



Our Ref: 5162160CO43

Vincent O'Malley
Transport Infrastructure Ireland



16th June 2021

By email to: 

Re. Submission of Natura Impact Statement pursuant to the Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media pursuant to the requirements of Regulation 49(9)(c) of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended)

Lot 2 – Munster Bridges Term Maintenance Contract No. 3 – Culvert Inverts – Group 1 (Knockakip Culvert)

Further to the submission of a Natura Impact Statement relating to works proposed to be undertaken at Knockakip Culvert (KY-N21-016.00), Co. Kerry correspondence was received from Gerry Clabby, Head of Ecological Assessment, National Parks and Wildlife Service dated 18th May 2021.

This correspondence acknowledged Transport Infrastructure Ireland's (TII) email dated 6th April 2021 in respect of the project referred to above and confirmed that they had reviewed the Natura Impact Statement (NIS) referred to the Minister in this regard.

The Department did, however, raise two issues of concern which need to be addressed. These are discussed in turn below: -

Point 1 - Otter

“The project is maintaining the status quo in terms of the structure of the culvert, with a fall at its outlet. The appropriate assessment should assess any possible effects of otter mortality due to maintaining the current culvert structure and assess if otters are likely to cross the road rather than travelling up the culvert during high flow conditions. Also, the possibility of inserting ledges to allow otter access to the downstream outlet of the culvert should be considered. It cannot be ruled out that the otters using this stream are not otters from the cSAC river downstream to which the conservation objectives apply, hence the need to consider this in the appropriate assessment.”



Response

The Eurasian Otter (*Lutra lutra*) is widespread throughout all Irish freshwater and most estuarine and coastal habitats (Chapman & Chapman, 1982; Marnell, 2016). The overall conservation status of the otter population in Ireland is reported as being 'Favourable' (NPWS, 2013a; NPWS, 2019) with an overall trend in conservation status of 'Improving' (NPWS, 2019; see also Reid *et al.*, 2013).

Otter are protected by a number of legal instruments. Key amongst these is protection under Annex II & IV of the EU Habitats Directive (92/43/EEC), which was transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) and further amended in 2015. Otters, including their breeding and resting places, are also protected under national legislation such as the Birds and Natural Habitats Regulations and the Wildlife Acts 1976 to 2012.

Threats and pressures to otter populations include habitat destruction due to human activity, disease, road casualties and the degradation of water quality which in turn can affect fish biomass (Chanin, 2003). NPWS (2013a) listed a number of pressures on otter, which included road mortalities. Roadkill data from 2007-2013 reported 10-30 otters killed on Irish roads each year and road mortalities were considered a medium pressure in 2013. Otters are still killed on Irish roads, however it is not considered to pose a risk to the national conservation status of otter, as road design and the network of mammal underpasses on new roads and the erection of road-side signage are positive examples of measures that have been implemented to reduce the mortality of otter on roads (NPWS, 2019). Other threats such as entanglement in fishing nets and diffuse and point-source pollution of freshwater and coastal waterbodies can indirectly impact on otter. However, these threats listed above are considered to be pressures impacting otter on a local rather than a national scale (NPWS, 2019).

The National Roads Authority, now Transport Infrastructure Ireland, has produced guidance documents regarding the crossing of watercourses and considerations for otter during the construction of road schemes; '*Guidelines for the crossing of watercourses during the construction of national road schemes*' and '*Guidelines for the treatment of otters prior to the construction of national road schemes*' (NRA, 2009a & 2009b). These guidelines detail procedures to be taken during construction in the vicinity of otter holts, the destruction of holts under licence, provision of a means of passage at crossing points (in particular at watercourses) and installation of mammal resistant fencing.

Knockakip Culvert is located on the N21, approximately 6km north-east of Castleisland, Co. Kerry. It is situated on the Ballyduff stream, which is a tributary of the River Owveg, located in the Feale subcatchment. Upstream of the culvert, the Ballyduff stream is only ca. 1km in length; thus, the amount of suitable otter habitat upstream of the culvert is limited. Downstream of the structure, a significant drop of approximately 1m to the riverbed is present; this will remain unchanged. This drop is a significant barrier to fish passage. As such, prey availability for otter upstream of Knockakip culvert is likely to be low.

With respect to published data, otter spraints were recorded on the Ballyduff Stream approximately 400m downstream of Knockakip Culvert during the *Otter Survey of Ireland* (Chapman & Chapman, 1982). It was noted that the stream was small with good cover; however, that few aquatic prey items were likely to be available for otter. There are no road kill records for otter in the vicinity of the culvert on the Road Kill Survey 2020 database¹.

