Kenson River Restoration

Preliminary Ecological Appraisal

Final

P03

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Prepared for:

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This report describes work commissioned by Natural Resources Wales. Hannah Webster of JBA Consulting carried out this work.

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The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken in January 2025 and is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances. Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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Abbreviations

BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
CIEEM	Chartered Institute of Ecology and Environmental Management
EPS	European Protected Species
GIS	Geographic Information System
INNS	Invasive Non-Native Species
JNCC	Joint Nature Conservation Committee
MAGIC	Multi-Agency Geographic Information for the Countryside
NRW	Natural Resources Wales
PEA	Preliminary Ecological Appraisal
PRF	Potential Roosting Feature
SAC	Special Area of Conservation
SEWBReC	South East Wales Biodiversity Records Centre
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UKHab	UK Habitat Classification
WCA	Wildlife and Countryside Act

1 Introduction

1.1 Project Background

JBA Consulting was commissioned by Natural Resources Wales (NRW) to undertake a Preliminary Ecological Appraisal (PEA) to help inform the Outline and Detailed Design of restoration opportunities for the Kenson River at Fonmon Estate, in the Vale of Glamorgan.

The survey was commissioned to provide baseline data and identify any likely ecological constraints to the proposed scheme. Where applicable, recommendations for further surveys, mitigation and ecological enhancements have been provided, in relation to the ecological receptors likely to be impacted upon.

1.2 Site Location

The site is situated on a stretch of the River Kenson between Kenson Hill (NE) to the location where the Kenson River passes under the B4265. The river flows southwest through grassland and riparian habitats until its confluence with the River Thaw 500m southwest of the site boundary (red line). The area of interest is a 2.3km long reach from Kenson Hill 250m north of Kenson to the B4265 2km to the west of Kenson and is centralised on national grid reference NGR ST 04343 68371. The site location and survey boundary are shown below in Figure 1-1.

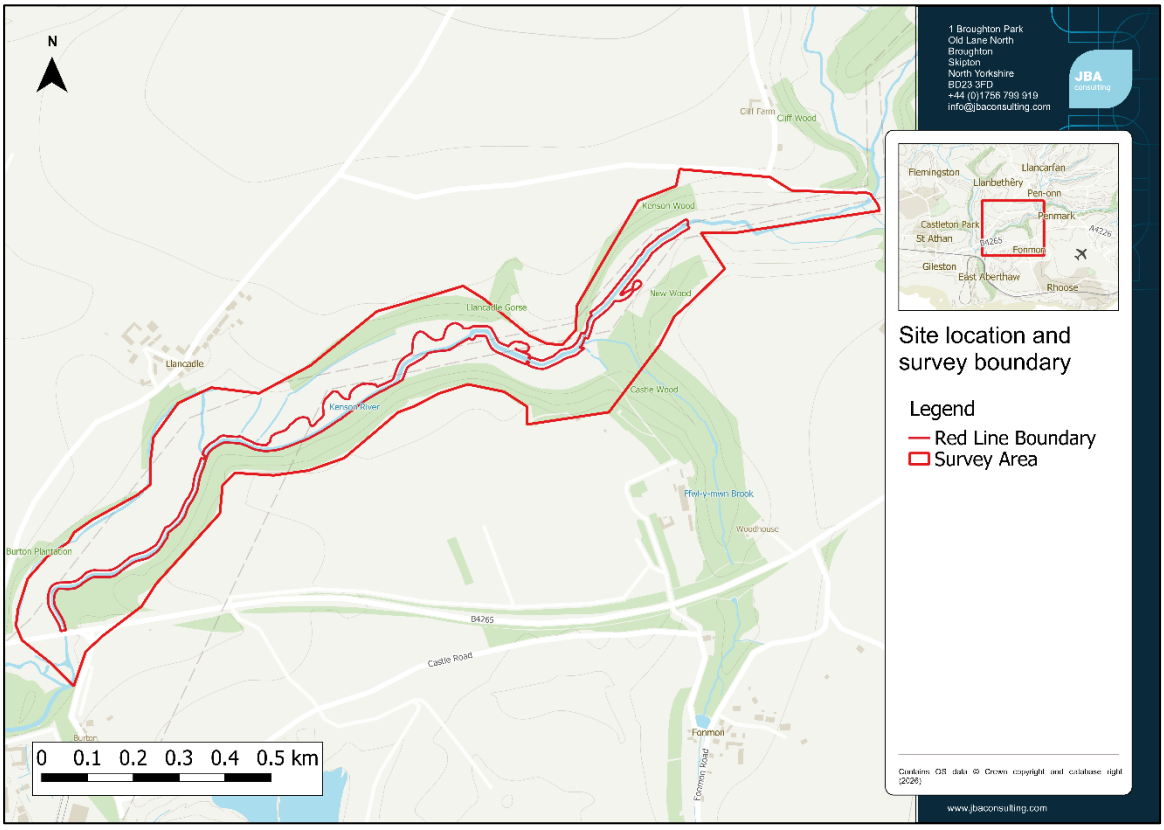


Figure 1-1. Site Location and Survey Boundary

1.3 Proposed Scheme

The development will include changes to the floodplain and the channel of the Kenson River. The restoration of the river corridor will establish a sinuous river planform and improve in-channel habitats using nature-based solutions (NBS) to replicate and reinstate natural channel dynamics and increase habitat diversity. Meanwhile, elements added and changed across the floodplain will increase lateral connectivity and restore habitats alongside the river. The works will consist of:

- Creating backwater areas in the current channel
- Bed raising
- Re-profiling and re-grading sections of riverbank
- Installing in-channel features, such as woody material and in-channel berms
- Reconnecting palaeo channels and channel infilling
- Floodplain lowering
- Improving riparian corridor
- Installing a new footbridge

The restoration will improve the resilience of habitats and increase biodiversity within the Kenson River. The restoration works should also improve water quality by reducing the amount of sediment entering the watercourses. Improving riparian buffer strip integrity will also help protect the banks from erosion. These gains will all contribute towards improving the WFD status of the Kenson River, with the added benefit of helping transform the site into more pleasant areas for local residents using the PRoWs and visitors to Fonmon Castle to enjoy.

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 priority habitats and species, and designated nature conservation sites in the vicinity of the proposed works.
- A site survey comprising a habitat survey using the UK Habitat Classification (UKHab) 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 England GIS data (www.gis.naturalengland.org.uk/pubs/gis/GIS_register.asp)
- South East Wales Biodiversity Records Centre (SEWBReC),

Due to the size of the site, it is considered that the zone of influence would be up to 2km from central grid reference ST042684, and therefore the desk-based assessment was conducted within this search area.

2.2 Site Survey

A site survey was undertaken on 23 January by ecologist Hannah Webster. The survey area included the site boundary as outlined in Figure 1-1 above. A previous walkover was completed by JBA on 16 February 2023 to inform the feasibility study (Kenson River: River Restoration Feasibility Study).

