

Black Pool Mill Wall Repair -

Preliminary Ecological Appraisal

November 2024

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Abbreviations

AONB	Area of Outstanding Natural Beauty
BAP	Biodiversity Action Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CRoW	Countryside and Rights of Way Act
EPS	European Protected Species
HPI	Habitats of Principal Importance
HRA	Habitat Regulations Assessment
INNS	Invasive Non-native Species
JNCC	Joint Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
MAGIC	Multi-Agency Geographic Information for the Countryside
NERC	Natural Environment and Rural Communities
NNR	National Nature Reserve
NRW	Natural Resources Wales
PEA	Preliminary Ecological Appraisal
PPW	Planning Policy Wales
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SINC	Site of Importance for Nature Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	Wildlife and Countryside Act

1 Introduction

1.1 Project Background

JBA Consulting was commissioned by Bluestone Resorts Ltd. to undertake a Preliminary Ecological Appraisal (PEA) in relation to emergency works on the riverbank downstream of Blackpool Mill, Narberth. This report and survey were commissioned to provide baseline data and identify any likely ecological constraints to the proposed works. Where applicable, recommendations for further surveys, mitigation and ecological enhancements have been provided, in relation to ecological features which may be impacted upon.

1.2 Site Location

The site is located to the west of Narberth, adjacent to Black Pool Mill and consists of the riverbank and wall failure at National Grid Reference (NGR) SN 05979 14485. The site sits within the administrative boundary of the Pembrokeshire Coast National Park Authority (PCNPA).

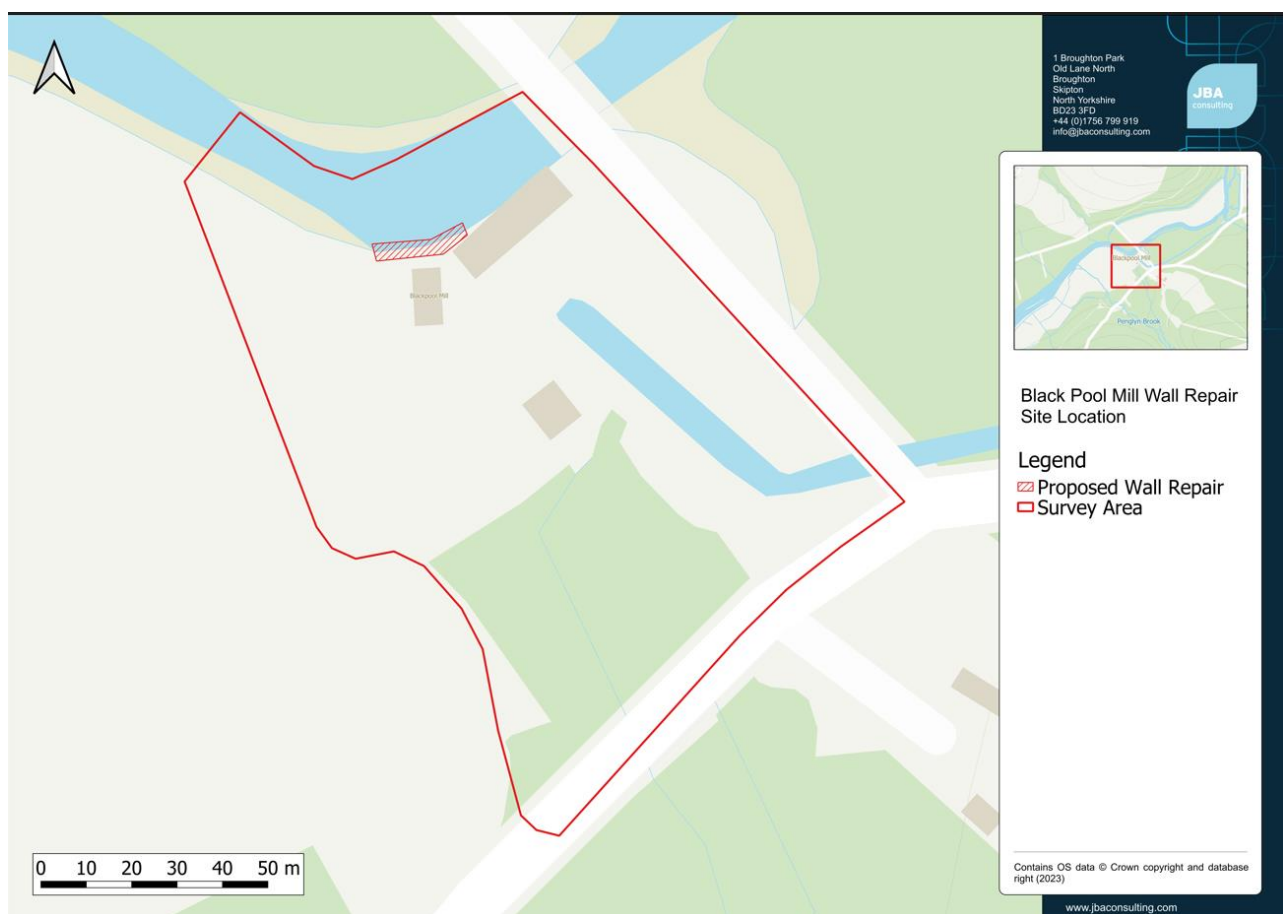


Figure 1-1. Site Location

1.3 Proposed works

Bluestone Resorts Ltd commissioned JBA Consulting to undertake the permanent design of a failed masonry wall at Black Pool Mill in Pembrokeshire, Wales, herein called the Mill. The wall failed following flooding of the Cleddau Ddu river on the 25th of October 2023. JBA Consulting designed emergency works to stabilise the exposed embankment using 48 no. 2T Salix Aqua Rock Bags, constructed in November 2023 as shown on Figure 3-2 below.



