

**TAG Biodiversity Impacts Worksheet**

Step 2		Step 3				Step 4	Step 5
Area	Description of feature/ attribute	Scale (at which attribute matters)	Importance (of attribute)	Trend (in relation to target)	Biodiversity and earth heritage value	Magnitude of impact	Assessment Score
Bath and Bradford on Avon Bats Special Area of Conservation (SAC)	Designated for the Annex II species greater horseshoe bat, lesser horseshoe bat, and Bechstein's bat.  The SAC is 7 km north west of the route alignment	International	International - Supports Annex II bat species, including supporting hibernation sites associated with 15% of the UK greater horseshoe bat population	Favourable (for the nearest component SSSI, Box Mine)	Very High	To be determined following outcome of Habitats Regulations Assessment (HRA)	To be determined following outcome of HRA
Mells Valley SAC	Designated for the Annex II bat species greater horseshoe bat  The SAC is 27 km south west of the Proposed Scheme	International	International - This SAC contains the maternity site associated with a population comprising about 12% of the UK greater horseshoe bat	Favourable/Unfavourable - Recovering (for the nearest component SSSI, Vallis Vale)	Very High	To be determined following outcome of HRA	To be determined following outcome of HRA
Chilmark Quarries SAC	Designated for the Annex II species greater horseshoe bat, lesser horseshoe bat, Bechstein's bat and Barbastelle bat.  The SAC is 29 km south of the Proposed Scheme	International	International - This complex of abandoned stone mines provides suitable hibernation conditions for a range of bat species	Unfavourable - Recovering (for the nearest component SSSI, Fonthill Grottoes)	Very High	To be determined following outcome of HRA	To be determined following outcome of HRA
Severn Estuary SAC, Special Protection Area (SPA) and Ramsar	Designated for the following habitats: Estuaries; mudflats and sandflats not covered by seawater at low tide; Atlantic salt meadows; sandbanks slightly covered by seawater at all times; and reefs  Designated for the following species: sea lamprey, river lamprey, twaite shad, allis shad, Bewick's swan, and wintering populations of curlew, dunlin, pintail, redshank and shelduck, and passage populations of ringed plover.  The site also sees regular assemblages of over 20,000 wildfowl , which qualify the site as a wetland of international importance.  The site is 40 km north west of the Proposed Scheme, but is directly linked hydrologically	International	International - Supports important habitats, bird populations and fish populations	Favourable/Unfavourable - No change/Unfavourable - Declining (for the Severn Estuary SSSI)	Very High	To be determined following outcome of HRA	To be determined following outcome of HRA
Spye Park Site of Special Scientific Interest (SSSI)	A habitat mosaic comprising woodlands, parkland and dry acidic grassland.  The SSSI 1.1 km north east of the route alignment at the closest point, however the Scheme falls within the Impact Risk Zone for the SSSI, meaning that the SSSI could be subject to air quality impacts as a result of the Scheme.	National	National - A SSSI important for various habitat types and the wildlife it supports	Unfavourable - Recovering	High	To be determined following outcome of air quality and affected road network analysis	To be determined following outcome of air quality and affected road network analysis

