely to re-establish to better quality within 5 years.

4.3.5 INVERTEBRATES

The habitat on site is considered suitable to support numerous important invertebrate species and has been confirmed to support Small Blue Butterfly in particular. The habitat on site is only a small part of a larger area of similar habitat. However, specifically for the Small Blue and Shrill Carder Bee the pockets of suitable habitat along the coastal strip of Port Talbot are an important stronghold and important at a county level; therefore any losses of such habitat may cumulatively have a significant impact upon local populations.

The general habitat seeding proposals will ensure that similar habitat to support Small Blue butterfly and Shrill Carder Bee continue to be provided on and off-site and by reseeding with appropriate seed mixes and the provision of kidney-vetch and red bartsia plug planting

Impact Assessment: Short-term negligible loss of habitat available habitat for invertebrates, especially Small Blue Butterfly and Shrill Carder Bee.

Mitigation: Appropriate seeding and planting of plug plants of Kidney vetch and Red bartsia.

Residual Impact: Long-term minor increase in habitat availability and quality within 5 years.

4.4 SUMMARY OF IMPACT ASSESSMENT

Feature	Impact	Mitigation	Residual Impact
Designated Sites	Minor pollution of sites meeting SINC criteria	Pollution Prevention Measures	NONE
Scrub	Minimal risk of killing/injury. Negligible Loss of scrub.	Avoid works in bird nesting season	Negligible Long-term loss
LBAP/cSINC/S7 Habitat: Previously Developed Land of Biodiversity Interest	Minor short-term loss of a site that meets SINC criteria/LBAP/S7 (Circa. 1.5ha)	Appropriate seeding and replacement planting	Short-term loss of habitat (16,500m^2), Long-term increase in habitat (18,500m^2 biodiversity mitigation areas)
Bats	Minor short-term reduction in available foraging	Feeding corridors will be created by habitat along linear routes (Dock road, verges, SUDS)	Negligible loss of foraging in short-term. Long-term – NONE
Amphibians	Minimal risk of killing/injury and reduction of habitat availability.	Ecological Clerk of Works to supervise works and apply method to conserve amphibians and reptiles during site clearance works; plus habitat mitigation as above.	Negligible short-term reduction in habitat. Long-term - NONE
Reptiles	Significant risk of killing/injury; minor reduction of habitat availability.	Ecological Clerk of Works to supervise works and apply method to conserve amphibians and reptiles during site clearance works; plus habitat mitigation as	Minor short-term reduction in habitat availability Long-term – NONE/ MINOR GAIN IN QUALITY

		above; and provision of a reptile hibernacula.	
Birds	Negligible loss of breeding and foraging habitat	Seeding as per above, works to be undertaken outside of the bird breeding season.	Minor long-term loss of breeding habitat, short-term loss of foraging habitat. Long-term – MINOR
Invertebrates	Minor loss of suitable habitat, especially Small Blue Butterfly and Shrill Carder Bee; potential cumulatively have a significant impact upon local populations.	Appropriate seeding and planting of Kidney vetch and Red bartsia plug plants.	Short-term negligible reduction in habitat. Long-term – MINOR GAIN

5 RECOMMENDATIONS FOR MITIGATION

5.1 SITE CLEARANCE METHOD

The method will be followed in the order set out below:

- A suitably experienced/qualified ecologist will be engaged to act as an ecological clerk of works (ECoW) and oversee all site clearance works.
- The ECoW will provide toolbox talks to all site operatives on their biodiversity responsibilities, especially in relation to reptiles.
- During all works on site, if any site operative encounters a protected species (such as reptiles) works will stop immediately and further advice sought from the ECoW.

DAY 1

- The vegetation on site will be cut to a height of 300mm above ground and left for 24 hours. Cutting/strimming will be undertaken for the majority of the site in a north west to north east direction to allow any animals to move towards suitable habitat off-site (See Figure 6). All cutting/strimming will be supervised by the ECoW. Any reptiles/other animals discovered will be carefully captured and moved to adjacent suitable habitat.