The PEA was based upon a UKHab Survey, conducted using the UK Habitat classification (UKHab) system. 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 UKHab classification system. The survey was undertaken within the boundary shown in Figure 1-1. Habitats were mapped to level 4 of the UK Habitat Classification scheme (UKHab Ltd 2023) implemented using the field key with reference to the relevant definitions (UKHab Ltd 2023). All habitats within the site were recorded during the site survey and a description of each habitat type collected. Botanical names follow Stace (2019).

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 C, 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

Structures and trees likely to be impacted by the proposed scheme were inspected during a Daytime Bat Walkover (DBW) to observe, assess, and record any habitats suitable for bats to roost, commute and forage both on site and in the surrounding area using the methods specified in the Bat Conservation Trust (BCT) guidelines (Collins, 2023).

Structures, trees, and other features that could be suitable for bats to roost in and any habitats that could be suitable for bats to commute, forage or swarm in/ at were assessed for potential suitability following the below guidance provided by the BCT Guidelines:

Evidence indicating the existence of a bat roost includes bat droppings, urine staining/ dark stains running below holes or cracks, odours, feeding remains, scratch marks, and dead/alive bats. However, roosting bats may still be present without any external evidence being recorded.

Furthermore, the suitability of habitats across the site to support commuting and foraging bats was assessed in terms of habitat type, abundance, connectivity, and distribution. These were categorised as having either 'none', 'negligible', 'low', 'moderate' or 'high' suitability for bats which was determined by applying the categories given within the BCT Guidelines (see Table 2-1).

Table 2-1. Guidelines for assessing the potential suitability of proposed development sites for bats (Collins, 2023).

Suitability	Roosting habitats	Potential flightpaths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all/underground levels.	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. 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).	Habitat that could be used by small numbers of bats as flight-paths 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.

Suitability	Roosting habitats	Potential flightpaths and foraging habitats
Moderate	A structure 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, such as maternity and hibernation – the categorisation described in this table is 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 flight-paths 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 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. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths 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, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

The information displayed in Table 2-1 does not reflect the same classifications for trees, therefore, Table 2-2 demonstrates the appropriate classification of PRFs (Potential Roosting Feature) for trees - 'NONE', 'FAR', or 'PRF'. PRFs on trees include cracks/splits, crevices, rot cavities, fluting, loose bark, woodpecker holes and areas of Ivy *Hedera helix*.

Table 2-2. Guidelines for assessing the suitability of trees on proposed development sites for bats (Collins, 2023).

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

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 Newt

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.

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 (Sewell et al. 2013).

2.2.2.8 Invertebrates

An assessment of the habitat suitability for invertebrates was made, involving the identification of key habitats and features which may be favoured by invertebrates, such as flower-rich grassland, areas of early successional habitat, wetland, scrub, mature / veteran trees, aquatic vegetation, river margins and habitat mosaics (Natural England 2005; Buglife 2015).

2.2.2.9 Fish

A preliminary assessment of habitat suitability for fish was made along the watercourses, including assessing flow rate, depth, and riverbed substrate, where possible. Any impediments to fish passage were also noted.

2.2.3 Other priority species and environmental constraints

During the site survey, any signs or sightings of other priority 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 or 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.

The survey was conducted in January, a suboptimal time of year to find field signs and for botanical identification. Therefore, there is potential that protected and notable species may have been overlooked and are present to a greater extent than were recorded during the survey.

Large sections of the river were obscured due to dense riparian vegetation and steep banks. Therefore, due to safety reasons these sections were not surveyed and therefore field signs for protected and notable species such as Otter and Water Vole may have been missed.

3 Results and Evaluation

3.1 Desk-Based Assessment

3.1.1 Statutory Designated Sites

A search via the MAGIC database showed that there is one statutory designated site within 2km of the proposed scheme. This is the East Aberthaw Coast Site of Special Scientific Interest (SSSI) located approximately 1.6km south of the scheme boundary.

East Aberthaw Coast SSSI is designated for its range of habitats that makes it one of the richest coastal wildlife sites in the county. Rocky and sandy shore, shingle spits, saltmarsh, relict sand dunes and Liassic limestone cliffs all support species of plants and animals that are of a limited distribution in the county. *Adiantum capillus-veneris* and *Lithospermum purpurocaeruleum* are species of note found on the limestone cliffs and in associated areas of scrub. Saltmarsh and shingle ridges support a good range of plant species. Land and littoral invertebrates are particularly rich in this area and include *Phanacis caulicola, Brachinus crepitans* and *Lima pontia*.