Figure 1-2: Emergency repair works to wall failure

Concept design optionneering for the permanent works is shown in the drawing LTU-JBA-XX-XX-PP-C-0001-S3-P01-Concept_Design_Development and described in the Design and Input Statement (JBA Consulting, 2024b). The preferred option is a Redi-Rock modular gravity retaining wall which will replace the existing temporary rock bag wall in Figure 3-2. The works will include minor repairs to adjacent concrete steps and construction of roof drainage outfalls for the adjacent store building.

The proposed construction works will include the following:

- Underpinning of the adjacent store building.
- Removal of existing emergency works (48 no. 2T Salix Aqua Rock Bags).
- Creation of temporary cofferdam using the removed Aqua Rock Bags.
- Installation of new Redi-Rock gravity retaining wall including the foundation and tie in with the Mill.
- Repair/replacement of existing access steps.
- 2 no. roof drainage pipes from the adjacent store building to outfall from the retaining wall.

- 1no. unknown drainage pipe adjacent to the Mill building to outfall from the retaining wall.
- Hard standing area on the repaired bank top.
- Security railings at the crest of the retaining wall.

The top of wall level shall match that of the existing wall pre-failure. The top of wall level shall be 4.4mAOD.

The pedestrian handrail will be installed alongside the access steps leading to the seating area adjacent to the wall. The handrail will be 1m above pitch line of steps and will be designed to match the existing railings in front of the mill.

1.4 Site access for construction

Access to the site will be gained from the A4075 near Canaston Bridge at SN 06956 14835. The access is a narrow country lane that leads directly to the entrance to Black Pool Mill at SN 06056 14414.

The area of modified grassland within the site boundary will be used as site compound throughout the construction phase of the project. This area was previously used for the crane pad during the emergency works.

If the site entrance to Black Pool Mill is impassable for larger vehicles, the adjacent field may be used: materials or similar will be craned over the hedgerow.

2 Methods

A PEA of the site has been undertaken in line with current best practice guidance (CIEEM, 2017) and included:

- A desk-based assessment to identify any records of protected and/or notable habitats and species, and designated nature conservation sites in the vicinity of the proposed works.
- A review of the previous PEA of the site undertaken by Soltys Brewster Ecology (2016).
- A site survey comprising a UKHab Survey including and an assessment of the possible presence of protected or priority species, and (where relevant) an assessment of the likely importance of habitat features present for such species.
- An assessment of the potential impacts of the works on the habitats and species present at the site and the surrounding areas.

2.1 Desk-Based Assessment

Prior to undertaking the site survey, searches of databases containing ecological records, priority habitats, and information on statutory and non-statutory designated sites were made. The following sources were included in these searches:

- MAGIC mapping service (www.magic.gov.uk)
- Natural Resources Wales GIS data

Due to the size of the site, it is considered that the zone of influence would be up to 2km radius from central grid reference SN 05979 14485 and therefore the desk-based assessment was conducted within this search area.

2.2 Site Survey

A site survey was undertaken on the 16th of November 2023 by Jonathan Harrison BSc MSc MCIEEM. The PEA was based upon a UKHab Survey, conducted using the UK Habitat Classification (UKHab) methodology. The method was extended to identify any features suitable for use by legally protected or notable species and locate evidence for their presence or likely absence based on standard techniques.

2.2.1 Habitats

Habitats within and adjacent to the site boundary were surveyed using the UK Habitat Classification (UKHab) methodology. The survey was undertaken within the redline boundary shown in Figure 1-1. Habitats were mapped to level 4 of the UK Habitat Classification scheme (UK Habitat Classification Working Group, 2018a) implemented using the field key (Carey & Butcher, 2018) with reference to the relevant definitions (UK Habitat Classification Working Group, 2018b). All habitats within the site were recorded

during the site survey and a description of each habitat type collected. Botanical names follow Stace (2010).

2.2.2 Protected and Notable Species

Habitats were also assessed for their potential to support any legally protected species or species of conservation concern and any incidental faunal sightings, or field signs discovered during the survey, were recorded. The following sections provide further details on the assessments undertaken in relation to specific species. Legislative guidance relating to protected species is outlined in Appendix A, along with details of other relevant policy and legislation.

2.2.2.1 Birds

Vegetation and habitats around the site were assessed for their suitability to support nesting birds. Special consideration was given to bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). Furthermore, any birds seen or heard on site during the survey were recorded as incidental observations.

2.2.2.2 Badger

The survey area was searched for signs of Badgers *Meles meles*, and where evidence was found details were recorded following Harris et al. (1989). In addition to recording the presence of setts and the level of activity at them, the following signs of activity were also searched for: latrines, footprints, evidence of feeding activity and well-worn paths through vegetation. Badgers will use a number of setts throughout their territory at different times of year; any large holes with the potential to be used by Badgers, but not showing obvious signs of recent activity, were therefore also recorded.

