

Ecological Constraints Sheet – Tintern Wireworks Bridge

The Site: The Site comprises Tintern Wireworks Bridge spanning the river Wye and its immediate surrounds at either entrance to the bridge. At this location, the River Wye is the boundary between Monmouthshire to the west and Gloucestershire to the east. A public footpath runs across the bridge (no vehicular access is permitted).

The surrounding landscape comprises the River Wye, the village of Tintern, woodlands, arable and pasture fields.

Site Grid Ref: SO 53012 00294

Scope of Assessment: This report presents ecological information obtained during the following:

- A desk-based search for statutory designations and granted European Protected Species Licence (EPSL) applications using on-line resource¹ on 01/10/2021;
- A biological data search request for protected and notable species, and non-statutory designations from the Gloucestershire Centre for Environmental Records (GCER)² on 06/10/2021;
- A walkover survey of accessible land within and adjacent to the Site on 15/10/2021.
- The Welsh Government/Natural Resources Wales Lie geo-portal NBN Atlas Natural Resources Wales | NBN Atlas³ was also used to check for aquatic ecological data for the River Wye.
- The Welsh Government/ Natural Resources Wales Water Watch Wales Map⁴ was used to check for Water Framework Directive (WFD) data for watercourses within 150 m of the Scheme.

The walkover survey and identification of potential ecological constraints was based on the condition of the Site and its immediate surrounds (50 m east and west of the bridge) encountered during the walkover survey and current information about the Scheme available at that time. If the Scheme should change, the Site may need to be re-visited to establish if there are any further ecological constraints arising from changes to the design.

If works do not start on site within 12 months (of survey walkover date), the ecological constraints survey should be repeated.

This sheet must be read in conjunction with the over-arching GCC Preliminary Ecological Appraisal report⁵.

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The information which Atkins Limited has provided has been prepared by an environmental specialist in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management. Atkins Limited confirms that the opinions expressed are our true and professional opinions.

The Scheme:

Tintern Bridge has been identified as requiring remedial works. The proposed works are for full repair and refurbishment for vehicle and pedestrian access including:

- Steel member replacement/strengthening, timber deck replacement, grit blasting, painting, masonry repairs to the arches, piers and abutments and scour remedial works where required.

Works will be carried out using spanning scaffolding which is proposed to be installed on the bridge in March 2022. The bridge will be wrapped throughout works to prevent debris falling into the River Wye. Three temporary compound are proposed to be located on either side of the bridge and in a car park to the south east of the Site. Limited vegetation removal is proposed with the trimming of some tree branches, the removal of one sapling tree, scrub and grassland habitat on the pathway verge. Access to the bridge will along an existing public footpath.

Limitations

Generic limitations covering typical survey limitations at all sites are detailed within the methods section of the over-arching GCC report⁵

The banks of the River Wye could not be accessed due to health and safety concerns and lack of access. The majority of habitat types along the bank could be assessed from the bridge itself but not all plant species or signs of the presence of protected or notable species could be observed from this height. This is considered to be a limitation to the survey. Due to access issues, only 25 m of surrounding



Photograph 1 – Tintern Wireworks Bridge with the River Wye running beneath



Photograph 2 – The deck of Tintern Wireworks Bridge

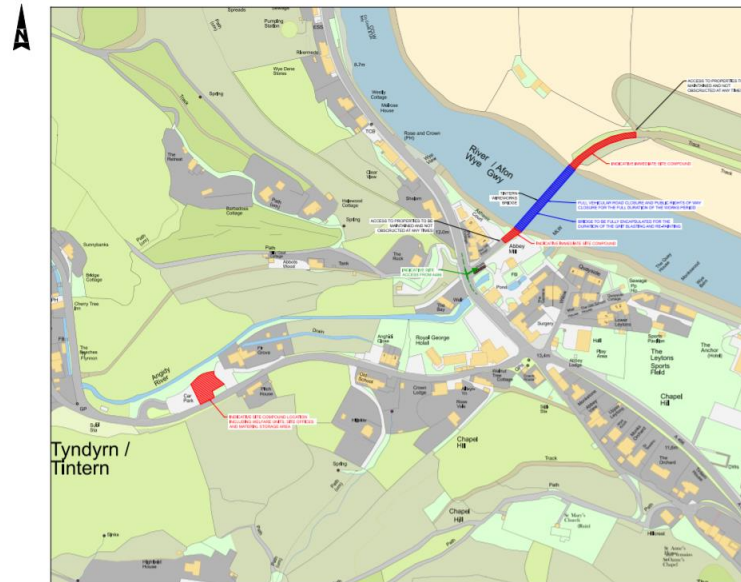


Figure-2 – General arrangement plan. Site location in blue. Proposed site compounds shown in red