DAY 2

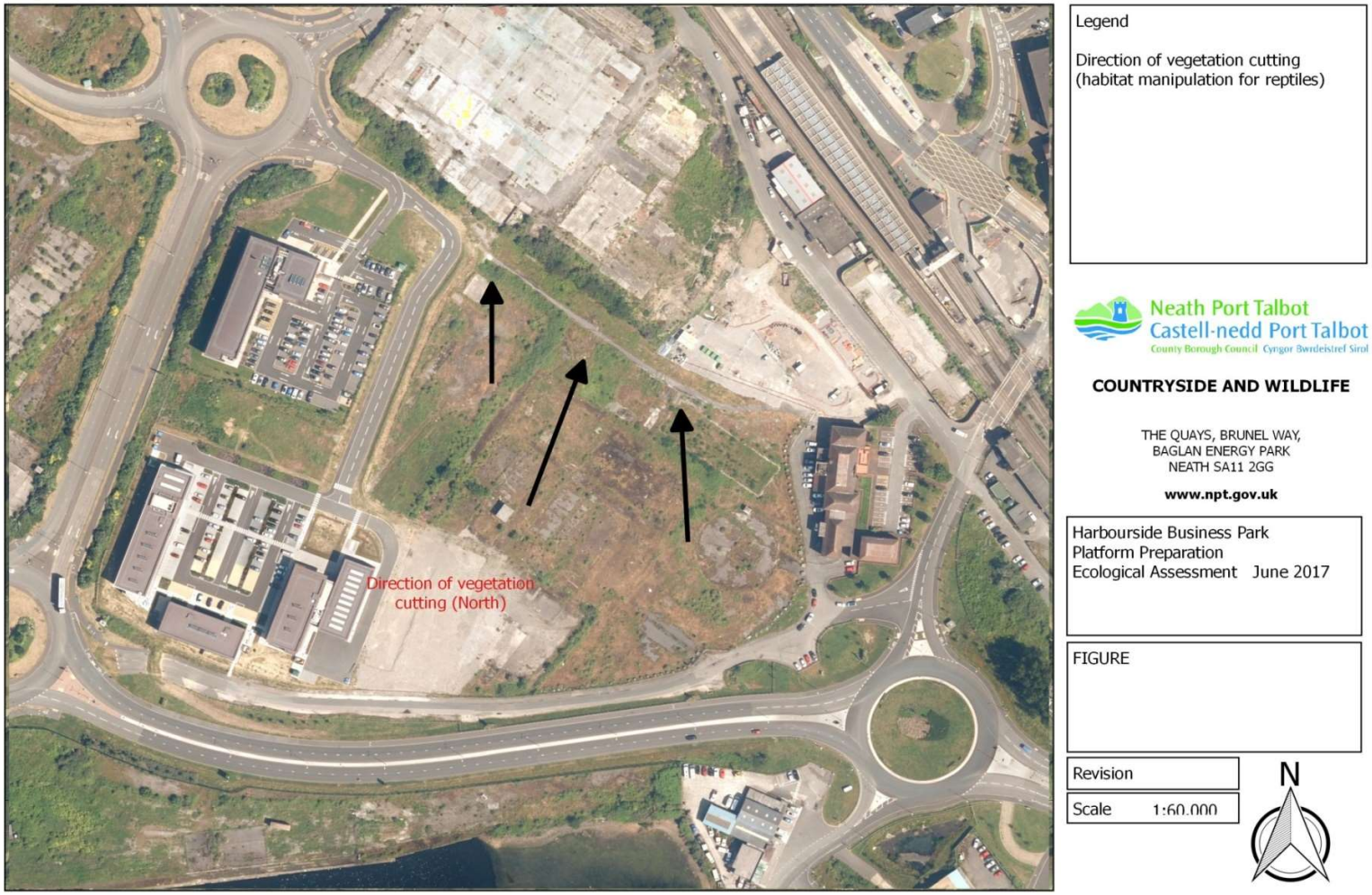
- Vegetation throughout the remaining area of the site will be cut/strimmed to a height of 100mm above ground and left for 24 hours. Cutting should be undertaken in the same direction as previously and towards existing suitable habitat off-site. All cutting/strimming will be under supervision of the ECoW. Any reptiles/other animals discovered will be carefully captured and moved to adjacent suitable habitat.

DAY 3

- Remaining vegetation will be reduced down to ground level and left for 24hours. Cutting should be undertaken in the same direction as previously and towards existing suitable habitat off-site. All cutting/ strimming will be under supervision of the ECoW. Any reptiles/ other animals discovered will be carefully captured and moved to adjacent suitable habitat.

DAY 4

- The site can now be prepared for the works.
- All storage of materials, such as soils, rubble etc. will be placed within the site compound, on bare ground away from adjacent off-site habitat. This will ensure that such storage does not attract animals, such as reptiles, as refugia/hibernacula. All locations will be agreed with the ECoW.



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Legend

Direction of vegetation cutting (habitat manipulation for reptiles)

Neath Port Talbot
Castell-nedd Port Talbot
County Borough Council Cyngor Bwrdeistref Sirol