The site was visited by an ecologist in September 2019. The area surveyed included 50m both upstream and downstream of the bridge. Otter spraints were present on the downstream side of the culvert. One sprainting site was recorded with 2 spraints present; 1 old and 1 fresh spraint. No otter holts were recorded in the vicinity of the culvert. This evidence therefore indicates that otter are using the Ballyduff stream and potentially may pass through the culvert to the stream above the N21.

The option of installing an otter ledge (in line with NRA published guidance) was considered. However, the culvert in this case is not a concrete square / rectangular structure onto which a ledge can be easily attached. This corrugated steel structure has been identified as having durability and structural issues as a result of the erosion of previous bitumen protection linings and progressive corrosion of the metal

¹ 2020 Road Kill Survey - <http://www.biology.ie/mapv.php?m=npws>

particularly in the lower region. The purpose of the concrete invert is to mitigate further corrosion and section loss to the invert of the culvert and to restore and maintain its structural integrity. Engineering advice provided to us by Atkins engineering and discussed with TII was that attachment of a ledge to this structure was not a viable and sustainable option and may in fact add to the current durability and structural issues. It was therefore not possible for us to recommend installation of an otter ledge as a mitigation measure.

Knockakip Culvert is not within a European site. It is, however, upstream of Lower River Shannon SAC (002165). Otter is a qualifying interest of the Lower River Shannon SAC (NPWS, 2012; 2013b). The Conservation Objective is *to restore the favourable conservation condition of Otter in the Lower River Shannon SAC*, which is defined by the list of attributes as set out in the Conservation Objectives document for the Lower River Shannon – see Appendix A.

The potential for the proposed works to impact upon these Attributes is summarised in Table 1.

Table 1 - Review of Attributes of Lower River Shannon SAC for Otter against the proposed works.

Attribute	Impact of culvert works
Distribution	<p>As measured by the percentage of positive survey sites. Proposed works will not restrict access to the environs of the culvert, nor will they alter the ability of otter to pass through the culvert to upstream stretches of the Ballyduff Stream.</p> <p>Therefore, undertaking the works does not change the risk of otter crossing the road during periods of very heavy rainfall; thus, putting them at risk of road mortality. However, as noted above, there are no road kill records for otter in the vicinity of the culvert on the Road Kill Survey database. While this data should be interpreted cautiously, it does at a minimum indicate that Knockakip culvert is not a hot spot for otter mortality as it stands.</p> <p>Given that both old and new spraints were observed during the site visit, it should be assumed that the Ballyduff Stream is being used by otter. However, the length of Ballyduff Stream upstream of the culvert, together with the presence of a significant barrier to fish passage does reduce the ecological value of the upstream section of Ballyduff Stream for Otter.</p> <p>While it would be good practice to insert a mammal ledge as part of the proposed works, removing the need for otter to ever cross the N21; as noted above for engineering reasons this is not possible in the case of corrugated metal culverts.</p> <p>It is noted that the Department has acknowledged that the “<i>The project is maintaining the status quo in terms of the structure of the culvert, with a fall at its outlet</i>”. No further mitigation is practical at this location.</p>
Extent of terrestrial habitat	<p>There will be no terrestrial habitat loss associated with the proposed works. No change to the extent of terrestrial habitat is predicted.</p>
Extent of marine habitats	<p>Knockakip Culvert is located on a freshwater stream at a significant remove from the Shannon estuary. There will be no impact to marine habitats.</p>
Extent of freshwater (river) habitat	<p>There will be no loss of river habitat due to the proposed works. Works to place a concrete invert on the existing corrugated metal culvert are all within the culvert. The ability of otter to pass through the culvert will be unchanged by these works. Placement of a concrete invert in the culvert will not affect the <i>status quo</i>.</p> <p>Furthermore, the placement of a concrete invert within the culvert will not affect the hydrological regime within the stream (as set out in the Hydraulic Assessment which accompanied the NIS; see Appendix C to the NIS). Thus, it is anticipated that the river conditions under which an otter can use the culver will remain unchanged.</p> <p>The only material change would be that the surface of the concrete invert would be rougher and might provide greater grip for otter moving through</p>