Key Constraints:

- Priority habitats
- Bats
- Nesting birds
- Great crested newts
- Otters
- Water voles
- Reptiles
- Hazel dormice
- Aquatic species (aquatic macrophytes, aquatic macroinvertebrates and fish)

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ATKINS Member of the SNC-Lavalin Group 		The Hub 500 Park Avenue Aztec West Bristol BS32 4RZ		
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¹ <https://magic.defra.gov.uk/>

² <https://www.gcer.co.uk/>

³ <https://registry.nbnatlas.org/public/show/dp122> [Accessed: December 2021].

⁴ <https://waterwatchwales.naturalresourceswales.gov.uk/en/> [Accessed: December 2021].

⁵ Atkins (2020) GCC Preliminary Ecological Assessment Report Upfront. October 2020.

General ecological recommendations for site work are included in the over-arching GCC Preliminary Ecological Appraisal report while ecological constraints identified from the desk study and ecological walkover survey are summarised in the table below with recommendations for any further survey and mitigation, including timings. Species and habitats that have not been identified during the desk study and/or survey have not been considered further and, therefore, do not appear in the table below.

Site Features	Potential Ecological Constraints	Recommendations	Timing
Designated Sites	A MAGIC search for statutory designated sites for nature conservation identified the following sites within 2 km of the Site. • River Wye Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC): The river is located directly beneath Tintern Wireworks Bridge and designated for supporting species and habitats covered by Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora such as Atlantic salmon, allis shad and otters. • Wye Valley Woodlands SAC: Located approximately 350 m northeast of the Site and designated for <i>Asperulo-Fagetum</i> beech forests, <i>Tilio-Acerion</i> forests and yew woods. • Barbadoes Hill Meadows SSSI: Located approximately 560 m northwest of the Site, this Site comprises a 3.48 ha area of unimproved neutral grassland. • Shorn Cliff and Caswell Woods SSSI: Located approximately 935 m south-east of the Site and designated for overlying the carboniferous limestone and old red sandstone of the eastern slopes of the lower Wye Gorge and forming part of a continuous belt of woodland which stretches from Brockweir to Tutshill. • Blackcliff/Wyndcliff SSSI: Located approximately 995 m south of the Site and designated for several component woodlands including yew woodland, <i>ash</i> and <i>small-leaved lime</i> dominated woodland. • The Hudnalls SSSI: Located approximately 1.84 km north of the Site and designated for forming part of one of the most important areas for woodland conservation in Britain. GCER identified no additional statutory designated sites or non-statutory designated sites for nature conservation within 1 km of the Site. Due to the presence of the River Wye SAC and SSSI within immediate proximity to the Site and the potential to directly or indirectly impact this Site, further mitigation is required. Due to the works being restricted to Tintern Bridge and wrapping of the bridge being proposed to prevent debris falling, no direct impacts are anticipated on any other designated Sites within 2 km of the Site.	The General Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, should be adhered to. In addition to these, it is recommended that: • A Habitats Regulations Appraisal (HRA) Stage 1 Screening should be conducted due to the proximity of the Proposed Scheme to Wye River SAC. GCC, as the Competent Authority, has a duty under the Conservation of Habitats and Species Regulations 2017 (as amended) to consider any potential implications on European designated sites. It is anticipated that following this, a Stage 2 Appropriate Assessment will be required to determine whether, in view of a European Site's conservation objectives, the plan (either alone or in combination with plans and projects) would have an adverse effect (or risk of this) on the integrity of the European Site with respect to the site structure, function and conservation objectives. • A Section 28 assent from Natural England for operations which may destroy, damage or disturb the notified features of special scientific interest of an SSSI should be applied for, for any works on or near to the River Wye SSSI. An assent for multiple SSSI sites across Gloucestershire was granted by Natural England on 25/02/2019 for GCC Public Right of Way Maintenance on or near to SSSI's. However, the River Wye is not covered in this assent.	Prior to and during works.