COUNTRYSIDE AND WILDLIFE

THE QUAYS, BRUNEL WAY,
BAGLAN ENERGY PARK
NEATH SA11 2GG

www.npt.gov.uk

Harbourside Business Park
Platform Preparation
Ecological Assessment June 2017

FIGURE

Revision

Scale 1:60,000

N

Figure 6: Habitat Manipulation plan

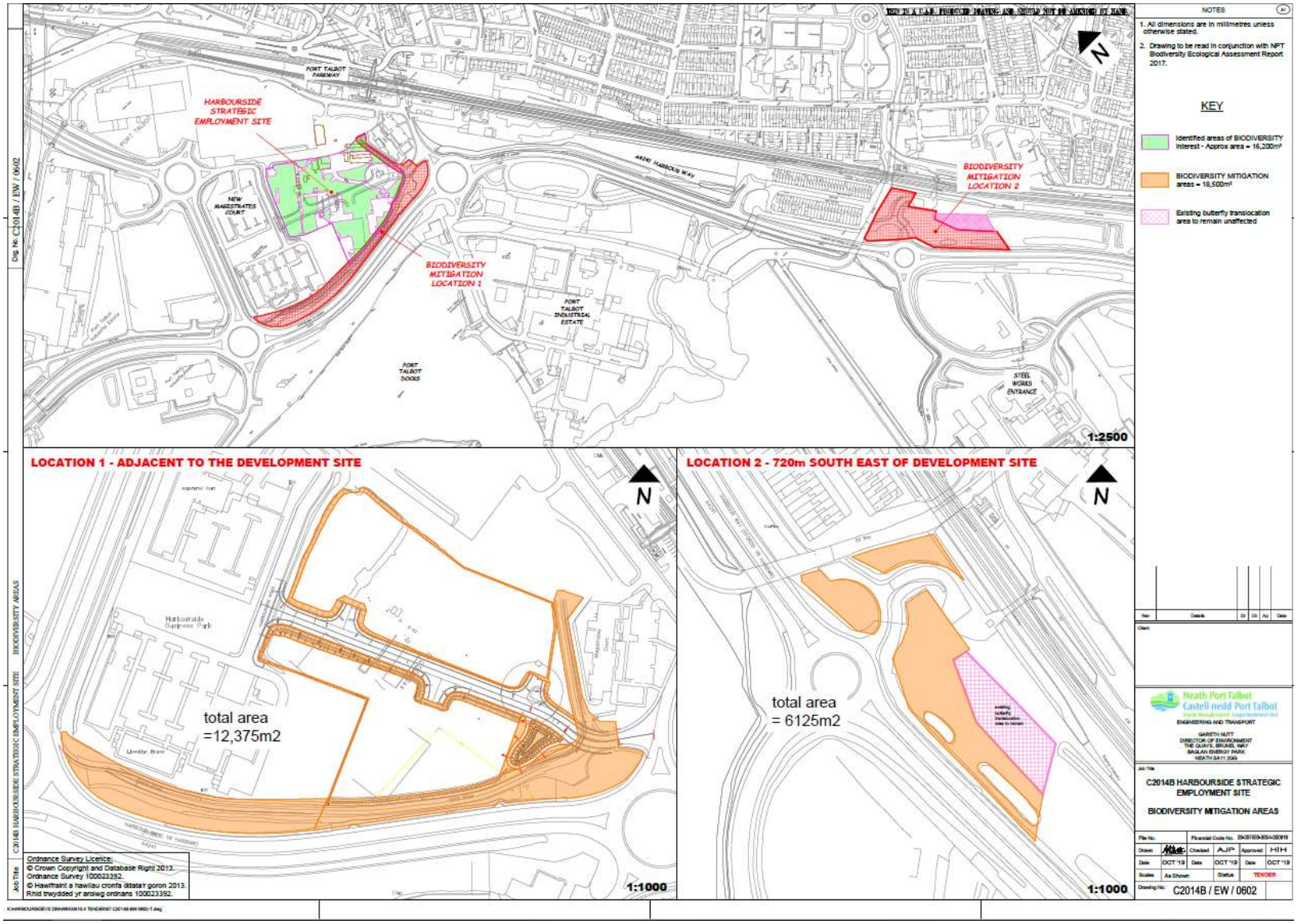

Figure 7: Principal Biodiversity Mitigation Areas (approx. location)

5.2 HABITAT MITIGATION PLAN

The scheme will involve the short-term loss of SINC habitat. Mitigation for habitat loss will be provided by newly created biodiversity mitigation areas (figure 7) being planted with a suitable wildflower seed mix which includes invertebrate-friendly species (see Appendix D) with the addition of the specific species that are particularly attractive to Small Blue Butterfly and Shrill Carder:

Kidney Vetch	*Anthyllis vulneraria*
Red Bartsia	*Odontites vernus*

The species listed above will also be plug planted in the newly created areas to provide immediate replacement for the habitat that will be lost.

Red bartsia is currently (end of 2019) unavailable as a plug plant due to issues with propagation however Restharrow (*Ononis repens)* will be planted with the Kidney vetch as it supports a similar suite of invertebrates as Red bartsia and the Red bartsia plants will be planted as soon as is possible.

Following planting and establishment the planted areas will be put into an appropriate management regime.

The area previously used for translocation of Small Blue habitat under the PDR scheme is adjacent to areas identified for mitigation under this Harbourside Strategic employment scheme. Evidently it has not been managed appropriately and is currently dominated by scrub. It is proposed that this former area be brought back into good condition by suitable management, and then both areas managed as one contiguous site for Small Blue butterfly. The details of this management will be set out in the habitat management and monitoring plan (see below).