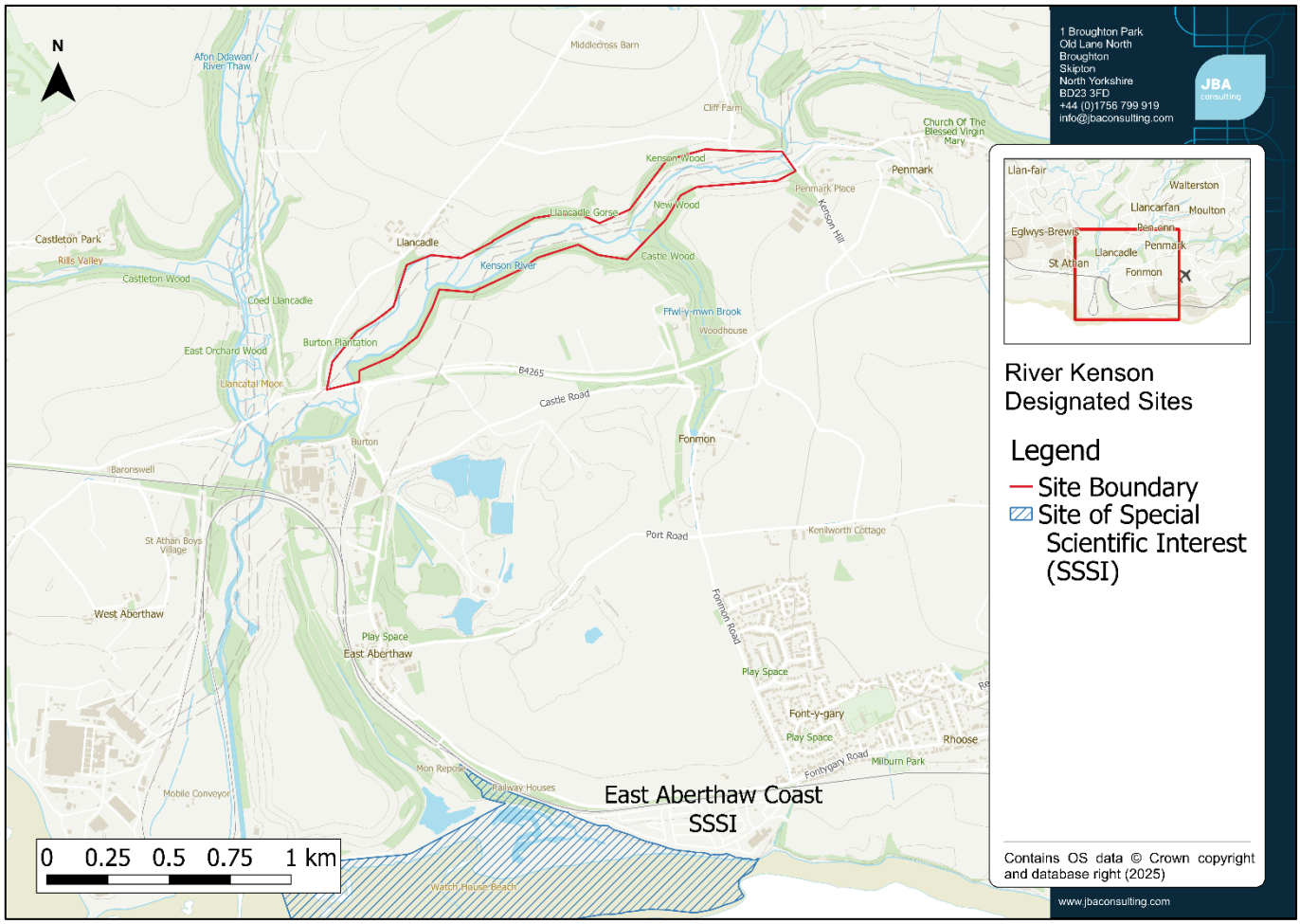


Figure 3-1. Statutory Designated Sites within 2km of the proposed scheme.

3.1.2 Non-Statutory Designated Sites

The data search from South East Wales Biodiversity Records Centre (SEWBReC) identified 35 Local Wildlife Sites (LWS) within 2km of the proposed scheme. The LWS within 1km of the proposed scheme are listed below in Table 3-1.

Table 3-1. Local Wildlife Sites within 1km of the proposed scheme.

Site Name	Proximity to site
Castle Wood	Within scheme boundary
Land adjacent to Kenson Wood	Within scheme boundary
Kenson Wood	Within scheme boundary
Llancadle	318m North
Cliff Wood	691m East
Land West of Pen-Doines	788m East
Pen-Doines	909m East
Land West of Pen Onn Farm	943m East

3.1.3 Protected Species

Details of the relevant protected species records held by SEWBReC within 2km of the proposed scheme are outlined below in Table 3-2. Details of the legislative context and proximity of the records are also provided. Only records submitted after 2000 are considered. Where multiple records exist the closest to the site is included.

Table 3-2. Protected species held by SEWBReC within 2km of the site.

Scientific Name	Common Name	Designation	Distance From Site
Birds			
Pluvialis apricaria	Golden Plover	BDir1	752m
Limosa lapponica	Bar-tailed Godwit	BDir1	1251m
Calidris pugnax	Ruff	BDir1, WCA1.1	1477m
Caprimulgus europaeus	Nightjar	BDir1	255m
Falco peregrinus	Peregrine	BDir1, WCA1.1	923m
Falco columbarius	Merlin	BDir1, WCA1.1	752m
Alcedo atthis	Kingfisher	BDir1, WCA1.1	898m
Cygnus cygnus	Whooper Swan	BDir1, WCA1.1	1365m
Pandion haliaetus	Osprey	BDir1, WCA1.1	752m
Cygnus columbianus	Tundra Swan	BDir1, WCA1.1	1140m
Circus cyaneus	Hen Harrier	BDir1, WCA1.1	752m
Grus grus	Crane	BDir1	1365m
Milvus milvus	Red Kite	BDir1, WCA1.1	752m
Numenius phaeopus	Whimbrel	BDir22, WCA1.1	1380m

Scientific Name	Common Name	Designation	Distance From Site
Limosa limosa	Black-tailed Godwit	BDir22, WCA1.1	1965m
Tringa nebularia	Greenshank	BDir22, WCA1.1	1030m
Turdus iliacus	Redwing	BDir22, WCA1.1	448m
Turdus pilaris	Fieldfare	BDir22, WCA1.1	448m
Clangula hyemalis	Long-tailed Duck	BDir22, WCA1.1	1030m
Tyto alba	Barn Owl	WCA1.1	255m
Accipiter gentilis	Goshawk	WCA1.1	825m
Fringilla montifringilla	Brambling	WCA1.1	1318m
Regulus ignicapilla	Firecrest	WCA1.1	983m
Mammals			
Rhinolophus hipposideros	Lesser Horseshoe Bat	WCA Sch5	255m
Pipistrellus pipistrellus	Common Pipistrelle	WCA Sch5	641m
Pipistrellus pygmaeus	Soprano Pipistrelle	WCA Sch5	255m
Myotis nattereri	Natterer's Bat	WCA Sch5	610m
Myotis daubentonii	Daubenton's Bat	WCA Sch5	641m
Plecotus auritus	Brown Long-eared Bat	WCA Sch5	610m
Nyctalus noctula	Noctule Bat	WCA Sch5	641m
Lutra lutra	Otter	WCA Sch5	65m
Arvicola amphibius	Water Vole	WCA Sch5	804m
Meles meles	Badger	Protection of Badgers Act 1992	641m
Amphibians			
Triturus cristatus	Great Crested Newt	WCA Sch5	1530m
Rana temporaria	Common Frog	WCA Sch5	641m
Bufo bufo	Common Toad	WCA Sch5	255m
Reptiles			
Vipera berus	Adder	WCA Sch5	671m
Anguis fragilis	Slow-worm	WCA Sch5	583m

3.2 UKHab Survey

3.2.1 Habitats

The habitats identified on site are detailed in a UKHab map in Appendix A, with a description of each habitat type within the following text. Site photographs are presented in Appendix B.

3.2.1.1 g3c - Other Neutral Grassland

The Kenson River flows within an area of managed semi-improved neutral grassland that is subject to grazing by cattle. Dominant grass species include Tufted Hair-Grass *Dechampsia cespitosa* and Red fescue *Festuca rubra*. Other species present include Nettle *Urtica dioica* and Thistle *Cirsium spp* with Hard Rush *Juncus inflexus* and Soft Rush *Juncus effusus* present in areas of wetter ground.