Site Features	Potential Ecological Constraints	Recommendations	Timing
	No significant impacts on any of the other listed designated sites are anticipated due to the small scale and localised nature of the works and the distance between the Site and these designated sites.		
Habitats	A MAGIC search identified multiple priority habitats within 1 km of the Site. These are: • Ancient woodland; • Deciduous woodland; • Intertidal substrate foreshore; and • Mudflat. The closest habitat is intertidal substrate foreshore located directly beneath the Site. Due to the proximity of this habitat to the Site, there is a risk of this habitat being impacted by the Scheme. Therefore, further mitigation is required. GCER identified the following priority habitat within 1 km of the Site. This was: • Deciduous woodland. The closest parcel of deciduous woodland is located approximately 90 m north-east of the Site. It is considered unlikely that this priority habitat would be impacted by the Scheme due to the localised scale of the works. The Site is centred on Tintern Bridge which spans the River Wye. The bridge is a five-span bridge with stone abutments approximately 85 m in length and 4 m in width. The decking of the bridge comprised wooden planks and carries a public footpath over the River Wye. Some ivy and buddleia are present on the bridge truss and abutments. Some sparse ground level vegetation comprising perennial ryegrass and common dandelion is present on the verges of the footpath. The habitat beneath the Site comprises running water in the form of the River Wye. The riverbank to the southwest of the bridge comprises grassland and scrub with a line of trees at the top of the bank. Trees comprise willow, hawthorn, alder, dogwood and holly. Buddleia, common nettle and rosebay willowherb are also present. A water outlet coming from the village of Tintern is present and an area of mud and boulders is present in front of this outlet, extending into the river.	It is recommended that the addition to the General Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, it is recommended that: • As priority habitat is present within 10 m of the Site, an Ecologist should identify and mark up areas of priority habitat for contractors to avoid in order to prevent impacts to this habitat. A toolbox talk should be given on Site to contractors to identify potential impacts from the works on the habitats present and how to avoid them.	During works.

Site Features	Potential Ecological Constraints	Recommendations	Timing
	The riverbank to the northwest of the bridge comprises a mud flat approximately 3 m in width. Behind this mud flat is a steep vegetated bank with willow, hawthorn, alder, dogwood and holly. The riverbank to the northeast of the bridge comprises a mud flat approximately 4 m in width. Behind this is an area of grassland. The riverbank to the southeast of the bridge comprises grassland with some areas of exposed mud. This grassland is approximately 6 m in width. A line of trees mainly comprising willow is present behind this. Habitats to the east of the bridge comprise hardstanding in the form of the public footpath through a woodland with a clearing at the end of this footpath. The woodland comprises hazel, sycamore, pedunculate oak, elder, buddleia, bramble and common nettle. Habitats to the west of the bridge comprise hardstanding in the form of the public footpath, grass verges, hawthorn and buddleia. Removal of the ivy and buddleia from the bridge truss is proposed as part of the works. Ground level vegetation of the footpath verge may also be removed. The removal of the buddleia and hawthorn tree to the west of the bridge is proposed and the removal of some branches of trees in the woodland to the east of the bridge is proposed in order to facilitate movement of machinery. Habitats within the Site are considered to be fairly common and of low ecological value. Habitats within the Site do not provide good connectivity to priority habitats within the surrounding landscape. The woodland habitat to the east of the Site is well connected to other woodland habitat but is not anticipated to be significantly affect by the works. The River Wye and intertidal substrate foreshore are located directly beneath the Site. Due to the proximity of these habitat to the Scheme, there is a risk of these habitats being impacted by the works. Therefore, further mitigation is required.		
Bats	A MAGIC search identified one European Protected Species Licence (EPSL) for bats within 2 km of the Site. This was for the destruction of a resting place for common pipistrelle in 2009 approximately 1.6 km north of the Site.	Bats and their roosts have full legal protection as European Protected Species (see Appendix C of the over-arching GCC Preliminary Ecological Appraisal report). In addition to the General Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, it is recommended that: As the bridge contains gaps and crevices that could not be assessed during the walkover survey, the overall suitability of the bridge for bats cannot yet be determined. It is recommended that an Ecologist be	Prior to works and during works.