2.2.2.3 Bats

The suitability of habitats across the survey area to support commuting and foraging bats was assessed in terms of habitat type, abundance, connectivity and distribution. These were categorised as having either 'negligible', 'low', 'moderate' or 'high' suitability for bats which was determined by applying the categories given within the BCT Guidelines (Collins, 2016) (Table 2-1).

Table 2-1. Definitions of Roost Suitability (From Collins, 2016).

Suitability	Roosting Habitats	Commuting and Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts.

2.2.2.4 Otter

Watercourses and surrounding areas within the site were assessed for their potential to support Otter *Lutra lutra*, based on RSPB (1994) and Chanin (2003). This involved walking the survey section and recording any spraints (droppings), slides, feeding remains and footprints. A search was also made for possible holt and couch (resting) sites. Otters are extremely difficult to observe, and this method provides the most effective and efficient means of investigating presence or absence.

2.2.2.5 Water Vole

The field survey assessed watercourse suitability for Water Vole *Arvicola amphibius*, based on initial habitat assessment criteria outlined in Dean et al. (2016). The assessment of habitat suitability for Water Vole is based on the availability and nature of dry areas above water level for burrowing/nesting (e.g. bank profile, bank substrate), vegetation (i.e. the quantity and cover of herbaceous species) and the presence of water. Any field signs observed within the survey area, informed by Strachan et al. (2011), were also noted. The most important, diagnostic field sign for Water Vole is the presence of latrine sites. These are locations repeatedly used by Water Vole to deposit their droppings, often in prominent locations along the bank. Other field signs include the presence of burrows, feeding sites and footprints. Although these other signs provide indications of presence and are useful supporting evidence to latrines, they are of limited value on their own.

2.2.2.6 Great Crested Newts

Habitat features with the potential to support Great Crested Newt *Triturus cristatus*, and other amphibians, were recorded. Such features can include: ponds with habitat suitable for breeding newts within 500m of the proposed works; piles of logs, stones or other debris; cracks in the ground; stone or rubble covered ground, and any other features that could support newts. Where access was possible, any substantial waterbodies within 500m of the site, and which had ecological connectivity to the site, were assessed for their potential to support newts. This assessment was based on the Habitat Suitability Index (HSI) (Oldham et al., 2000; ARG UK, 2010). This system involves assessment of ten suitability indices per waterbody and is an accepted method of assessing the likelihood for a particular pond to hold breeding Great Crested Newts.

2.2.2.7 Reptiles

As part of the site survey, an assessment of the habitat suitability for common reptiles was made. This involved inspection of the site for key habitat features/microhabitats which may be favoured by reptiles, such as embankments, log, brash or rock piles, dry stone walls, hedgerows, open sandy areas, woodland edges and rides and interfaces between different habitat types (Froglife 1999).

2.2.3 Other Notable Species and Environmental Constraints

During the site survey, any signs or sightings of other notable species were also recorded. In addition, any environmental features that might constrain the works were also recorded (e.g. access restrictions).

2.2.4 Invasive Non-Native Species

Any Invasive Non-native Species (INNS) observed during the survey were recorded. For stand-forming plant species, the extents of such stands were noted.

2.3 Limitations

The habitats and species present in a given area are subject to change over time. A single field visit of this nature captures and reports the situation at the time of survey. As such, the advice contained within this report is considered valid for a period of 18 months before a review on the need for an updated survey/assessment must be made by an ecologist (CIEEM 2019). Data from biological records centres or online databases is historical information, and datasets might be incomplete, inaccurate or missing. It is important to note that even where data is held, a lack of records for a defined geographical area does not necessarily mean that the species is absent; the area may simply be under-recorded. As such, records cannot be relied on and serve only as an indication of what might/ might not be found.

3 Results and Evaluation

3.1 Desk-Based Assessment

3.1.1 Statutory Designated Sites

A search via the MAGIC database showed that the proposed works area is located within the Pembrokeshire Marine/Sir Benfro Forol Special Area of Conservation (SAC) and Milford Haven Waterway Sites of Special Scientific Interest (SSSI). The Afonydd Cleddau / Cleddau Rivers SAC and Afon Cleddau Dwyreiniol / Eastern Cleddau River SSSI are both located approximately 40 meters upstream.

Figure 3-1 shows the site location in relation to the statutory designated sites within a 2km search and the designations and their features are detailed in Table 3-1 below.

Table 3-1. Statutory Designated Sites Within 2km of the Proposed Works

Site Name	Features of Designation	Distance From Proposed Scheme
Special Area of Conservation (SAC)		
Pembrokeshire Marine/Sir Benfro Forol	Annex I habitats; primary reason for selection: -1130 Estuaries -1160 Large shallow inlets and bays -1170 Reefs Annex I habitats; not primary reason for selection: -1110 Sandbanks which are slightly covered by sea water all the time -1140 mudflats and sandflats not covered by seawater at low tide -1150 Coastal lagoons -1330 Atlantic salt meadows -8330 Submerged or partially submerged sea caves Annex II species; primary reason for selection -1364 Grey seal <i>Halichoerus grypus</i> -1441 Shore dock <i>Rumex rupestris</i> Annex II species; not primary reason for selection: -1095 Sea lamprey <i>Petromyzon marinus</i> -1099 River lamprey <i>Lampetra fluviatilis</i> -1102 Allis shad <i>Alosa alosa</i> -1103 Twaite shad <i>Alosa fallax</i> -1355 Otter <i>Lutra lutra</i>	Immediately adjacent

