

Ecology Research and Solutions

12 Cahernane Meadows,

Killarney,

Co. Kerry

P: 0834620651

E: dalton.rory@gmail.com

Seamas O Reilly

Senior Executive Engineer, Operation & Maintenance

Limerick City & County Council

Dooradoyle

Limerick

V94 WV78

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Re: The review of a previous NIS and the results of an updated survey of Mohernagh Bridge, Ballyhahil , County Limerick.

To whom it may concern,

Ecology Research and Solutions Limited has been engaged by Limerick County Council (henceforth “the Council”) to provide ecological advice and support for repair and upgrade works at a deteriorating bridge located between the townlands of Mohernagh and Finnoo, 1.5km south east of Ballyhahil, County Limerick. The bridge had been visited by Punch Engineering Consultants a number of years ago, and a series of works had been prescribed for the bridge in order to bring it to a safe working order. On the foot of this, the proposed works set out for the bridge were assessed by Ecofact Ecology Consultants for their capacity to cause impacts to the local environment, particularly to areas protected under the Birds Directive and the Habitats Directive. The findings of this assessment are detailed in an NIS which was compiled for the works planned for the bridge in question. As over two years had lapsed since this NIS was issued to the Council, it was decided to to review the NIS and update the surveys that informed it to ensure that the details contained within it, particularly the findings and mitigations, are appropriate to the current situation and the proposed works at the bridge. This decision was taken based on the information provided in the guidance document “*Advice Note on the Lifespan of Ecological Reports and Surveys*” (CIEEM, 2019).

The proposed works for Mohernagh Bridge are summarised as follows:

- The river will be diverted and/or over pumped to allow the construction to proceed. The road is on a cul-de-sac serving few houses. A temporary pedestrian bridge and car-park will be constructed.
- All vegetation including trees, shrubs and the like will be removed for 10 m upstream and downstream of the bridge over a width of 30 m approximately. All efforts will be made to preserve mature and semi-mature trees, where possible.
- The bridge deck, slab and beams, will be removed. The riverbed will be excavated to a depth of up to 1.7 m below the existing riverbed. A subbase shall be formed at the new formation level consisting of a 500 mm subbase of graded granular material underlaid with a 300 mm thick lean-mix concrete base.
- The precast concrete culvert will be lowered into place in segments to form the core of the new bridge. The invert level of the culvert will be a minimum of 500 mm below the existing riverbed level and shall be laid to a gradient not steeper than 5%. The culvert bed will be backfilled with clean gravel to match the existing river profile and to initiate simulation of the riverbed. This will allow for the regeneration of a natural riverbed in the culvert. Reference shall be made to Inland Fisheries Ireland publication "Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters".
- Cast insitu reinforced concrete wing walls and foundations will be constructed at both ends of the culvert to retain the embankment backfill.
- The remaining excavations, above the riverbed and outside the watercourse, will be backfilled with acceptable fill material to road formation level. The roadway will be reinstated using a surface course and binder (base), course of Dense Bitumen Macadam on a granular sub-base.
- Insitu reinforced concrete upstands for the parapet rails and raised plinths will be cast at the road edges on the bridge structure.
- Other ancillary items associated include; proprietary galvanised steel parapets; road side drainage; traffic signs; etc.

Mohernagh Bridge is located over the 3rd order River Owvane (Limerick) which eventually flows into the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA, both c. 7.2rkm downstream. The bridge is located 300m from the Stacks To Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (4161), although this is not mentioned in the original NIS. The subject bridge is on a local access road c. 1.5km to the south-east of Ballyhahill Village and c. 5.2km west of Shanagolden Village. There are some broadleaved trees in the vicinity of the bridge site and there are some farm and residential buildings adjacent to the site. The main

land use in the surrounding area is low intensity agriculture, consisting of wet grassland, lightly improved agricultural grassland and hedgerows.

The Screening for Appropriate Assessment Report identified the potential for impacts on the Lower River Shannon SAC due to water quality, disturbance and invasive species impacts, and the potential for impacts to 12 of the bird species designated within the Shannon and Fergus Estuaries SPA (Ecofact, 2020).

The stream itself is used by salmon to spawn. It is certainly used by brown trout to spawn, and may also be suitable for sea trout to spawn in. There is no suitable spawning habitat within the footprint of the works, the closest suitable area being 40m downstream, and that is considered sub optimal, however, there is optimal spawning habitat spread along the stream. Brook lamprey likely use the river, but again no suitable spawning or ammocoete habitat is present. River lamprey and sea lamprey are absent, as there are at least 3 falls that would be considered impassable both species and several other cascades that would cause significant difficulty or may be impassable; the river is a grade 3 river in terms of kayaking, and contains long stretches of relatively flat water interspersed with big drops and slides on sloped rock, as the river travels over occasionally surfacing fractures in the geology. Eel also use the stream.

| Conservation Interest | Present within or immediately downstream of the works area |
|--|--|
| Sandbanks which are slightly covered by sea water all the time [1110] | No |
| Estuaries [1130] | No |
| Mudflats and sandflats not covered by seawater at low tide [1140] | No |
| Coastal lagoons [1150] | No |
| Large shallow inlets and bays [1160] | No |
| Reefs [1170] | No |
| Perennial vegetation of stony banks [1220] | No |
| Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] | No |
| Salicornia and other annuals colonising mud and sand [1310] | No |
| Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] | No |
| Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] | No |
| Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260] | No |
| <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] | No |
| Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] | No |
| <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] | No |