Reptile Habitat mitigation will include the creation of a hibernaculum in the vicinity of the former Dock Road. The ECoW will agree the most suitable location and the design will follow best practice guidance.

5.3 WORK TIMING RESTRICTIONS

- All vegetation clearance works will be undertaken outside of the bird nesting season (1st March – 31st July inclusive).
- All site clearance works will be undertaken during the reptile active season April-October.
- The optimum timing, to avoid conflict between birds and reptiles is therefore **August - October**
- If the works are not undertaken prior to October, a follow-up visit will be undertaken by an ecologist and additional advice on mitigation given and implemented to ensure all of the above elements of the ecological resource on the site are appropriately accommodated.
- Also, see Appendix E for general timing advice.

5.4 OTHER REQUIREMENTS

- All invasive non-native species will be removed as part of the works. These include: Japanese Knotweed, *Cotoneaster* and *Buddleia*. Japanese Knotweed will be treated in line with current best practice methodologies. *Cotoneaster* and *Buddleia* will be removed as part of the vegetation clearance works. Arisings will be appropriately disposed of via a licensed skip.
- Where necessary, appropriate Pollution Prevention Measures will be employed to prevent discharge of any silted water during excavation works.
- Any open trenches left uncovered overnight will include means of escape for any trapped animals (e.g. ramp).

6 MANAGEMENT AND MONITORING

Monitoring of the biodiversity mitigation areas should include the following:

- The biodiversity mitigation areas should be monitored for a period of 10 years and should measure both success of habitat establishment and level of functioning for Small Blue butterfly. Monitoring should be carried out and reported in years 1, 2, 3 5 and 10.

Management of the biodiversity mitigation areas should include the following:

- The level of management for Brownfield type habitats is usually fairly minimal, the majority of plants being early successional in the first few years of establishment and will not need much in the way of strimming, and should be guided by the results of the monitoring undertaken in the first 3 years. The important features to retain are: areas of bare ground, some areas of longer grasses for the Male Small Blue, patches of Kidney Vetch for the Females.
- The site should be monitored for non-native invasive plants and treatment deployed as per industry best practice.
- The grassland should be kept clear of large scrub species
- A cutting regime, similar to that used for the PDR, is likely to be required and will be specified and implemented once the vegetation has fully established. The monitoring will inform this.

A detailed habitat management and monitoring plan for all of the biodiversity mitigation areas will be developed, detailing the methods, timings and monitoring required to be implemented. This plan will be produced prior to works starting on site and will be based on the above proposals.

7 REFERENCES

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Section 7 – list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

8 APPENDICES

APPENDIX A – BOTANICAL SPECIES RECORDS (DR. CHARLES HIPKIN)

Plant Survey of Roadside Verge and Open Mosaic Habitat in Vicinity of Port Talbot Magistrates Courts (SS764896)