Site Name	Features of Designation	Distance From Proposed Scheme
Afonydd Cleddau / Cleddau Rivers	Annex I habitats; not primary reason for selection: -3260 Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation -7110 Active raised bogs -91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) Annex II species; primary reason for selection: -1096 Brook lamprey <i>Lampetra planeri</i> -1099 River lamprey <i>Lampetra fluviatilis</i> -1163 Bullhead <i>Cottus gobio</i> -1355 Otter <i>Lutra lutra</i> Annex II species; not primary reason for selection: -1095 Sea lamprey <i>Petromyzon marinus</i>	40m upstream
Sites of Special Scientific Interest (SSSI)		
Milford Haven Waterway	Milford Haven Waterway is of special interest for its geology, ancient woodland, marine biology, saltmarsh, swamp, saline lagoons, rare and scarce plants and invertebrates, nationally important numbers of migratory waterfowl, Greater and Lesser Horseshoe bats <i>Rhinolophus ferrumequinum</i> and <i>R. hipposideros</i> , and Otter <i>Lutra lutra</i> .	Immediately adjacent 0m upstream
Afon Cleddau Dwyreiniol / Eastern Cleddau River	The Eastern Cleddau River is of special interest primarily for important populations of Otter <i>Lutra lutra</i> , Bullhead <i>Cottus gobio</i> , River Lamprey <i>Lampetra fluviatilis</i> and Brook Lamprey <i>Lampetra planeri</i> . It is also of special interest for Sea Lamprey <i>Petromyzon marinus</i> ; for its range of river habitats including beds of submerged aquatic plants often dominated by Watercress <i>Ranunculus spp</i> , the aquatic plant <i>Potamogeton berchtoldii</i> x <i>P. polygonifolius</i> (cf.) as well as a variety of associated riverside habitats.	40m upstream