At the lower extent of the site transitional vegetation is present where the grassland becomes more tidally influenced. Here there is a large bed of Greater Pond-sedge *Carex riparia* with Common Skullcap *Scutellaria galericulata* also present. As the grassland transitions towards the tidal weir some saltmarsh species are present within brackish grassland with species including Sea Arrow-grass *Triglochin maritima*, Saltmarsh Rush *Juncus gerardii*., Wild Celery *Apium graveolens* and Hairy Buttercup *Ranunclus sardous.*

The UKHab survey conducted as part of this PEA was conducted in January a suboptimal time of year for botanical identification. Therefore, it was recommended that further survey in the form of an NVC survey to be conducted at a suitable time of year. An NVC survey was conducted by experience JB ecologist Jonathan Harrison in September 2025. The NVC surveys recorded within the site boundary included SM24 *Elymus pycnanthus* salt-marsh community, S4 *Phragmites australis* swamp and reed-beds, S6 *Carex riparia* swamp, S7 *Carex acutiformis* swamp, S21 *Scirpus maritimus* swamp, 26 *Phragmites australis Urtica dioica* tall-herb fen, MG1 *Arrhenatherum elatius* grassland, MG6 *Lolium perenne Cynosurus cristatus* grassland, MG10 *Holcus lanatus Juncus effusus* rush-pasture, MG11 *Festuca rubra Agrostis stolonifera Potentilla anserina* grassland and OV23 *Lolium perenne Dactylis glomerata* community. Full details of the NVC can be found in the National Vegetation Classification Survey report (OVQ-JBA-00-00-RP-BD-0003-NVC_Report)

3.2.1.2 w1h5 - Other Woodland- mixed; mainly broadleaved

Areas of semi-natural broadleaved woodland borders the site boundary on both sides of the valley slopes, including Castle Wood and Llancadle Gorse Local Wildlife Sites, both designated as Ancient Semi-Natural Woodland. The woodland is comprised of Oak *Quercus spp*., Beech *Fagus sylvatica*, Sycamore *Acer pseudoplatanus,* Alder *Alnus glutinosa* and Poplar *Populus spp*. with planted conifers also present. The understory is comprised of Holly *Ilex aquifolium*, Hazel *Corylus avellana* and Willow *Salix spp.*

3.2.1.3 r1b - Other Rivers and Streams

The Kenson River is a low lying single thread watercourse within the site area. The watercourse has been straightened, modified and realigned along its length. The riparian zone is dominated with poor scrub ad short grass vegetation comprising Bramble *Rubus fruticosus*, Thistle *Cirsium spp*. and Reeds *Phragmites australis*. Tree species including Hawthorn *Crataegus monogyna*, Alder *Alnus glutinosa* and Willows *Salix spp*. are also present along the riverbanks throughout the site.

3.2.1.4 r1f6 - Other temporary ponds and scrapes

Recently a number of scrapes have been created for biodiversity enhancement throughout the site. These have formed small ponds that are yet to establish.

3.2.2 Protected and Notable Species

3.2.2.1 Birds

The areas of woodland and individual mature trees across the site are likely to support a wide range of bird species and offer nesting opportunities for breeding birds including passerine and ground-nesting species. A number of Schedule 1 species have been recorded within and close to the site and the site offers habitat for aquatic species such as Kingfisher *Alcedo atthis*.

Incidental sightings during the site walkover included Kingfisher, Red Kite *Milvus milvus,* Buzzard *Buteo buteo* and Grey Heron *Ardea cinerea*.

3.2.2.2 Badger

No signs of Badger (including setts, runs, latrines etc.) were recorded during the walkover survey, however the areas of grassland and woodland throughout the survey area provides suitable foraging habitat for Badger. A number of Badger records were returned in the desk study with the closest being approximately 620m from site.

3.2.2.3 Bats

The desk study returned numerous records for bat species within 2km of the site including Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared bat, Noctule bat, Natterer's bat and Lesser Horseshoe bat.

Areas of woodland and mature trees on site have the potential to provide potential roosting opportunities for bats. No other structures with bat roosting potential were identified within the survey area.

Woodland, grassland and the Kenson river watercourse itself provide suitable foraging and commuting habitat for a range of bat species and the site is considered to have moderate potential for this purpose.

3.2.2.4 Otter

The river and tributaries within the site provide suitable Otter commuting and foraging habitat, particularly where trees and scrub along the banks provide cover, as well as potential holt-building habitats under roots. An Otter survey was carried out as part of the site walkover, no direct evidence of Otter, such as spraints, holts or resting sites, were observed during the survey however large sections of the river were obscured due to dense riparian vegetation and steep banks. There are a number of recent Otter records along the stretch of river within the site boundary.

3.2.2.5 Water Vole

The river and tributaries present within in the site have the potential to provide suitable habitat for Water Vole with soft earth banks that are suitable for burrowing and vegetation present suitable for refuge and foraging. No Water Vole field signs or burrows were observed during the survey; however, signs of activity could have been missed on account of the poor bankside visibility due to dense vegetation growth.

There are no records of Water Vole on the Kenson River within the site boundary; however, anecdotal landowner knowledge advises that Water Vole may have been present in the study site until the 1980 and Water Vole reintroduction is occurring within the lower River Thaw as part of the Wildlife Trust for South and West Wales strategy to bring back the Water Vole (https://www.welshwildlife.org/about-us/whatwe-do/wildlife-conservation/our-projects/water-vole-project).

3.2.2.6 Reptiles

Suitable reptile habitat for breeding and hibernating is present within the survey area in the form of woodland and scrub, whilst the open grassland habitats offer suitable basking opportunities. Tree debris and fallen branches could provide cover and a food source for reptiles. The desk study returned records for reptiles within 2km of the site including Slow-Worm, and Adder.

3.2.2.7 Amphibians including Great Crested Newt

Records for a number of amphibians within 2km of the site were returned in the desk study. These include Great Crested Newt, Common Frog and Common Toad. The closest record for Great Crested Newt is approximately 1km from the site. Terrestrial habitat suitable for amphibians is present on site in the form of grassland and areas of woodland. Recently a number of scrapes have been created for biodiversity enhancement throughout the site. These have formed small ponds that are yet to establish however over time could provide optimal habitat for breeding amphibians including Great Crested Newt.

3.2.2.8 Invertebrates

The grassland, woodland and standing water habitats within the site provide ample opportunities for common and widespread species of invertebrate to be present within the site.

3.2.2.9 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. Salmon *Salmo salar*, Brown trout *Salmo trutta* and Sea trout *Salmo trutta trutta*, Eel *Anguilla anguilla* and River lamprey *Lampetra fluviatilis* have been recorded in the Thaw and its tributaries and the River Kenson may therefore provide supporting habitat for these species.

3.2.2.10 Invasive Non-Native Species

No INNS were recorded during the site walkover; however the walkover was conducted in January, a time when many invasive plants are inconspicuous or have altogether died back. During the previous walkover conducted by JBA in February 2023 remains of Himalayan Balsam *Impatiens glandulifera* were recorded within the survey area (Kenson River: River Restoration Feasibility Study). Records for Himalayan Balsam and Japanese Knotweed *Fallopia japonica* within close proximity to the site were returned in the desk study.

During the Water Vole and Otter Survey completed in April 2025 Himalayan balsam was recorded in dense patches throughout the middle section of the survey reach on both banks extending further than previously recorded during past site visits. Dense patches were recorded downstream of the main footbridge on right bank (ST 04374 68410) and extending along the left bank (from ST 04150 68390 to ST 04370 68398).