Charles Hipkin and Hilary Hipkin 13th September 2014

Taxon	Vernacular	Site	Gridref
Achillea millefolium	Yarrow	Port Talbot	SS7689
Agrostis capillaris	Common Bent	Port Talbot	SS7689
Agrostis stolonifera	Creeping Bent	Port Talbot	SS7689
Anagallis arvensis	Scarlet Pimpernel	Port Talbot	SS7689
Arenaria serpyllifolia	Thyme-leaved Sandwort	Port Talbot	SS7689
Arrhenatherum elatius	False Oat-Grass	Port Talbot	SS7689
Artemisia vulgaris	Mugwort	Port Talbot	SS7689
Bellis perennis	Daisy	Port Talbot	SS7689
Blackstonia perfoliata	Yellow-wort	Port Talbot	SS7689
Buddleja davidii	Butterfly-bush	Port Talbot	SS7689
Calystegia sepium	Hedge Bindweed	Port Talbot	SS7689
Cardamine hirsuta	Hairy Bitter-cress	Port Talbot	SS7689
Carex hirta	Hairy Sedge	Port Talbot	SS7689
Catapodium rigidum	Fern-grass	Port Talbot	SS7689
Centaurea nigra	Common Knapweed	Port Talbot	SS7689
Cerastium fontanum	Common Mouse-ear	Port Talbot	SS7689
Ceratodon purpureus	Redshank	Port Talbot	SS7689
Cirsium arvense	Creeping Thistle	Port Talbot	SS7689
Cirsium vulgare	Spear Thistle	Port Talbot	SS7689
Clematis vitalba	Traveller's-joy	Port Talbot	SS7689
Conyza floribunda	Many-flowered Fleabane	Port Talbot	SS7689
Cotoneaster horizontalis	Wall Cotoneaster	Port Talbot	SS7689
Crataegus monogyna	Hawthorn	Port Talbot	SS7689
Crepis capillaris	Smooth Hawk's-beard	Port Talbot	SS7689
Dactylis glomerata	Cock's-foot	Port Talbot	SS7689
Daucus carota	Carrot	Port Talbot	SS7689
Dipsacus fullonum	Wild Teasel	Port Talbot	SS7689
Echium vulgare	Viper's-bugloss	Port Talbot	SS7689
Epilobium ciliatum	American Willowherb	Port Talbot	SS7689
Epilobium parviflorum	Hoary Willowherb	Port Talbot	SS7689
Equisetum arvense	Field Horsetail	Port Talbot	SS7689
Erigeron acer	Blue Fleabane	Port Talbot	SS7689
Erodium cicutarium	Common Stork's-bill	Port Talbot	SS7689
Eupatorium cannabinum	Hemp-agrimony	Port Talbot	SS7689
Euphorbia helioscopia	Sun Spurge	Port Talbot	SS7689
Euphorbia peplus	Petty Spurge	Port Talbot	SS7689
Euphrasia sp.	Eyebright	Port Talbot	SS7689
Festuca rubra	Red Fescue	Port Talbot	SS7689
Foeniculum vulgare	Fennel	Port Talbot	SS7689
Galium verum	Lady's Bedstraw	Port Talbot	SS7689
Geranium pyrenaicum	Hedgerow Crane's-bill	Port Talbot	SS7689
Hedera helix	Common Ivy	Port Talbot	SS7689
Heracleum sphondylium	Hogweed	Port Talbot	SS7689
Hirschfeldia incana	Hoary Mustard	Port Talbot	SS7689
Holcus lanatus	Yorkshire-fog	Port Talbot	SS7689
Homalothecium lutescens	Yellow Feather-moss	Port Talbot	SS7689
Hypericum perforatum	Perforate St John's-wort	Port Talbot	SS7689
Hypochaeris radicata	Cat's-ear	Port Talbot	SS7689
Impatiens glandulifera	Indian Balsam	Port Talbot	SS7689
Juncus inflexus	Hard Rush	Port Talbot	SS7689
Lathyrus pratensis	Meadow Vetchling	Port Talbot	SS7689
Lavatera arborea	Tree-mallow	Port Talbot	SS7689

Leontodon autumnalis	Autumn Hawkbit	Port Talbot	SS7689
Leucanthemum vulgare	Oxeye Daisy	Port Talbot	SS7689
Linaria purpurea	Purple Toadflax	Port Talbot	SS7689
Linaria vulgaris	Common Toadflax	Port Talbot	SS7689
Lotus corniculatus	Common Bird's-foot-trefoil	Port Talbot	SS7689
Malva sylvestris	Common Mallow	Port Talbot	SS7689
Medicago lupulina	Black Medick	Port Talbot	SS7689
Melilotus altissimus	Tall Melilot	Port Talbot	SS7689
Odontites vernus	Red Bartsia	Port Talbot	SS7689
Oenothera cambrica	Small-flowered Evening-primrose	Port Talbot	SS7689
Ononis repens	Common Restharrow	Port Talbot	SS7689
Orobanche minor	Common Broomrape	Port Talbot	SS7689
Pastinaca sativa	Wild Parsnip	Port Talbot	SS7689
Peltigera rufescens	Field Dog-lichen	Port Talbot	SS7689
Phragmites australis	Common Reed	Port Talbot	SS7689
Picris echioides	Bristly Oxtongue	Port Talbot	SS7689
Picris hieracioides	Hawkweed Oxtongue	Port Talbot	SS7689
Pilosella officinarum	Mouse-ear-hawkweed	Port Talbot	SS7689
Plantago coronopus	Buck's-horn Plantain	Port Talbot	SS7689
Plantago lanceolata	Ribwort Plantain	Port Talbot	SS7689
Poa annua	Annual Meadow-grass	Port Talbot	SS7689
Potentilla anglica	Trailing Tormentil	Port Talbot	SS7689
Potentilla reptans	Creeping Cinquefoil	Port Talbot	SS7689
Prunella vulgaris	Selfheal	Port Talbot	SS7689
Pulicaria dysenterica	Common Fleabane	Port Talbot	SS7689
Ranunculus acris	Meadow Buttercup	Port Talbot	SS7689
Ranunculus repens	Creeping Buttercup	Port Talbot	SS7689
Reseda lutea	Wild Mignonette	Port Talbot	SS7689
Reseda luteola	Weld	Port Talbot	SS7689
Rubus fruticosus agg.	Bramble	Port Talbot	SS7689
Rumex obtusifolius	Broad-leaved Dock	Port Talbot	SS7689
Salix caprea	Goat Willow	Port Talbot	SS7689
Salix cinerea	Grey Willow	Port Talbot	SS7689
Salvia verbenaca	Wild Clary	Port Talbot	SS7689
Sanguisorba minor subsp. muricata	Fodder Burnet	Port Talbot	SS7689
Scrophularia nodosa	Common Figwort	Port Talbot	SS7689
Sedum album	White Stonecrop	Port Talbot	SS7689
Sedum spurium	Caucasian-stonecrop	Port Talbot	SS7689
Senecio jacobaea	Common Ragwort	Port Talbot	SS7689
Senecio vulgaris	Groundsel	Port Talbot	SS7689
Silene latifolia	White Campion	Port Talbot	SS7689
Sonchus oleraceus	Smooth Sow-thistle	Port Talbot	SS7689
Stachys arvensis	Field Woundwort	Port Talbot	SS7689
Stachys sylvatica	Hedge Woundwort	Port Talbot	SS7689
Taraxacum agg.	Dandelion	Port Talbot	SS7689
Trifolium arvense	Hare's-foot Clover	Port Talbot	SS7689
Trifolium repens	White Clover	Port Talbot	SS7689
Tripleurospermum inodorum	Scentless Mayweed	Port Talbot	SS7689
Ulex europaeus	Gorse	Port Talbot	SS7689
Urtica dioica	Common Nettle	Port Talbot	SS7689
Verbascum thapsus	Great Mullein	Port Talbot	SS7689
Verbena officinalis	Vervain	Port Talbot	SS7689
Vicia cracca	Tufted Vetch	Port Talbot	SS7689
Vicia sativa	Common Vetch	Port Talbot	SS7689