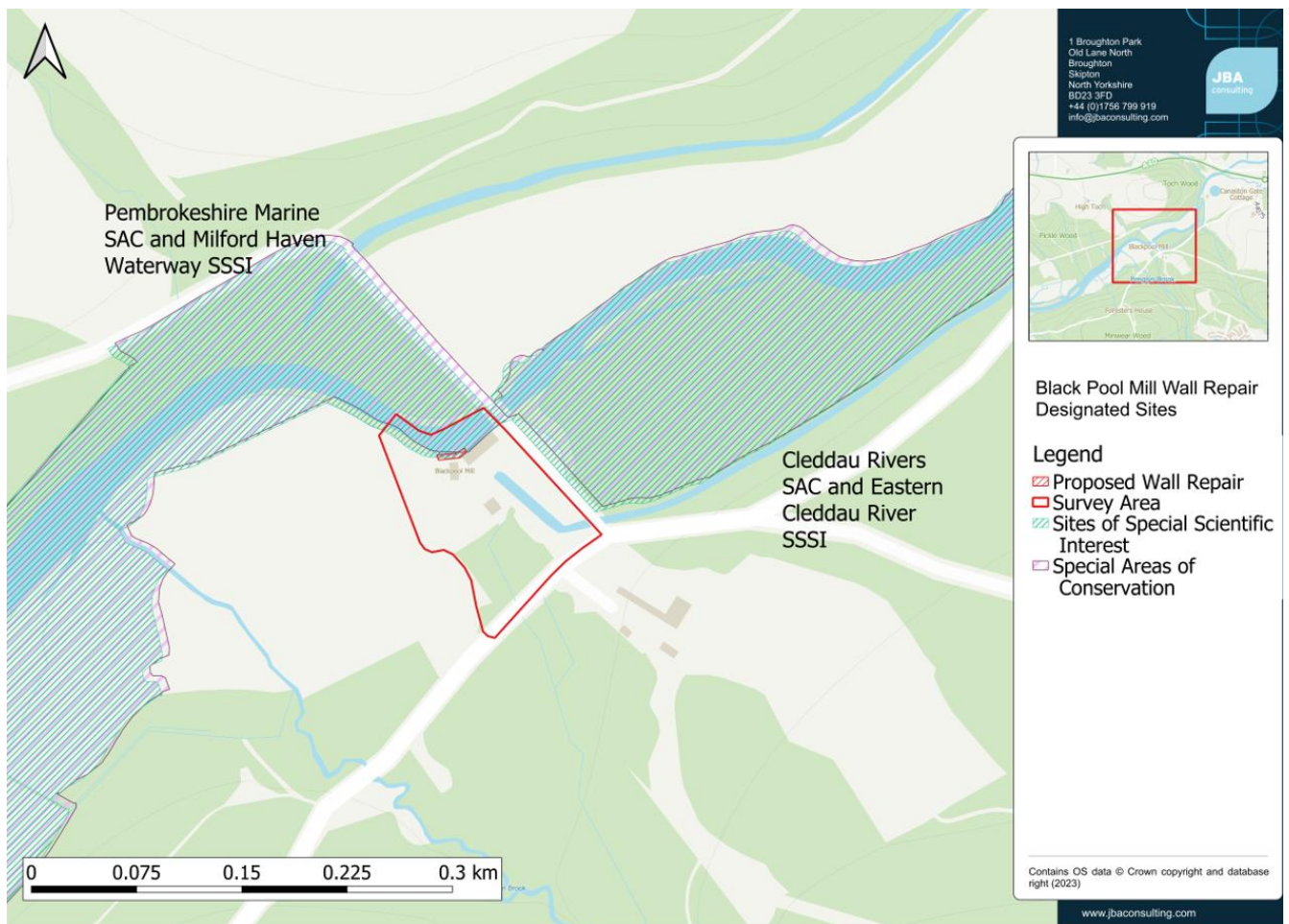


Figure 3-1. Statutory Designated Sites

3.2 Phase 1 Habitat Survey

The results of the extended UKHab survey are described in the following sections below.

3.2.1 Habitats

g4 Modified Grassland

The majority of the survey area is comprised of improved modified grassland. The grassland is heavily grazed by sheep and dominant species present include Perennial Rye Grass *Lolium perenne* and White Clover *Trifolium repens*, with occasional Dandelion *Taraxacum sp.*, Ribwort Plantain *Plantago lanceolata* and Yorkshire Fog *Holcus Lanatus*. in wetter areas Soft Rush *Juncus effusus* is present.

f2 Fen marsh and swamp

To the northwest of the survey area is an area of marshy grassland that is relatively species poor and dominated by Soft Rush *Juncus effusus*. Common Reed *Phragmites australis* was also present in this area.

w1g Other woodland; broadleaved

Directly south of the main Black Pool Mill building is an area of broadleaved woodland made up of semi mature and mature trees with species including Oak *Quercus sp.*, Beech *Fagus sylvatica*, Alder *Alnus glutinosa*, Willow *Salix sp.* and Ash *Fraxinus excelsior*.

There is also an area of woodland in the southwest corner of the survey area with species including Oak, Beech, Alder and Ash.

h2a Hedgerows

Directly south of the main Black Pool Mill building, in the private grounds, is a large species poor hedgerow dominated by Blackthorn *Prunus spinosa* and Hawthorn *Crataegus monogyna*.

Along the western boundary of the survey area is a large hedgerow made up of species including Ash, Willow, Alder, Oak and Holly *Ilex aquifolium*.

r2 Rivers and streams

The wall failure at the centre of the proposed works is located on the left riverbank of the Eastern Cleddau that runs adjacent to Black Pool Mill.

Within the survey there are three streams that run through the site. Entering from the southeast corner of the survey area and running along the main entrance road to Black Pool Mill is the historic feed stream for the Mill. The stream is heavily silted with Reed present within the channel.

A stream also flows through the broadleaved woodland located in the southwest corner of the survey area before joining the historic feeder stream.

There is also a stream located on the western boundary of the survey area that flows directly into the Eastern Cleddau.

3.2.2 Assessment for Protected and Notable Species

3.2.2.1 Birds

There are multiple species records for birds within the survey area held by WWBIC including Schedule 1 species reliant on the watercourses on site such as Kingfisher *Alcedo atthis*.

Throughout the survey area there are habitats that are likely to support a wide range of bird species and offer nesting opportunities for breeding birds. These habitats include the reed bed, open grassland and hedgerows present throughout the site as well as the Eastern Cleddau river channel.

3.2.2.2 Badger

WWBIC identified multiple records of badgers *Meles meles* within the broadleaved woodland surrounding the site.

No signs of Badger (including setts, runs, latrines etc.) were recorded during the survey, however the areas of grassland and woodland throughout the survey area provides suitable foraging habitat for Badger.

3.2.2.3 Bats

WWBIC data identified records from bat emergence surveys conducted at the Blackpool Mill, which included records of Lesser Horseshoe bats *Rhinolophus hipposideros*, Greater Horseshoe bats *Rhinolophus ferrumequinum*, Brown Long-eared Bats *Plecotus auritus* and Pipistrelle spp. *Pipistrellus* bats. The data also included records of Noctule *Nyctalus noctula* and Daubenton's Bat *Myotis daubentonii* maternity roosts within trees located east of site along the Cleddau.

Roosting bats have been identified in the main building and previous renovation works required extensive mitigation measures carried out under appropriate NRW licensing.

The closest building to the proposed works is an outbuilding that has been converted into office space following the previous renovation works. It is unknown whether this building contains known bat roosts following this renovation, however, examination of the building shows that potential ingress and egress routes for bats remain and there is the potential for it to be utilised by roosting bats.

Previous surveys have identified a number Greater Horseshoe Bats and a smaller number of Lesser Horseshoe Bats roosting within Black Pool Mill and a licence to disturb bat species has been obtained for previous refurbishments to Black Pool Mill. As part of this licence monitoring of the bat population is ongoing and data is available throughout the 2023 season and up to January 2024. During this period a number of construction activities have been undertaken at the Mill including the emergency works for the riverbank which these works are seeking to formalise. During this period the population of Greater Horseshoe Bats has shown a steady increase.

Areas of broadleaved woodland within the site and surrounding area contain a number of mature trees that may have bat roost potential. The areas of woodland, grassland and hedgerow habitat present on site provide foraging habitat for bat species and the water channels may also be used as linear commuting features.