Bristol River Avon Local Wildlife Site (LWS)	One of the main river systems draining north-west Wiltshire. Important for dragonfly populations including scarce chaser. It is also important for aquatic plants.  The Bristol River Avon crosses the route alignment to the north of the Proposed Scheme.	Regional	Regional - A main river system in the area which supports biodiversity	Unknown	Medium	Minor negative	Slight adverse
Inwood, Lacock LWS	Broadleaved woodland and neutral grassland.  20 m west of the working footprint of the Proposed Scheme. It is likely that the LWS will experience air quality impacts	Local	Local - A local wildlife site which supports broadleaved woodland and neutral grassland	Unknown	Medium	Minor negative	Slight adverse
Kennet and Avon Canal LWS	High bird biodiversity, as well as populations of water vole. Directly crosses the southern extent of the route alignment.	Regional	Regional - A river system which supports biodiversity and acts as an ecological corridor	Unknown	Medium	Minor negative	Slight adverse
Eighteen Acre Plantation LWS	Plantation woodland with field maple, ash and oak. The LWS is 400 m east of the route alignment	Local	Local - A local wildlife site which supports plantation woodland	Unknown	Medium	Unknown. To be determined following the outcome of air quality analysis.	Unknown. To be determined following the outcome of air quality analysis.
Hill Planting LWS	Even-aged plantation of mature oak and ash. Hazel, hawthorn, and elm understory.  The LWS is 570 m east of the route alignment	Local	Local - A local wildlife site which supports a plantation woodland	Unknown	Medium	Unknown. To be determined following the outcome of air quality analysis.	Unknown. To be determined following the outcome of air quality analysis.
Hack Farm Meadow LWS	A small area of species-rich neutral meadow  The LWS is 600 m east of the route alignment	Local	Local - A local wildlife site which supports a species-rich neutral meadow	Unknown	Medium	Unknown. To be determined following the outcome of air quality analysis.	Unknown. To be determined following the outcome of air quality analysis.
Hanging Wood LWS	Mature poplar plantation on a very wet ancient site. Hazel understory.  The LWS is 780 m east of the route alignment	Local	Local - A local wildlife site which supports a mature poplar plantation	Unknown	Medium	Unknown. To be determined following the outcome of air quality analysis.	Unknown. To be determined following the outcome of air quality analysis.
Ancient Woodland	There are four pockets of ancient woodland within 1 km of the Proposed Scheme alignment. The closest is an unnamed 2 ha woodland located 85 m to the west  Additionally, there is a further pocket of ancient woodland within 250 m of the Junction Signalling Works at the A3102/A342 (Wyatt's Wood).	National	National - Considered to be of importance to biodiversity conservation	Formerly in Wiltshire most of the county would have been covered by primary woodland of some type. The woods which now remain and are ancient in origin generally exist on sites relatively less favourable for farming (Wiltshire Biodiversity Action Plan, 2008).	High	To be determined following outcome of air quality and affected road network analysis	To be determined following outcome of air quality and affected road network analysis
Ancient, Veteran and Notable Trees	A notable English oak is 50 m north east, and one veteran English oak is 80 m north east of the Proposed Scheme. In addition, the Phase 1 survey identified a further 79 large trees within the survey area which are potentially veteran, notable, or ancient, with some appearing to be directly within the route alignment.	Regional	Regional - Considered to be of importance to biodiversity conservation	Unknown	High	To be determined following outcome of arboricultural surveys which will determine if the trees to be lost / directly impacted are notable	To be determined following outcome of arboricultural surveys which will determine if the trees to be lost / directly impacted are notable
Broadleaved Woodland (Priority Habitat)	There are 12 pockets of broadleaved woodland within the working corridor of the Proposed Scheme	Regional	Regional - Considered to be of importance to biodiversity conservation	Unknown	Medium	Intermediate negative	Slight adverse

Hedgerows (Priority Habitat on the UK Biodiversity Action Plan)	The Proposed Scheme bisects 101 hedgerows	Regional	Regional - Considered to be of importance to biodiversity conservation	Unknown	Medium	Intermediate negative	Slight adverse
Traditional Orchards (Priority Habitat on the UK Biodiversity Action Plan)	There are 22 traditional orchards within 1 km of the Proposed Scheme, closest is 350 m east of the Littleton Roundabout	Regional	Regional - Considered to be of importance to biodiversity conservation	Unknown	Medium	Minor negative	Slight adverse
Bristol River Avon (aquatic habitat)	The Bristol River Avon and unnamed tributary of the Bristol River Avon are a reportable WFD water body, with an overall classification of 'Moderate' At this stage, a precautionary approach has been taken in valuing the Bristol River Avon (including the unnamed tributary of the Bristol River Avon which is assessed under the same WFD waterbody). A Regional importance has been applied due to the presence of a diverse aquatic species assemblage that includes notable fish species, in particular lamprey. However, this will be re-evaluated at a later stage following further assessment and surveys.	Regional	Regional - Diverse aquatic species assemblage which includes notable fish species	Unknown	Medium	Minor negative	Slight adverse
Forest Brook	Forest Brook is a reportable WFD waterbody, with an overall classification of 'Poor'. In line with other similar Schemes and review of aerial imagery, in addition to the WFD biological quality elements classification, Forest Brook has been valued at Local importance, as it is likely to provide habitat of value to aquatic species at the local scale.	Local	Local - Provides habitat to local aquatic species	Unknown	Medium	Minor negative	Slight adverse
Clackers Brook	Clackers Brook is a reportable WFD water body, with an overall classification of 'Poor'. In line with other similar Schemes and review of aerial imagery, in addition to the WFD biological quality elements classification, Clackers Brook has been valued at Local importance, as it is likely to provide habitat of value to aquatic species at the local scale.	Local	Local - Provides habitat to local aquatic species	Unknown	Medium	Minor negative	Slight adverse
Semington Brook	The Semington Brook is a reportable WFD water body, with an overall classification of 'Moderate'. In line with other similar Schemes and review of aerial imagery, in addition to the WFD biological quality elements classification, Semington Brook has been valued at Local importance, as it is likely to provide habitat of value to aquatic species at the local scale.	Local	Local - Provides habitat to local aquatic species	Unknown	Medium	Minor negative	Slight adverse
Kennet and Avon Canal (aquatic habitat)	The Kennet and Avon Canal is a reportable WFD water body with an overall classification of 'Moderate' as of 2019. The Kennet and Avon Canal is a major canal system and recreational resource, noted for its coarse fishery and connectivity with other watercourses within the catchment. In the absence of detailed survey data, a precautionary approach has been taken to value it at Regional importance.	Regional	Regional - a major canal system and recreational resource	Unknown	Medium	Minor negative	Slight adverse

