



**PRELIMINARY ECOLOGICAL APPRAISAL
BRIDGE REPLACEMENT, BANK STABILISATION AND CULVERT
REPLACEMENT**

Location:

20 Neath Road, Fforest Goch, Neath, SA8 3JB

Prepared by Spectrum Ecology

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INTRODUCTION

Spectrum Ecology was instructed to undertake a Preliminary Ecological Appraisal (PEA) in support of a retrospective planning application relating to:

- Replacement of an agricultural bridge
- River bank stabilisation works
- Replacement of a collapsed surface water culvert

The works have been completed and this report provides an as-built ecological review and assesses potential effects on habitats, protected species and the water environment.

1. SURVEYOR EXPERIENCE

- 1.1** This PEA has been prepared by Leigh Tuck and Jen Pilkington who together have over 30 years habitat and protected species surveying experience.
- 1.2** Jen is an NRW accredited licence holder and has been training for her full bat licence for over 3 years. She has experience undertaking a large number of river surveys and worked for many years with the Rivers Trust. Jen is an associate member of CIEEM and holds a CIEEM-accredited Masters in Wildlife and Conservation Management and a degree in Marine Biology, amongst other ecological qualifications, and has many years of practical environment management and conservation experience.
- 1.3** Leigh is a NRW licensed bat worker and has held licences for over 15 years, with over 17 years surveying and bat monitoring experience. He has a HND in Ecology and Conservation as well other ecological qualifications. Recently Spectrum Ecology have undertaken an extensive habitat and mapping survey of Local Nature Reserves for Blaenau Gwent County Borough Council. Within the course of his career, Leigh has also been involved in monitoring and surveying of other European protected species such as Otter, Dormouse and Great crested newt and have worked extensively in habitat management for the enhancement of protected species.

2. Site Description

- 2.1** The site comprises a residential dwelling with large garden area leading to a small watercourse and beyond the watercourse is an agricultural landscape. The immediate surroundings include:

- Poor semi-improved grassland
- Disturbed ruderal margins
- Riparian scrub and mature trees
- Areas historically used for agricultural storage

Historic imagery confirms long-standing residential and agricultural disturbance within the bridge footprint.

3. Description of Works

3.1 Bridge and Bank Stabilisation

Timeline provided by client:

- 2nd July 2024 – Culvert works undertaken from top of bank
- September 2024 – Removal of tyre-retained bank to stop erosion (approx. 5m length, 2m height), which was installed by
- October 2024 – Rock armour installed along approx. 5m of bank
- 4th October 2024 – Abutment installation
- 1st November 2024 – Steel bridge structure installed

The previous bank protection structure comprised stacked and interlocking tyres. During the extraction process between the tyres general landfill material such as carpets, household waste, furniture was removed. No cavities or void systems were present at that time, as advised by the owner.

All works were undertaken from the top of bank and no in-channel plant operation occurred.



3.2 Culvert Replacement

It should be noted that a 600mm diameter surface water culvert located on the client's land had collapsed, resulting in flooding of the adjacent land and garden. However this is not confirmed. The culvert was replaced with a plastic pipe like-for-like in diameter.

During the survey there had been heavy rain in the morning and there was considerable outfall from the pipe causing significant turbidity in the water course. When the line of the pipe was traced back the origin of the pipe is not confirmed but is considered to collect surface water runoff, potentially from highway drainage.

The culvert was installed from the top of bank. No channel excavation was undertaken. Backfill comprised clean 50mm limestone.



4. Ecological Baseline

4.1 Habitats

During the walkover survey on the 20th January 2026 and habitat loss was confirmed and confined to the following habitat types:

- Disturbed ruderal vegetation
- Previously modified tyre-retained bank
- Areas of compacted ground associated with access

The walkover further confirmed that no priority habitats were lost and from analysis of Google aerial imagery it is considered that no trees were removed. Furthermore the river morphology remains open span beneath the new bridge.



Retained riparian corridor taken on 20th January 2026

4.2 Historical Contamination

The client confirms the former bank reinforcement contained landfill material and waste. Removal of this material and replacement with clean rock armour stone represents an environmental betterment in comparison to the former condition.

5. Protected Species Assessment

5.1 Survey Methodology

A protected species walkover survey was undertaken concurrently with the Preliminary Ecological Appraisal. The survey comprised:

- Inspection of both river banks upstream and downstream of the bridge (minimum 100m in each direction)
- Inspection of exposed soil banks for burrows, holes and latrine areas
- Inspection of undercut banks, root plates and cavities
- Search for field signs including footprints, slides, feeding remains and spraints
- Inspection of bridge abutments and rock armour for void potential
- Visual assessment of trees from ground level for bat roosting potential features (PRFs)
- Inspection for invasive non-native plant species

The survey was undertaken in suitable weather and visibility conditions. Water levels were normal seasonal flow and banks were accessible. The survey is considered appropriate for a preliminary assessment of protected species presence and habitat suitability.

5.2 Otter (*Lutra lutra*)

5.2.1 Legal Status

Otter is fully protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to deliberately capture, injure, kill or disturb an otter, or to damage or destroy a resting place.

Methodology

- The watercourse and banks were surveyed for
- Holts (natal and resting)
- Couches and day resting sites
- Spraints
- Feeding remains
- Slides
- Footprints in soft sediment

5.2.2 Findings

Survey included inspection beneath the bridge span and within rock armour stabilisation areas.

No holts, couches, spraints, feeding remains, slides or footprints were recorded. The former tyre-retained bank was comprised of compacted landfill material with no cavities or void systems capable of supporting holt formation. The newly installed rock armour does not create enclosed chambers suitable for resting places.