Site Features	Potential Ecological Constraints	Recommendations	Timing
	GCER returned 19 recent⁶ records of bat species within 2 km. The closest records were eight records for lesser horseshoe bat, greater horseshoe bat, Myotis spp., soprano pipistrelle and brown long-eared bat approximately 450 m east of the Site. Some of these records are from surveys within Tintern Tunnel where lesser and greater horseshoe bats were observed roosting. The Site walkover identified that the metal trusses of the bridge within the Site provide negligible potential for roosting bats. Gaps and crevices are present within the stone columns at the entrance to the bridge but these are considered either too large and exposed or too small to support roosting bats and, therefore, also provide negligible potential for roosting bats. Multiple gaps and crevices are present on the abutments beneath the bridge deck. These crevices could not be fully observed from the bridge deck or adjacent land and so their suitability for bats could not be assessed. Trees within 5 m of the bridge (growing from the riverbanks on the east and west of the bridge) were assessed as having negligible suitability to support roosting bats. Some minor vegetation clearance is proposed as part of the works but this is not anticipated to impact upon roosting, commuting or foraging bats. The River Wye and its vegetated banks provide high potential to support foraging and commuting bats. The Site is well connected to the surrounding landscape which provides good roosting, commuting and foraging habitat for bats. Bats are known to be present within the local area. There is potential for bats to be commuting or foraging over or adjacent to the Site. Bats are also known to be roosting within 500 m of the Site and to be active within the local area. It is anticipated that the works could cause indirect disturbance to bats through noise disturbance from the works, in particular, gritblasting. Therefore, further mitigation is required. As some gaps and crevices within the abutments could not be fully assessed during the Site walkover, there is the potential for bats to be present within gaps. As these gaps are proposed to be infilled as part of the works, further survey work and mitigation is required.	present during the installation of scaffolding to ensure that no potentially suitable features are impacted by the scaffold. Once this scaffolding is installed, it is recommended that an Ecologist use the scaffolding to access features that cannot be reached from the ground. The Ecologist will carry out an inspection of these features using an endoscope and can categorise the bridge's potential to support roosting bats. Further recommendations will be given following this assessment. It is possible that further surveys, a Precautionary Method of Working, or a licence from Natural England may be required for the works. Following preparation and submission of a licence application, Natural England usually aim to decide upon an application with 30 working days of receiving it. However, this timeframe often exceeds 30 working days especially at certain times of year when there are heavy workloads on their staff. As the works may indirectly impact upon bats in the local area through noise disturbance, it is recommended that a Precautionary Method of Working (PMW) should be produced detailing measures to be taken to reduce indirect disturbance. This should be followed, prior to and during the works.	

⁶ For the purposes of this assessment, a recent record is one that has been recorded in the last 10 years of the date of this assessment.

Site Features	Potential Ecological Constraints	Recommendations	Timing
Birds	GCER returned two recent records of bird species within 1 km of the Site. These records were for marsh tit which is a UK priority and red listed species. Due to the habitats present, (gaps within the bridge structure, sparse vegetation growth along the bridge and scrub and trees along the public footpath) some nesting opportunities are available for a range of common species although these habitats are considered unlikely to be used due to being exposed. More suitable habitat for nesting birds is present in the woodland to the east of the Site. Vegetation removal of ivy and buddleia from the bridge truss, buddleia and hawthorn tree to the west of the bridge and the removal of some branches of trees in the woodland to the east of the bridge may impact upon nesting birds within or adjacent to these habitats. Due to this, further mitigation is required.	Wild birds and their occupied nests are legally protected (see Appendix C of the overarching GCC Preliminary Ecological Appraisal report). In addition to the General Ecological Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, it is recommended that: - If works are to take place in the core nesting bird season (the core nesting bird season is 1st March to 31st August), it is recommended that a check is carried out to assess for the presence of nesting birds within or adjacent to the works area. - In the event that an active nest is found on Site, it should be left in place and an ecologist contacted for advice. It is likely that an appropriate buffer (e.g. a stand-off zone of protective vegetation) will need to be put in place until the young have fledged and/or the nest is no longer in use. If any Schedule 1 bird species, are observed nesting within 50 m of the Site during the works, works should cease immediately, and advice be sought from an Ecologist on how to proceed.	Prior to and during works.
Great crested newts and common amphibians	A MAGIC search within 500 m of the Site recorded no great crested newt (GCN) EPSLs and no waterbodies with reported GCN survey information. GCER returned no recent records of GCN or other amphibians within 1 km of the Site. The River Wye, Anghidi River and one ditch are present within 500 m of the Site. The River Wye Anghidi River are not considered to provide suitable aquatic habitat for GCN or common amphibians due to being fast flowing. However, in the absence of surveys, the ditch (present approximately 250 m southwest of the Site) is presumed to have the potential to support GCN. Connectivity between this ditch and the Site is poor with habitats mainly comprising hardstanding. The bridge itself is not considered to provide suitable terrestrial habitat for GCN or common amphibians due to the deck comprising a wooden walkway and the ground vegetation on the Site is considered unlikely to be utilised by amphibians as it is isolated from suitable aquatic habitats.	GCN have full legal protection as a European Protected Species (see Appendix C of the overarching GCC Preliminary Ecological Appraisal report). GCN and other amphibians are considered to be likely absent from the Site and no further surveys or mitigation are required.	N/A.
Otters	A MAGIC search within 500 m of the Site recorded no otter EPSLs. GCER returned no recent records of otters within 2 km of the Site. No evidence of otter activity was identified within the Site during the walkover, however, access to the riverbanks was not possible and so this area was viewed from the bridge itself and there were severe visual limitations due to dense foliage along the banks. As works will be restricted to the bridge and some light vegetation clearance to the west and east of the bridge for access, no direct	Otters and their resting sites have full legal protection as European Protected Species (see Appendix C of the over-arching GCC Preliminary Ecological Appraisal report). In addition to the General Ecological Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, it is recommended that: Further otter survey work is carried via drone in order to ascertain if otters are utilising the banks of the river for resting or breeding. If evidence of otter resting sites is found the works may need to be	Prior to works and during works.