APPENDIX B –PHASE 1 HABITAT SURVEY SPECIES LIST

Bi-nomial	**Latin**
Annual Meadow-grass	*Poa annua*
Thyme-leaved Sandwort	Arenaria serpyllifolia
Butterfly bush	*Buddleia davidii*
Bramble spp.	*Rubus fruticosus agg.*
Bristly Oxtongue	*Picris echoides*
Broadleaved Dock	*Rumex obtusifolius*
Buck's-horn plantain	*Plantago coronopus*
Burdock	*Artctium sp*
Creeping Cinquefoil	*Potentilla reptans*
Cock's-foot	*Dactylis glomerata*
Common cat's-ear	*Hypochoeris radicata*
Common Broomrape	*Orobanche minor*
Common Centaury	*Centaurium erythraea*
Common Knapweed	*Centaurea nigra*
Common Bird's-foot trefoil	*Lotus corniculatus*
Common Mouse-ear	*Cerastium fontanum*
Common figwort	*Scrophularia nodosa*
Common nettle	*Urtica dioica*
Common Ragwort	*Senecio jacobaea*
Common Restharrow	*Ononis repens*
Common Stork's-bill	*Erodium cicutarium*

Common ivy	*Hedera helix*
Dandelion	*Taraxacum agg*
Dewberry	*Rubus caesius*
Dock species	*Rumex spp*
Dove's-foot Crane's-bill	*Geranium molle*
European Gorse	*Ulex europaeus*
Evening Primrose	*Oenothera agg.*
Eyebright	*Euphrasia officinalis agg.*
False Oat-grass	*Arrhenatherum elatius*
Fennel	*Foeniculum vulgare*
Fern Grass	*Catapodium rigidum*
Field woundwort	*Stachys arvensis*
Great Mullein	*Verbascum thapsus*
Hare's-foot clover	*Trifolium arvense*
Hedge bedstraw	*Galium mollugo*
Herb Robert	*Geranium robertianum*
Hoary Cabbage	*Hirschfeldia incana*
Hop Trefoil	*Trifolium campetstre*
Ivy	*Hedera helix*
Japanese Knotweed	*Fallopia japonica*
Kidney Vetch	*Anthyllis vulneraria*
Lady's bedstraw	*Galium verum*
Meadowsweet	*Filipendula ulmaria*
Meadow vetchling	*Lathyrus pratensis*
Melilot species	*Melilotus sp.*

Mouse-eared Hawkweed	*Pilosella officinarum*
Ox-eye Daisy	*Leucanthemum vulgare*
Perforate St. John's-wort	*Hypericum perforatum*
Pyramidal Orchid	*Anacamptis pyramidalis*
Red Bartsia	*Odontites vernus*
Red Clover	*Trifolum pratense*
Ribwort plantain	*Plantago lanceolata*
Round leaved crane's-bill	*Geranium rotundifolium*
Scarlet pimpernel	*Anagallis arvensis*
Scentless Mayweed	*Tripleurospermum inodorum*
Sedge spp.	*Carex spp.*
Sedum spp.	*Sedum spp.*
Selfheal	*Prunella vulgaris*
Smooth hawk's-beard	*Crepis capillaris*
St. John's-wort species	*Hypericum spp.*
Sun spurge	*Euphorbia helioscopa*
Teasel	*Dipsacus fullonum*
Tufted Vetch	*Vicia cracca*
Vervain	*Verbena officinalis*
Viper's-bugloss	*Echium vulgare*
Wall Cotoneaster	*Cotoneaster horizontalis*
White Clover	*Trifolium repens*
Wild Carrot	*Daucus carota ssp carota*
Wild Mignonette	*Reseda lutea*
Wild Parsnip	*Pastinaca sativa*

Willow spp.	*Salix spp.*
Yellow Feather-moss	*Homalothecium lutescens*
Yellow-wort	*Blackstonia perfoliata*
Willow herb species	*Epilobium spp.*
Yorkshire Fog	*Holcus lanatus*

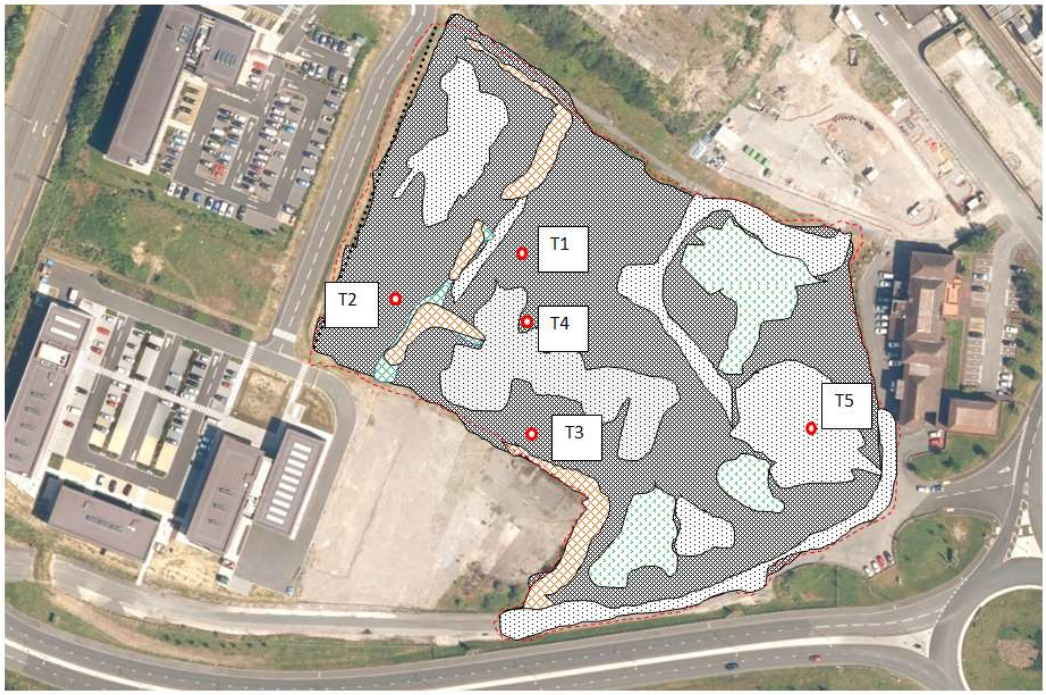
Key: yellow = non-native invasive spp

Species list compiled by Wendy Larcombe 25/05/2017

APPENDIX C –PHASE 1 HABITAT SURVEY PLAN & TARGET NOTES

Colour	Code	Description	Notes
	A2.1	Dense continuous scrub	Native scrub includes Willow and Bramble
	A2.2	Scattered scrub	Mostly Willow and Buddleia
	J1.3	Ephemeral/short perennial	Mixture of low growing forbs, coastal grassland, taller forbs typically Evening Primrose, Bugle, Mullein
	J1.4	Introduced shrub	Buddleia (some *Cottoneaster*)
	J4	Bare ground	Some solid tarmac/concrete, some more gravelly with Sedum covering
……	J2.8	Earth bank	Vegetated bank of earth and mixed materials

APPENDIX C Phase 1 Survey – Habitat Map & Target Notes



TARGET NOTE NUMBER	DESCRIPTION	RECOMMENDATION
T1	Small Blue butterfly (3 in total)	Retain habitat in situ, or re-use turf
T2	Linnet and Dunnock (no nesting behavior)	Tree planting within landscaping of future developments
T3	Waste materials (potential reptile refugia)	Hand check before removal
T4	Kidney vetch population	Translocate turf
T5	Anthills and Kidney Vetch and Rest-harrow. Small blue seen here	Retain habitat in situ, or re-use turf

APPENDIX D – WILDFLOWER SEED MIX

Wildflower Seed Mix (Sow at 3 - 5 grms/m^2)