4 Conclusions and Recommendations

4.1 Conclusions

The site consists of the following habitats: neutral grasslands, broadleaved woodland, rivers and standing water. Habitats present on or adjacent to the site have the potential to support numerous protected and notable species such as reptiles, Water Vole, Otter, breeding and bird populations, bats, aquatic and terrestrial invertebrates, amphibians potentially including Great Crested Newt and fish.

Recommendations for further surveys are made below, these have only been recommended where there are gaps in the existing data on the site. The surveys will need to be completed before a full assessment of the preferred option for the scheme can be undertaken. Where further surveys have not been recommended for particular species or species groups known to be present within or adjacent to the site there is sufficient existing information to be able to fully assess the impacts on these species, or it is considered that the likely options would not result in impacts.

4.2 Recommendations

The following recommendations are made to avoid and/or mitigate against the potential ecological impacts of the proposed works.

4.2.1 Designated Sites

The East Aberthaw Coast SSSI is located approximately 1.6km south of the scheme boundary. Given the distance and nature of the proposed scheme it is not considered that there will be any significant impact to these sites or the features, provided appropriate pollution prevention measures are followed, the contractor should therefore ensure best practice pollution prevention measures are used.

4.2.2 Habitats

The proposed scheme has the potential to result in the small-scale temporary and permanent loss of habitats on site including neutral grassland and scrub. It is recommended that any impact is mitigated, and that any permanent loss of habitat is compensated for. The Project aims to restore areas of the River Kenson and improve the resilience of habitats and increase biodiversity, as well as potentially reduce the local risk of flooding. The restoration works will also improve water quality by reducing the amount of sediment entering the watercourses. Improving riparian buffer strip integrity will also help protect the banks from erosion.

4.2.3 Protected Species

4.2.3.1 Birds

Habitats within the site boundary and surrounding area provide foraging and nesting opportunities for birds. Therefore, precautionary measures for vegetation clearance should be put in place to safeguard nesting birds. Where possible, all vegetation clearance should be undertaken outside the main breeding season (i.e. between October and February inclusive). Where this is not possible, all vegetation clearance should be supervised by an experienced ecologist. Any identified nests will be safeguarded until the chicks have fledged to ensure there are no direct impacts upon nesting birds.

4.2.3.2 Badger

There were no signs of Badger activity or setts recorded during the survey however suitable foraging habitat is present within the scheme boundary. Therefore, general precautions for larger mammals should be followed:

- Any holes/trenches should be covered overnight or left with a ramp at one end, to avoid animals falling in and becoming trapped.
- Any pipes on site should have their ends capped.
- The work site should be left in a tidy state, with no equipment or materials left that could cause harm or trap animals.
- Fencing should avoid blocking access to commuting routes within the work area.

4.2.3.3 Bats

Habitats within the scheme boundary have the potential to be used by commuting and foraging bats and therefore, where possible, works should be carried out in daylight hours between late March and October. If works must be carried out during this period at night, any artificial worksite lighting should be minimised. Any floodlights should be fitted with a directional cowl to avoid light-spill onto the watercourses and surrounding woodland habitats. A number of mature and semi mature trees are likely to be impacted by the proposed works and therefore Preliminary Roost Assessments will be required by a suitably qualified ecologist. If the assessments deem the impacted trees to have Potential Roost Features further surveys will be required.

4.2.3.4 Otter

Otter records have been identified within the survey area. It is likely that Otter use the River Kenson for commuting or foraging. Therefore, targeted Otter surveys were completed in January and April 2025. No direct evidence of Otter, such as spraints, holts or resting sites, were observed during the survey however large sections of the river were obscured due to dense riparian vegetation and steep banks. The river and tributaries within the site provide suitable Otter commuting and foraging habitat, particularly where trees and scrub along the banks provide cover, as well as potential holt-building habitats under roots.

Restoration opportunities must therefore seek to avoid adverse impacts to Otter utilising the site and Otter passage must be maintained at all times. Works near watercourses should not be undertaken at night and watercourses should not be illuminated by lighting, such as security lights, during works. Excavations left overnight should either be covered, or an escape ramp installed to prevent the trapping of animals such as Otter. Should an Otter be encountered on site during the works, all works should cease immediately, and advice be obtained from an experienced ecologist.

4.2.3.5 Water Vole

There were no signs of Water Vole recorded during the survey however habitats present within the River Kenson were deemed potentially suitable for Water Vole. Therefore, targeted Water Vole surveys were completed in January and April 2025. No Water Vole field signs or burrows were observed within the survey area during either of the two surveys. However, signs of activity could have been missed on account of the poor bankside visibility due to dense vegetation growth and the inability to survey in-channel due to unsafe access and egress. The river and tributaries present within in the site have the potential to provide suitable habitat for Water Vole with soft earth banks that are suitable for burrowing and vegetation present suitable for refuge and foraging. It is therefore recommended that during the vegetation clearance of bankside vegetation a suitably qualified Ecological Clerk of Works (ECOW) should be present to survey areas of the channel that were previously obscured. Should any Water Vole field signs be observed following vegetation clearance all works should be stopped and displacement will be necessary.

4.2.3.6 Reptiles and Amphibians

Loss of reptile and amphibian habitat will be temporary during the construction phase with impacted habitats being reinstated when the works have been complete. Vegetation clearance should be conducted in a sensitive manner to avoid direct harm to reptiles and amphibians.

Two-staged vegetation clearance should be conducted under a watching brief by an Ecological Clerk of Works (ECoW) between April and September to avoid the reptile hibernation period (which takes place October - March). The first cut should bring the vegetation down to between approximately 15cm. The second stage is to be undertaken later the same day (more than two hours) or the following day (weather and ground condition dependent - to allow reptiles and amphibians the chance to move away into adjacent areas) and will bring the vegetation down to ground level. All cleared vegetation will be moved to areas outside of the construction footprint to encourage reptiles to move away. Vegetation in working areas will be maintained short for the duration of the project to reduce the likelihood of disturbing reptiles. Small mammal burrows will be destructively searched under supervision of an ECoW to search for any reptiles and amphibians using these as a refuge and move them away from working areas.

4.2.3.7 Great Crested Newt

Recently a number of scrapes have been created for biodiversity enhancement throughout the site. These have formed small ponds that are yet to establish however within the time before detailed designs have been agreed and construction starts could provide optimal habitat for breeding amphibians including Great Crested Newt.

Further surveys will therefore be required to determine the presence or likely absence of GCN within the site including Environmental DNA (eDNA) testing to determine if breeding populations of Great Crested Newts are present. eDNA testing can only be undertaken from mid-April to end-June and should be undertaken by a suitably licenced ecologist. Depending on the eDNA results, a mitigation licence may be required from NRW. Licences are no longer provided free of charge and will likely require population surveys to be undertaken.