All other ordinary watercourses	Walkover surveys have not been undertaken at this stage. Therefore, ordinary watercourses that are within 150 m of the alignment will be surveyed at a later stage, where habitat and geomorphological characteristics and diversity will be fully assessed. Review of aerial imagery indicates that the majority of ordinary watercourses have a primary function as drainage ditches. Therefore, these are unlikely to support truly aquatic species such as fish, however, may support isolated communities of macrophytes and invertebrates.	Local	Local - may support isolated populations of macrophytes and invertebrates	Unknown	Medium	Minor negative	Slight adverse
Standing waterbodies	No pond habitat or aquatic species data (macrophytes, invertebrates and fish) are available for ponds that are crossed or lie within the footprint of the Scheme. Review of aerial imagery identified that the ponds are found within agricultural settings. Two ponds were identified within 150 of the Proposed Scheme. During the terrestrial ecology walkover surveys, a further seven ponds were identified within the Proposed Scheme, meaning that nine ponds in total will likely be lost as a result of the Proposed Scheme, with more to potentially be disturbed.	Local	Local - an important ecological habitat in the wider agricultural landscape	Unknown	Medium	Minor negative	Slight adverse
Amphibians	Desk study records indicate great crested newts and other amphibians are within the landscape. During the extended Phase 1 habitat survey, 33 ponds were identified within 250 m of the Proposed Scheme. Nine ponds are directly within the Proposed Scheme working corridor. In addition, there are 22 watercourses / ditches with standing water within 250 m of the Proposed Scheme, some of which may support breeding populations of great crested newts.	Regional	Regional - a European Protected Species which forms an important part of the local ecosystem	Unknown	High	Minor negative	Slight adverse
Bats	Desk study records and the presence of suitable habitat indicates bats of various Annex II bat species are present within the landscape, including lesser and greater horseshoe bats. Due to the proximity of the Proposed Scheme to the Bath and Bradford on Avon Bats SAC, and the previous records as described above, the Survey Area could support bat populations that are up to National importance.	National	National - bat populations within the Scheme footprint could be associated with the Bath and Bradford on Avon Bats SAC	Unknown	High	Intermediate adverse	Large adverse
Hazel dormouse	The extended Phase 1 habitat survey identified suitable habitat for hazel dormouse, and in the absence of further survey, presence is assumed.	Regional	Regional - a European Protected Species which forms an important part of the local ecosystem	Unknown	High	Minor negative	Slight adverse
Otter	Suitable habitat for otter has been recorded within the Study Area and otter have been recorded on the Bristol River Avon within 1 km of the Proposed Scheme. This species may pose a constraint to the Proposed Scheme.	Regional	Regional - a European Protected Species which forms an important part of the local ecosystem	Unknown	High	Minor negative	Slight adverse
Water vole	Suitable habitat for water vole has been recorded within the Study Area and it has been recorded on the Bristol River Avon within 1 km of the Proposed Scheme. This species may pose a constraint to the Proposed Scheme.	Regional	Regional - afforded a high level of protection and the extensive suitable habitats within the study area means the Proposed Scheme could support an important population for the region	Unknown	Medium	Minor negative	Slight adverse