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|---|-----|
| Petromyzon marinus (Sea Lamprey) [1095] | No |
| Lampetra planeri (Brook Lamprey) [1096] | Yes |
| Lampetra fluviatilis (River Lamprey) [1099] | No |
| Salmo salar (Salmon) [1106] | Yes |
| Tursiops truncatus (Common Bottlenose Dolphin) [1349] | No |
| Lutra lutra (Otter) [1355] | Yes |

The original NIS identified the following species as being subject to Potential Impacts/Likely Significant Effects: salmon, otter, brook lamprey, river lamprey and sea lamprey. We would suggest that sea lamprey and river lamprey are absent from this upper reach section of the river as we are privy to local knowledge about barriers to fish passage having kayaked the river a number of times, and suggest that the list of species subject to Likely Significant Effects be trimmed back to salmon, otter and brook lamprey. The original NIS identifies the following potential impacts for these species: water quality, disturbance, invasive species; this finding remains unchanged.

The original NIS identified 12 species of birds within the River Shannon and River Fergus Estuaries SPA as being subject to potential impacts or likely significant effects, however it is our opinion that these species will not be impacted due to a combination of the distance from the bridge and the fact that this SPA is designated for wintering birds, and bridge works are to be carried out within the instream works season - July, August and September.

The Stacks To Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA is not mentioned in the original NIS, however no potential for impacts was identified by us on this SPA, as there is no suitable breeding habitat for hen harrier in the immediate vicinity of the bridge. The works will not be directly affecting any foraging or breeding habitat for hen harrier in the area.

Section 7 of the NIS outlines the mitigations to be implemented in order to protect the conservation interests of the SAC. They are as follows:

- Detailed Method Statement and CEMP
- Avoidance: limiting the footprint of the works
- Avoidance: timing of the works
- Water quality protection
- Biosecurity
- Site ecologist

The most important element of the project in terms of protecting the ecology of the area is the damming and fluming or damming and over-pumping the works area in

order to allow the existing bridge walls to be excavated and the existing bridge floor to be excavated to *“depth of up to 1.7 m below the existing riverbed.”* Carrying out this scale of excavation without dam & flume or dam & over-pump procedures in place would likely initiate a major release of sediment and silt to the river, potentially clogging the intra-gravel voids for a significant reach of the river. Sandbags should be waterproof by building them with a plastic rubble sack inside of the outer hemp/plastic mesh sack to prevent wear. If a tonne-bag is required, it should be filled with these bags rather than filling it directly with sand.

The original NIS states *“no invasive species were recorded at the site during the site survey, but precautions will be taken to ensure that no invasive species are introduced due to the proposed works,”* however, our site visit showed that there is a large stand of Japanese knotweed present at the downstream river-left wingwall (left as one looks downstream, or the western-most area of the bridge) and extending for ~20m downstream covering the river-left bank.





Since the bridge is in very poor condition, and there is no time to eradicate the plant before carrying out the bridge repairs, in order to mitigate against the spread of this plant, a number of practical measures should be followed:

1) The d/s left wingwall should be left in place until all other elements of the bridge have been removed to keep the infested from being disturbed until the bulk of the work has been done.

2) Rubble and other excavated materials should be split into two piles; uninfested material and potentially infested material. The potentially infested material should be left onsite adjacent to the stand of knotweed and treated onsite over an extended period of time with herbicide until the knotweed in the excavated material and on the river bank has been completely eradicated.

3) Removal of elements of the bridge which may contain knotweed should be done in one go so that the excavator is not contaminating the uninfested material which is to be brought offsite. As such the wing wall and whatever fill is behind it removed and placed near the existing knotweed as a separate job, perhaps done in an afternoon, and the excavator bucket and tracks should be thoroughly cleaned with a power hose of coarse-brush and water after that element of the works has been completed. This area should be cordoned off (site fencing or site tape) to ensure vehicles are not tracking over it etc.

4) The ecologist should be onsite for the removal of materials on the west bank (river left) which may contain knotweed, and the ecologist should follow the standard

approach for removal of earth contaminated with knotweed; i.e checking the bank as the bucket of the excavator has removed a scoop to see the cross-sections of the rhizomes (similar in cross-section to that of a small carrot).





Conclusion

Mitigation measures proposed ensure that there are no residual impacts on the Lower River Shannon SAC. The potential impacts identified, including water quality, disturbance and invasive species, will be successfully reduced to imperceptible in scale following the implementation of the mitigation measures in this NIS. It has therefore been concluded that following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the proposed works, and with the implementation of the mitigation measures proposed, that the proposed works do not pose a risk adversely affecting the integrity of any Natura 2000 site, either alone or in-combination with other plans or projects.

One thing that should be noted is that there is a nest of a bird in the bridge this season. It appears to be a dippers nest (though it is also reminiscent of a wrens nest, or may be another species). As such, the project should be scheduled for the end of the instream works season (September) to avoid the breeding bird works exclusion season (march to august inclusive). Many birds fledge much before the end of this works exclusion period, so it may be possible for the project ecologist to check the nest prior to mobilisation if the council or their contractors wish to begin the works earlier.

Another thing that should be noted is that the bridge is completely unsuitable for bats.

If there are any questions or queries please do get in touch

All the best

Rory Dalton

Managing Director

Ecology Research and Solutions Limited

P: 0834620651

E: dalton.rory@gmail.com