4.2.3.8 Fish

The River Kenson has the potential to support freshwater and marine fish species, and therefore restoration opportunities must seek to avoid adverse impacts to fish. No fish species data was available during the data search or on the Fish Data Explorer however Salmon, Brown trout and Sea trout, Eels and River lamprey have been recorded in the Thaw and its tributaries.

In order to reduce impacts to fish utilising the Kenson River any in channel works should only be completed between the 15th of May and the 15th of October to avoid periods of most sensitivity to fish species. If sections of the channel are to be infilled, for example, as part of any re-meandering work, then a fish rescue will need to be carried out immediately beforehand to remove any fish that could be in the area. These would need to be relocated either upstream or downstream of the proposed work area. This should be arranged with the NRW fisheries team once a timeline has been prepared.

4.2.3.9 Invasive Non-Native Species

No INNS were recorded during the site walkover; however the walkover was conducted in January, a time when many invasive plants are inconspicuous or have altogether died back.

During the Water Vole and Otter Survey completed in April 2025 Himalayan balsam was recorded in dense patches throughout the middle section of the survey reach on both banks extending further than previously recorded during past site visits. Dense patches were recorded downstream of the main footbridge on right bank (ST 04374 68410) and extending along the left bank (from ST 04150 68390 to ST 04370 68398).

Production of an invasive species management plan will therefore be required for the construction works, to ensure that measures are put in place to ensure INNS are not spread within or beyond the site. The presence of workers and machinery on site could introduce species and therefore industry-standard biosecurity measures should be implemented on site. The Check-Clean-Dry approach should be followed, ensuring that all Personal Protective Equipment (PPE) and equipment is cleaned before leaving site. For more information go to: www.nonnativespecies.org/checkcleandry.

4.2.4 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 likely presence of Bats and Otter 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 watercourses and the railway associated with the site;
- 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; and
- 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.

4.2.5 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.

4.2.6 Pollution Prevention Measures

Appropriate mitigation measures should be implemented prior to the construction phase to ensure that 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 20/02/2025].

- 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.

5 Summary of Recommendations

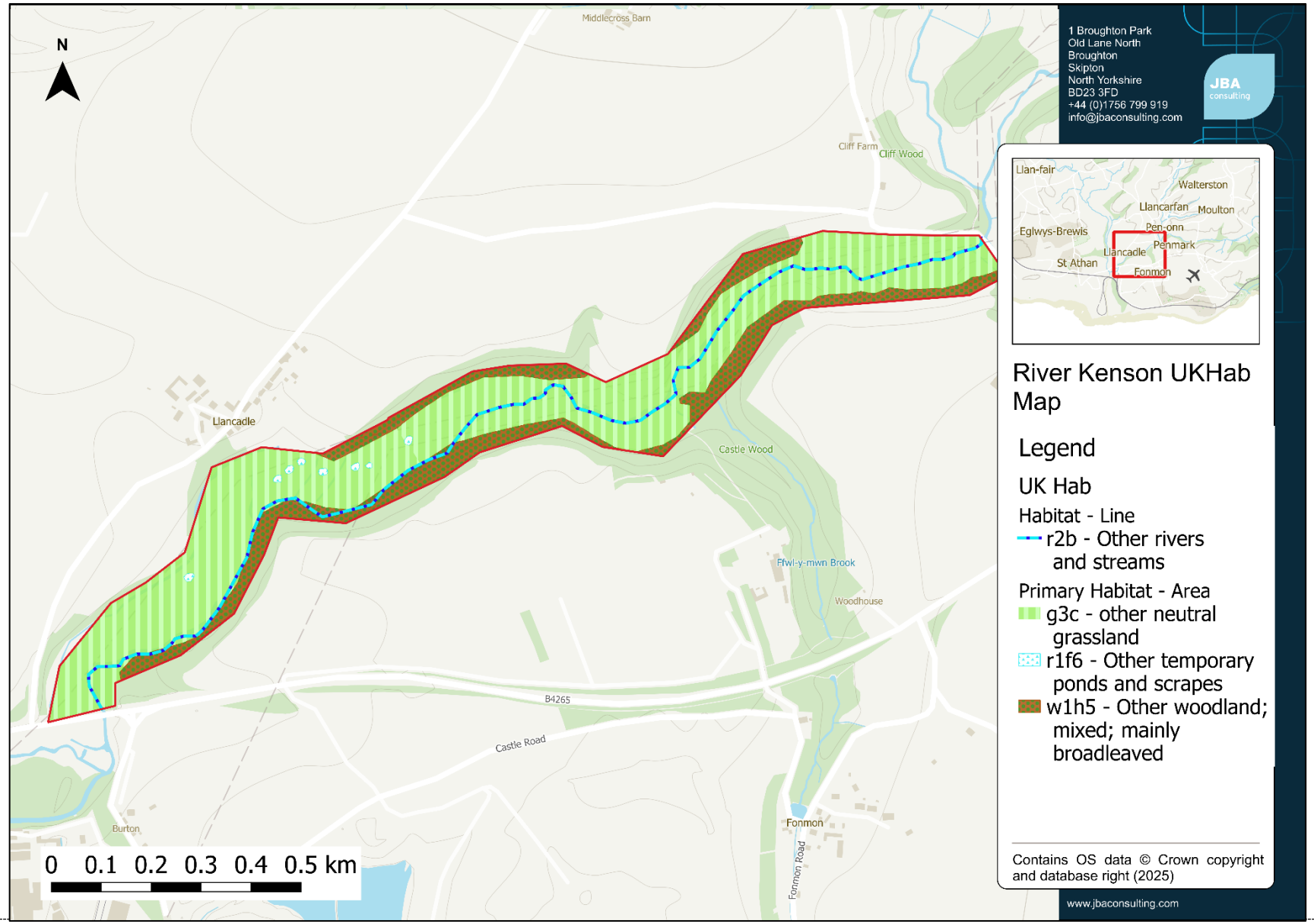
Given the results of the desk study and site walkover, further surveys are recommended to gain a better understanding of the study area baseline and to help further inform option development and detailed designs. These are outlined below:

- Precautionary measures for vegetation clearance to safeguard nesting birds should be put in place. Where possible, vegetation clearance should be undertaken outside the main breeding season (i.e. between October and February). Any vegetation clearance being undertaken within the main breeding season should be conducted under a watching brief by an experienced Ecological Clerk of Works (ECoW). Any identified nests will be safeguarded until the chicks have fledged to ensure there are no direct impacts upon nesting birds.
- Vegetation clearance and works to scrub and woodland areas should be conducted under a watching brief by an Ecological Clerk of Works (ECoW) between April and September to avoid impacts to reptiles and amphibians. Further surveys are required including Environmental DNA (eDNA) testing to determine if breeding populations of Great Crested Newts are present.
- Precautionary measures should be put in place for potential bat species foraging and commuting in the area. Further surveys, including preliminary roost assessments are required for trees are proposed be removed. Depending on the potential for bat roosts to be present or if any potential roost features are identified further bat Presence/Absence survey may be required.
- Precautionary measures should be put in place for potential Badger foraging and commuting in the area.
- Precautionary measures should be put in place for Water Vole. It is recommended that during the vegetation clearance of bankside vegetation a suitably qualified Ecological Clerk of Works (ECOW) should be present to survey areas of the channel that were previously obscured. Should any Water Vole field signs be observed following vegetation clearance all works should be stopped and displacement will be necessary.
- Precautionary measures for Otter potentially utilising the site should be put in place.
- To reduce impacts to fish utilising the Kenson River any in channel works should only be completed between the 15th of May and the 15th of October in order to avoid periods of most sensitivity to fish species. If sections of the channel are to be infilled, for example, as part of any re-meandering work, then a fish rescue will need to be carried out immediately beforehand to remove any fish that could be in the area.

