

Appendix A - Preliminary Ecological Assessment



Ref: 17991

STORY CONTRACTING LIMITED

CP6 YEAR 3 WORKBANK

UB-132-017 FORTH VIADUCT REPAIRS & REPAINTING

ECOLOGIST DAILY REPORT

AUGUST 2020

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PROJECT TITLE: CP6- Year 3	PROJECT NO: 17991
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START DATE/TIME	SITE	IKM REQUESTED WORK	COMPLETED DATE/TIME
05/08/20 0930	UB-132-017 Forth Viaduct, SCM3 line, 118m 143yrs. Stirling, FK9 5HU	Ecological constraints survey	05/08/20 1030
WEATHER:	Light rain and calm	TEMPERATURE:	~16°C

SITE COMMENTS
GENERAL
<p>IKM Consulting Limited (IKM) was commissioned by Story Contracting (Story) to undertake an ecological constraints survey to determine the potential and confirmed constraints at UB-132-017 Forth Viaduct located at 118m 143yds on the SCM3 line, Stirling. The works to the underbridge is part of the wider CP6 Year 3 package of works across Scotland.</p> <p>The survey area included the underbridge and immediate surrounds within 30m. The general scope is described as viaduct repairs and repainting, though the detailed requirements are not known. No consideration has been given to the access routes or any laydown/compound areas as these are currently unknown.</p>
METHODOLOGY
<p><u>Desk Study</u></p> <p>A search for designated sites within 5km of the site was made through data pulled from SNHi SiteLink, and a review of areas of ancient woodland within 1km of the underbridge was made through the Ancient Woodland Inventory (AWI) using QGIS.</p> <p><u>Field Study</u></p> <p>An ecological constraints survey of underbridge UB132-017 Forth Viaduct and adjacent habitats, where safe access was available, was undertaken by IKM Ecologist Sandy Craig on 5th of August 2020, to ascertain potential and confirmed ecological constraints and to provide recommended mitigations to facilitate the works. Photographs of specific features are provided at the end of the report. The survey was undertaken non-trackside during daylight hours with a view of trackside locations taken where possible only.</p> <p>The habitats within the survey area were assessed in terms of their suitability for protected species such as badger (<i>Meles meles</i>), bats, birds, otter (<i>Lutra lutra</i>), reptiles and water vole (<i>Arvicola amphibious</i>). Any evidence of the presence of these species, including sightings, prints, feeding signs, droppings, hairs and resting sites were recorded.</p> <p>Protected species such as freshwater pearl mussel (<i>Margaritifera margaritifera</i>), great crested newt (<i>Triturus cristatus</i>), pine marten (<i>Martes martes</i>), red squirrel (<i>Sciurus vulgaris</i>) and Scottish wildcat (<i>Felis silvestris</i>) were scoped out of this survey due to their known distribution being out with the location of the site and the lack of suitable habitat within the immediate survey area and wider landscape.</p> <p>The value of the underbridge and any mature trees within the survey area were assessed in terms of suitability for roosting bats in line with current best practice guidance (Collins, 2016). Where necessary, these features were scrutinised with binoculars. Any signs of roosting bats such as staining, and droppings were recorded, and droppings were to be collected for further analysis. No detailed internal inspections of tree roost features have been undertaken, but an external ground-based assessment has been undertaken.</p>

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During this inspection an assessment was also made to assess the potential or current use of the underbridge and surrounding vegetation by nesting birds which included a search for current nests, evidence of previous nesting and evidence of presence of birds including roosting individuals and droppings.

Non-native and invasive species such as Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*) were also identified and mapped as far as possible, as well as other non-native plant species relevant to the Wildlife and Natural Environment (Scotland) Act (WANE) 2011.

Limitations

The assessment aims to provide a baseline of potential or confirmed (where possible) ecological constraints and is not designed to replace the need for further detailed surveys where considered necessary, based on the project proposals and assumptions.

Due to high water levels and lone working policy, a full otter survey of the river banks was not undertaken.

The survey was completed during the main survey season for many of the receptors potentially present at this location and further survey has been recommended where necessary. It is therefore considered that a robust assessment has been completed and the aims of the study met with no significant limitations.

The local Biological Records Centre was not consulted for any protected species records as part of this study.

RESULTS

Desk Study

The viaduct is the boundary for the end of the River Teith SAC (Special Area of Conservation) which designates the River Forth upstream of the viaduct. This SAC has qualifying interests of river lamprey (*Lampetra fluviatilis*), brook lamprey (*Lampetra planeri*), sea lamprey (*Petromyzon planeri*) and Atlantic salmon (*Salmo salar*).

Abby Craig SSSI (Site of Special Scientific Interest) is situated 1.4km to the northeast. This site is designated for its upland mixed ash woodland and beetle assemblage.

Balquhiddelock Wood SSSI and Local Nature Reserve is located 3.1km to the south, southeast. This site is designated for its wet woodland.