3.2.2.4 Otter

During the previous PEA conducted in 2016 Otter footprints were identified beneath the Mill's basement bridge, there are also numerous WWBIC records for Otter along the Eastern Cleddau River.

No direct evidence of Otter such as spraints, holts or resting sites were observed during the recent survey however the section of the Eastern Cleddau River within the proposed scheme area is likely to be used for commuting and foraging by Otters.

The area of the proposed works footprint was considered unsuitable for resting Otter, however, the banks of the Eastern Cleddau River and the alluvial woodland on the opposite bank have potential to support Otter holts or resting places.

3.2.2.5 Water Vole

No Water Vole field signs or burrows were observed during the survey. The Eastern Cleddau within the proposed scheme area was deemed unsuitable for Water Vole due to the lack of vegetation, the structure of the banks and the exposed tidal nature of the river. The streams onsite also lacked suitable habitat.

No records for Water Vole within 2km of the scheme area were returned in the desk study.

3.2.2.6 Reptiles and Amphibians

Areas of grassland on site have the potential to support a common reptile species throughout the survey area. Records for Common Lizard *Zootoca vivipara* within the Blackpool Mill were identified in the desk study with Adder *Vipera berus*, Grass Snake *Natrix natrix* and Slow-worm *Anguis fragilis* being identified within 1km radius of site (Minwear Wood).

Suitable terrestrial habitat for common amphibians is also present in the form of marshy grassland. The likely presence of fish in the Eastern Cleddau River and a general lack of aquatic vegetation as well as its fast flow at the proposed scheme area suggests that it is not suitable habitat for amphibians, including Great Crested Newt. No records for Great Crested Newt within 2km of the scheme area were returned in the desk study.

3.2.2.7 Fish

The water channels running throughout the survey area have the potential to support freshwater and marine fish species, however no fish species data was available during the data search or on the Fish Data Explorer. Pembrokeshire Marine SAC is designated for Sea lamprey, River lamprey, Allis shad and Twaite and Cleddau Rivers SAC is designated for River lamprey, Brook lamprey, Bullhead and Sea lamprey. Given hydrological connectivity to the site these species have the potential to be present within the channel.

3.2.2.8 Invasive Non-Native Species

No invasive non-native species were identified in the desk study and no species were recorded during the site survey.

4 Assessment of Impacts and Recommendations

4.1 Designated Sites

The Annex I habitats for which the Pembrokeshire Marine/Sir Benfro Forol SAC is designated are not present within close proximity of the proposed works. However, there is the potential for fish species associated with the site to migrate through this section of the river, potentially breeding and spawning further upstream. Otter are also known to be present and potential impacts are considered below.

Habitats associated with the Afonydd Cleddau / Cleddau Rivers SAC are not present within the proposed works area, however, woodland present on the opposite bank likely qualifies as the Annex I habitat 91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*. This will not be directly impacted by the proposed works, however, mitigation will be required to ensure that this habitat is not indirectly impacted. There is the potential for Annex II fish species to commute through the river in this area.

There is a potential for the construction of the flood defences to impact upon the features of the two adjacent SAC's through disturbance or changes in water quality. These potential impacts are directly linked to the construction of the project and the construction methodology and working practices to be employed. Appropriate control measures including Method Statements and an Environmental Action Plan (EAP) are likely to be required to manage any potential risks. It is likely that the scheme will require the completion of Habitat Regulation Assessment (HRA) with regards to these sites.

The proposed works would need to demonstrate no adverse effect on the nature conservation interest of the site or would be required to provide adequate compensatory measures to preserve its wildlife value.

4.2 Habitats

The potential for significant direct impacts to adjacent habitats is considered low, ideally the works will consist of renewal of existing flood walls and defences in this area.

There is the potential that the scheme will directly result in the small scale loss of riparian habitats. In area of the proposed works, the channel has already been modified as part of mill structure. It is considered unlikely that renewing the wall in this area will have a significant permanent impact upon the river. However, depending on the option selected in-channel habitats may also be impacted.

The potential for the creation of pathways for pollution incidents or contamination migration, either from soils or impacted ground waters, to adjacent waters should be considered and managed within appropriate control measures including Method Statements and an

Environmental Action Plan (EAP). An aim of the proposed works is to prevent further contaminated material from being eroded and entering the surrounding waters.

Freshwater habitats are a Priority habitat nationally and is also a feature of the adjacent protected sites. It is recommended that the amount and nature of habitat to be lost is calculated and discussions with NRW undertaken on the requirement for the provision of compensatory habitat.

Once a preferred option is selected the potential for impacts on the river should be assessed through a WFD assessment. This will also include assessment of potential geomorphological impacts.

4.3 Protected Species

4.3.1 Birds

Impacts to habitats suitable for nesting birds are unlikely. However, should any vegetation clearances such as single tree removals become necessary an ecologist should be consulted and a nesting bird check carried out before hand if works take place in the bird nesting season (March to September inclusive).

4.3.2 Badger

Whilst the surrounding area provides potential for badger, direct impacts to this species is unlikely. Impacts to badger that may forage in the surrounding area can be effectively mitigated through good working practices.