Production of an invasive species management plan will be required before any construction works, to ensure that measures are put in place to ensure INNS are not spread within or beyond the site.

Appendix

A UKHab Map


N
Middlecross Barn
Cliff Farm
Cliff Wood
Llancadle
Castle Wood
Ffwl-y-mwn Brook
Woodhouse
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Castle Road
Burton
Fonmon
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1 Broughton Park
Old Lane North
Broughton
Skipton
North Yorkshire
BD23 3FD
+44 (0)1756 799 919
info@jbaconsulting.com
JBA consulting
Llan-fair
Walterston
Llancarfan
Moulton
Eglwys-Brewis
Pen-onn
Penmark
Llancadle
St Athan
Fonmon
River Kenson UKHab Map
Legend
UK Hab
Habitat - Line
r2b - Other rivers and streams
Primary Habitat - Area
g3c - other neutral grassland
r1f6 - Other temporary ponds and scrapes
w1h5 - Other woodland; mixed; mainly broadleaved
Contains OS data © Crown copyright and database right (2025)
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B Site Photographs

Photo Ref.	Description	Photographs	Grid Ref.
1	Other neutral grassland present throughout survey area		ST 04352 68397
2	Riparian zone along river Kenson		ST 04851 68692

Photo Ref.	Description	Photographs	Grid Ref.
3	One of the recent artificial scrapes created		ST 03743 68277
4	Area dominated by Greater Pond-sedge.		ST 03521 68025

Photo Ref.	Description	Photographs	Grid Ref.
5	Area of grassland towards tidal weir structure with saltmarsh species present.		ST 03351 67777

C Relevant Policy and Legislation

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

C.1 Environment (Wales) Act 2016

The Environment (Wales) Act 2016 sets out the requirement for the 'sustainable management of natural resources' together with new ways of working to achieve this. Part 1 of the Environment Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

Part 1 of the Environment Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act. Part 1 of the Act, including Sections 6 and 7, came into force on May 21, 2016.

C.1.1 Section 6 – Biodiversity and resilience of ecosystems duty

Section 6 under Part 1 of the Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (the S6 duty) for public authorities in the exercise of functions in relation to Wales. The S6 duty requires that public authorities must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems.

C.1.2 Section 7 - Biodiversity lists and duty to take steps to maintain and enhance biodiversity

This section replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

C.2 Planning Policy Wales (Edition 12, February 2024)

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.

The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and

cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation and resultant duties such as the Socio-economic Duty. A well-functioning planning system is fundamental for sustainable development and achieving sustainable places.

C.3 Natural Environment and Rural Communities (NERC) Act 2006

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.

C.4 Statutory Designated Nature Conservation Sites

Sites with statutory designations receive varying degrees of legal protection under UK statute and European Directives. There are several statutory designations used for sites of high nature conservation value in the UK, which are applied depending upon the importance of the site in a local, regional, national or international context. This includes:

- Ramsar Sites (International designation);
- SAC and SPA (European designations);
- National Nature Reserves (NNR) and SSSI (National designations);
- Local Nature Reserves (LNR) (Local designation).

C.5 Non-Statutory Designated Sites

Non-statutory sites are afforded no statutory legal protection but are normally recognised by local planning authorities and statutory agencies as being of local nature conservation value. The protection afforded to such sites is usually discretionary, through Local Plan policies. Non-statutory sites are designated by the local authority, usually in partnership with the County Wildlife Trust (or equivalent).

C.6 Protected Species

Several species are protected under UK and international legislation. In the UK, primary protection is provided under the Wildlife and Countryside Act 1981 (as amended). Species

of European importance receive additional protection in England under the Conservation of Habitats and Species Regulations 2017 (as amended); others may receive protection through specific legislation. Further details on specific species and their levels of protection are provided below.

C.6.1 Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- Take, destroy or possess the egg of any wild bird.

Certain species, such as the Barn Owl *Tyto alba*, receive additional protection under Schedule 1, which makes it an offence to intentionally or recklessly disturb birds and also their young at, on or near an active nest.

C.6.2 Badger

Badgers *Meles meles* are protected by the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981 (as amended), Schedule 6. Under the Protection of Badgers Act, it is illegal to intentionally kill, capture, injure or ill-treat any Badger. It is also an offence to obstruct, destroy or damage a Badger sett or disturb Badgers within a sett. Disturbance is defined, for development purposes, as any activity that could damage a sett or be greater than what Badgers commonly tolerate.

C.6.3 Bats

All UK bat species are European Protected Species (EPS), protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitat and Species Regulations 2017 (as amended). This makes it an offence to:

- Deliberately capture, injure or kill a bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Intentionally or recklessly obstruct access to a bat roost.

C.6.4 Otter

The European Otter *Lutra lutra* is an EPS protected under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence to:

- Deliberately capture, injure or kill an Otter;
- Deliberately disturb an Otter such as to affect local populations or breeding success;

- Damage or destroy an Otter holt, possess or transport an Otter or any part of an Otter;
- Sell or exchange an Otter.

Otters also receive protection under the Wildlife and Countryside Act 1981 (as amended), this makes it an offence to:

- Intentionally or recklessly disturb any Otter whilst within a holt;
- Intentionally or recklessly obstruct access to a holt.

C.6.5 Water Vole

The Water Vole *Arvicola amphibius* is protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure or capture a Water Vole;
- Possess or control a Water Vole, living or dead, or any part of a Water Vole;
- Intentionally or recklessly damage, destroy or obstruct access to any place of shelter, or disturb a Water Vole within such a place;
- Sell or offer for sale a Water Vole living or dead, or part of a Water Vole.

C.6.6 Great Crested Newt

The Great Crested Newt *Triturus cristatus* is an EPS under the Conservation of Habitats and Species Regulations 2017 (as amended). This makes it an offence to:

- Kill, capture or disturb a Great Crested Newt;
- Take or destroy the eggs of a Great Crested Newt;
- Damage or destroy the breeding or resting places of Great Crested Newt.