Wolf's Hole Quarry SSSI is situated 3.7km to the north and contains notified geological features of non-marine Devonian stratigraphy and Silurian – Devonian Chordata palaeontology.

4.1km to the north, Kippenrait Glen SSSI and SAC is situated along the railway corridor. This site is designated SSSI for;

- Upland mixed ash woodland
- Beetle assemblage
- Biodiversity Action Plan crane-fly species; *Lipsothrix ecucullata*.

SAC;

- Mixed woodland on base-rich soils associated with rocky slopes.

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Sauchie Craig Wood SSSI lies 4.6km to the southwest of the viaduct. This site contains notified for its lower carboniferous (Dinantian – Namurian) stratigraphy and Permian igneous petrology, along with containing upland mixed ash woodland.

4.7km to the southeast lies Wester Moss SSSI designated for containing raised bog habitat.

There is a single block of ancient woodland listed within the AWI lie within 1km of the site.

- Unnamed wood (NS791937) is located 920m southwest of the underbridge.

Habitats

The surrounding habitats are of suburban nature, with amenity grassland and parkland trees making up parks and gardens in the surrounding area. to the south and further to the north. To the northeast active allotments have been established. The banks of the River forth consist of mainly tall ruderal with mainly rosebay willow-herb (*Chamerion angustifolium*), common nettle (*Urtica dioica*), giant hogweed (*Heracleum mantegazzianum*), Himalayan balsam (*Impatiens glandulifera*) with some *phragmites sp.* on the northern bank.

See below plates for images of habitats.

Protected Species

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Birds

Feral Pigeons (*Columba livia domestica*) were recorded using the bridge however it is not fully clear whether nests were present within out of reach areas. The vegetation on the railway embankment, river banks and surrounding habitats, offer ample suitable nesting habitat for species common to the geographical area.

Fish

As the site lies atop the River Forth it is likely that fish species common to the local geographical will be present within.

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Invasive, Non-native Species (INNS)

Both Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) were present within 30m of the viaduct. Himalayan balsam was present along the entirety of the north and south banks and extending to the north along the east of the railway corridor. Giant hogweed was present c.25m to the east on the south bank and present along the entirety of the north bank in a variety of stages of growth. A large stand was present within the railway boundary to the east on the north bank.

[REDACTED]

Reptiles

No evidence of reptiles using the site was uncovered during the survey. The surrounding habitats were considered to be suboptimal in respect to reptile use for basking and foraging and limited connectivity to more extensive areas of suitable habitats. Therefore, no further recommendations regarding reptiles have been made within this report.

Water vole

No evidence of water vole presence or suitable habitat was identified within the survey area. Water vole is not considered further within this report.

RECOMMENDATIONS

The scope of the works is not currently known and therefore the detailed level of potential impact on protected species and sites. A precautionary approach has therefore been adopted in terms of recommendations.

Desk Study

Given the proximity of the project to internationally designates sites (River Teith SAC) it is recommended that a Habitat Regulations Screening Appraisal is completed in order to ascertain is there is any Likely Significant Effects (LSE) on the qualifying features of a European Protected Site.

Habitats

The habitats likely to be lost during any work and installation of access routes should, as a minimum be returned to its previous state.

Protected Species

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Birds

The vegetation on the rail embankment, surrounding habitats adjacent to the underbridge and the structure itself provide plentiful suitable nesting bird habitat. If works are programmed within the bird breeding season (recognised as March-August, inclusive, in Scotland), a nesting bird check must be carried out of all vegetation, ideally within 48 hours ahead of the clearance but a maximum of seven days, by a suitably qualified ecologist.

If nesting birds are confirmed to be present, then all works in the vicinity of any nest must be delayed until the young have fledged, and a suitably qualified ecologist has confirmed the nest is no longer in use. An appropriate exclusion area will also be put in place, which will be species dependant and the topography on the ground conditions. This will be determined by the ecologist at the time of the discovery.

Fish

It is recommended that a fish rescue plan is implemented if instream works are to take place.

Invasive, Non-native Species (INNS)

As Himalayan balsam and giant hogweed is present within the site boundary it is recommended that an Invasive Species Management Plan is implemented during works to the structure. As part of this it would be recommended that a further survey and mapping of the full extents of the spread of INNS is undertaken in advance of works

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[REDACTED]

[REDACTED]

- [REDACTED]
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- [REDACTED]
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REFERENCES

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal. 2nd Edition, Chartered Institute of Ecology and Environmental Management, Hampshire.

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Collins (2016) <i>Bat Surveys for Professional Ecologist – Good Practice Guidelines, 3rd Edition</i> . Bat Conservation Trust			
COMPLETED BY:	Sandy Craig	DATE:	26/08/20
CHECKED BY:	Simon Inger		



Plate 1 - Western elevation of underbridge



Plate 2 - Eastern elevation of underbridge



Plate 3 - Habitat to the northeast



Plate 4 - Habitat along river bank to the south