5.2.3 Impact Assessment

Works were undertaken entirely from the top of bank. No in-channel works occurred. The river corridor remains open span beneath the bridge and fully passable. On the basis of habitat assessment and absence of field signs, no evidence was identified to suggest the presence of a breeding holt, resting site or regularly used couch within or adjacent to the works footprint at the time of survey. The development is therefore not considered to have resulted in damage or destruction of a resting place, nor to have caused disturbance likely to constitute an offence.

5.3 Water Vole (*Arvicola amphibius*)

5.3.1 Legal Status

Water vole is protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to damage, destroy or obstruct access to any structure or place used for shelter or protection.

Methodology

River banks were inspected for:

- Burrow entrances (typically 4–8cm diameter, clean-cut holes at water level)

- Latrines
- Feeding stations
- Runs through marginal vegetation
- Both upstream and downstream banks were assessed.

5.3.2 Findings

The bank sections directly impacted by works were previously reinforced with tyres and landfill material and were not composed of soft, burrowable substrate. Remaining banks comprise rock armour, shallow stony margins or vegetated slopes not suitable for burrowing. No burrows, latrines, feeding remains or runs were recorded.

5.3.3 Impact Assessment

Given the absence of suitable burrow habitat within the works footprint and absence of field signs, impacts to water vole are considered highly unlikely.

5.4 Bats

5.4.1 Legal Status

All bat species and their roosts are protected under the Conservation of Habitats and Species Regulations 2017 (as amended).

5.4.2 Methodology

5.4.3 No specific Preliminary Roost Assessment (PRA) was commissioned as part of this instruction. However, mature trees within the site and adjacent riparian corridor were visually inspected from ground level for:

- Cavities
- Rot holes
- Split limbs
- Loose bark
- Ivy cover
- Woodpecker holes

5.4.4 Findings

No trees were removed as part of the development. A visual inspection confirmed that some mature riparian trees exhibit potential roosting features typical of older specimens (e.g. fissures, ivy growth, branch unions). These trees were not impacted by the works and remain undisturbed. The bridge structure does not provide enclosed voids or features suitable for roosting.

5.4.5 Impact Assessment

As no trees with potential roosting features were removed or modified, and no structures with roost potential were affected, the development is not considered to have impacted bat roosts. The river corridor continues to function as a commuting and foraging route.

5.4.6 Lighting

No lighting has yet been installed. Any future lighting should be designed to avoid light spill onto the watercourse and adjacent tree canopy. A robust planning condition requesting a baseline darkness survey and appropriate lighting scheme will be required to ensure the continued ecological function for bats is maintained.

5.5 Breeding Birds

Vegetation removal was limited to disturbed scrub. No tree removal occurred. The historic works and their impact cannot be quantified or understood as part of this survey.

6. Water Environment and Turbidity Observations

6.1 During site inspection, turbid discharge was observed from the newly installed culvert during rainfall conditions. The discharge appears consistent with surface water runoff carrying suspended sediment, likely associated with upstream drainage inputs rather than the bridge works themselves.

The following points are relevant:

- No in-channel works were undertaken as part of bridge construction.
- The main river channel was not excavated or reprofiled.
- Turbidity appears episodic and rainfall-driven.

6.2 The turbidity observed is considered part of the existing baseline condition of the watercourse due to the surface water run-off potentially from the Highway Drainage, rather than an effect of the bridge or bank stabilisation works. No evidence was observed to suggest that the development materially altered the water quality regime of the watercourse.

7. Fisheries Context

The channel comprises mainly a cobble substrate with bends and edges comprising a finer gravel substrate suitable in principle for salmonid species. However, anecdotal evidence when speaking with local residents suggest fish presence has declined in recent years. In addition there are a number of barriers to upstream migration including a fallen tree which has blocked and diverted the watercourse further south.

Given that:

- No in-channel works occurred
- The span remains open
- Substrate was not disturbed

The development is not considered to have adversely affected fish habitat.

8. Biodiversity Enhancement

Although impacts are limited, the following enhancements are recommended:

- Installation of 1–2 dipper nest boxes beneath the bridge
- Native riparian shrub planting along disturbed margins
- Retention of an unmanaged buffer strip
- Sensitive lighting design is required
- Retention of the old bridge to minimise riparian impact

9. Conclusion

The bridge replacement, bank stabilisation and culvert replacement have resulted in limited ecological impact confined to previously modified and disturbed areas. No trees were removed and no priority habitats were lost. No protected species resting places were identified. The river corridor remains functionally intact and the removal of historic landfill and tyre structures has improved the environmental condition of the bank. Subject to sensitive lighting design and biodiversity enhancement measures, the development is considered ecologically acceptable.

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Disclaimer

This report represents an assessment of the site described, based on observations made at a specific point in time. Every reasonable effort has been made to provide an accurate and thorough evaluation of the habitats and species present during the survey period.

Ecological conditions can change over time due to natural succession, seasonal factors, or human activity. The findings and recommendations within this report should therefore be considered valid for a maximum of two years from the date of survey, unless significant changes occur in site management, habitat structure, or surrounding land use in the interim.

This report has been prepared to inform the planning and design process. It does not constitute a method statement or protected species licence application. Where development proposals evolve, or new ecological evidence emerges, further survey or assessment may be required to ensure ongoing compliance with relevant legislation and best practice.

Spectrum Ecology accepts no responsibility for alterations, actions, or events occurring after the date of survey which may affect the conclusions or recommendations made herein.