Site Features	Potential Ecological Constraints	Recommendations	Timing
	impacts are anticipated as no works to the river or riverbank will occur. However, as there is the potential for otters to be feeding or commuting within the river or resting or breeding on the banks, indirect disturbance from activities such as grit blasting could be caused by the works.	carried out under a European Protected Species Licence/and or a PMW.	
Water voles	GCER returned no recent records of water voles within 1 km from the Site. The River Wye is present directly beneath the Site. The river is considered to provide suboptimal aquatic habitat for water voles due to being large and fast flowing. No suitable habitat for water voles is present within the Site itself and the Site is not well connected to suitable water vole habitat. Overall, the Site and surrounding habitats provide suboptimal habitat for water voles and are poorly connected to other watercourses in the surrounding area.	Water voles have legal protection (see Appendix C of the over-arching GCC Preliminary Ecological Appraisal report). The General Ecological Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, should be adhered to. A detailed water vole survey is not considered necessary due the River Wye providing suboptimal aquatic habitat for water voles and due the small-scale nature of the works which are not considered to have significant impact on water voles (if present).	During works.
Reptiles	GCER returned no recent records of reptiles within 1 km of the Site. The Site walkover recorded no reptile evidence within the Site. However, suitable habitat for basking and foraging widespread reptile species is present within the woodland to the east of the Site and the ground vegetation and scrub on the verges of the public footpath. The stone abutments and walls of the bridge provide potential refuge habitat for reptiles in the form of gaps and crevices. As some of these gaps may be infilled as part of the works, there is the potential to disturb, injure or kill reptiles that are present.	Reptiles are legally protected (see Appendix C of the over-arching GCC Preliminary Ecological Appraisal report). The General Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, should be adhered to. In addition, it is recommended that: - A PMW should be produced detailing how works can be undertaken in a lawful manner to avoid harm to any reptiles. This will detail a pre-works inspection for reptiles to be carried out on the stone walls within the Site by an Ecologist prior to any gaps or crevices being in-filled. - If vegetation clearance below the height of 150 mm is required, an Ecologist should be present to advise during the clearance work.	Prior to and during works
Hazel Dormice	A MAGIC search within 1 km of the Site recorded no hazel dormouse EPSLs. GCER returned five recent records of hazel dormouse within 1 km of the Site. All records were recorded during hazel dormouse box checks 0.93 km southeast of the Site. The Site itself provides negligible potential for hazel dormice due to being largely exposed. Suitable habitat for hazel dormice is present in the form of the woodland adjacent to the Site. However, it is considered unlikely that hazel dormice would commute from this suitable habitat and into the Site. Overall, the bridge itself provides negligible potential for hazel dormice and dormice are considered to be absent from this structure. However, as some vegetation clearance within suitable	Hazel dormice have full legal protection as European Protected Species (see Appendix C of the over-arching GCC Preliminary Ecological Appraisal report.). The General Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, should be adhered to. In addition, it is recommended that: A PMW should be produced detailing how works can be undertaken in a lawful manner to avoid harm to any hazel dormice. Vegetation clearance should be minimised. Vegetation clearance of habitat suitable for dormice will be checked by a suitably qualified ecologist for the presence of hazel dormice prior to clearance. If vegetation clearance greater than what has been proposed is required, this should be discussed with the Ecologist prior to clearance to avoid any impacts to surrounding	Prior to and during works.

Site Features	Potential Ecological Constraints	Recommendations	Timing
	dormice habitat along the footpath within the Site is proposed, further mitigation is required.	habitats and connectivity between the Site and suitable adjacent habitat and potential impacts to hazel dormice.	
White-clawed Crayfish	GCER returned no recent records of white-clawed crayfish (WCC) within 1 km of the Site. White-clawed crayfish are known to be present within the River Wye present beneath the Site and are a reason for designation of the River Wye SAC. Suitable refuge opportunities for white-clawed crayfish may be present within the stone abutments of Tintern Wireworks Bridge, however, due to the survey being carried out from the deck of the bridge, this could not be assessed closely. Photographs of the abutments from previous surveys do not indicate any particular features where WCC could be present.	WCC are legally protected (see Appendix C of the over-arching GCC Preliminary Ecological Appraisal report). The General Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, should be adhered to. In addition, it is recommended that: If there is a requirement to directly disturb potential white-clawed crayfish habitat (including any underwater voids or gaps in the bridge abutments) then an ecologist should be contacted for advice.	Prior to and during works.
Aquatic species (macrophytes, macroinvertebrates and fish)	Aquatic macrophytes GCER returned no records for priority or protected aquatic macrophytes within 2 km of the Scheme. Review of the NRW Lle geo-portal returned no records for aquatic macrophytes within 2 km of the Scheme. There are NRW aquatic macrophyte sampling locations on the River Wye over 2 km away from the Site (upstream). The River Wye at the sampling locations exhibits a differing habitat typology to that of the Site, and subsequently the macrophyte species assemblages are not fully representative. The River Wye at the Site is within the tidal limit, which is likely to constrain the establishment of rooted macrophytes within the main flow of the channel due to high turbidity and mobile bed loads. Aquatic macroinvertebrates GCER returned no records for priority or protected aquatic macroinvertebrates within 2 km of the Scheme. Review of the NRW Lle geo-portal returned no records for aquatic macroinvertebrates within 2 km of the Scheme. There are NRW aquatic macrophyte sampling locations on the River Wye over 2 km away from the Site (upstream). The River Wye at the sampling locations exhibits a differing habitat typology to that of the Site, and subsequently the macroinvertebrate species assemblages are not fully representative. Fish GCER returned no records for priority or protected fish species within 2 km of the Scheme. Review of the NRW Lle geo-portal returned no records for fish species within 2 km of the Scheme. The River Wye is designated as an SAC, primarily for Annex II species that include sea lamprey (<i>Petromyzon marinus</i>), brook lamprey (<i>Lampetra planeri</i>), river lamprey (<i>Lampetra fluviatilis</i>),	General Recommendations In addition to the General Recommendations and those listed for Designated Sites and Habitats, detailing best practice guidelines for working near, in and over watercourses, the following are recommended to further reduce the risk of harm to aquatic species and habitats: - Consultation with the Environment Agency will be required to confirm the level of environmental permitting required for the repair works. - Development of an emergency watercourse pollution response procedure, noting that encapsulation of the bridge is likely to reduce the risk of a pollution event occurring. - Ensure adequate provisions are on Site in the form of spill kits and wash down areas in order to avoid the watercourse and associated species being impacted by works run off. - Aquatic macrophytes and macroinvertebrate - In the absence of a requirement for any in-channel working, no further recommendations beyond the adoption of best practice guidelines for working near, in and over watercourses, are identified. Fish - As no in-channel works are required, risks are mainly associated with visual and noise disturbance, which can be minimised by the following recommendations: - Implement measures that would act to control potential run-off to the watercourse from the site compound location (in the woodland clearing and site access routes) and arrange site tracking routes to avoid watercourse margins and site on existing hardstanding where practically possible. - Avoid direct lighting to the watercourse from construction areas. - It is recommended that works are undertaken at a time of year which avoids the most sensitive life-stage periods for fish inhabiting the watercourse.	Prior to and during works.

Site Features	Potential Ecological Constraints	Recommendations	Timing
	Twaite shad (<i>Alosa fallax</i>), Atlantic salmon (<i>Salmo salar</i>) and bullhead (<i>Cottus gobio</i>). Allis shad (<i>Alosa alosa</i>) are also present as a qualifying feature but are not a primary reason for site selection. It is considered likely that all of the migratory species listed under the SAC designation (sea lamprey, river lamprey, salmon and shads) utilise the watercourse in its transitional reaches within the Site. Constraints Since there is no requirement for in-channel working, there is no potential for direct loss of aquatic macrophytes, benthic macroinvertebrate or fish species. Temporary, although minor, risks to aquatic species (macrophytes, macroinvertebrates and fish) include: • Risks of temporary visual, acoustic and vibration disturbance to fish from work activities to the bridge deck. • Pollution/ construction material ingress to the watercourse from the working area and compound/access location (e.g., during grit blasting) that could impact pollution sensitive species and cause habitat deterioration.	• Grit blasting, the activity with the greatest likelihood of causing noise disturbance to fish species inhabiting the Scheme's watercourse, will not be undertaken during the most sensitive life-stage periods for interest feature fish. However, due to the range of fish species supported by the River Wye, and their variable life-histories/ strategies, it should be noted that it may not be possible to avoid all sensitive periods. • Given the range of fish species likely to be present in the River Wye adjacent to the Site, grit blasting will be avoided between March and July (inclusive). • This would avoid the key migratory and spawning period for Twaite/Allis, which shad tend to spawn between April and May and may move into the watercourse as early as March. Shad species spawn at/ above the tidal limit, however, in the River Wye they are known to migrate 100 km upstream to spawning sites. However, due to the likely suitability of habitat at the Site, a precautionary approach has been taken to assume that they spawn in proximity to the Scheme. By avoiding the key sensitive periods for Twaite/Allis shad, this also avoids other key spawning and/or migratory periods for other qualifying fish species of the SAC, including all lamprey species, Atlantic salmon and bullhead. • River and brook lamprey migratory/spawning period is March to April, inclusive, and are known to be well distributed throughout the catchment. Sea lamprey migrate to the River Wye between May and June. Spawning for all three lamprey species occurs further up the catchment, therefore, risks are purely associated with disturbance during migratory periods. • Avoiding grit blasting between March and June would also avoid the key spawning period for bullhead. • Avoiding grit blasting between March and July would also avoid the early migratory period for Atlantic salmon. Atlantic salmon tend to enter the system in early spring/summer, before migrating further up the system later in the year (typically September/ October) to their spawning habitats. As for lamprey species, risks are purely associated with disturbance to migration. • As grit blasting will be undertaken outside the key ecologically sensitive periods for fish species, in addition to the implementation of the mitigation measures outlined above alongside wrapping of the working area, it is considered that the risk of disturbance/harm to fish and other aquatic species is minimal.	
Invasive Non-Native Plant Species	No invasive non-native plant species (INNPS) were observed during the survey. Given the nature of the Site and works, impacts in relation to INNPS are considered unlikely.	The General Recommendations, listed in the overarching GCC Preliminary Ecological Appraisal report, should be adhered to. In addition, it is recommended that:	During works.

Site Features	Potential Ecological Constraints	Recommendations	Timing
		If a suspected INNPS is encountered at the Site, works within 10 m of the INNPS should cease and an ecologist should be contacted for advice.	
Other species Grey seal	Local reports indicate that a resident Grey seal of Chepstow is known to be seen in the River Wye and to feed around Tintern in the winter months December -January. Due to the timing of the works it is unlikely the seal will be present at the same time as work activities (Demobilisation is programmed to finish late December). It is unusual for grey seals to be found so far upstream however reports suggest a seal is often seen feeding. It is unlikely that additional individuals are present in the area as Grey seals are territorial. Therefore, impacts to Grey seals are considered unlikely.	Grey seals are protected under multiple legislation including the Conservation of Seals Act 1970, Conservation of Seals Order 1999, Wildlife & Countryside Act 1981, Conservation of Habitats and Species Regulations and the Wild Mammals Act 1996 where it is an offence to take, injure or kill, but not an offence to disturb. No impacts are expected from the works, therefore, no mitigation measures are deemed necessary.	N/A