Attribute	Impact of culvert works
	the culvert than might be the case on the existing smooth corrugated metal surface.
Extent of freshwater (lake/lagoon) habitat	Lake / lagoon habitats are not located in the environs of Knockakip Culvert. No lake / lagoon habitats would be impacted by the proposed works.
Fish biomass available	<p>As noted, a barrier to fish passage exists downstream of the culvert. It was noted in the 1982 national otter survey that “few aquatic prey items were likely to be available for otter” in the short stretch of Ballyduff stream (ca. 1km) upstream of Knockakip culvert. Furthermore, the placement of a concrete invert within the culvert will not affect the hydrological regime within the stream (as set out in the Hydraulic Assessment which accompanied the NIS; see Appendix C to the NIS).</p> <p>A deterioration in water quality of the Ballyduff stream and the Owveg River could indirectly impact on fish biomass availability to Otter within the watercourses. The NIS details mitigation measures to mitigate potential impacts to water quality of the Ballyduff stream and Owveg River, and hence the SAC.</p> <p>It is therefore anticipated that the proposed works will not affect fish biomass available to otter either upstream or downstream of the culvert.</p>
Barriers to connectivity	<p>As noted, a barrier to fish passage exists downstream of the culvert. This consists of a 1m drop. This will remain unchanged. While, this may hinder fish passage upstream of the culvert it is not likely to represent a barrier to upstream movement of otter.</p> <p>The placement of a concrete invert within the culvert will not affect the hydrological regime within the stream and therefore will not alter the frequency with which the culvert is passable to otter (as set out in the Hydraulic Assessment which accompanied the NIS; see Appendix C to the NIS).</p>

In more recent Conservation Objectives Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (NPWS, 2017) documents – Couching sites and holts are listed as an Attribute. During the September 2019 site survey, no otter couches or holts were noted within 50m upstream or downstream of the culvert. The mitigation measures of the NIS detail that a pre-construction survey will be carried out prior to commencement of the works.

References: -

- Bailey, M. and Rochford J. (2006). Otter Survey of Ireland 2004/2005. *Irish Wildlife Manuals*, No. 23. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.
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- Marnell, F. (2016). Otter (*Lutra lutra*). Pp 100-101. In Lysaght, L. and Marnell, F. (Eds) (2016) Atlas of Mammals in Ireland 2010-2015. National Biodiversity Data Centre, Waterford.
- NPWS (2009). *Threat response plan: Otter (2009-2011)*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- NPWS (2012). Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013a). *The Status of EU Protected Habitats and Species in Ireland. Species Assessments Volume 3. Version 1.0*. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- NPWS (2013b). *Site Synopsis Lower River Shannon SAC Site Code 002165. Version date 16/12/2013, Revision 13*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Dublin, Ireland.
- NPWS (2017). *Conservation Objectives: Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC 000365. Version 1*. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2019). *The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments*. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.

NRA (2009a). *Survey Guidelines for National Road Schemes*. National Roads Authority. Dublin, Ireland.

NRA (2009b). *Guidelines for the treatment of otter prior to the construction of National Road Scheme*. National Roads Authority. Dublin, Ireland.

Reid, N., Hayden, B., Lundy, M.G., Pietravalle, S., McDonald, R.A. & Montgomery, W.I. (2013) National Otter Survey of Ireland 2010/12. *Irish Wildlife Manuals* No. 76. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

2 *Ecological clerk of works*

“An ecological clerk-of-works is recommended to be on-site during critical works periods (especially involving initial cleansing, placement of silt control measures, excavation, concrete pouring and use of chemicals), to ensure compliance with mitigation measures, and liaison with IFI staff if required. The sites should be examined for breeding otters, 50m upstream and downstream of the culverts, prior to works being implemented at a particular culvert. TII guidelines should be followed in relation to otters.”

Response

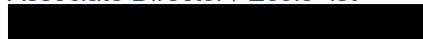
It can be confirmed that as part of the proposed works TII will appoint an ecological clerk-of-works (ECoW). The ECoW will be on-site during critical works periods (especially involving initial cleansing, placement of silt control measures, excavation, concrete pouring and use of chemicals), to ensure compliance with mitigation measures. Together with the appointed Contractor, the Contractor’s ecologist and the resident engineer appointed by TII, they will also be available to liaise with IFI staff if required.

As part of their duties the ECoW will undertake an Otter survey prior to the commencement of any works on site. This will look for signs of Otter breeding 50m upstream and downstream of the culverts. TII guidelines (NRA, 2009b) will be followed in relation to otters.

Yours sincerely,



Paul O'Donoghue
Associate Director / Ecologist



Appendix A

From: -

NPWS (2012). *Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Conservation objectives for: Lower River Shannon SAC [002165]			
1355 Otter <i>Lutra lutra</i>			
To restore the favourable conservation condition of Otter in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:			
Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. FCS target, based on 1980/81 survey findings, is 88% in SACs. Current range in Shannon catchment estimated at 70.5% (Bailey and Rochford 2006)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 596.8ha above high water mark (HWM); 958.9ha along river banks/ around ponds	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above HWM and along river banks) identified as critical for otters (NPWS, 2007)
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 4,461.6ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (HWM) (NPWS, 2007; Kruuk, 2006)
Extent of freshwater (river) habitat	Kilometers	No significant decline. Length mapped and calculated as 500.1km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake/lagoon) habitat	Hectares	No significant decline. Area mapped and calculated as 125.6ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase. For guidance, see map 17	Otters will regularly commute across stretches of open water up to 500m. e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed