

7. Terrestrial Ecology

Introduction

- 7.1 This Chapter reports the outcome of the assessment of likely significant environmental effects arising from the Proposed Scheme in relation to terrestrial ecology.
- 7.2 The Chapter describes the technical consultation that has been undertaken during the EIA, the scope of the assessment and assessment methodology, and a summary of the baseline information that has informed the assessment.
- 7.3 In line with **Chapter 2: Approach to EIA**, the assessment reports on the likely significant environmental effects, the further mitigation measures required to prevent, reduce or offset any significant adverse effects, or measures to further enhance beneficial effects. The conclusions are provided both in terms of the residual effects and whether these are considered significant. The assessment of effects takes into consideration both primary and tertiary mitigation (see **Chapter 2: Approach to EIA** for further details) and is informed by the EIA Scoping process (see **Chapter 2: Approach to EIA** for further details).
- 7.4 This Chapter, and its associated **Figures 7.1 – 7.3** and **Appendices 7.1 – 7.5**, is intended to be read as part of the wider ES with particular reference to the introductory Chapters of this ES (**Chapters 1 – 5**), as well as **Chapters 11: Air Quality** and **Chapter 12: Noise and Vibration**.
- 7.5 In addition, this Chapter should be read in conjunction with **Chapter 14: Assessment of Cumulative Effects**.

Summary of Consultation

- 7.6 **Table 7.1** provides an overview of the consultation that has been undertaken to inform the Proposed Scheme and EIA, including the consideration of likely significant effects and the methodology for assessment.

Table 7.1: Summary of Consultation

Body / Organisation	Contact	Date and Form of Consultation	Summary
Neath Port Talbot County Borough Council (NPTCBC)	Neath Port Talbot County Ecologist and Countryside and Wildlife Lead	Associated British Ports (ABP) Meeting, 21 st June 2022	Discussion of precautionary approach required for the assessment of reptile species (population size and relocation site). Addressing the loss of any habitats on the list published by the Welsh Ministers in accordance with section 7 of Environment (Wales) Act 2016 that require avoidance/mitigation/compensation for the Proposed Scheme.

			Discussion regarding off-site Compensation/ Enhancement.
NPTCBC	Neath Port Talbot County Ecologist	31 st August 2022 Site Meeting with ABP, Turley, Ebsford	Confirmation that Japanese Knotweed (JKW) eradication is to be carried out by ABP as site management involving cutting back of scrub and the relocation of reptile populations as part of these advanced works. NPTCBC stated that compensation for the loss of willow scrub woodland would require off-site tree planting (derived from NPTCBC calculations) and/or enhancement of existing low value woodland to reduce tree planting requirement. This is what is proposed. NPTCBC stated that the dune slack vegetation, although small, is a habitat of note.
NPTCBC	Neath Port Talbot County Ecologist	Email, 5 th April 2023	Confirmation of agreement with the conclusion that all waterbodies within 250m of the Site boundary have negligible suitability for great crested newts - all located in operational land within Tata Steel works.
NPTCBC	Neath Port Talbot County Ecologist and Planning Officer	Teams meeting 11 th May 2023	Presentation on integrated design for biodiversity SuDS, landscape alongside operational limitations
NPTCBC	Neath Port Talbot County Ecologist and Planning Officer	Teams meeting 24 th May 2023	Broad agreement on the appropriateness of on-site landscape proposals including creation flower rich vegetation on post-industrial substrates, brown/green roof, and modular biodiversity walls as well additional features including insect hotels

Outputs of PAC process

- 7.7 With respect to Terrestrial Ecology, technical comments were raised by Natural Resources Wales (NRW) which are summarised in **Table 7.2**.

Table 7.2: Summary of NRW PAC comments

Focus of NRW Comment	Technical Response
Absence of information relating to lighting and corresponding impacts on protected species	The effects of lighting have been considered within this Chapter (see ' <i>Assessment of Effects, Secondary Mitigation and Residual Effects</i> '), including consideration of the Lighting Assessment and Strategy , specifically the lighting strategy for the Proposed Scheme, especially those measures used to control lighting effects.
The need for any construction effects upon Otters to be controlled through a CEMP prepared in line with good practice measures.	The construction measures for Otters identified by NRW have been incorporated in Volume 3: Environmental Management Plan (EMP) which defines all mitigation identified through the EIA, inclusive of measures to be incorporated into the CEMP, which are specifically identified in Volume 3. A Framework CEMP has been prepared and submitted with the Application, however, in line with Volume 3 it is expected that a detailed CEMP will be prepared by a contractor (once appointed) and be submitted to NPTCBC in advance of any construction activities and this to be controlled through planning condition attached to any granting of planning permission.

Scope of the Assessment

- 7.8 As set out in **Chapter 2: Approach to EIA**, the scoping of the EIA and ES has utilised a combination of informal consultation with NPTCBC, culminating in a formal request for an EIA Scoping Opinion in June 2023, supported by an EIA Scoping Report (**Appendix 2.1**), as well as consultation comments raised through the PAC process (where applicable). As the Scoping Opinion was not issued before the planned submission date for the Application, the request for EIA Scoping Opinion was withdrawn in October 2023.
- 7.9 Although the EIA Scoping Report looked to establish the overall framework of the EIA and ES, an iterative scoping process has been adopted in order to respond to the evolving engineering design of the Proposed Scheme. In a similar manner, a number of changes have occurred to the Proposed Scheme since the preparation and submission of the EIA Scoping Report, as set out within **Chapter 1: Introduction** and **Chapter 2: Approach to EIA**. As a result, it has been necessary to review the scope of assessment proposed.
- 7.10 This section provides a review, validation and update, where necessary, on the scope of the assessment presented within this Chapter.

Effects Not Considered to be Significant

- 7.11 The following effects were not considered significant as part of the EIA Scoping Report (**Appendix 2.1**) and are considered to remain non-significant, however, the evidence in the scoping report has been updated in response to changes to the proposed scheme through the inclusion of the additional temporary working areas.

Direct loss, injury and/or disturbance to Hazel Dormouse, Great Crested Nests and Badgers

- 7.12 Based on the nature of the regenerating habitats on previously developed ground and lack of connectivity to potential hazel dormouse habitat off-site; this species is considered to be absent from the Site.
- 7.13 Survey work has confirmed the very likely absence of any active badger setts within or directly adjoining the Production Development Zone, TCA1, TCA West and TCA East with no signs of activity within the site. TCA East comprises built development and has no features of potential value as foraging habitat or the establishment of setts.
- 7.14 Great crested newt (GCN) surveys were conducted on behalf of a third party (XLCC) for two nearby waterbodies in the Harbourside site (to the west of the PDZ) in 2021. A small man-made waterbody, measuring 25m x 3m, lies 200m west of the hard standing section of TCA West and 250m west of habitats in TCA West. DNA testing in 2021 confirmed likely absence of great crested newts.
- 7.15 The second waterbody, a reedbed with sections of open water, lies over 480m west from the boundary of TCA West. Negative eDNA tests were obtained in 2019 and 2021. Presence / absence surveys in 2015 and 2019 also concluding likely absence.
- 7.16 On Tata Steel land to the south of the PDZ there are two areas where water pools in winter in operational areas located with 250m of the Proposed Scheme and TCAs. Both features have very low suitability for GCN and there is a high degree of separation between them and the Proposed Scheme. It is concluded there is negligible potential for GCN to utilise habitats within the PDZ, Crown Wharf dockside or any of the Temporary Construction Areas.
- 7.17 Therefore it is concluded that there would be no direct loss, injury and/or disturbance effects to Hazel Dormouse, GCN and Badgers. These species are not to be considered further in the EIA or reported in the ES.
- 7.18 The following effect was considered potentially significant as part of the EIA Scoping Report, though since preparing this evidence, additional evidence has become available to identify that effects are not considered significant and therefore excluded from further assessment within the EIA or reporting as part of the ES. The identified effects and associated evidence base is set out in the below sections below.

Degradation of qualifying features in statutory designated sites due to air emissions (Operation)

- 7.19 **Chapter 11: Air Quality** has undertaken modelling of on-site point source emissions associated with the Proposed Scheme, and resulting calculations of deposition rates at Kenfig Special Area of Conservation (SAC), Crymlyn Bog SAC and Cefn Cribwr SAC, the only three designated ecological sites within 10km of the Site.
- 7.20 In line with Guidance AQTAG06 the modelling has considered NO_x and SO₂ concentrations, deposition velocities, dry deposition rates and corresponding total acid deposition occurring at the ecological designations as a result of the Proposed Scheme.

- 7.21 The critical loads have been selected based on the most sensitive habitat set out on the APIS website relevant to each designated site which either grassland or forest habitats.
- 7.22 The relevant deposition velocities for grassland or forest habitats have been used to convert NO_x and SO₂ emissions to S and N deposition rates.
- 7.23 The deposition rates were then compared to the site-specific critical loads for the most applicable habitat types (grassland and forest) available through the APIS website and data centre (see **Chapter 11: Air Quality** for full details of methodology).
- 7.24 In addition to the above, impact arising from emissions from traffic associated with the Proposed Scheme was also modelled as part of **Chapter 11: Air Quality**, including accounting for other relevant projects in the surrounding area that could give rise to combined impacts with the Proposed Scheme (see **Chapter 11: Air Quality** for full details of methodology). As such the modelling has predicted annual mean emissions of NO_x and NH₃ at the Kenfig SAC (as this is the only designation within proximity to an affected road link), where the NO_x concentrations have been converted to N-Deposition and acid deposition. Again these values have been considered alongside the APIS critical loads for the most appropriate habitats relevant to the designated site. All modelling (as set out in **Chapter 11: Air Quality**) has defined that the predicted operational concentrations, including emission from on-site point sources and traffic, are all less than 1% of critical level/load for any of the internationally designated sites in the wider area and that the resulting Predicted Environmental Contribution (PEC) is below 100% of the relevant critical level/load for the emission. On this basis it was concluded through **Chapter 11: Air Quality** that all effects on designated ecological sites with respect to deposition were negligible. Given the conclusion of **Chapter 11: Air Quality** indirect loss or damage of features within statutory sites during operation are not considered significant and will not be considered further in the EIA or reported in the ES.
- 7.25 Further to the above effects, two new additional effect not previously identified as part of the EIA Scoping Report (i.e. scoped in or out) has been identified and not considered to be significant. The evidence to support this conclusion has also been provided below.

Direct Habitat Loss and Indirect Disturbance of Otters (Construction and Operation)

- 7.26 Past records of otter from the River Afan confirm the presence of a local population.
- 7.27 An otter survey undertaken in 2022 and early 2023 have found no evidence of otters using habitats in the PDZ, Crown Wharf dockside, TCA West or TCA1 all of which had low potential value for otters with no features in which a holt could be established or cover where individuals could rest in dense cover during the daytime. In the PDZ and TCA West areas of dense ground cover largely limited to patches bramble and these locations had no direct connectivity with the open water dock.
- 7.28 The buildings and hardstanding in TCA East have negligible potential as otter habitat. They lie between the open water dock and the large reedbed to the south. Survey visits in late summer 2023 found no evidence of otter paths on the northern edge of the reedbed which would indicate movement through TCA East.
- 7.29 Any otters with territories extending into the open water dock will be habituated to industrial activity and the species is known to be tolerant of noise. Behavioural changes at times during construction are possible due to lighting, noise, human activity, especially

outside standard working hours. Effects will be limited to the open water dock habitat and it is anticipated night time working will be intermittent. With extensive territories, a localised reduction of the value of the open water dock as a foraging habitat would not impact on the status of the local otter population.

- 7.30 During operations the open water dock would remain a potential foraging habitat with any avoidance behaviour limited to the section of the dock around the marine loading/unloading facility where lighting and noise will be permanent factors affecting the context of open water habitat.
- 7.31 The construction and operation of the Proposed Scheme will not create any physical barriers to the movement of otters through the open water dock or River Afan. Good working practices adopted for land adjoining the open water will avoid any adverse effects on any individuals using the open water dock during the construction period.
- 7.32 The otter population in the River Afan will not be considered further in the EIA or reported in the ES as the impact of the Proposed Scheme on the otter population both during construction and operation is not considered to have the potential to be significant and will not be considered further in the EIA or reported in the ES.

Degradation of features in Non-statutory Designated Sites (Construction and Operation)

- 7.33 The closest designated sites Lower River Afan Estuary Sites of Interest for Nature Conservation (SINC) and the adjoining Little Warren SINC, lie to the north-west over 600m from the boundary of the PDZ and TCA West and over 900m from Crown Wharf dockside, TCA1 and TCA East.
- 7.34 These sites are primarily designated for the coastal habitats and the presence of sea stock, a nationally rare plant species also listed for the purposes of section 7 Environment (Wales) Act 2016. With no direct physical or hydrological linkage between the SINC designations and the construction areas, there will be no predicted direct impacts.
- 7.35 Due to the distances between the construction areas and the SINC's potential indirect construction effects would not affect features for which the sites have been designated.
- 7.36 During operation the emissions have been assessed for SINC sites and ancient woodland. Modelling defined deposition rates at each receptor which were compared to the site-specific critical loads for the most applicable habitat types (grassland and forest) available through the APIS website and data centre (see **Chapter 11: Air Quality** for full details of methodology). The N deposition and acid deposition rates at all non-statutory designated sites and ancient woodland are below 1% of the critical loads of the relevant emissions.
- 7.37 From the modelling of the emissions it is concluded that there will be no adverse effects on any SINC's or ancient woodland during operations. Therefore, degradation of features in non-statutory designated Sites during construction and operation are not considered significant and will not be considered further in the EIA or reported in the ES.

Effects Considered Likely to be Significant

- 7.38 The following effects (**Table 7.3**) were considered likely to be significant at the EIA Scoping stage and have been assessed and reported within this Chapter. Table notes have been included where the description and structuring of effects utilised in **Table 7.3** deviates from the description included in the EIA Scoping Report.

Table 7.3: Effects Considered Likely to be Significant

Likely Significant Effect	Receptors	Applicable Development Stage	Note
Loss of Section 7 Habitats and equivalent habitats	- Naturally regenerated grassland (PDZ, TCA West) - Coastal grassland and dune slack vegetation (PDZ) - Open Mosaic Habitat (TCA1)	Construction	Habitat receptor descriptions have been updated. Open mosaic habitat in TCA1 is now included. Reedbed has been reclassified as seasonally waterlogged ground
Loss of other notable on-site habitats (PDZ, TCA West, TCA East, TCA1, Crown Wharf dockside)	- Willow scrub (grey willow) - Scrub, bramble, and bracken - Seasonally flooded ground	Construction	Habitat receptor descriptions have been updated. Reedbed has been reclassified as seasonally waterlogged ground
Degradation of habitats as a result of the spread of Japanese knotweed or other Schedule 9 plant species	On-site and off-site habitats	Construction	Additional effect in the ES chapter but not included in the scoping report. No defined receptor locations due to the nature of potential spread in the absence of control mechanisms
Permanent loss of roost / foraging habitat, temporary disturbance of foraging habitat and flightlines	Bat populations	Construction	Loss of a bat roost is additional effect not previously identified, due to the inclusion of TCA East, which has a number of structures that have the potential to support bat roosts, post the submission of the EIA Scoping Report Plus two related effects on bats- listed separately in the scoping report¹ – have been combined.

¹ The EIA Scoping Report (**Appendix 2.1**) listed '*Disturbance as a result of artificial lighting*' and the '*Loss of bat foraging habitat*' as separate effects; for bats these have been combined into a single effect in this Chapter.

Likely Significant Effect	Receptors	Applicable Development Stage	Note
Loss of nesting sites and foraging areas and indirect disturbance as a result of construction noise, vibration and lighting	Breeding birds	Construction	Merges three related effects ² on a species assemblage – listed separately in the scoping report.
Habitat loss / displacement from terrestrial habitats	Overwintering birds	Construction	Merges two related effects on a species assemblage – listed separately in the scoping report
Disturbance from site construction activities including piling	Overwintering birds (in the open water dock)	Construction	Consistent with scoping report
Habitat loss and displacement of reptiles	Reptile populations (common lizard, slow-worm and grass snake)	Construction	Consistent with scoping report
Permanent habitat loss and disturbance from construction lighting	Invertebrate populations	Construction	Additional effect added to reflect detailed design and construction lighting requirements.
Disturbance as a result of noise, artificial lighting and general site operations.	Bats	Operation	Additional effect added to reflect operational lighting and noise requirements
Disturbance as a result of operational noise, artificial lighting and general site operations	Overwintering birds	Operation	Consistent with scoping report

² The EIA Scoping Report (**Appendix 2.1**) listed 'Disturbance as a result of construction noise and vibration', 'Disturbance as a result of artificial lighting' and the 'Loss of bird nesting sites and foraging areas' as separate effects and for this Chapter these effects have been combined into a single effect on breeding birds.

Likely Significant Effect	Receptors	Applicable Development Stage	Note
Operational lighting effects on populations	Invertebrates	Operation	Additional effect added to reflect detailed operational lighting design and lux contour modelling.

Assessment Methodology

Legislative Framework, Policy and Guidance

7.39 The following legislation has informed the assessment of effects within this Chapter.

- The Conservation of Habitats and Species Regulations 2017.
- The Environment (Wales) Act 2016.
- The Countryside and Rights of Way Act 2000.
- Wildlife and Countryside Act 1981 (as amended).
- The Natural Environment and Rural Communities (NERC) Act 2006.
- The Well-being of Future Generations Act (Wales) 2015.

7.40 The EC Directives 2009/147/EC on the Conservation of Wild Birds (the Birds Directive) and 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) are implemented in the UK principally through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

7.41 All wild birds, their nests and eggs are protected under Part 1, Section 1 of the Wildlife and Countryside Act. Birds listed in Schedule 1 of this Act are subject to special protection. Wild animals listed in Schedule 5 received full legal protection and plants listed in Schedule 8 are also under this Act.

7.42 Highly invasive non-native plant species are listed under Schedule 9 of the Act.

7.43 Where species protected by the regulations would be affected by development, a licence may be granted subject to tests set out in section 55 of the Regulations. These are that:

- 1) the licence must be necessary for reasons of preserving public health or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment;*
- 2) there is no satisfactory alternative; and*
- 3) the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.*

- 7.44 The Well-being of Future Generations (Wales) Act 2015 includes a number of well-being goals (Part 2 Section 4), the second of which is ‘A resilient Wales’ described as:
- 7.45 ‘A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).’
- 7.46 Part 2 Section 3 of the Act places a well-being duty on public bodies (which include the Welsh Ministers) requiring that:
- ‘(1) Each public body must carry out sustainable development.*
- (2) The action a public body takes in carrying out sustainable development must include—*
- (a) setting and publishing objectives (“well-being objectives”) that are designed to maximise its contribution to achieving each of the well-being goals, and*
- (b) taking all reasonable steps (in exercising its functions) to meet those objectives…….’*
- 7.47 The Environment (Wales) Act 2016 includes measures to provide an integrated natural resource management process to deliver the sustainable management of natural resources. That means the collective actions (including non-action) required for managing the maintenance, enhancement and use of natural resources in a way, or at a rate, which enables people and communities to provide for their social, economic and environmental well-being in Wales.
- 7.48 The Act requires public bodies to co-operate, share information, jointly plan for and jointly report on the management of natural resources, of which climate resilience and climate mitigation are key strands.
- 7.49 Section 6 of the Act sets out a biodiversity and resilience of ecosystems duty and replaces Section 40 of the Natural Environment and Rural Communities Act 2006. This applies to a range of public authorities such as the Welsh Ministers, local planning authorities and public bodies. This ensures that biodiversity is an integral part of the decisions that public authorities take in Wales. It also links biodiversity with the long-term health of ecosystems and aligns to the framework for sustainable natural resource management in the Act. The Act requires all public authorities in Wales to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.
- 7.50 In regard to promoting the resilience of ecosystems, the Welsh Government must in particular have regard to the United Nations Environmental Programme Convention on Biological Diversity 1992.
- 7.51 Section 7 of the Act requires the Welsh Government to prepare and publish a list of the living organisms and types of habitat which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales, and to take measures to maintain and enhance these species and habitats. Hereafter these are referred to as ‘Section 7 Species’ or ‘Section 7 Habitats’.

7.52 The following national and local planning policy documents and guidance are relevant to the Proposed Scheme, and are described briefly in the sections below with reference to the particular sections applicable to nature conservation and biodiversity:

- Planning Policy Wales 11 and revised Policy 6 released in advance of Planning Policy Wales 12;
- Technical Advice 5: Nature Conservation and Planning;
- Neath Port Talbot Council Biodiversity and Geodiversity Supplementary Planning Guidance 2018;
- The Nature Recovery Plan for Wales 2020;
- Biodiversity Duty Plan 2020 – 2030
- Action Plan for Pollinators in Wales; and
- Future Wales – The National Plan 2040.

Defining the Study Area

7.53 Consistent with the scoping report, the assessment within this Chapter has been informed by the following study areas:

- International designated sites – 10km from the planning application boundary
- National and local designated sites – 2km from the planning application boundary
- Legally protected species– planning application boundary and immediate surroundings (up to 500m from the boundary)
- Other fauna – planning application boundary and immediate surroundings (up to 500m from the boundary)
- Habitats – planning application boundary and immediate surrounds (up to 100m from the boundary)

Background Studies to Inform the ES / Establishing the Baseline

7.54 **Table 7.4** summarises the surveys and survey data evaluation undertaken to inform the assessment presented within this Chapter. The table lists the surveys specifically undertaken for this project. A habitat plan of the Site is illustrated on Figure 1.

7.55 **Table 7.4** also lists previous surveys completed in 2021 for the land within the wider docks on behalf of a third party (XLCC) where the findings have in part informed the assessment in this Chapter. The XLCC survey work completed in 2021 covered the majority of the Harbourside site. The extensive survey area was subdivided into four areas, (referred to in 2021 as Areas A, B, C West, and C East) based on their character and geographic context. The extent of each is illustrated on Figure 2. TCA West is the only part of the Site which overlaps the 2021 Harbourside survey area, being located at the eastern end of Area C East.

7.56 Whilst most of the 2021 survey data is not directly related to the Proposed Scheme, the survey outcomes have helped inform an understanding of the detailed nature of habitats on

the Harbourside and their status and how these relate to the Proposed Scheme. The surveys are also helpful in understanding the presence of protected species adjacent to the Site and where there are common characteristics between the Site and Harbourside survey area.

Table 7.4: Surveys and Evaluation

Study / Survey / Analysis / Evaluation	Overview	Date of Completion
Preliminary Ecological Appraisal (Appendix 7.1)	Habitat survey for the PDZ , Phoenix Wharf and TCA1 and audit of protected species, species of principal importance and species of conservation concern Updates on botanical species composition	June 2022 July 2022 – May 2023
Habitat surveys (included in Appendix 7.1)	TCA East	July and August 2023
Update habitat survey (included in Appendix 7.1)	TCA West	July 2023
Building inspections – preliminary bat roost assessment (PBRA) (included in Appendix 7.2)	TCA East	August 2023
Bat emergence surveys (included in Appendix 7.2)	TCA East	August – September 2023
Bat activity surveys (included in Appendix 7.2)	Transects and remote recording TCA East	August and September 2023
Bat activity survey (included in Appendix 7.2)	Transects and remote recording of bat activity for the PDZ, Phoenix Wharf and TCA1	May 2022 – September 2022
Bat activity surveys (included in Appendix 7.2)	Transects and remote recording TCA West	July – September 2023
Reptile survey (included in Appendix 7.2)	Reptile presence/absence surveys for the PDZ, Phoenix Wharf, TCA1 and sidings	June 2022 – October 2022
Overwintering bird survey (included in Appendix 7.3)	Bi-monthly assessment of bird activity in the PDZ	November 2021 – March 2022
Overwintering bird survey (included in Appendix 7.3)	Monthly assessment of bird activity in the southern half of the open water dock	October 2022 – March 2023

Breeding bird assessment (included in Appendix 7.3)	Assessment of the value of the PDZ through the extrapolation of 2021 survey data for equivalent adjoining habitats (including all of TCA West)	June 2023
Invertebrate assessment (Appendix 7.4)	Assessment of the value of the PDZ and TCA1 through the extrapolation of 2021 survey data for equivalent adjoining habitats (including all of TCA West)	June 2023
Invertebrate survey 2023 (Appendix 7.5)	TCA1, TCA West and adjoining habitats, selected habitats in the PDZ following cutting down of the majority of the willow scrub	June – August 2023
Previous surveys completed on behalf of XLCC in 2021 that are referenced in the assessment		
Invertebrate Survey (Harbourside) 2021 (David Gibbs, 2021)	Survey of 40ha of post-industrial habitat in the docks (Harbourside site) including TCA West	June – August 2021
Breeding bird survey (Harbourside) 2021 (RPS, 2022)	Survey of 40ha of post-industrial habitat in the docks (Harbourside site) including TCA West	May – June 2021
Bat activity survey (Harbourside) (RPS, 2022)	Bat activity transects and remote recording of 40ha of post-industrial habitat in the docks (Harbourside site) including TCA West	May to September 2021
Reptile survey (Harbourside) (RPS, 2022)	Presence/absence of 40ha of post-industrial habitat in the docks (Harbourside site) including TCA West	July to October 2021

Assessment Process

Ecological Impact Assessment (EclA)

7.57 The assessment within this Chapter has been informed by an **Ecological Impact Assessment (EclA)**³ (RPS, 2023). The EclA report has considered all effects from the Proposed Scheme upon ecological receptors and is based on the Guidelines for Ecological Impact Assessment in

³ The **Ecological Impact Assessment (EclA)** has been submitted alongside the Application.

the UK and Ireland, terrestrial, freshwater and marine published by the Chartered Institute of Ecology & Environmental Management (CIEEM) in 2018. The purpose of this approach is to allow the ES and the assessments within this Chapter be focused on significant effects, whilst the **EclIA** provides a full assessment of all effects.

- 7.58 In line with the guidance the **EclIA** has considered the value of habitats, species and other ecological features and how these are assigned at a geographic scale (site, local, county, region, nation). Furthermore, the appraisal of effects within the **EclIA** has considered all effects from the Proposed Scheme at a geographic scale and defining whether they are significant in the same geographic context.
- 7.59 The **EclIA** has considered all effects on all the habitats within the Site in order to recognise the accumulative value of habitats of value for biodiversity only in the context of the Site. This comprehensive approach has informed the total losses and gains and formed the baseline for the delivery of Net Benefit for Biodiversity consistent with Welsh biodiversity planning guidance.
- 7.60 Effects that were classified as potentially 'significant at above a site context' in the **EclIA** have been brought into the ES for 'assessment' and conclusion in line with the EIA assessment methodology set out in **Chapter 2**.

Baseline

- 7.61 As identified through **Table 7.4**, the ecological baseline for the Site has been informed by a series of surveys and investigations undertaken across a number of years. All surveys have been provided as **Appendix 7.1 – 7.5** for completeness, with the **EclIA** summarising the outputs of the surveys and investigations.
- 7.62 The PDZ has been subject to ongoing Japanese knotweed control works being implemented by ABP (as landowner) in relation to this Schedule 9 species.
- 7.63 The ecological baseline used in this Chapter and assessment (and the **EclIA**) is derived from the conditions in the PDZ prior to the initiation of the ongoing Japanese knotweed control measures being undertaken by ABP.
- 7.64 Due to the extent and density of the Japanese knotweed, and its presence within other habitat types, the majority of the willow scrub in the PDZ was cut down to ground level by ABP in February 2023, to enable a full assessment of the extent of the Japanese knotweed growth and facilitate ongoing Japanese knotweed control measures. The dead canes in the dense stands of Japanese knotweed were again cut down to close to ground level across the majority of the PDZ in early winter 2023.
- 7.65 As detailed in **Table 7.4**, precautionary assessments were completed for breeding birds and invertebrates to provide an estimation of the use of the PDZ by these species groups prior to the clearance of scrub.

Reporting of the Environmental Effect and Significance Criteria

- 7.66 The assessment of likely significant environmental effects, as presented in this Chapter, resulting from the Proposed Scheme has taken into account the construction stage and operational stage. The following sections define the approach adopted within the assessment for the determination of sensitivity (or value/importance), magnitude of change

(or impact), the level of effect and significance, in order to align the outputs of assessment of ecological impacts in a common terminology and approach to the remainder of the ES. As noted above, all assessment conclusions are informed by the assessment undertaken as part of the **EclA**.

Determining Sensitivity of Receptor

7.67 The sensitivity of affected receptors has been considered on a scale of **high, medium, low** or **negligible**. The evaluation of receptors for the purposes of this assessment has been based on the criteria set out in **Table 7.5** below.

Table 7.5: Definitions of Ecological Receptor Sensitivity

Sensitivity	Typical Descriptors
High	Sites of UK or National (Welsh) Importance (SSSI & National Nature Reserves (NNR)) and Ancient woodland. Resident, or regularly occurring, populations of species which may be considered at an International, European, UK or National level where: • The population exceeds 1% of published data for national populations. The loss of the population would adversely affect the conservation status or distribution of the species at this scale; or • the population forms a critical part of a wider population at this scale; or • the species is at a critical phase of its life cycle.
Medium	Sites of regional importance in South Wales, sites of County Importance (SINCs) or sites of equivalent to county value. Priority habitats (Section 7 habitats) of County / Regional importance. Resident, or regularly occurring, populations of species which may be considered at an International, European, UK or National level and key/priority species listed within Local BAPs where: • the loss of these populations would adversely affect the conservation status or distribution of the species at this scale; or • the population forms a critical part of a wider population; or • the species is at a critical phase of its life cycle.
Low	Features of Local or District Importance. Designated sites including Local Nature Reserves (LNRs) designated in the local context. Priority habitats (Section 7 habitats) of Local / District importance. Areas of habitat; or populations/communities of species considered to appreciably enrich the habitat resource within the local context (such as veteran trees), including features of value for migration, dispersal or genetic exchange.
Negligible	No higher than Parish or very local importance.

7.68 In assigning a sensitivity to a habitat or species population or assemblage, its distribution and status (including a consideration of trends based on available historical records) are considered. Rarity is considered because of its relationship with threat and vulnerability, and

the need to conserve representative areas of habitats and genetic diversity of species populations, although rarity in itself is not necessarily an indicator of value. A species that is rare and declining is assigned a higher value than one that is rare but known to be stable.

Ecological site

- 7.69 When determining sensitivity of ecological sites full account has been given to the existing value systems such as SSSIs and SINCE designations and ancient woodland. Judgement is required for the valuation of ecological sites of less than county importance.

Habitat

- 7.70 When determining sensitivity of habitats, this has taken into account size (extent), diversity, naturalness, rarity, fragility, typicalness, recorded history, position in an ecological or geographical unit, current condition and potential importance. Consideration has also been given to both existing and future predicted baseline conditions, for example the spread of Japanese knotweed and ongoing natural succession from grassland to scrub, where applicable and able to be determined.

Species population / assemblages

- 7.71 Reaching a determination on sensitivity for species populations / assemblages are valued on the basis of their size, recognised status (such as recognised through published lists of species of conservation concern and designation as Section 7 species) and legal protection status.
- 7.72 For example, bird populations exceeding 1% of published information on biogeographic populations are considered to be of international importance, those exceeding 1% of published data for national populations are considered to be of national importance, etc.
- 7.73 In assigning importance to species populations consideration has been given to its distribution, rarity, population trends, and the size of the population which would be affected. Therefore, a species subject to international or national level legal protection is not automatically classified as being of international or national importance and is assigned a value based on the context of the particular population present at the Site and immediate surroundings.

Determining the Magnitude of Change

- 7.74 The magnitude of change has been considered as the change experienced from the current baseline conditions at the sensitive receptor and has been considered on a scale of **large, medium, small or negligible**.
- 7.75 **Table 7.6** below indicates how the magnitude of change has been described within this assessment, taking into account guidance provided in CIEEM (2018).

Table 7.6: Definitions of Magnitude

Magnitude of change category	Typical Descriptors
High	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (Adverse).

Magnitude of change category	Typical Descriptors
	Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial).
Medium	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements (Adverse).
	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial).
Low	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements (Adverse).
	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial).
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (Adverse).
	Very minor benefit to or positive addition of one or more characteristics, features or elements (Beneficial).

7.76 Conservation status is described by the CIEEM guidance (2018) as follows:

‘Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.’

‘Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.’

7.77 For designated sites, the focus is on the impact on the integrity of the site, i.e. the ability of the site to continue to maintain conditions which would allow the key species and habitats for which it was designated to flourish. In assessing impacts on these sites, the focus has been on impacts on the key species and those habitats and features of value to them.

7.78 For habitats and species the magnitude of impacts consideration has been given to:

- type of impact;
- size or intensity measured in relevant terms e.g. numbers of individuals affected;
- extent or spatial scope of the impact;
- fragility / stability of habitats (the ability for the ecosystem to maintain a form of equilibrium alongside change);
- sensitivity of species to disturbance (degree of change in species abundance and composition)

- anticipated duration of the impact;
- reversibility of the impact – whether the effect is naturally reversible or reversible through mitigation action; and
- timing and frequency of the impact, in relation to ecological changes.

Determining the Level of Effect

7.79 The level of effect has been informed by the magnitude of change due to the Proposed Scheme and the evaluation of the sensitivity of the affected receptor. The level of effect has been determined using professional judgement and **Table 7.7** has been a tool which has assisted with this process.

7.80 Whilst **Table 7.7** provides ranges, the level of effect is confirmed as a single level and not a range, informed by professional judgement. For each effect, it has been concluded whether the effect is 'beneficial' or 'adverse'.

Table 7.7: Matrix to Support Determining the Level of Effect

		Sensitivity (or value / importance)			
		High	Medium	Low	Negligible
Magnitude of Change	Large	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Small	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

7.81 The following terms have been used to define the level of the effects identified and these can be 'beneficial' or 'adverse':

- **Major effect:** where the Proposed Scheme is likely to cause a considerable change from the baseline conditions and the receptor has limited adaptability, tolerance or recoverability or is of the highest sensitivity;
- **Moderate effect:** where the Proposed Scheme is likely to cause either a considerable change from the baseline conditions at a receptor which has a degree of adaptability, tolerance or recoverability or a less than considerable change at a receptor that has limited adaptability, tolerance or recoverability;
- **Minor effect:** where the Proposed Scheme is likely to cause a small, but noticeable change from the baseline conditions on a receptor which has limited adaptability, tolerance or recoverability or is of the highest sensitivity; or where the Proposed Scheme is likely to cause a considerable change from the baseline conditions at a receptor which can adapt, is tolerant of the change or/and can recover from the change; and

- **Negligible:** where the Proposed Scheme is unlikely to cause a noticeable change at a receptor, despite its level of sensitivity or there is a considerable change at a receptor which is not considered sensitive to a change.

7.82 The duration of the effect has been assessed as either 'short-term', 'medium-term' or 'long-term'. Short-term is considered to be up to 1 year, medium-term is considered to be between 1 and 10 years and long-term is considered to be greater than 10 years.

Determining Significance

7.83 For each effect, a statement has been made as to whether the level of effect is '**Significant**' or '**Not Significant**'. This determination has been based on professional judgement and/or relevant guidance/legislation where applicable. Significance has only been concluded for residual effects (i.e. following the identification of secondary mitigation).

Baseline Conditions

7.84 Detailed baseline information is presented in the relevant appendices. The key baseline information relating to the receptors taken forward for assessment within this Chapter is provided below.

Designated Sites

7.85 There are three international statutory designated sites within 10km of the Site boundary: Kenfig SSSI/NNR/SAC located 5km to the south, Crymlyn Bog and Pant y Sais SSSI/NNR/SAC located 6.6km to the north of the site and Cefn Cribwr SSSI/SAC, 9.5 km to the south-west of the Site. Within a 2km radius around the Site, there are no national statutory designated sites and five non-statutory Sites of Interest to Nature Conservation (SINC).

7.86 The five non-statutory designated nature conservation sites within 2km which are:

- Lower River Afan Estuary SINC, a 6.63ha site located 700m west of the PDZ and 480m west of TCA West
- Little Warren SINC, a 1.47ha site adjoining the Lower River Afan Estuary SINC, 1km west of the boundary of the PDZ and 825m west of TCA West.
- Harbourside Law Courts SINC is a 3.04ha brownfield site supporting Open Mosaic Habitats on Previously Developed Land located 645m to north of the PDZ and 625m north of TCA1.
- Bryn Goytre Cycleway SINC is a 2.5 mile linear section of disused railway line supporting grassland and woodland. This SINC lies 1.6km east of the PDZ and 1.2km east of TCA1.
- NPT Watercourses SINC is an extensive designation covering watercourses and waterways in coastal, urban and industrial areas across Neath Port Talbot. The River Afan forms part of this SINC site and the SINC boundary is approximately 700m to the west of PDZ at the closest point.

7.87 The closest area of ancient semi-natural woodland is at Tai-Bach (SS 77871 88473), a small block on the south-western side of the M4 motorway and bounded by residential housing. This woodland is located 825m from TCA1 and 1.2km from the PDZ.

- 7.88 The second closest block of ancient woodland located at the eastern end of the Bryn Goytre Cycleway SINC located c1.1km from TCA1 and 1.5km from the PDZ. Further blocks of ancient semi-natural woodland and Plantations of Ancient Woodland Sites within Bryn Goytre Cycleway SINC are located between 1.5 and 2km of the Site.

Section 7 Habitats and Equivalent

PDZ

- 7.89 One Section 7 Habitat and one habitat equivalent to county value occur within the PDZ:

- Coastal grassland and dune slack vegetation – 0.05ha
- Naturally regenerating grassland – 1.25ha

- 7.90 The coastal grassland is characterised by a high percentage cover of herbs and sedges with minimal bare ground. The overall species assemblage is moderately diverse with some variation. Locally frequent species include bird's-foot trefoil, red fescue, sand sedge, common restharrow, and common storks-bill. 22 SINC grassland indicator species were recorded in the small area of coastal grassland.

- 7.91 The dune slack vegetation is very small in extent (less than 100m²) having established on seasonally flooded ground on the margin of an area of hardstanding. The species composition is characterised by creeping willow, water mint, dotted sedge and glaucous sedge, sharp rush and sea rush.

- 7.92 The multiple areas of naturally regenerated grassland habitat in the PDZ together reach approximately 1.25ha in extent in total. The largest areas occur on the eastern and north-western parts of the PDZ with many glade areas on the centre of the PDZ. A wide range of herb species are distributed across the grassland but hairy sedge and dewberry are typically abundant and the number of plant species per square metre is typically not high. During the 2022 habitat survey (**Appendix 7.1**), 44 species SINC grassland indicator species were recorded in the species assemblages present in the different grassland areas.

TCA West

- 7.93 Small extents of naturally regenerating grassland occur within TCA West. These grassland areas had lower species diversity than the equivalent grassland in the PDZ, and are not of county value when considered as separate habitat units. Due to their context, adjacent to the PDZ they should be considered as a continuation of the naturally regenerating grassland habitats in the PDZ.

TCA1

- 7.94 TCA1 is located within the land parcel referred to as Margam Wharf and will occupy c70% of the total area of the wharf.
- 7.95 TCA1 comprises a c2ha area of ephemeral vegetation, bryophytes, bare ground, open structured grassland and scattered native and non-native shrubs. Together these habitats classify as open mosaic habitat (OMH), a Section 7 habitat.

- 7.96 The parts of the pioneer vegetation are flower-rich. Habitat and botanical surveys recorded the presence of a population of oxtongue broomrape, a nationally rare plant species protected under Schedule 8 of the WCA 1981; 39 (SINC) indicator species of grassland and post-industrial sites, as defined in the Guidelines for the Selection of Wildlife Sites in South Wales. Many of the indicator species also have local importance in Neath Port Talbot.
- 7.97 The open mosaic habitat (TCA1), naturally regenerating grassland (PDZ), and coastal grassland/dune slack vegetation (PDZ) are the features of highest sensitivity and support an assemblage of SINC indicator species. The more localised areas of grassland habitat in TCA West and TCA East were less diverse.
- 7.98 The sensitivity of all the grassland habitats in the PDZ and TCA West has been considered in the context of the encroachment of Japanese knotweed and regenerating willow and the ongoing decline in biodiversity value in the absence of intervention. The roots of Japanese knotweed will extend through the ground beneath many of the areas of grassland.
- 7.99 In addition, as the Japanese knotweed and willow increase in extent the grassland areas will become more isolated reducing the resilience of populations of less common plant species.
- 7.100 The open mosaic habitat in TCA1 will also change over time in the absence of intervention. Wall cotoneaster (Schedule 9) has colonised the edge of the dock and is starting to colonise and spread. The extent of longer open mosaic habitat will gradually develop into grassland and scrub with the loss of populations of pioneer species.
- 7.101 As a whole the S7 habitats (and equivalent) within the Site (both permanent development areas and temporary working areas) are classified as having medium sensitivity.

Other Habitats

- 7.102 The other lower value habitat types within the PDZ are listed below with their approximate extents.
- Willow scrub – 3.88ha
 - Dense Japanese knotweed stands – 2.25ha
 - Mixed species scrub, gorse and bramble – 0.9ha
 - Hardstanding/sparsely vegetated ground – 0.53ha
 - Ephemeral vegetation/bare ground – 0.26ha
 - Bracken – 0.25ha
 - Seasonally flooded ground – 0.18ha
 - Conifer tree line – 0.03ha
- 7.103 Relatively small extents of bramble and bracken with patches of grassland and scattered scrub / young trees occur at Crown Wharf dockside in the strip of land between the open water dock and Phoenix Way.

- 7.104 TCA East is c3.9ha in extent and primarily comprises industrial buildings within areas of hardstanding.
- 7.105 There are a small number of patches of open grassland, tall ruderals, dense willow scrub, gorse and bramble, generally located on the margin and bounded by hardstanding or built development. The grassland has naturally regenerated on previously disturbed ground and comprise a mix of ubiquitous ruderals, pioneer colonists and grassland herbs typical of disturbed areas that have colonised over time. Several small stands of Japanese knotweed are present along with non-native cotoneaster species.
- 7.106 A range of habitats are present in the main part of TCA West which is c1.58ha. Dense Japanese knotweed covers approximately a quarter of the area. The other main habitats are regenerating willow scrub (0.5ha), mixed species scrub with small grassland glades (0.19ha) and bracken (0.14ha). There are also small extents of ephemeral vegetation, naturally regenerating grassland, reseeded grassland and non-ruderal (ferns).
- 7.107 Overall the other habitats within the Site (both permanent development areas and temporary working areas) are classified as having low sensitivity.

Species population/assemblages

Oxtongue Broomrape

- 7.108 Colonies of oxtongue broomrape, a nationally rare plant legally protected under Schedule 8 of the WCA. It is a parasite of hawkweed oxtongue and requires good populations of the hosts species to sustain colonies.
- 7.109 Oxtongue broomrape also occurs in a number of locations in the wider docks with colonies in the wider Harbourside site (Areas A, B and C West) and in the grassland adjoining the enclosed harbour foreshore, 640m west of TCA West. There are also recent records of further colonies of oxtongue broomrape outside of Port Talbot Docks.
- 7.110 The colony of this nationally rare plant within TCA1 is classified as having medium sensitivity being part of the population occurring within the wider docks.

Bats

Roosts

- 7.111 The presence / absence of bat roosts in buildings in TCA East was subject to assessment in late summer 2023. A low conservation status day/transitional roost and feeding perches/night-roost for common pipistrelle has been recorded in Building B1 with a single bat recorded to emerge during two of the emergence surveys.
- 7.112 Low value potential roost features were found in four of the buildings in TCA East (Buildings B5, B13 and B17) as defined on Figure 3. No bats were recorded emerging from or re-entering these buildings indicating the likely absence of bat roosts.
- 7.113 Common pipistrelles were also recorded foraging in the vicinity of Building B1 by surveyors and on remote detectors.

7.114 There are no potential roost features within the PDZ, Crown Wharf dockside, TCA1, or TCA West. All the shrub willows were multi-stemmed and had narrow diameter trunks and there are no larger semi-mature or mature large broadleaf trees. Daytime inspections confirmed the absence of any potential roost features in the line of cypress trees.

7.115 The sensitivity of the low status common pipistrelle roost in Building 1 has been classified as Negligible.

Bat Activity

7.116 Five bat species were recorded within the Site during the transect surveys and/or remote recording in 2021, 2022 and 2023: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule and brown long-eared bat.

7.117 Common pipistrelle was by far the most frequently encountered species with extended foraging by a small number of bats in the PDZ and parts of TCA East.

7.118 Soprano pipistrelle and noctule bat activity was typically recorded at very low levels of activity within the Site, but with occasional periods of foraging probably reflecting changes in prey abundance for example brief periods of elevated numbers of invertebrates after mass hatching.

7.119 A single pass of a Nathusius pipistrelle was recorded on a remote recorder on the western boundary between the PDZ and TCA West in 2022. A few Nathusius pipistrelle calls were also recorded to the west of TCA West in 2021 on remote detectors placed on the scrub edge habitat.

7.120 A single brown long-eared bat pass was recorded on a remote recorder located on the southern boundary of TCA East in 2023 but was not recorded in either 2022 or 2021.

7.121 The overall level of bat activity for common pipistrelle was generally low with only localised areas of regular used as foraging habitat, including scrub edge habitat adjoins grassland on the northern and eastern sides of the PDZ, especially where these habitats are sheltered by the line of conifers and around streetlights on the side of Phoenix Way which will attract prey species.

7.122 TCA East adjoins the 1.2ha reedbed and willow scrub woodland which are further areas used as foraging habitat and flightlines by common bat species. Moderate levels of common pipistrelle were recorded on the margin of the reedbed where it adjoins TCA West, especially in the western section around Building 1 half with between 115 and 215 passes were recorded per night. Observations indicated this related to extended periods of foraging by a small number of bats.

7.123 The remainder of TCA East and the other industrial / commercial premises are considered to have low importance as foraging habitats for bats with very few passes recorded over the built areas during emergence and re-entry surveys and walked transects along the northern boundary.

7.124 In 2023 the bat activity surveys recorded low levels of activity of common pipistrelle foraging on the boundary along the edges of the scrub in TCA West. Occasional passes of soprano pipistrelle and noctule passes were also recorded in this location. Regular low level of activity

around scrub on the southern boundary of the scrub lined margin of the reedbed where it adjoins the disused railway line.

- 7.125 The sensitivity of the small assemblage of bat species utilising flightlines and foraging habitat within the Site and immediate surroundings has been classified as Low.

Birds - Overwintering Assemblage

- 7.126 A total of 16 species of conservation interest were recorded during monthly counts covering the open water dock survey areas (as defined in Appendix 7.3) between October and March 2023 and during surveys of the terrestrial habitats in PDZ and TCA West undertaken between October and March 2021.
- 7.127 The bird species using the dock in 2022/ 2023 closely matched the data collected during the Wetland Bird Survey (WeBS) monthly counts between 2012 and 2016.
- 7.128 The assemblage of wetland birds regularly using the dock is small comprising species that are common and widespread in coastal/wetland habitats during winter months. All the species occur in small numbers, with the exception of the herring gull (with a peak count of 131 across the dock as a whole) and black headed gull (with a peak count of 35 across the dock as a whole). Both gull species are BoCCW Red List species.
- 7.129 During the monthly 2012 – 2017 WeBS counts only four wader species were recorded: lapwing (BoCCW Red List), oystercatcher, snipe and common sandpiper (BoCCW Amber List). Lapwing and snipe were also recorded in 2022/2023.
- 7.130 Small numbers of snipe were recorded in the PDZ and outside the site on an area of open ground to the west of Crown Wharf dockside with all sightings associated with seasonally flooding. Woodcock (BoCCW Red List) was also occasionally recorded in the PDZ.
- 7.131 The willow and other scrub habitats are used by a range of passerine species over winter feeding on seeds and invertebrates. The BoCC species recorded were mistle thrush, grey wagtail, magpie, snipe and woodcock.
- 7.132 Adjacent to TCA1 in early winter 2022, small numbers of birds were recorded foraging on berries produced by wall cotoneaster (invasive non-native plant) where it grows abundantly on the edge of the open water dock with individual meadow pipit and mistle thrush recorded along with robin, blackbird, dunnoek and magpie in November 2022. There was negligible activity in late winter.
- 7.133 The Lower River Afan Estuary, located outside the open water dock, to the west is used by flocks of gulls at low tide with black headed gull (BoCCW Red List) the main species. Wildfowl and wader species also occur small numbers; including curlew, redshank and lapwing (all BoCCW red list species), oystercatcher (BoCCW Amber list species) and mallard.
- 7.134 Bird activity during high tide periods is limited to individual birds typically feeding on the seaweed covered engineered stone revetments above the average high water level.
- 7.135 The sensitivity of the wintering bird population associated with the Site, open water dock and adjoining habitats is classified as Low.

Breeding Birds

- 7.136 Based on a precautionary assessment it is assumed that 8 species breeding within the site having conservation importance; being classified under the Birds of Conservation Concern in Wales (BoCCW) Red or Amber lists, as a Species of Principal Importance (Section 7, Environment Wales 2016), or protected under Schedule 1 of the Wildlife and Countryside Act 1981.
- 7.137 In 2021, the scrub woodland and areas of dense mixed scrub in Area C East supported a different several common and widespread bird species with up to four pairs of wren along with observations of great tit, blue tit, blackbird, and robin, all species associated with gardens and urban areas as well as the wider environment. Additional species associated with scrub woodland habitats were song thrush, blackcap, and chiffchaff. Up to three pairs of whitethroat and up to two pairs of dunnock were nesting in the gorse, bramble, willow scrub in 2021. A further breeding survey visit in June 2023 recorded an equivalent species assemblage.
- 7.138 With the exception of herring gull, no nesting activity was observed within the other buildings within TCA East during building inspections in July 2023, but the use of cavities by BoCCW species such as house sparrow and starling cannot be ruled out.
- 7.139 During the summer walkover surveys of TCA in 2022 and 2023 the absence of any activity of ground nesting birds (skylark, meadow pipit) was confirmed. The flat sparsely vegetated ground with scattered scrub in TCA1 provides negligible cover and the regenerating scrub is only starting to develop sufficient cover at ground level for nest sites.

BoCCW Red List species

- Herring gull is a common resident breeding species recorded on the flat roof of Building B1 in TCA East in 2023. It is not possible to view the roof from the ground but herring gull activity was observed during every site visit in summer 2023 including the presence of fledged juvenile birds and is considered very likely to have nested.
- Goldcrest (1 pair) – Goldcrest has been confirmed as breeding in the line of cypress conifers on the eastern boundary in 2022.
- Linnet is common resident breeding species in the county. And linnet is a potentially breeding species in gorse and bramble with an estimate of up to 2 pairs. No nesting activity was recorded in TCA West in 2021.
- Whitethroat is a confirmed breeding species in TCA West and the PDZ and is a common breeding passage migrant with an estimate of up to 8 pairs across the two areas, primarily using gorse and bramble habitats.

BoCCW Amber List species

- Bullfinch, dunnock, chaffinch, and magpie are all common resident breeding species in the county.

Schedule 1 Species

- Cetti's warbler is a BoCC Green List species considered to be locally common resident in the region. Areas of dense reed bounded by scrub have the potential to nesting pairs. Potential nesting habitat within the site is limited to the small seasonally

waterlogged areas in the PDZ while outside the site the reedbed/scrub south of TCA East and the reedbed/scrub on the edge of the open water dock are further potential nesting habitat. Brief Cetti's warbler song was heard in all three locations in 2022 and/or 2023.

- 7.140 Song thrush is a Section 7 species but was reclassified as BoCC green (low conservation concern) in 2022 and is a common resident breeding species in the county.
- 7.141 The majority of nesting habitat within the Site is associated with the denser structured vegetation, principally bramble, gorse and woody hawthorn scrub which have a scattered distribution across the PDZ and in TCA West. The dense bracken also provides potential cover for species associated with scrub that nest on the ground. Low levels of activity have been recorded in the continuous stands of even aged regenerating willow scrub which have a very open ground flora.
- 7.142 The sensitivity of the breeding bird assemblage within and adjoining the Site and associated with the open water dock is classified as Low.

Reptiles

- 7.143 Populations of three native reptile species (common lizard, grass snake and slow worm) all occur in the Site.
- 7.144 Highest numbers were found in the PDZ and TCA West with small numbers recorded on the Crown Wharf dockside. No reptiles were found in TCA1 where the expanse of sparse vegetation cover provided low potential for reptile species. Based on the survey result and habitat quality all three species are considered to be absent from this part of the Site.
- 7.145 The PDZ and TCA West supports a good population of common lizard with a peak count of 18 adults from the PDZ. The sightings were centred around areas of grassland with the willow scrub and dense Japanese knotweed being suboptimal habitat.
- 7.146 Grass snake breed in the PDZ with small numbers of sub-adults and juveniles recorded. The areas of seasonally dry reedbed and bracken provide conditions most suitable for egg laying. Grass snake also utilise dockside habitats at Crown Wharf and is likely to occur in the reedbed habitat adjoining the TCA East.
- 7.147 Slow-worm have been recorded in TCA West, the PDZ and TCA East. The survey of the PDZ in 2022 recorded a peak count of 2 adults with most individuals recorded on the boundary between the PDZ and TCA West. The results indicate a small breeding population. In 2021, slow-worm were also recorded in Area C East including habitats within TCA West. The peak count of 7 adults in Area C East. Two individual slow-worms were seen in the small patches of grassland in TCA East during a walkover survey in August 2023.
- 7.148 The populations of the three reptile species within the Site have been classified as having low sensitivity (equivalent to local importance) forming part of the larger breeding populations present within Port Talbot Docks as a whole.

Invertebrates

- 7.149 A range of habitats and micro-habitats offering a wide range of opportunities for invertebrates occur across Port Talbot Docks as assessed through surveys of the Harbourside site in 2021. Features of value for invertebrates include bare sandy ground, varied topography with many banks, open water, reedbed, open mosaic habitat, open structured flower-rich grassland, tussocky grassland and scrub.
- 7.150 These features contribute to the value of the local area for invertebrates. Many invertebrate species have very precise requirements for habitat 'niches' and the range of ground conditions increases the diversity of micro-habitats available to invertebrates while flower-rich vegetation provides valuable sources of nectar and pollen.
- 7.151 The terrestrial invertebrate survey of the Harbourside site in 2021 recorded a total assemblage of 317 species from sampling in mid and late summer. The ratio of species with conservation status (Red Data Book, National Scarce, Section 7) varied from 7 to 9% in the different survey compartments where current and former listed species are considered together including all species that formerly had conservation status but are no longer classified. These rarer species were primarily associated with the grassland, banks, and flower-rich habitats.
- 7.152 Based on the habitat types and extents and following a precautionary assessment the PDZ is predicted to have a total diversity of between 145 and 155 species. This is a conservative estimate taking into account the current extent of Japanese knotweed, absence of bank features and homogeneity of the regenerating grey willows as well as recognising that a proportion of the species assemblage using the PDZ will have not been recorded elsewhere. The percentage of the assemblage in the PDZ that classify as key species is expected to be 7 and 9%, based on the survey results for the Harbourside site in 2021.
- 7.153 A follow up invertebrate survey was completed for Area C East, TCA1 and the grassland and reedbed habitats in the PDZ in 2023. The results are presented in Appendix 7.5.
- 7.154 A total of 151 species were recorded in the PDZ. Excluding the species that no longer have national conservation status, the number of species of conservation concern found was 4 (2.6%) including 2 (1.3%) RDB species. In the PDZ the very extensive Japanese knotweed infestation meant that the actual area of habitat of potential value for invertebrates was limited. However a few species were only recorded in the PDZ including a rare leafhopper *Paralimnus phragmitis* and a snail-killing fly *Pherbellia knutsoni*, both of which were associated with the stands of common reed which completely dried in early summer.
- 7.155 A total of 156 species were identified in Area C East. Excluding the species that no longer have national conservation status, the number of species of conservation concern found was 4 (2.6%) including 2 (1.3%) RDB species. In 2021 the total number of recorded species in Area C East was very similar with a total of 157 species. In Area C East two important invertebrates were found, the flesh-fly *Macronychia polyodon* which is associated with dunes in South Wales, and the blood-bee *Sphecodes ferruginatus* which was also recorded in Area C East in 2021.
- 7.156 TCA West makes up under 50% of the total area of Area C East and only part of the species assemblage will be associated with this area due to the extent of densely shading willow, Japanese knotweed and bracken and the limited extent of flower-rich grassland and open,

ruderal areas which is more prevalent in the adjacent habitats to the west included in the 2023 survey.

- 7.157 In TCA1 and the immediate surroundings in Margam Wharf 86 species were recorded. Excluding the species that no longer have national conservation status, the number of species of conservation concern found was 3 (3.5%) of which 1 (1.2%) is an RDB species.
- 7.158 In TCA1 the rare mining-fly *Phytomyza orobanchia* (which has recently been given provisional RDB2 status) was recorded. This species was abundant in TCA1 where it occurs on the host-plant, oxtongue broomrape. Colonies of this plant occur elsewhere on ABP land at Port Talbot and it is expected that this rare invertebrate occurs more widely within the docks. It should be noted that the first invertebrate survey visit of Harbourside site in 2021 was undertaken after the seasonal period when this species would have been active.
- 7.159 The overall invertebrate assemblage is classified as having medium sensitivity.
- 7.160 The species recorded contribute to the populations present in naturally regenerating habitats within the Port Talbot Docks as a whole. A small number of individual species have high conservation status due to their rarity in South Wales including the mining fly associated with oxtongue broomrape.

Future Baseline

PDZ and TCA West

- 7.161 Aerial photography illustrates formerly naturally regenerating grassland was the dominant habitat alongside areas of sparsely vegetated ground and hardstanding related to former industrial uses.
- 7.162 Over the last 20 years very extensive stands of Japanese knotweed have spread into the majority of the PDZ and is widely distributed throughout with the largest expanses located in the south-western part of the PDZ. The densest stands currently cover approximately 40% of the PDZ.
- 7.163 Willow scrub has also regenerated across the PDZ and TCA West in the last 20 years and now forms multiple continuous stands alongside the Japanese knotweed. Areas of mixed species scrub, bramble and bracken have also established. Young shoots of Japanese knotweed were noted growing in the willow scrub and grassland a significant distance from older growth.
- 7.164 The spread of Japanese knotweed and the natural succession to scrub has led to much of the former grassland having been lost. In the absence of future intervention, the PDZ and TCA West will become dominated by dense stands of Japanese knotweed and shrub willows with more localised areas of mixed species scrub and bramble. There would be an ongoing loss of grassland and after 10 years any remaining extents of grassland would be expected to be very small. These changes significantly reduce the potential future biodiversity value of the PDZ and TCA West.

TCA 1

- 7.165 The flower-rich ephemeral vegetation present across TCA1 has slowly established on ground that was developed in the recent past. The rate of natural succession is gradual because of the nature of the underlying post-industrial substrates.

- 7.166 In the absence of intervention, willow scrub, butterfly bush and birch will increase in extent with the gradual reduction in the extent of pioneer vegetation. The invasive non-native species, wall cotoneaster has started to colonise the grassland and would be expected to significantly increase in extent as the plants establish and spread.
- 7.167 A shallow soil would start to develop from the vegetation that dies back each year. In the long term, it is possible that the pioneer vegetation and flower-rich grassland will become scrub and long grassland with lower species diversity. Oxtongue broomrape occurs in very open pioneer plant communities and as the ground conditions change the population at TCA1 would decline over time.

TCA East

- 7.168 Consistent with the other areas of the site, in the absence of intervention, areas of grassland will naturally develop into willow scrub, and butterfly bush alongside the spread of Japanese knotweed. The small areas of grassland would be lost and reducing habitat and plant species diversity.
- 7.169 There is no predicted future change to biodiversity value of hardstanding or buildings in TCA East if they were to remain operational.

Primary and Tertiary Mitigation

Construction Stage

- 7.170 The following primary and tertiary mitigation which has been evaluated as part of the construction stage assessment is outlined below.

Construction Site Drainage

- 7.171 As set out within **Chapter 4: Development Specification**, it is intended that a temporary drainage strategy will be implemented during the construction stage to manage surface water runoff. This temporary drainage strategy will incorporate features which will remain part of the operational surface water drainage system and take advantage of any post-development SuDS without compromising the long-term operation of the SuDS features.
- 7.172 Where components of the permanent drainage strategy are used during construction, all silt and debris build-up will be removed, and the permanent components fully reinstated on completion of construction.
- 7.173 The temporary drainage strategy will take account of industry best practice and guidance (i.e., British Standard 8582:2013 – Code of practice for surface water management for development sites, Site handbook for the construction of SuDS (CIRIA C698) and CIRIA's Control of water pollution from construction sites).
- 7.174 Where necessary the temporary drainage solution during construction will include measures to remove silt, sediment, and debris.
- 7.175 The Temporary Construction Areas shall require draining for their lifetime. To facilitate use as a construction area, preliminary works to this area shall comprise gravel surfacing. The final slope of the area shall be realised to direct surface water from the Temporary Construction Area to ditches with drainage pumps to manage silt laden runoff and build-up of materials across the area.

Operational Stage

7.176 The following primary and tertiary mitigation which has been evaluated as part of the operational stage assessment is outlined below.

Landscape Scheme

7.177 The landscaping features within the PDZ will include:

- Flower-rich grassland/pioneer vegetation
- Modular biodiversity (bespoke gabion) walls
- Biodiverse green/brown roof with solar on the administration building
- Small green/brown roofs on small buildings (Site Entrance 1 and Gatehouse 1)
- Gravel substrate rain gardens (adjoining hard landscaping)
- Insect hotels
- Large rock features

7.178 The layout has been designed to minimise potential fire hazards and this has included the design of the landscaped areas within the PDZ. This has limited the extent of landscaping and vegetation cover within the PDZ. Consequently all the landscaped areas are located towards the boundaries with the largest landscaped spaces located within the administration area, between the truck loading area and Phoenix Way and towards the western boundary alongside a proposed internal road.

7.179 The main proposed habitat types are flower-rich grassland and pioneer vegetation which will be established on nutrient-poor substrates, features that should be equivalent to habitats of biodiversity value found in the docks. The vegetation proposed is associated with industrial sites which can support key foodplants for invertebrates and provide sources of pollen and nectar. Both habitat types are suitable for periodic disturbance, with low maintenance requirements.

7.180 Site-won substrates will be used where possible (subject to the results of ground investigations), or alternatively, similar inert post-industrial substrates will be sourced for the creation of pioneer plant communities as an integral part of the landscape scheme for the PDZ.

7.181 It is anticipated that the majority of the component species will establish through natural colonisation from flower rich vegetation growing on similar substrate in the locality of the development. Open mosaic habitats comprise species that are adapted to drought stressed environments and can cope with periods of desiccation. The composition would include annuals, many of which will be spring flowering, dying back in summer and germinating from seed each year. The habitat is resilient to climate change and will adapt to changing conditions through variation in the abundance of individual species, but remaining a flower rich low grass cover vegetation.

7.182 To maximise value the individual features have been designed to have multifunctional benefits for biodiversity, landscaping and sustainable drainage (SuDS). The development will

have permeable paving (staff car parking areas), trapezoidal ditches (gravel-based swales) along Pheonix Way and macro-permeable paving (frontage of warehouses).

Operational Lighting

- 7.183 For operational lighting the following mitigation measures will be fully adopted in the detailed lighting strategy as part of good lighting design practice.
- 7.184 Lower colour temperature lamps (CCT ≤ 4000K) have been specified for lighting limiting output on the blue / ultraviolet range to minimise potential effects on the behaviour of bats, invertebrates and birds.
- 7.185 The positioning and orientation of luminaires will confine lighting to the task area through the use horizontal cut-off optics and zero floodlight tilt angles);
- 7.186 Deflectors will be included in the detailed specifications to minimise obscure light sources and skyglow.
- 7.187 The normal lighting will be controlled by a timer and photo electric cell, so that the lights can only come on during set hours and only if it is dark enough for artificial lighting to be required. Therefore, these lights will only come on if required between 6am and 11pm. After 11pm, lighting will drop down to emergency lighting levels as indicated above.
- 7.188 Streetlights and car park lighting will be controlled by a timer and photo electric cell so that the lights can only come on during set hours and only if it is dark enough for artificial lighting to be required for safe movement around site.

Assessment of Effects, Secondary Mitigation and Residual Effects

Construction Stage

Habitat loss within the Site (PDZ, TCA West, TCA East, TCA1, Crown Wharf dockside (for works to facilitate the Construction Wharf / Jetty and Marine Loading/Unloading Facility))

Loss of Section 7 Habitats and equivalent

- 7.189 The permanent loss of higher value habitat is defined as:
- Coastal grassland and dune slack vegetation (PDZ) – 0.05ha
 - Naturally regenerating grassland (PDZ) – 1.25ha
 - Open mosaic habitat (TCA 1) – 2ha
- 7.190 Taking into account the context of these habitats in the PDZ where they are being encroached by Japanese knotweed and are subject to natural succession to scrub. All the habitats within the PDZ will be subject to permanent loss given the implementation of the Proposed Scheme and therefore the magnitude of change is deemed to be large.
- 7.191 The use of part of Margam Wharf as TCA1 will result in the loss of c2ha open mosaic habitat (OMH), also Section 7 habitat. Approximately 80% of the OMH habitat in Margam Wharf is located within the boundary of TCA 1 and will be affected by the Proposed Scheme, through its use as a temporary construction area which will require the clearance of all vegetation

ahead of the installation of protective ground measures. The existing ground is expected to remain below a membrane and gravel/chippings for the duration of construction (c. 2.5 years). Following construction, TCA1 will be returned to ABP for their use and will be under ABP management from the end of the construction period.

- 7.192 The combined sensitivity of the Section 7 habitats (and equivalent) within the Site that will be impacted is considered to be medium. The magnitude of change is considered to be large. Therefore, there is likely to be a direct, permanent, long-term, adverse effect which is considered to be moderate.

Secondary Mitigation or Enhancement

On-site

- 7.193 Although the proposed loss of habitat will occur as part of the construction stage, mitigation for the loss will be delivered as part of the operational stage of the Proposed Scheme, through habitat creation (see Primary Mitigation), including compensatory open mosaic habitat features, which include flower-rich grassland, pioneer vegetation, modular biodiversity walls and the green roofs. The proposed on-site habitat (within the PDZ) will be subject to annual monitoring for a minimum of five years from the start of operation (i.e., once the Proposed Scheme is operational) to assess the extent to which plant populations are establishing in the green space.
- 7.194 The proposed habitat within the PDZ will also be subject to a low intensity management approach, appropriate for these habitats. Furthermore, the proposed open structured grassland in the operational site would be subject to the removal of colonising shrubs (periodic cutting) and the control of the perennial weeds (thistles, common nettle and docks).
- 7.195 The long term management of the on-site habitats will be adapted to promote floristic diversity and be responsive to the monitoring set out above. Periodic cutting and removal of arisings will be adopted where dominant plants lower the diversity and value.

Off-site Compensation

- 7.196 Separate to the Proposed Scheme, Associated British Ports (ABP) is promoting proposals for the Future Ports: Port Talbot Programme (FPT), which encompasses the Proposed Scheme. ABP has purchased land for an off-site receptor for species and delivery of new and/or improved habitat in the vicinity of Port Talbot to secure Net Biodiversity Benefit (NBB) for future development proposals. The land purchase was completed in July 2023. Part of the land is to be utilised by the Applicant for the Proposed Scheme in the form of providing off-site compensation for the proposed habitat loss.
- 7.197 The proposed off-site mitigation and enhancement outcomes to address the assessed ecological and biodiversity effects for the Proposed Scheme includes:
- Enhancement of broadleaved woodland and scrub to mitigate loss of low-value self-sown willow scrub:
 - Restoration of plantation on ancient woodland and other broadleaved woodland.

- Enhancement of broadleaved woodland and scrub to mitigate the loss of mixed species scrub, gorse, and bramble:
- Creation of mixed species scrubby woodland edge; partial replacement of bramble with mixed species scrub.
- Retention areas of bramble thicket as a component of more structurally diverse woodland edge.
- Grassland restoration will be undertaken to re-establish high value grassland habitats that have degraded or been lost.

7.198 It is expected that the delivery of the ecological mitigation for the Proposed Scheme will be subject to a suitably worded planning condition to any granting of planning permission for the Proposed Scheme so that NPTCBC can ensure the mitigation occurs.

7.199 Through delivering these outcomes, biodiversity compensation and enhancement will be provided to ensure biodiversity gain is achieved to meet the requirements of Environment (Wales) Act 2016 and Planning Policy Wales (PPW 11).

7.200 ABP have confirmed their agreement to this approach.

Residual Effect

7.201 The sensitivity of the Section 7 habitats and equivalent within the Site is considered to be medium. The magnitude of change following secondary mitigation is considered to be negligible to small beneficial. Therefore, there is predicted to be a direct, permanent, long-term, beneficial residual effect which is considered to be at least minor.

Significance

7.202 This effect is considered to be **Not Significant**.

Loss of Other on-site Habitats

7.203 The following habitats will be subject to permanent loss as a result of the Proposed Scheme would include:

- Willow scrub (PDZ, TCA West, TCA East) – 4.38ha
- Mixed species scrub, gorse and bramble (PDZ, TCA West, TCA East, TCA 1 and Crown Wharf dockside) – 1.3ha
- Bracken (PDZ, TCA West and Crown Wharf dockside) – 0.5ha
- Seasonally flooded ground (PDZ) – 0.18ha

7.204 All the habitats listed above will be subject to permanent loss and therefore the magnitude of change is deemed to be large.

7.205 The combined sensitivity of all the other on-site habitats is considered to be low. The magnitude of change is considered to be large. Therefore, there is likely to be a direct, permanent, long-term, adverse effect which is considered to be minor.

Secondary Mitigation or Enhancement

7.206 The secondary mitigation identified under **Paragraphs 7.186 – 7.193**, specifically the proposed off-site compensation measures, is applicable to the other on-site habitat and their compensation.

Residual Effect

7.207 The sensitivity of the other on-site habitats within the Site is considered to be low. The magnitude of change following secondary mitigation is considered to be small beneficial. Therefore, there is predicted to be a direct, permanent, long-term, beneficial residual effect which is considered to be at least minor.

Significance

7.208 This effect is considered to be **Not Significant**.

Partial loss of colony of Schedule 8 plant species in TCA1

7.209 As set out within 'Baseline' the Margam Wharf (which includes TCA1) population of Oxtongue broomrape is one of many colonies present across the docks and wider area. The number / density of spikes in Margam Wharf in 2022 represented a large population, there is typically considerable variation between years.

7.210 The use TCA1 for the Proposed Scheme will cover a substantial proportion of the colony of the legally protected Schedule 8 plant oxtongue broomrape in this part of the dock. However, the eastern section of Margam Wharf is owned by Tata Steel and located outside the Site and therefore will remain unaffected by the Proposed Scheme. Part of the oxtongue broomrape colony and the host plant population (hawkweed oxtongue) will therefore be retained within this land adjacent to TCA1. At the end of the construction stage, all construction plant, equipment and materials will be removed from TCA1, and the protective ground layer and coverings will be removed, exposing the existing ground.

7.211 Oxtongue broomrape is a species adapted to dry sparsely vegetated ground with populations of the host species. The re-exposed of the existing substrate will create conditions which the population could re-establish but only if left undisturbed for several years.

7.212 As such, the Proposed Scheme is expected to result in a partial loss of one of the colonies of Oxtongue broomrape (present within TCA1). However, the partial loss is not considered to substantially change the overall conservation status of this species at Port Talbot Docks (i.e. the wider population).

7.213 The sensitivity of the oxtongue broomrape population within TCA1 is considered to be medium. The loss of c80% of the oxtongue broomrape population at Margam Wharf as a result of the Proposed Scheme is considered to result in a small magnitude of change. Therefore, there is likely to be a direct, permanent, adverse effect which is considered to be minor.

Secondary Mitigation or Enhancement

7.214 No secondary mitigation or enhancement has been identified.

Residual Effect

7.215 In the absence of secondary mitigation the residual effect remains as reported in the pre-mitigation scenario.

Significance

7.216 This effect is considered to be **Not Significant**.

Degradation of habitats as a result of the spread of Japanese knotweed or other Schedule 9 plant species

7.217 There are dense stands of Japanese Knotweed population in the PDZ and TCA West, as well as smaller stands in other areas surrounding the Site. The advanced herbicide treatment and proposed removal of the Japanese knotweed crowns by ABP ahead of construction activities (see **Chapter 4: Development Specification**) will reduce the vigour of the plant within the most extensive stands present across much of the PDZ. All areas of bare soil within the PDZ construction area could contain viable Japanese knotweed rhizome. Therefore, construction activities such as vegetation clearance and earthworks pose a high risk of spread of Japanese knotweed either across the Site, or to wider habitats adjacent to the Site or further afield (i.e. through effective transportation off-site via construction vehicles). The spread of Japanese knotweed could then result in the degradation of habitats within and outside the Site boundary.

7.218 The sensitivity of the habitats that could be affected will be variable and linked to the way in which the rhizomes are mobilised and to what extent, but given the known habitats in the immediate vicinity of the Site, this has the potential to include habitats that are of county sensitivity/importance/value and thus of moderate sensitivity.

7.219 Other Schedule 9 Plant Species including montbretia and wall cotoneaster are present in localised areas within the PDZ (see 'Baseline') that could also be spread as result of construction activities.

7.220 The spread of Japanese knotweed and other Schedule 9 plant species as a result of the Proposed Scheme has the potential to result in a large magnitude of change. Therefore, in the absence of control measures there is likely to be a direct, permanent, adverse effect which is considered to be up to moderate.

Secondary Mitigation or Enhancement

7.221 A detailed Biosecurity Plan will be designed and implemented with mandatory requirements for all contractors and site personnel to fully adhere to the procedures at all times. It is expected this will be secured by condition.

7.222 Measure to include will be determined by a suitably qualified specialist, but linked to the need for a robust cleaning procedures to be implemented for all contractors and their vehicles, with monitoring and enforcement by dedicated personnel. Every contractor will be responsible for completely removing soil from all vehicles and clothing and footwear in dedicated wash down areas equipped with portable water source. Dirty water collection areas will be maintained to prevent surface water run-off from the Site.

7.223 The separate designated hard surfaced vehicle and footwear cleaning areas will be established close to all exits from the PDZ, and any other areas of the Site known to have Japanese knotweed and be required to be operational from the outset of construction stage.

7.224 Any person entering the PDZ construction site will be legally responsible for fully adhering to the mandatory biosecurity procedures with LanzaTech holding ultimate responsibility for compliance across all contractor teams.

- 7.225 For all other Schedule 9 Plant Species the contractor will excavate all plants, corms, and roots of these species under an ecological watching brief in advance of large-scale vegetation clearance and ground remodelling. All excavated plant material of these species would be incinerated in a nominated control area within the working site.

Residual Effect

- 7.226 The sensitivity of potential receptors will be variable up to medium. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, the potential for a direct, permanent, long-term, adverse residual effect is considered to be negligible.

Significance

- 7.227 This effect is considered to be **Not Significant**.

Permanent loss of roosts and foraging habitat and temporary disturbance of bat foraging habitat and flightlines

Bat Roosts

- 7.228 As set out in 'Baseline' a number of existing buildings and above ground structures are present within TCA East which will be demolished to slab level and removed as part of the construction stage, to allow use of the areas.
- 7.229 The survey identified that four of the 19 buildings within TCA East have low bat roost potential with the presence of roosting bats limited to Building B1 in late summer 2023.
- 7.230 The demolition of Building 1 in TCA East will result in the loss of a low value transitory roost and night feeding roost used by very small numbers of common pipistrelle.
- 7.231 The three other industrial buildings with low roost potential (having at least one potential roost feature) will also be demolished during the enabling works to establish the working area in TCA East.

Bat Activity

- 7.232 The Proposed Scheme, specifically construction works within the PDZ and TCA West (inclusive of vegetation clearance) will result in the permanent loss of habitats regularly used by foraging common pipistrelle, and more occasionally used by soprano pipistrelle and noctule bat. The loss of these habitats will result in a reduction in foraging habitat available to common and widespread bat species.
- 7.233 In comparison, the loss the extensive stands of willow scrub and Japanese knotweed is expected to have a limited effect on bats with no foraging activity and very few bat passes recorded in these locations, but the boundaries of the habitats are flight lines but typically associated with low levels of activity.
- 7.234 The habitats within the PDZ and TCA West form part of a bat flight corridor located to the south of the open water dock which includes the margins of the disused railway line and sidings. The loss of scrub within the PDZ and TCA West will reduce the width of a wide section of green corridor. The loss of willow scrub on the southern boundary of the PDZ will remove a potential flight line. The 500m long linear tree belt and grassland bank running east-west 60-70m to the south of the PDZ will provide an alternative flight line. The large 1ha reedbed bounded by scrub adjoining TCA East and to the east of the PDZ is a further area

with value as foraging habitat from common pipistrelle located adjacent to the construction site.

- 7.235 The use of temporary construction lighting in spring, summer, and autumn (outside of the core working hours) would reduce the potential value of the scrub and reedbed habitats adjoining the working areas to continue to function as bat foraging habitat and flight lines over the 2 year construction period. During periods of night time working there will be increased light spill in the PDZ, Crown Wharf and TCAs which will be likely to affect activity. The construction lighting specification will be the responsibility of each contractor to ensure that the work sites are functional and not compromised. The extent to which night working will be required is not known.
- 7.236 The bat activity recorded at the site is principally species that have low sensitivity to artificial light, which reduces the overall potential magnitude of the effect.
- 7.237 Artificial lighting is already a factor in the existing site and the small number of bat species foraging in the site do not have high sensitivity to lighting.
- 7.238 Construction lighting on the boundary of TCA East where the working areas will adjoin reedbed and scrub woodland will potentially have the largest effect. How the outdoor works sites are organised and lit will be defined by the contractors and it is anticipated that some lighting units will need to be located close to the reedbed and with the potential for light spill on locations where small number of pipistrelle bats forage for extended periods.
- 7.239 A precautionary approach would need to assume reduced levels of bat activity over the reedbed and scrub woodland during night time working where elevated lighting is required.
- 7.240 With very low levels of activity associated with Crown Wharf and TCA1 the removal of habitats the potential effects on bat activity are anticipated to be very minor in these locations.
- 7.241 The sensitivity of the bat populations within and adjoining the Site is considered to be low. The magnitude of change is considered to be medium. Therefore, will be direct, permanent long term adverse effects from the loss of the roost and foraging habitat and indirect temporary, medium-term adverse effects from construction lighting. The combined adverse effect on bat populations is considered to be minor.

Secondary Mitigation or Enhancement

- 7.242 A Welsh Government derogation bat licence will be obtained to enable the demolition of Building 1 supporting a common pipistrelle summer day roost (low value transitory / daytime roost and night time roost used by very small numbers of bats).
- 7.243 No work with the potential to damage or destroy the roost will be undertaken until the licence is obtained, and all such work would be carried out strictly in accordance with the licence method statement. Full details of the timing of measures for species protection, mitigation and demolition will be presented in the method statement submitted with the licence application.
- 7.244 A minimum of two long lasting bat boxes of suitable design will be installed on larger trees in the adjoining woodland in locations that will not be affected by light spill or noise during construction. Installation will be prior to the removal or disturbance of the roost. Both

boxes would be installed more than 3m above ground level on west or east facing sides of trees.

- 7.245 Species protection measures will be detailed in the licence application. Bats would be excluded under the supervision of the named ecologist (or their accredited agent) on the WG bat licence during the active season. Alternatively, where exclusion is impractical, the roost feature would be subject to soft demolition directly supervised by the named ecologist on the WG bat licence.
- 7.246 All site staff involved in demolition of Building 1 (and the other three buildings with low bat roost potential) would be made aware of the presence of bats and the potential risk of encountering bats while demolishing buildings. If bats are encountered at any stage, all works would stop until the bat licence holder has been contacted and has advised on what action is necessary.
- 7.247 The bat boxes will be subject to roost monitoring to assess use by species of bats with checks in September/October by a bat survey licence holder for signs of use and to determine the species using the boxes (DNA analysis of droppings).

Residual Effect

- 7.248 The sensitivity of bat species assemblage using the site is considered to be low. The magnitude of change following secondary mitigation will remain medium. Therefore, there is likely to be a direct, permanent, long-term and medium term, adverse residual effects on bat populations during construction which is minor.

Significance

- 7.249 This effect is considered to be **Not Significant**.

Loss of nesting sites and foraging areas and indirect disturbance as a result of construction noise, vibration and lighting

- 7.250 Construction of the Proposed Scheme, specifically construction works within the PDZ and TCA West (inclusive of vegetation clearance), will result in the permanent loss of habitats that have supported an assemblage of breeding birds. Clearance of the site will remove prospective nest sites and foraging habitats.
- 7.251 The effect will be the displacement of between 13 and 20 nesting species including up to 8 BoCC red list or amber list species. Whitethroat (up to 8 pairs), goldcrest (1 pair), dunnoek (up to 7 pairs) and chaffinch (up to 3 pairs) are all confirmed breeding species. Pairs of linnet, bullfinch, all classified as possibly breeding in the PDZ, could also be displaced. A small number of herring gulls could be displaced from TCA East.
- 7.252 The clearance of vegetation and ground remodelling during the breeding season would also have a potential impact on active nest sites where works are undertaken between March and September.
- 7.253 In the wider context of Port Talbot Docks, the Proposed Scheme will locally reduce the extent of available nesting habitat for some species. The loss of all the scrub habitats in the PDZ and TCA West will result in a reduction in this habitat type across Port Talbot Docks as a whole. Dispersal of species from the Proposed Scheme is the anticipated outcome.

- 7.254 Breeding birds nesting in habitats outside the Site could be affected by indirect effects relating to construction activities (noise, vibration, and artificial lighting) which will change the context of habitats adjoining the construction areas. The habitats close to construction areas subject to elevated light spill will have reduced value as nesting habitat for breeding birds with increased susceptibility of nests to predation.
- 7.255 Habitats of higher sensitivity include the reedbed, willow scrub and woodland adjoining TCA East and scrub and willow woodland to the north and west of TCA West.
- 7.256 For the TCAs, activities will typically generate typical background construction noise. Following the establishment of TCA East species nesting in the reedbed would be expected to select nest sites in locations in the extensive reedbed set back from the temporary construction works. Given the existing industrial activities, to some extent resident birds will be habituated to activities associated with current operations in TCA East. The light spill from construction lighting, is to be directed into the site, will also only affect a 5-10m zone beyond the boundary of the TCAs limiting the magnitude of the potential effect from lighting.
- 7.257 The willow scrub woodland adjacent to the northern boundary of TCA West is also located close construction activities, but very limited breeding and nesting activity was recorded in this habitat in 2021 and no adverse indirect effects are anticipated in this location.
- 7.258 Indirect effects outside the PDZ during construction will limited following clearance of habitats within TCA West.
- 7.259 The sensitivity of breeding bird assemblage using terrestrial habitats within the Site is considered to be low. The magnitude of change is considered to be medium. Therefore, there is likely to be direct, permanent, adverse effect associated with habitat loss and an indirect temporary, medium-term, adverse effect associated with construction activities. Together the effect on breeding bird populations is considered to be minor.

Secondary Mitigation or Enhancement

- 7.260 Protection of nesting birds is to be built into the on-site works. Wherever practical habitats will be removed outside the breeding season to avoid constraints on the construction programme.
- 7.261 During bird nesting season (between the start of March to August inclusive) prior to works that involve the removal of vegetation (trees, scrub, bramble, bracken, grassland) or the initiation of activities on extensive open ground inspections/ surveys for nesting birds will be completed comprising inspections for nests in vegetation and observations of any territorial activity. These precautions relates to each part of the Site including the TCAs; and will include inspections of trees, shrubs, dense ground vegetation and sparsely vegetated ground.
- 7.262 Any active nest sites in the working area will be protected by with a minimum stand off of 5m. Cetti's warbler is the only species protected under Schedule 1 that could breed within the Site. The presence of an active Cetti's warbler nest would require a minimum buffer zone of 25m to avoid disturbance of adult birds while on or at the nest

Residual Effect

- 7.263 The sensitivity of this species assemblage is considered to be low. The magnitude of change following secondary mitigation will be medium. Therefore, there is likely to be a direct, permanent, long-term adverse effect from habitat loss and indirect, temporary, medium-term, adverse effect from construction activities. The adverse residual effect is considered to be minor.

Significance

- 7.264 The effect is considered to be **Not Significant**.

Habitat loss and displacement (of overwintering birds) from terrestrial habitats

- 7.265 Wintering bird activity will be directly impacted by the loss of habitat and indirectly effected by noise and potentially artificial lighting during activities in the PDZ, TCA West and on land adjoining the open water dock.
- 7.266 In relation to the direct effects, the main impacts relate to the PDZ and TCA West. The habitats in this area provide a proportion of the wintering food source for a range of passerine species in the local area.
- 7.267 Seasonal flooding in the PDZ also attracts small numbers of waders (snipe and woodcock) along with similar habitat located to the north west of the PDZ.
- 7.268 All wintering bird species using the PDZ and TCA West will be displaced with all habitats of value for these species to be lost. Areas of grey willow scrub, mixed species scrub, gorse and bramble outside the Site which all provide alternative shelter and sources of food for wintering populations.
- 7.269 The sensitivity of overwintering bird assemblage using terrestrial habitats within the Site is considered to be low. The magnitude of change is considered to be medium. There will be direct, permanent, long-term adverse effects associated with habitat loss and separate temporary, indirect medium-term, adverse effects associated with construction activities.
- 7.270 Together the effect on overwintering birds are considered to be minor.

Secondary Mitigation or Enhancement

- 7.271 No secondary mitigation or enhancement has been identified for indirect effects on foraging activity.

Residual Effect

- 7.272 In the absence of secondary mitigation the residual effect is the same as the pre-mitigation scenario.

Significance

- 7.273 The effect on the assemblage of overwintering birds associated with terrestrial habitats is considered to be **Not Significant**.

Disturbance (to overwintering birds in the open water dock) from site construction activities including piling

- 7.274 Information presented in **Appendix 12.3: Construction Noise Impact Assessment** have been used to inform part of the assessment of this effect (i.e. disturbance from noise). The decibel

levels referred to in the text are derived from the noise contour plans included in **Appendix 12.3**.

- 7.275 The construction phase will create indirect effects on wintering birds using the open water dock. Activities within and on the edge of the dock at Crown Wharf will result in indirect disturbance through noise, human activity, movement of equipment/ships and artificial lighting.
- 7.276 Peak average noise levels will be above 55dB across much of the open water dock throughout the construction period. At this level the behaviour of wetland species would be expected to change. Variation in noise level with intermittent loud noises would also increase the chances of behavioural changes.
- 7.277 Most birds will show a degree of response to noise stimuli. Birds that remain in the affected area may not forage efficiently and if there are additional pressures on the birds then this may impact upon the survival of individual birds or their ability to breed (Cutts et al., 2013).
- 7.278 The magnitude of this impact will be influenced by the frequency and duration of elevated noise events. For auditory disturbance, high level constitutes sudden noise events over 60 dB at the bird or a more prolonged noise of over 72 dB. Moderate level disturbance is classified as a consistent elevated level noise between 60-72 dB over long periods (Cutts et al., 2013). Low level disturbance is considered to occur where elevated noise is between 45dB and 60dB in rural locations or between 55-72 dB in highly disturbed areas e.g. industrial or urban areas and adjacent to roads.
- 7.279 During construction, modelling of the different construction activities has defined the worst case noise levels around the Proposed Scheme. Within the open water dock the levels of noise at the eastern end between Phoenix Wharf and Margam Wharf and incorporating the adjacent reedbed are predicted to be up to 60 to 65dB which would be a moderate level disturbance with probably sudden noise events creating periodic high level disturbance.
- 7.280 In the central part of the open water dock the predicted worst case noise levels are between 55dB and 60dB and in the northern and western section between 45 and 55dB. These levels equate to low level disturbance.
- 7.281 The open water dock lies within an industrial context and the species that currently utilise the area will be habituated to vehicle movements, general background noise from operational sites and to a lesser extent human activity, although most of the dock edge is not regularly accessed by people on foot.
- 7.282 It is anticipated that gull species on open water in the south-eastern part of the open water dock will move away from TCA1, Crown Wharf and Phoenix Way during construction to use more distant parts of the open water or alternative roost sites in the wider area.
- 7.283 Other wetland bird species associated with the open water and reedbed would also be expected to disperse further away from construction activities generating moderate levels noise remaining within the wider open water dock or dispersing to alternative off-site locations.

- 7.284 Potential impacts from construction activities, artificial lighting and task lighting at the marine loading / unloading facility will create further levels of disturbance and will contribute to the level of displacement.
- 7.285 Worst case noise levels at the River Afan will be below 50dB at the intertidal habitats of the River Afan and below 40dB at the intertidal habitats associated with the harbour over 1km to the west. There is no expectation of dispersal or displacement of gulls, waders or other wetland species from these areas.
- 7.286 The open water dock is one of a number of locations in the local that will be used by wintering gulls and other common wetland species including gull roosts within the Tata Steel works.
- 7.287 During periods where there is elevated noise across the majority of the open water dock, temporary displacement is anticipated with birds most likely to move into adjoining intertidal habitat or to waterbodies in the surrounding area.
- 7.288 The sensitivity of this species assemblage using the open water dock is considered to be low. The magnitude of change in the open water dock is considered to be medium. Therefore, there is likely to be an indirect, temporary, medium-term, adverse effect which is considered to be minor.

Secondary Mitigation or Enhancement

- 7.289 No secondary mitigation or enhancement has been identified.

Residual Effect

- 7.290 In the absence of secondary mitigation the residual effect is the same as set out for the pre-mitigation scenario.

Significance

- 7.291 The effect on the assemblage of overwintering birds associated with the open water dock is considered to be **Not Significant**.

Habitat loss and displacement of reptiles

- 7.292 As set out in **Chapter 2: Approach to EIA** and '*Assessment Methodology*', with respect to the assessment of worst-case scenario, this Chapter has assumed the baseline conditions observed through the baseline studies (**Table 7.5**), prior to any clearance works within the PDZ as part of the ABP Japanese Knotweed management strategy. As such, it has been assumed that reptile populations are present in the PDZ prior to the species protection measures being undertaken by ABP.
- 7.293 Construction activities in the PDZ, and Crown Wharf dockside will result in the permanent loss of habitats which support the three resident reptile species (common lizard, slow worm and grass snake). The habitats in these areas provide prey, cover, refuge and hibernation features with juveniles of all three species.
- 7.294 The Proposed Scheme will also result in the loss the reptile habitats supporting slow worm and common lizard in TCA West and habitats used by at least slow worm in TCA East. Habitat loss in the TCAs is considered to be a permanent effect with the re-establishment of reptile habitat not expected to occur following the Project Dragon construction period (as per **Chapter 4: Development Specification**).

- 7.295 These losses will result in a reduction in the total extent of reptile habitat across the docks as a whole. The permanent loss of habitats within the PDZ and TCAs will reduce the level of connectivity between reptile habitats outside the Site. The habitats to the west of TCA West will no longer have strong connectivity to the reedbed and scrub/woodland to the east of the PDZ with the sparsely vegetated sidings (adjoining the PDZ to the south) providing limited cover and few places of shelter.
- 7.296 Construction effects relating to noise, human activity and ground vibration could also indirectly effect reptiles present in habitats adjoining the Site. Indirect effects should be localised, potentially affecting a small number of individuals which would disperse away from the working area.
- 7.297 The sensitivity of the reptile assemblage is considered to be low. The magnitude of change is considered to be medium. Therefore, there is likely to be a direct, permanent long-term adverse effects from habitat loss and a temporary, medium-term, adverse indirect effect due to construction activities. The combined effects are considered to be minor.

Secondary Mitigation

- 7.298 The potential habitat loss and displacement effects assessed above related to both areas within the PDZ and TCA East and West. With respect to the PDZ, as noted previously, the reptiles population within the PDZ has been subject to translocation as part of the Japanese Knotweed management practices.
- 7.299 As such, ABP have been and are continuing to relocate reptiles from within the PDZ to the adjacent Harbourside site to enable ABP to undertake Japanese knotweed control measures across the habitats within the PDZ. The Harbourside site is a c23ha area of primarily grassland habitats extending to the west of TCA West and incorporating a former sand and gravel mineral extraction. ABP are using the Harbourside site as a Temporary Reptile Mitigation Area for common lizard, grass snake and slow-worm. Measures undertaken by ABP in the Temporary Reptile Mitigation Area included the creation of new grassland and the creation habitat mosaics of basking areas and cover.
- 7.300 Enhancements were targeted at habitats that will already support populations of prey species. Areas of uniform rank grassland and dense bracken have been modified to create patches of open ground adjacent to dense cover with extensive edge habitats in locations where there will be good populations of prey species. Multiple refuge and hibernation features have created alongside areas of habitat enhancement. All receptor habitat enhancements were completed in advance of the relocation.
- 7.301 ABP have installed semi-permanent reptile exclusion fencing around the boundary of the Japanese knotweed control area. The alignment of the exclusion fence is set back from the boundary of the PDZ to the south and west. Maintenance of the exclusion fence as a continuous barrier is ongoing until the start of construction.
- 7.302 ABP are also in the process of defining and creating permanent off-site reptile receptor habitats to provide compensation sites for the Future Port Talbot (FPT) developments across the docks. All the reptiles are being moved into the Temporary Reptile Mitigation Area in 2023/2024. In the interim the Temporary Reptile Mitigation Area will be managed by ABP to maintain its ability to continue to support the relocated population.

- 7.303 Prior to construction activities, ABP will relocate reptiles from TCA West, Crown Wharf dockside and vegetated areas of TCA East to off-site receptor relocations as part of the ABP permanent reptile conservation strategy.
- 7.304 The implementation of this reptile mitigation and conservation measures are outside the control of the Applicant, but does mitigate the effect assessed above.

Residual Effect

- 7.305 The sensitivity of this species assemblage is considered to be low. Following the implementation of secondary mitigation the magnitude of change is considered to be negligible. The development will result in a direct, permanent, long-term, residual effect which will be at least negligible.

Significance

- 7.306 The effect on the reptile populations is considered to be **Not Significant**.

Effect of permanent habitat loss and indirect construction effects on invertebrate populations

Habitat Loss

- 7.307 The permanent loss of habitats in the PDZ, TCA West and TCA1 will result in a local reduction in the extent of habitats available to invertebrate. The habitats affected are present are also found outside the Site and in the context of Port Talbot Docks as a whole these partial losses.
- 7.308 Overall the permanent habitat loss will reduce the population size of less mobile species and reduce the available habitat for more mobile species. It is assumed that most populations in the Site disperse into the alternative habitats within the docks, with the potential loss from the docks where the distribution is centred on features within the Site. Based on the invertebrate assemblages recorded in the wider docks it is anticipated that this would include a small number of invertebrate species whose distribution will be centred on areas within the Site. Declines in population size and status of some species in the context of the docks is possible. The presence of similar habitats in the wider docks outside the areas affected by the Proposed Scheme (regenerating willow scrub, mixed species scrub, pioneer vegetation and naturally regenerating grassland) moderating the magnitude of an effect.

Construction Lighting

- 7.309 Construction lighting in the PDZ and TCAs will have periodic effects on the use of adjoining habitats in the medium term during periods of night working. Artificial lighting during construction would have the potential to reduce the value of habitats adjoining the boundary of the Site (through light spill) and create points of light that could attract invertebrates in the wider habitats. The effect would be most marked in spring and summer during the flight periods of airborne species.
- 7.310 The sensitivity of the invertebrate species assemblage is considered to be medium. The magnitude of change resulting from habitat loss is medium. The magnitude of change relating to lighting is considered to be medium. Therefore, there will be a direct, permanent, long term, adverse residual effect and an indirect, temporary, short term, adverse effect which are considered to be moderate.

Secondary Mitigation or Enhancement

- 7.311 The secondary mitigation identified under **Paragraphs 7.186 – 7.193**, specifically the proposed off-site compensation measures will provide multiple habitat enhancements for invertebrates as compensation.
- 7.312 Environmentally sensitive lighting will be designed for the construction phase to minimise the artificial light spill outside the boundary of the application site. Construction lighting will be developed with reference to the recommendations published by the Institution of Lighting Professions and Bat Conservation Trust (BCT/ILP, 2018 and 2023).

Residual Effect

- 7.313 The sensitivity of invertebrate assemblage is considered to be medium. The magnitude of change, following secondary mitigation, is considered to be small. Therefore, there is likely to be direct, permanent, long term, adverse residual effect and an indirect, temporary, short term, adverse effect which are considered to be minor.

Significance

- 7.314 The effect on the reptile populations is considered to be **Not Significant**.

Operational Stage

Disturbance to bats as a result of operational noise, artificial lighting and general site operation

- 7.315 Disturbance to bats as a result of operational noise, artificial lighting and general site activities. The plant will be operational 24 hours a day and the immediate surroundings and the industrial context will influence the behaviour of bats. Artificial lighting within the PDZ will permanently change the conditions around the boundaries of the operational site with additional lighting to be used at marine loading/unloading facility and adjoining dockside.
- 7.316 Consequently the Proposed Scheme the context of the adjoining habitats will change but only in the immediate vicinity of the development. Following completion of construction scrub habitats will remain to the south-east and south-west with the regenerating scrub on much of the railway sidings embankment expected to have been cleared. Few potential bat flightlines will remain in the vicinity of the operational area following completion of construction.
- 7.317 Outside the Site, bat flight lines include the linear tree belt and grassland bank located between the railway sidings and the Tata Steel works, 60 – 70m from the southern boundary of the PDZ at the closest point, and the large 1ha reedbed bounded by willow scrub located 100m to the east of the PDZ.
- 7.318 The use of operational lighting will reduce the potential value of the remaining blocks of scrub immediately adjoining the Site as foraging habitat and flight lines east-west. During operation lux levels on the PDZ boundary will be generally between 8 and 12 Lux locally increasing to 15 lux. Around the PDZ boundary there is generally sharp drop of in Lux levels achieving 1 Lux at 5 and 15m from the PDZ boundary. In the south-eastern and south-western corners of the PDZ modelling defines the 1 Lux contour up to 20 - 25m from the PDZ boundary. The zero Lux has been modelled to be up to 45m from the site boundary in these locations.
- 7.319 However, the modelling has considered the effects of the Proposed Scheme based on a worst-case scenario. The screening by buildings and scrub has not been included in the

lighting assessment calculation the extent of light spill will be lower than the worst case scenario.

- 7.320 The existing stands of regenerating willow scrub in both these locations means that in reality there will be a steeper drop off in Lux levels than modelled because of the screening effect of the vegetation.
- 7.321 The modelled Lux levels along the railway embankment to the south of the PDZ are around 5 Lux because of the proximity to the perimeter of the PDZ while the northern edge of the sidings will be between 5 and 1 Lux. There is no light spill onto the grassland and tree belt on the southern side of the sidings or along the southern edge of the reedbed.
- 7.322 No bat species with high sensitivity to artificial light were recorded during transects or on remote recorders, which reduces the overall potential magnitude of change of the effect.
- 7.323 Noise levels along the southern boundary of the PDZ will be between 65 and 70dB and at least partial avoidance of the existing scrub adjoining the south-western and south-eastern boundaries of the PDZ is anticipated.
- 7.324 Operating noise levels at night will be between 55 and 60dB along the majority of the east-west tree belt, 60m south of the PDZ, and reach 60-65dB in the central section as illustrated on the noise contour plans.
- 7.325 The Proposed Scheme will change the conditions around the boundaries of the operational site, and has the potential to disrupt the use of bat flight paths in the vicinity of the operational site through indirect operational effects. The effects of lighting and noise will change the behaviour of individuals and there is potential for noise to reduce the use of the railway sidings as a flightline.
- 7.326 The sensitivity of the assemblage of bat species following the removal of habitats during construction is considered to be negligible. The magnitude of change is considered to be at worst minor. Therefore, there is likely to be a direct, permanent and temporary, long-term, adverse effects which are considered to be negligible.

Secondary Mitigation or Enhancement

- 7.327 A **Lighting Assessment and Strategy** has been prepared and submitted within the Application, which sets out the principles of the proposed operational lighting within the Site, in order to ensure it is as environmentally sensitive as possible, in order to minimise artificial light spill outside the boundary of the operational areas. A detailed lighting design will be prepared for the development and would be subject to NPTCBC approval. The detailed lighting scheme will be developed (building on that provided within the **Lighting Assessment and Strategy**) with reference to the recommendations published by the Institution of Lighting Professionals and Bat Conservation Trust (BCT and ILP, 2018).
- 7.328 Given the above, additional measures as part of good lighting design practice will comprise details of the use of deflective brackets, and implementation of the control strategy.
- 7.329 Secondary mitigation measures in combination with lighting principles set out in the **Lighting Assessment and Strategy** to reduce light spill will be incorporated into a detailed lighting design to achieve the protection of habitats on the site boundaries and avoid degradation of the potential value of adjoining habitats for bats during the operational life.

Residual Effect

- 7.330 The sensitivity of bat assemblage is considered to be low. The magnitude of change, following secondary mitigation, is considered to be small. Therefore, there is likely to be a indirect, permanent, long-term, adverse residual effect which is considered to be negligible.

Significance

- 7.331 This effect is considered to be **Not Significant**.

Disturbance to breeding birds as a result of operational noise, artificial lighting and general site activities; (Operation)

- 7.332 Following construction of the Proposed Scheme, there will be few areas of scrub and other potential bird nesting habitat adjoining the PDZ operational site, which lowers the potential impact of any effect. There will be no scrub habitats to the west following the use of this area as TCA West, although if left undisturbed over time they would become suitable for ground nesting birds in the medium term.
- 7.333 For auditory disturbance to qualify as a high level, it must constitute a sudden noise event of over 60 dB at the bird or a more prolonged noise of over 72 dB. Moderate noise disturbance is typified as high-level noise which has occurred over long periods so that birds become habituated to it or lower level noise which causes some disturbance to birds. This encompasses occasional noise events above 55 dB, regular noise 60-72 dB and long-term regular noise above 72 dB, where birds have become habituated. Low level noise is classed as that which is unlikely to cause a response in birds using a fronting intertidal area. As such, noises of less than 55 dB at the bird are included in this category. These effects are likely to be masked by background inputs in all but the least disturbed areas and thus would not disturb the birds close by. Noise between 55-72 dB in some highly disturbed areas e.g. industrial or urban areas and adjacent to roads, may be categorised as a low level of disturbance provided the noise level was regular, as birds will to often habituate to a constant noise level.
- 7.334 Habitats in the vicinity of the PDZ will be subject to elevated noise from the operation of the site. During normal operations noise levels above 65dB will be largely restricted to the areas within the PDZ but these noise levels will also extend into the area used as TCA West during construction and in parts of the railway sidings to the south. Only a limited extent of potential bird nesting habitat will be located within the 60dB noise contour at outset of the operational phase with no habitats due to be remaining in TCA West.
- 7.335 During standard operations the modelled noise levels at habitats in the adjacent to the PDZ are:
- The tree belt to the south of the sidings – 55-65db
 - Willow scrub to the south-west of the PDZ – 60 to 65db
 - 50% reedbed to the east of the PDZ – 50 to 60db
 - Secondary scrub woodland and grassland to north and west of TCA West – 50 to 55dB
 - Reedbed in open water dock between Crown Wharf and Margam Wharf – 50 to 60dB

- 7.336 The potential level of disturbance in each of these locations under normal daytime/night time operations classify as low level noise. Long term regular noise between 50 and 60dB, where birds become habituated to the change in background noise levels. Any effects are likely to be masked by existing background noise, especially for habitats situated close to Phoenix Way and the tree belt on the boundary of Tata Steel works.
- 7.337 Relatively low level background noise is not predicted to result in any significant avoidance or displacement of nesting birds.
- 7.338 There will be short periods of higher noise levels during the use of the emergency flare. At these times most of the sidings, scrub habitats to the west of TCA West and habitats to the north of the PDZ will be subject 60 to 70dB levels equating to a moderate level noise. Occasional periods of continuous elevated noise above 60dB would not be expected to affect the nest that fall within this zone.
- 7.339 Operational noise generated by the Proposed Scheme in the habitats around the open water dock during standard operations vary from 40dB to 60dB, only increasing to 65dB on the Crown Wharf dockside.
- 7.340 During ship offloading noise levels in the immediate vicinity of the marine loading and unloading facility will be 70 to 80dB and will be between 55 and 65dB across approximately 20% of the open water and between 45 and 55dB across the remainder of the open water and adjoining habitats. It is anticipated that unloading of ships will be undertaken once every 7 to 14 days, and take up to 18hrs on each occasion.
- 7.341 Elevated regular noise a consistent background noise between 60dB and 70dB is considered to be moderate level noise with potential for effects on the behaviour of birds during these periods.
- 7.342 The reedbed within the eastern section of the open water dock, and the adjoining scrub, is the main nesting habitat within this zone with potential to support nesting pairs of coot, reed warbler, sedge warbler, Cetti's warbler and/or reed bunting. Nest abandonment by breeding birds would be very unlikely but reduced levels of activity by foraging birds closer to the marine loading and unloading facility is possible.
- 7.343 Habitats within the open water dock adjoining the marine loading and unloading facility will also be subject to the effects when the Proposed Scheme becomes operational. The potential for adjoining habitats to support nests would be reduced over the lifetime of the development due to the levels of noise.
- 7.344 The scrub habitats adjoining the boundary of the PDZ to the south-west and south-east will also be subject to light spill (above 0.5 – 1 lux). Following the installation of operational lighting, habitats that are subject to light spill will have lower potential value as nesting habitat for birds.
- 7.345 The habitats affected by light spill will also be subject to elevated noise and avoidance of these habitats by breeding birds in zone around the development is anticipated where the background noise levels will be above 60dB and/or the habitats will be subject to some light spill.

- 7.346 The sensitivity of breeding bird assemblage around the PDZ when operational is considered to be up to low. The magnitude of change is considered to be medium. Therefore, there is likely to be an indirect, permanent, long-term, adverse effect which is considered to be minor at worst.

Secondary Mitigation or Enhancement

- 7.347 No secondary mitigation or enhancement has been identified.

Residual Effect

- 7.348 In the absence of secondary mitigation the residual effects is the same as that reported in the pre-mitigation scenario.

Significance

- 7.349 This effect is considered to be Not Significant.

Disturbance of overwintering birds as a result of operational noise, artificial lighting and general site operations

Noise

- 7.350 Noise modelling has been completed to a number of scenarios relating to the operation of the PDZ, periodic flaring, generator testing, marine loading and unloading facility and ship movements. The detailed modelling is presented in Appendix 12.2. There is a degree of uncertainty in the source noise data used in the modelling as the scheme is not yet fully designed, and the full plant noise data is not currently available.
- 7.351 During typical operations, the central and eastern sections of the open water dock including part of the reedbed will be subject to only slightly elevated noise, between 50 and 55dB with lower noise levels (below 50dB) in other parts of the open water dock.
- 7.352 Average noise levels in the open water adjacent to Crown Wharf dockside will be between 55dB and 60dB increasing to 60-70dB in the vicinity of the dock edge from the operation of the PDZ.
- 7.353 During ship off-loading activities (which will take up to 18 hours and would occur once every 7-14 days) there will be periods of higher noise levels in the dock with approximately 70% of the open water subject to 50dB – 60dB with localised higher noise of 65dB to 80dB at the unloading facility and in the adjoining section of open water.
- 7.354 Ship movements along the tidal river at night also has predicted noise levels of 50-60dB across the open water, with higher noise directly next to the ship.
- 7.355 The development is located near to long established industrial areas and have an industrial noise component in their existing sound climate.
- 7.356 During standard operations some changes in bird activity are anticipated. It is generally recognised that noise below 45dB is considered unlikely to result in changes in bird behaviour, especially where birds occur in industrial areas where the population is habituated to noise and human activity.
- 7.357 The most numerous species are gulls, which have a high tolerance to industrial activities. Gull flocks should continue to roost/loaf in the parts of the open water dock where the noise

levels are below 50dB with only the small area of open water closest to the loading facility is likely to be avoided.

- 7.358 During periods of unloading the effect of displacement is expected to be more marked.
- 7.359 The level of effect on birds will be reduced by the context of the dock and the existing habituation of birds to industrial activities. The overall assemblage of common wetland species wintering and/or nesting in the dock should not significantly change when the proposed scheme is operational.
- 7.360 Outside the open water dock, a range of bird species use habitats in the Lower River Afan Estuary SINC, primarily gull flocks and but also wildfowl and wader species which generally occur small numbers at low tide; including curlew, redshank, lapwing, oystercatcher and mallard.
- 7.361 Ship movements will be at high tide when all the intertidal habitats will be covered and there are no anticipated effects on foraging. Individual birds roosting on the sides of the channel at high tide would be very unlikely to disperse from the area due to the movement of a ship.
- 7.362 Due to the existing habituation of birds to industrial activities, the assemblage of common wetland species wintering and/or nesting in the dock should not significantly change when the Proposed Scheme is operational.
- 7.363 There will be periodic ship movements through the Lower River Afan into the dock via the shipping lock. A range of wetland species use habitats in the Lower River Afan Estuary SINC at low tide when the mud and sand is exposed. Ship movements at high tide when intertidal habitats will be covered with no effects on foraging birds. Individual birds roosting on the sides of the channel could briefly disperse into the immediate vicinity when ships use the channel.
- 7.364 Noise will be generated by on-board pumps during the periods when ships are unloading ethanol at the new marine facility. Noise levels in the Lower River Afan will be 30-40dB with localised sections between 40 and 45dB below with no anticipated impact on bird activity on the intertidal habitats.

Lighting

- 7.365 Habitats beyond the application site boundary will be subject to light spill above 1 Lux within a zone up to 15 – 20m on the southern boundary of the PDZ, increasing to 20-25m in the south-eastern and south-western corners. There will be a short section of the margin of the open water dock at the marine loading and unloading facility that will be subject to lighting levels between 5 and 1 Lux from the PDZ extending up to 20m into the open water. Very localised effects on bird behaviour would be anticipated on the boundaries of operational area where habitats will be subject to light spill.
- 7.366 The sensitivity of overwintering bird assemblage is considered to be low. The magnitude of change is considered to be medium. Therefore, there is likely to be an indirect, permanent, long-term, adverse effect which is considered to be minor.

Secondary Mitigation or Enhancement

- 7.367 As detailed in the secondary mitigation section of the assessment of impacts of operations on bats (**Paragraph 7.318**), a detailed lighting design will be prepared for the development

and would be subject to NPTCBC approval, which will be inclusive of additional measures to ensure an environmentally sensitive lighting scheme that minimises artificial light spill outside the boundary of the operational areas.

7.368 No secondary mitigation has been identified for noise.

Residual Effect

7.369 In the absence of secondary mitigation the residual effect is the same as that reported in the pre-mitigation scenario.

Significance

7.370 This effect is considered to be Not Significant.

Operational lighting effects on invertebrate populations

7.371 It is recognised that artificial lighting can alter the behaviour of invertebrate species and change the distribution of invertebrates with a high proportion of species being nocturnal or partially nocturnal.

7.372 Many invertebrate species will move towards lights from surrounding unlit areas. This change in behaviour with potential adverse effects on populations through a number of factors including an increased susceptibility to predation and depletion of populations in the surrounding habitats.

7.373 The operational site will emit artificial light from external lighting and there will be some level reflected light from lit surfaces associated with the Proposed Scheme. The development will be lit 24hrs a day.

7.374 Much of the PDZ and its boundaries are currently dark, with only the eastern and north-eastern boundaries being subject to light spill from artificial lighting associated with Phoenix Way. During operation, habitats beyond the application site boundary will be subject to light spill within a zone generally up to 15m from the site boundary locally increasing to 25m in absence of any screening from buildings or scrub. A short section of the open water dock adjoining the marine loading and unloading facility will also be subject to low level light spill between 5 and 1 Lux. Light spill onto habitats in the immediate vicinity of the boundaries of the PDZ will reduce their value for invertebrates.

7.375 Point light sources could also result in the movement of invertebrates from grassland, scrub and plantation woodland in the vicinity of the PDZ primarily to the south and west. The movement of individuals away from these areas would be expected to affect populations and potentially the species assemblage.

7.376 Potential effects to the north and east of the PDZ and at the Crown Wharf dockside would have limited effect given the existing levels light spill from Hanson cement works, and the streetlights along Phoenix Way. Floodlights in the Tata Steel works operational areas to the south of the PDZ and adjoining railway sidings also limit the extent of habitats that are currently unlit.

7.377 The scrub, grassland and banks habitats to the west of PDZ (and TCA West) have confirmed value for invertebrates. These habitats lie 150m from the PDZ, with willow scrub woodland located 50m from the boundary of the PDZ at the closest point.

- 7.378 The open mosaic habitat in the railway sidings is the invertebrate habitat closest to PDZ and effects in this zone are expected. Effects are also possible in the tree belt and north-facing grassland bank to the south of the railway sidings. Given the existing streetlighting effects are not anticipated on any airborne invertebrates associated with the margin of the dock to the north of the PDZ.
- 7.379 The open grassland and low banks to the west of TCA West are c140m from the boundary of the PDZ while the reedbed is located 100m to the east. The effects on the invertebrate assemblages associated with these habitats would be expected to be negligible given their distance from the site. The magnitude of the effect will be reduced through the shielding of point light sources to minimise visibility outside the PDZ.
- 7.380 The landscape features designed to benefit biodiversity within the operational site including biodiversity walls and insect hotels will be subject artificial lighting and this is expected to affect the assemblage of invertebrate species that utilise them.
- 7.381 The sensitivity of invertebrate assemblage within the potential zone of influence is considered to be low. The magnitude of change is considered to have the potential to up to medium. Therefore, there is likely to be an indirect, permanent, long-term adverse effect which is considered to be no higher than minor.

Secondary Mitigation or Enhancement

- 7.382 As detailed in the secondary mitigation section of the assessment of impacts of operations on bats (**Paragraph 7.318**), a detailed lighting design will be prepared for the development and would be subject to NPTCBC approval, which will be inclusive of additional measures to ensure an environmentally sensitive lighting scheme will be designed for the operational development to that minimises artificial light spill outside the boundary of the operational areas

Residual Effect

- 7.383 The sensitivity of the invertebrate populations that could be affected is considered to be low. The magnitude of change in is considered to be up to small. Therefore, there is likely to be an indirect, permanent, long-term, adverse residual effect which is considered to be negligible.

Significance

- 7.384 This effect is considered to be Not Significant.

Limitations and Assumptions

- 7.385 To ensure transparency within the EIA process, the following limitations and assumptions have been identified.
- The very dense stands of dead Japanese knotweed canes and regenerating willow scrub restricted access to many areas of the PDZ in 2021. The dead canes were cut back to ground level in March 2022 which provided access across much of the PDZ and enabled surveyors to gain access to all areas of the PDZ and habitat and species surveys to be completed in survey and autumn 2022.
 - Due to the ongoing works to control/remove the extensive stands of Japanese knotweed by the landowner, Associated British Ports (ABP) in the PDZ, with the cutting back of

willow and other scrub completed in February 2023 to be able to accurately define the extent of all stands and provide access to undertake treatment works. Consequently surveys of breeding birds and invertebrates could not be completed for the PDZ in 2023.

- Precautionary assessment have been completed for breeding birds and invertebrates for the assessment, based on the habitat types present prior the cutting down of willow shrubs and the initiation of JKW control works. A precautionary baseline has been taken from the findings of the 2021 surveys of the Harbourside site (located to the west of the PDZ within the Port Talbot Docks landholding), which included habitat types with an equivalent structure and diversity to those found in the PDZ.
- Compensation requirements arising from the Proposed Scheme will be provided at an off-site ABP location/s, with details to be agreed with NPTCBC. It is proposed that the details of the mitigation and compensation measures on this site will be defined as a planning condition. Information on the nature and areas of habitat enhancement and a programme of enhancement works are not known at this stage.

Summary

7.386 **Table 7.8** provides a summary of the effects, receptors, residual effects and conclusions of significance considered within the Chapter.

7.387 The table only provides a summary of the residual effects identified within the assessment and details of all primary, secondary and tertiary mitigation that has been taken into account is set out in detail within the Chapter and summarised within the Environmental Management Plan included within **Volume 3: Environmental Management Plan**.

Table 7.8: Summary of Residual and Significant Effects

Effect	Receptor	Residual Effect	Is the Effect Significant?
Construction Stage			
Habitat loss Section 7 Habitats and equivalent	Naturally regenerated grassland (PDZ, TCA West, TCA East) Coastal grassland and dune slack vegetation (PDZ) Open Mosaic Habitat (TCA1)	Minor beneficial	No
Loss of Other on-site Habitats (PDZ, TCA West, TCA East, TCA1, Crown Wharf dockside)	Willow scrub (grey willow) Scrub, bramble, and bracken Seasonally flooded ground	Minor beneficial	No

Partial loss of colony of Schedule 8 plant species	Oxtongue broomrape	Minor adverse	No
Degradation of habitats as a result of the spread of Japanese knotweed or other Schedule 9 plant species	On-site and off-site habitats	Negligible	No
Permanent loss of roost / foraging habitat, temporary disturbance of bat foraging habitat and flightlines	Bats	Minor adverse	No
Loss of nesting sites and foraging areas Indirect disturbance as a result of construction noise, vibration and lighting	Breeding birds	Minor adverse	No
Habitat loss / displacement from terrestrial habitats	Overwintering birds (terrestrial habitats)	Minor adverse	No
Disturbance from site construction activities including piling	Overwintering birds (open water docks)	Minor adverse	No
Habitat loss and displacement of reptiles	Reptile populations (common lizard, slow-worm and grass snake)	Negligible beneficial	No
Permanent habitat loss and indirect effects (construction lighting)	Invertebrate populations	Minor adverse	No
Operational Stage			
Disturbance as a result of operational noise, artificial lighting and general site operations	Bats	Negligible	No
Disturbance to breeding birds as a result of operational	Breeding birds	Negligible to Minor adverse	No

noise, artificial lighting and general site activities; (Operation)			
Disturbance as a result of operational noise, artificial lighting and general site operations	Overwintering birds	Minor adverse	No
Operational lighting effects on populations	Invertebrates	Negligible adverse	No

References

- BCT/ILP (2018). Guidance Note 08/18. Bats and artificial lighting in the UK.
- BCT/ILP (2023) Guidance 08/23 Bats and artificial lighting at night
- CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Chartered Institute of Ecology and Environmental Management, Winchester
- Cutts N., Hemingway K. and Spencer J. (2013) *Waterbird Disturbance Mitigation Toolkit: Informing Estuarine Planning & Construction Projects*. Produced by the Institute of Estuarine and Coastal Studies
- Eaton M. A., Aebischer, N., Brown A., Hearn R., Lock L., Musgrove A., Noble D., Stroud D. & Gregory R. D. (2015). Birds of Conservation Concern 4: The population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* **108**, 708-746
- Hughes et al (2020) *Estimating the sizes of breeding populations of birds in Wales* Birds in Wales
- ILE (2005) Guidance notes for the reduction of obtrusive light. The Institution of Lighting Engineers.
- JNCC (2010). *Handbook for Phase 1 Habitat survey: a technique for environmental audit* (revised reprint). Joint Nature Conservation Committee, Peterborough
- Directive on the Conservation of Natural Habitats and Wild Flora and Fauna, 92/43/EEC
- The Wildlife and Countryside Act (1981), as amended
- The Conservation of Habitats and Species Regulations (2017, No.1012)
- HM Government (2017) UK Climate Change Risk Assessment
- M.D. & Speakman, L. (2015) Biodiversity Climate Change Impacts Summary Report. Living With Environmental Change.
- Natural England (2020) Climate Change Adaptation Manual Evidence to support nature conservation in a changing climate
- Natural Environment and Rural Communities Act (2006)
- Natural Resources Wales (2021) Terrestrial and freshwater Resilient Ecological Networks: a guide for practitioners in Wales
- Neath Port Talbot Council (2020) *Biodiversity Duty Plan 2020 - 2023*
- Neath Port Talbot Council (2018) *Special Planning Guidance Biodiversity and Geology*
- The Environment (Wales) Act (2016).
- Welsh Government (2015). Well-being of Future Generations (Wales) Act 2015.
- Welsh Government (2020) The Nature Recovery Action Plan for Wales 2020 – 21.
- Welsh Assembly Government (2009). Technical Advice Note 5: Nature Conservation and Planning
- Welsh Government (2013). The Action Plan for Pollinators in Wales
- Welsh Government (2021) Future Wales - The National Plan 2040