- The installation of protective fencing around the works area will be undertaken to prevent Badger from accessing the construction site;
- All excavations will be backfilled on the same day to avoid the risk of Badger falling in, or all open excavations over 600mm in depth will be covered at night. If this is not possible, a means of escape for small animals will be provided

4.3.3 Bats

No bat roost will be directly impacted by the works. Previous surveys have identified a number Greater Horseshoe Bats and a smaller number of Lesser Horseshoe Bats roosting within Black Pool Mill. As part of the licence already obtained monitoring of the bat population is ongoing and data is available throughout the 2023 season and up to January 2024. During this period a number of construction activities have been undertaken at the Mill including the emergency works for the riverbank which these works are seeking to formalise. During this period the population of Greater Horseshoe Bats has shown a steady increase, this potentially indicates that disturbance to bats has not arisen from these works and has not had a detrimental effect on the population.

The works will involve the placement of rock in the river and will not involve percussive techniques such as piling, similar to ongoing works at the mill. Given the above it is

considered that the works will not have a significant impact upon the bat populations in the Mill. However, it is recommended that this is continually reviewed as monitoring of the bat roost is ongoing. Surveys will be undertaken immediately before the proposed works to ensure that the situation has not changed.

The works will not be carried out at night and no lighting of the building will be required. This will ensure that bats can continue to enter and leave the building undisturbed.

4.3.4 Otter

It is likely that Otter will commute through the works area. The woodland on the opposite side of the bank holds potential for resting Otter and Otter footprints have been recorded under the mill itself.

If any works to these areas are proposed it is recommended that a targeted Otter survey is undertaken during the detailed design phase to identify the presence of Otter holts or lying-up areas. Further mitigation measures will then be developed and agreed as required. In addition, a further

Otter survey should be undertaken prior to any works being carried out along the Cleddau. This should seek to identify whether there are any newly established Otter field signs, holts and resting places along the river.

Disturbance to Otter due to noise and light pollution during construction of the scheme will be avoided through the implementation of the EAP. The EAP will include the following actions:

- Any site lighting required will be positioned so that no light falls onto the adjacent river bank;
- The installation of protective fencing around the works area will be undertaken to prevent Otters from accessing the construction site;
- All excavations will be backfilled on the same day to avoid the risk of Otter falling in, or all open excavations over 600mm in depth will be covered at night. If this is not possible, a means of escape for small animals will be provided; and
- Should an Otter be encountered on site during the works, all works will cease immediately.

4.3.5 Reptiles and Amphibians

Habitats suitable for reptiles and amphibians will not be directly impacted and impacts to these species are not anticipated.

4.3.6 Fish

Fish species are protected features of the adjacent designated sites, a number of these were for migratory species that are likely to spawn further up the Cleddau.

There are no known spawning sites within close proximity of the proposed works.

Whilst the construction phase will result in loss of exploitable water column for the duration of the works, the very limited footprint of the temporary works and dewatered area is highly unlikely to represent a loss of exploitable habitat that results in any discernible impacts on these qualifying features. Similarly, the bed substrates within the footprint of the temporary works and dewatered area are highly unlikely to be of exploitable value (likely being coarse due to being on the outside of the meander bend, and so sub-optimal for all life stages of all these features)

During the construction phase, sediment mobilisation and accidental chemical (e.g. fuel or concrete) spills could cause changes in water chemistry and impact both directly and indirectly upon either catadromous features (Bullhead; Brook Lamprey) or those life stages of the anadromous features (shad species; Sea Lamprey; River Lamprey) of the SAC which could be migrating past the works area, in the absence of suitable on-site avoidance and mitigation measures.

4.3.7 General Avoidance Measures

General avoidance measures that should be incorporated within the scheme include:

- Limit the hours of working to daylight hours, to limit disturbance to nocturnal and crepuscular animals;
- Due to the potential presence of bats and Otters the use of lighting at night should be avoided. If the use of lighting is essential, then a directional cowl should be fitted to all lights to prevent light spill and to be directed away from the watercourses.
- Contractors must ensure that no harm comes to wildlife by maintaining the site efficiently and clearing away materials which are not in use, such as wire or bags in which animals can become entangled;
- Any pipes should be capped when not in use (especially at night) to prevent animals becoming trapped. Any excavations should be covered overnight to prevent animals from falling and getting trapped. If that is not possible, a strategically placed plank should be placed to allow animals to escape.

4.3.8 Biosecurity

Measures will need to be put in place to ensure that there is no spread of invasive non-native species or diseases. The Check-Clean-Dry approach should be followed, ensuring that all PPE and equipment is cleaned before leaving site. For more information go to: www.nonnativespecies.org/checkcleandry.

4.3.9 Pollution Prevention Measures

Appropriate mitigation measures should be implemented prior to the construction phase to ensure that the water quality is not adversely affected through pollution incidents and the release of contaminants from the site. This mitigation could include, but is not limited to:

- Following relevant pollution prevention measures e.g. CIRIA Guidance:

- Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001). Information useful for Toolbox Talks on working near water and pollution prevention can be found at:
https://www.ciria.org/Resources/All_toolbox_talks/Env_toolbox_talks/Working_on_or_near_watercourses.aspx [site accessed 27/07/2023].
- Minimising the impacts of oil and fuel leaks can be achieved by the following actions:
 - Any chemical, fuel and oil stores should be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
 - Biodegradable oils and fuels should be used where possible.
 - Drip trays should be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Where practicable, refuelling of vehicles and machinery should be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m).
 - Emergency spill kits should be available on site and staff trained in their use.
 - Operators should check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages should be reported immediately.
 - Daily checks should be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective should be removed from site immediately or positioned in a place of safety until such time that it can be removed.