Wild flowers

- 1.0% *Achillea millefolium* Yarrow
- 0.5% *Achillea ptarmica* Sneezewort
- 0.5% *Agrimmona eupatorium* Agrimony
- 0.8% *Angelica sylvestris* Wild Angelica
- 1.0% *Anthyllis vulneria* Kidney Vetch
- 1.0% *Centaurea nigra* Common Knapweed
- 0.5% *Conopodium majus* Pignut
- 1.0% *Filipendula ulmaria* Meadowsweet
- 1.0% *Galium verum* Lady's Bedstraw
- 1.0% *Hordeum sacalinum* Meadow Barley
- 1.0% *Hypochaeris radicata* Cat's Ear
- 1.0% *Lathyris pratensis* Meadow Vetchling
- 1.0% *Leucanthemun vulgare* Ox Eye Daisy
- 1.0% *Lotus corniculatus* Common Birdsfoot Trefoil
- 1.0% *Lotus ulignosus* Marsh Trefoil
- 1.0% *Plantago lanceolata* Ribwort Plantain
- 1.0% *Primula veris* Cowslip
- 0.5% *Prunella vulgaris* Selfheal
- 1.0% *Pulicaria dysenteria* Common Fleabane
- 1.0% *Ranunculus acris* Meadow Buttercup
- 1.0% *Rumex acetosa* Common Sorrel
- 0.2% *Vicia cracca* Tufted Vetch
- 0.5% *Trifolium pratense* Red Clover
- 0.5% *Trifolium repens* White Clover
- Also, suggest add Red Bartsia *Odontites vernus.*

Grasses

- 10.0% *Agrostis stolonifera* Creeping Bent
- 6.0% *Alopecurus pratensis* Meadow Foxtail
- 3.5% *Arrhenatherum elatius* Tall Oat Grass
- 6.0% *Cynosurus cristatus* Crested Dogstail
- 6.0% *Dactylis glomerata* Cocksfoot Grass

- 13.5% *Deschampsia caespitosa* Tufted Hair Grass
- 6.0% *Festuca pratensis* Meadow Fescue
- 11.0% *Festuca rubra ssp litoralis* Slender Creeping Red Fescue
- 3.0% *Phleum pratense* Timothy
- 12.0% *Poa trivilas* Rough Stalked Meadow Grass
- 3.0% *Trisetum flavenscens* Yellow Oat Grass

APPENDIX E – GENERAL BIODIVERSITY TIMING CONSTRAINTS

SURVEY TIMINGS

Some surveys can only be undertaken at certain times of the year so can have implications for timetabling planning determination and development commencement. The following can be used as a general guide:

Survey for:	**Type**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Birds	Breeding			/	/	/	/	/					
	Wintering	/	/								/	/	/
Reptiles	Presence				/	/	/	/	/	/			
Great Crested Newts	Presence			/	/	/	/	/	/				
Badgers, Water Vole, Otter, Dormice	Presence	/	/	/	/	/	/	/	/	/	/	/	/
Bats	Roosts					/	/	/	/	/			
	Hibernating	/	/	/								/	/
Marsh Fritillary Butterfly	Presence						/			/	/		
Fen Raft Spider	Presence						/	/	/				

Survey for:	Type	J	F	M	A	M	J	J	A	S	O	N	D
Plants	Presence					/	/	/	/				
High Brown Fritillary Butterfly	Presence							/					
Habitat Survey						/	/	/	/	/			

/ = optimal period for survey

Please note that if a survey is undertaken outside of the optimal period it may be rejected and required to be re-done during the correct season. In addition, if applications are submitted without relevant surveys and in a season where surveys are not able to be undertaken the application will be unable to be determined.

MITIGATION TIMINGS

Biodiversity is often season specific. Certain species appear or are most active only during certain times of the year. Therefore, not only do surveys have to be undertaken at certain times but so do some mitigation works. Appropriately scheduling these sorts of works is key to the avoidance of delays. Some key timing constraints are shown in the below table:

Habitat or Species	Works Type	J	F	M	A	M	J	J	A	S	O	N	D
Badgers	Sett creation	/	/	/	/	/	/	/	/	/	/	/	/
	Sett closure (under licence)								/	/	/	/	
Birds	Vegetation clearance	/	/						/	/	/	/	/

Habitat or Species	Works Type	J	F	M	A	M	J	J	A	S	O	N	D
Reptiles	Capture and translocation				/	/	/	-	-	/	/		
	Vegetation clearance	/	/	/								/	/
Great Crested Newts	Newt trapping -pond and land (under licence)			/	/	/	/						
	Newt trapping - land (under licence)			/	/	/	/	-	-	-	-		
Habitat works	Planting and translocation	/	/	-	-					-	/	/	/
	Wildflower Meadow Cutting (hay-cut)				/					/			
Otters	Holt creation	/	/	/	/	/	/	/	/	/	/	/	/
Bats	Roost creation (separate to existing)	/	/	/	/	/	/	/	/	/	/	/	/
	Works to maternity roosts (under licence)	/	/	/	/					/	/	/	/

Habitat or Species	Works Type	J	F	M	A	M	J	J	A	S	O	N	D
	Works to hibernation roosts (under licence)					/	/	/	/	/	/		

/= optimal time for works. - = sub-optimal time for works.

Please note that the above table is only a guide to the general timing constraints commonly encountered. For works involving protected species that require a licence more specific timings may be put in place for the specific development. Further advice should be sought from the licensing body in this respect e.g. Natural Resources Wales or Welsh Government. Also, depending upon the species seeded, wildflower meadow cutting timings may vary.