White-clawed crayfish	Based on the suitability of the Bristol River Avon to support populations of white-clawed crayfish and the absence of further survey data, presence of white-clawed crayfish is assumed.	Regional	Regional - white clawed crayfish are afforded a high level of protection. Habitats within the Proposed Scheme study area could support a regionally important population	Unknown	Medium	Minor negative	Slight adverse
Reptiles	The majority of the study area is not considered to be optimal for supporting common reptile species, due to the heavy management of the pasture and arable fields dominating the study area. Based on the precautionary assumption that the study area supports populations of common species of reptiles and habitats that are important in maintaining the distribution of the species across this part of Wiltshire, reptiles have been ascribed a value of Local importance.	Local	Local - populations may be important in maintaining the distribution of common species of reptile in the area	Unknown	Medium	Minor negative	Slight adverse
Birds	The extended Phase 1 surveys identified suitable areas of habitat for notable wintering bird species such as wildfowl and waders. This primarily includes semi-improved grassland and arable land. Other habitats present that could support wintering bird species include semi-natural broadleaved woodland, broad-leaved and mixed plantation woodland, scrub, built-up areas and hedgerows; the latter being considered especially important for common passerine species, as well as migrant redwing and fieldfare, which were recorded during the Phase 1 surveys. Based on the information that is currently available concerning the distribution of suitable habitats and protected and priority species previously recorded within the study area, the breeding and wintering bird assemblages have precautionarily been ascribed a value of up to National importance.	National	National - the habitats on site could support nationally important bird populations	Unknown	High	Minor negative	Slight adverse
Priority Invertebrates	The intensive agricultural habitats that dominate most of the Study Area are unlikely to support notable assemblages of terrestrial invertebrates. However, the following habitats may support notable invertebrate assemblages or species: Mature hedgerows, mature trees, arable field margins, and watercourses. A soil bank identified during the Phase 1 survey was indicated to have potential for priority insect species.	Local	Local - habitats on site may support locally important populations of priority invertebrates in small numbers	Unknown	Medium	Minor negative	Slight adverse
Flowering Plants	The intensive agricultural habitats that dominate the Proposed Scheme are considered unlikely to support notable plant species.	Local	Local - habitats on site may support locally important populations of priority invertebrates in small numbers	Unknown	Medium	Minor negative	Slight adverse
Badger	Habitat within the working corridor predominantly comprises arable and pasture fields with hedgerow networks, which provide suitable habitat for badgers. Signs of badger presence were recorded during the extended Phase 1 habitat survey. Several main and secondary setts were located throughout the Study Area.	Local	Local - badgers are common in the landscape, however the Proposed Scheme area could support locally important populations	Unknown	Medium	Minor negative	Slight adverse

Other protected and priority species	The surrounding habitat in the Proposed Scheme area supports brown hare and hedgehog, including arable fields, grassland, woodland edges, hedgerows and scrub. During the Phase 1 survey, six brown hares were sighted.	Local	Local - The Scheme could support local populations of hare and hedgehog	Unknown	Medium	Minor negative	Slight adverse
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#### Reference Sources

Multi-Agency Geographic Information for the Countryside (MAGIC) website (<https://magic.defra.gov.uk/MagicMap.aspx>), information from Wiltshire and Swindon Biological Records Centre, Bing Maps (<https://www.bing.com/maps>), Google Earth (<https://earth.google.com/web/>), Woodland Trust Ancient Tree Inventory (<https://ati.woodlandtrust.org.uk/>), Ordnance Survey maps, Environment Agency Ecology and Fish Data Explorer website (<https://environment.data.gov.uk/ecology-fish>), Environment Agency Catchment Data Explorer website (<https://environment.data.gov.uk/catchment-planning>), Environment Agency Water Framework Directive classification data (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy), Environment Agency River Basin Management Plans, Environment Agency Main River Map, OS District Vector Map (<https://www.ordnancesurvey.co.uk/business-government/products/vectormap-district>), Atkins Next Generation Environmental Assessment (NGEA) GIS tool, Extended Phase 1 Habitat Survey, consultation with Wiltshire County Ecologist, JNCC Standard Data Form for internationally designated sites ([jncc.gov.uk](http://jncc.gov.uk))

#### Summary Assessment Score

Large Adverse

#### Qualitative Comments

At the time of writing, no Phase 2 surveys have been commissioned and the mitigation is not yet known. Therefore, the assessment of large adverse is based on a precautionary assessment, which may be subject to change as the project progresses.

The impacts to internationally designated sites are to be determined following the outcome of the HRA, meaning that impacts cannot be determined at this stage.

Impacts to Spye Park SSSI are likely to comprise air quality impacts as a result of the Scheme falling within the Impact Risk Zone cannot be assessed at this stage as the air quality analysis has not been finalised.

Minor negative impacts are anticipated to Kennet and Avon Canal LWS, Bristol River Avon LWS, and Inwood Lacock LWS in relation to hydrological and air pollution, due to their proximity to the Proposed Scheme. Impacts to the other LWS within the study area are considered unlikely due to the larger distances between the design extent boundary and the LWS, however this will be determined following detailed air quality analysis.

Moderate adverse impacts are anticipated on the priority habitats within the study area: broadleaved woodland and hedgerows, which are likely to be lost or severed as a result of the works.

Impacts to ancient woodland and veteran and ancient trees will be determined following detailed arboricultural surveys and air quality analysis.

Minor adverse impacts are anticipated to the Bristol River Avon, which the Scheme directly crosses. This is due to possible pollution effects during construction, and impacts relating to the new crossing during operation. No impacts are anticipated to any other watercourse in the study area at present.

A slight adverse impact is anticipated to standing waterbodies, some of which will be directly lost as a result of the Proposed Scheme and will require compensatory habitat to be created.

A precautionary large adverse impact is anticipated on bats, as bats in the study area may be associated with three internationally designated sites, and the Proposed Scheme may have habitats which support Annex 2 bat species. Slight adverse impacts are anticipated to the remaining protected and priority species in the landscape, which are likely to be adversely affected by the Scheme.