Appendices

A Relevant Policy and Legislation

The legislation discussed below is intended as a guide only and does not replace formal legal advice.

A.1 Planning Policy

A.1.1 Planning Policy Wales (Edition 9, July 2016)

Planning Policy Wales (PPW) sets out the broad principles for the operation of the planning system in Wales. The document contains general commitments to sustainable development, the protection of biodiversity and protection of the environment as a whole. It is supplemented by a series of Technical Advice Notes (TAN) and Circulars. Together these documents comprise national planning policy in Wales, which should be taken into account by local planning authorities in the preparation of development plans and assessment of planning applications.

A.2 Legislation

A.2.1 Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 are the means by which the EC Habitats Directive (92/43/EC) is transposed in England and Wales and updates and consolidates previous legislation. This has been updated by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. These Regulations provide protection for European Protected Species (EPS) (animals and plants listed in Annexe IV Habitats Directive which are resident in the wild in Great Britain) including bats, Dormice *Muscardinus avellanarius*, Great Crested Newts *Triturus cristatus* and Otters *Lutra lutra*. The Conservation of Habitats and Species (Amendment) Regulations 2012 placed new duties on public bodies to help “preserve, maintain and re-establish habitat for wild birds”. The designation and protection of national site network sites e.g. Special Protection Areas (SPA) and Special Areas of Conservation (SAC) also falls within these Regulations. Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in carrying out their duties i.e. when determining a planning application.

A.2.2 Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part 1 of the Act deals with the protection of wildlife. KKH-JBAU-XX-XX-RP-EN-0001-Castlemartin_Corse_Preliminary_Ecological_Appraisal A-2 Most European Protected Species are now covered under the Conservation of Habitats and Species Regulations (see

above) but some activities are still covered by the WCA such as obstructing access to a bat roost. All British birds, their nests and eggs are protected in law. It is an offence to deliberately take, kill or injure any wild bird or to take, damage, or destroy any nest or egg of any wild bird under Section 1 of the Act. In addition, certain species such as the Barn Owl *Tyto alba* are included in Schedule 1 of the Act and are protected against disturbance while nesting and when they have dependent young. Offences against birds listed on Schedule 1 are subject to special penalties.

A.2.3 Natural Environment and Rural Communities Act 2006 (NERC)

The Natural Environment and Rural Communities Act (NERC) requires all public authorities, including planning authorities to have regard to the purpose of conserving biodiversity whilst carrying out their normal functions. The NERC Act includes lists of Habitats and Species of Principal Importance (HPIs and SPIs) to the conservation of biodiversity (Section 42) which should be considered in the implementation of duties under the NERC Act. In line with government circular 06/2005 (ODPM, 2005) which provides supplementary guidance, the presence of a Priority species may be a material consideration when a planning authority is considering a development proposal. The HPI and SPI listed under the NERC Act are largely also UK BAP Priority habitats and species. The UK Post-2010 Biodiversity Framework succeeds the UK BAP partnership; though its list of Priority species and habitats agreed under the UK BAP still form the basis of much biodiversity work in the UK. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed under the UK BAP still remain important and valuable reference sources for background information on Priority species under the UK Post-2020 Biodiversity Framework.

A.2.4 Biodiversity Strategies

Habitats and Species of Principal Importance (HPI and SPI) listed under the NERC Act are largely also UK BAP Priority habitats and species. The UK Post-2010 Biodiversity Framework succeeds the UK BAP partnership; though its list of Priority species and habitats agreed under the UK BAP still form the basis of much biodiversity work in the UK. The Welsh Biodiversity Strategy, 'Environment Strategy for Wales' was published in 2006 and explains how Wales will tackle the challenge it faces over the next 20 years. The Environment (Wales) Bill was introduced in May 2015 and creates legislation needed to plan and manage Wales' natural resources in a more sustainable and joined-up way. Following on from the introduction of the Bill 'A Snapshot of the State of Wales' Natural Resources' was produced. This report was prepared to inform the passage of the Environment Bill through the National Assembly. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed under the UK BAP still remain important and valuable reference sources for background information on Priority species under the UK Post-2010 Biodiversity Framework.

A.2.5 Invasive Non-Native Species

Certain non-native invasive plant species are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to plant them in the wild or otherwise cause them to grow in the wild. The Wildlife and Countryside Act 1981 (Variation of Schedule 9) (England and Wales) Order 2010 added a number of plant species to the list including Himalayan Balsam *Impatiens glandulifera*, Montbretia *Crocasmia x crocosmiiflora*, Rhododendron *Rhododendron ponticum* and Wall Cotoneaster *Cotoneaster horizontalis*. The Environmental Protection Act 1990 has limited provisions for non-native invasive species but is included here due to the classification of soil and other waste containing viable propagules of invasive non-native plant species as controlled waste. This has been applied to Japanese Knotweed *Fallopia japonica* and Giant Hogweed *Heracleum mantegazzianum* with the result that waste containing these species must be disposed of in accordance with the duty of care set out in section 34 of the Act.

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