It also receives additional protection under the Wildlife and Countryside Act 1981 (as amended) making it illegal to possess or control any Great Crested Newt, living or dead.

C.6.7 Reptiles and Other Amphibians

Legal protection varies considerably for different species. Smooth Snake *Coronella austriaca*, Sand Lizard *Lacerta agilis* and Natterjack Toad *Epidalea calamita* are EPS, and it is an offence to:

- Deliberately kill, capture or disturb these species;
- Deliberately take or destroy the eggs of these species;
- Damage or destroy the breeding or resting places of these species.

Under the Wildlife and Countryside Act 1981 (as amended) Adder *Vipera berus*, Grass Snake *Natrix natrix*, Common Lizard *Zootoca vivipara* and Slow Worm *Anguis fragilis* are protected from intentional killing or injuring, additionally Common Frog *Rana temporaria*, Common Toad *Bufo bufo* and other newt species are prohibited from sale.

C.6.8 Fish

The Salmon and Freshwater Fisheries Act (1975) affords protection to fish and to the spawning grounds of fish. Section 2(5) makes it an offence to wilfully disturb spawning fish or the spawn of fish. Section 4(1) makes it an offence to knowingly permit the introduction of material to a watercourse such that it becomes injurious to fish, the spawn of fish or the spawning grounds of fish.

C.6.9 Invertebrates

Numerous invertebrate species receive international protection under the following legislation:

- The Conservation of Habitats and Species Regulations 2017 (as amended); Annex IIa, Annex Iva and Annex Va;
- Council of Europe Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II and III;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- EU CITES Regulations.

Approximately 70 species of invertebrate species receive legal protection through Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). There are various levels of protection according to the rarity of the species. Offences include combinations of the following:

- Sale, or offering / exposing for sale;
- Possession;
- Intentional taking, killing or injuring;
- Intentionally / recklessly damaging or destroying its place of shelter / protection;
- Intentionally / recklessly disturbing it whilst occupying its place of shelter / protection;
- Intentionally / recklessly obstructing access to its place of shelter / protection Species with full protection under the Act include the Marsh Fritillary *Euphydryas aurinia*, Southern Damselfly *Coenagrion mercuriale* and Violet Click Beetle *Limoniscus violaceus*.

There are also over 400 invertebrate species listed under Section 41 of the Natural Environment and Rural Communities Act for England and under Section 7 of the Environment (Wales) Act 2016.

C.6.10 Invasive Non-Native Species

Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) lists plant species, groups of plants and animal species for which it is illegal to plant, release, allow to escape or cause to spread into the wild. Examples of species listed on Schedule 9, which are most likely to be encountered, include Japanese Knotweed *Fallopia japonica*, Himalayan Balsam *Impatiens glandulifera*, Giant Hogweed *Heracleum mantegazzanum* and Signal Crayfish *Pacifastacus leniusculus*. Some species are also classed as 'controlled waste' under the

Environmental Protection Act 1990 and must be disposed of properly (i.e. Japanese Knotweed and Giant Hogweed). These provisions mean that, if these species occur on a site proposed for development or other work which may disturb the ground, control of these species is likely to be required.

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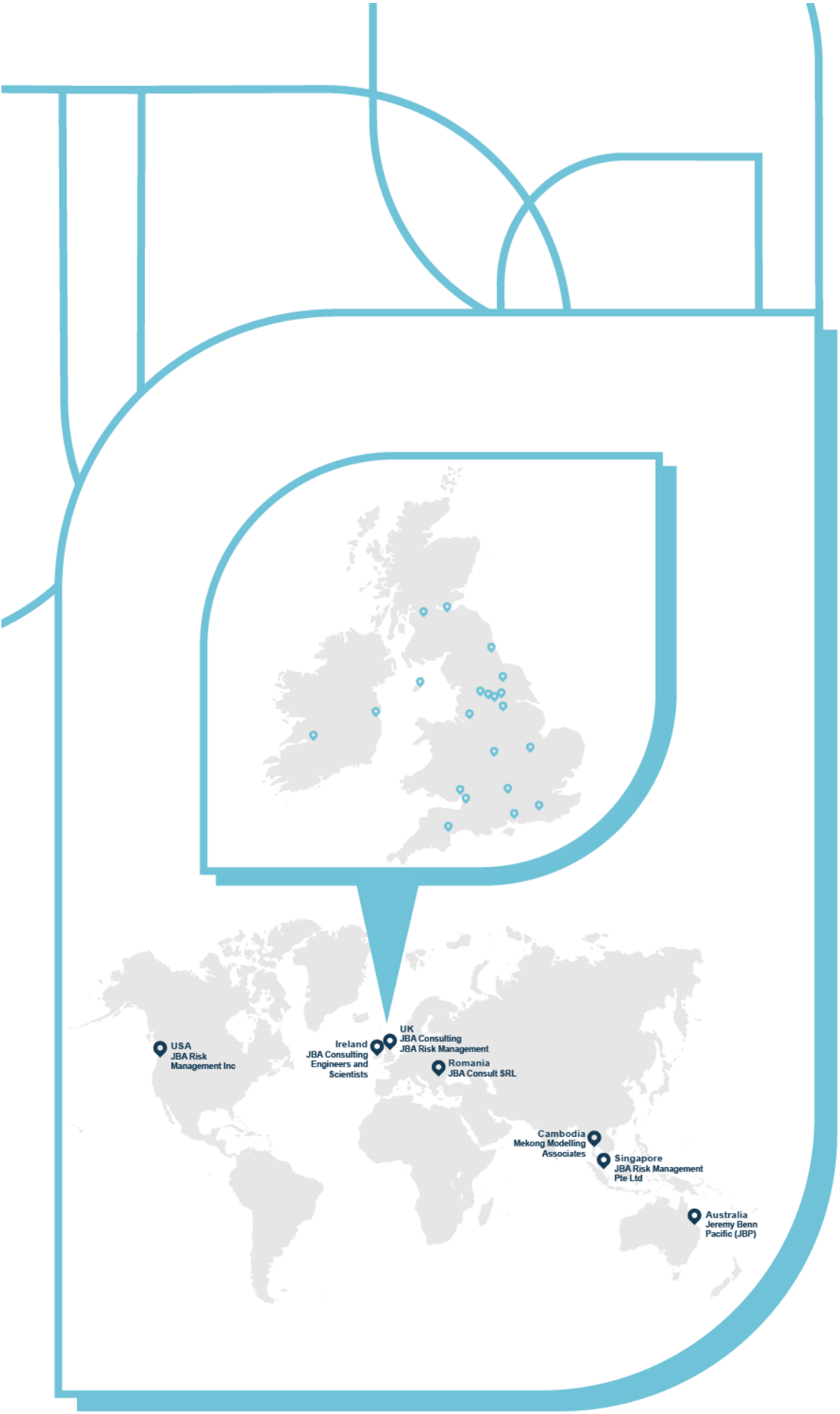

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