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MULTIDISCIPLINARY CONSULTING ENGINEERS

I385/1: ANNACOTTY WEIR

OTTER (LUTRA LUTRA) DEROGATION LICENCE REPORT & APPLICATION

For
Inland Fisheries Ireland

2 July 2026

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1 INTRODUCTION

1.1 PROJECT DESCRIPTION

This Otter Derogation Licence Report has been prepared by O'Connor Sutton Cronin & Associates Ltd. (OCSC) on behalf of Inland Fisheries Ireland (IFI) in relation to the proposed Annacotty Weir Removal Works on the River Mulkear, Annacotty, Co. Limerick. The proposed weir removal works include the removal of the existing fish pass, channel reprofiling, gravel embankment construction, and associated bank stabilisation works on the River Mulkear, County Limerick. The proposed works forms part of IFI's wider river continuity and river restoration programme, which aims to improve ecological connectivity, restore natural river processes, and enhance fish passage within Irish river catchments in accordance with the objectives of the Water Framework Directive and national fisheries management objectives. Hymo 6 is a Water Action Plan action specifically targeting Annacotty weir: *"IFI will lead a pilot project to be undertaken for the Annacotty Weir in County Limerick. The project will provide an opportunity to test a collaborative and ecology focussed design approach. It will also test enhanced community engagement opportunities that go beyond the standard consultation practices involved in the planning process, thereby assisting with the design and implementation of the national restoration programme. The pilot project is initially examining the feasibility of mitigation and will progress to the next stages, as appropriate."*

Otter surveys undertaken in 2025 and 2026 identified areas of particular importance to otters within the River Mulkear corridor in the vicinity of the proposed Annacotty Weir removal works. The surveys recorded a total of 32 otter signs within the study area, including spraints, slides, couches, and an active holt. The findings confirmed regular otter activity throughout the survey area and identified a number of breeding and resting places within and adjacent to the proposed works area. The site location is shown in Figure 1.1 below.

Subsequent surveys undertaken during 2026 confirmed continued otter activity within the River Mulkear corridor and the ongoing use of resting places in the vicinity of the proposed works. The surveys also demonstrated that otters utilise multiple resting locations within this section of the river corridor, reflecting the suitability of habitats present within the wider area.

To further investigate the status and use of one suspected otter resting place identified during the surveys, remote camera monitoring was undertaken under a National Parks and Wildlife Service (NPWS) licence was issued for the use from February 2026 to December 2026. The monitoring programme provided additional information on otter activity and utilisation of resting places within the study area. Detailed findings of the survey and monitoring programme are provided in the Otter Survey Report accompanying this application.

The proposed Annacotty weir removal works will result in the loss of one otter resting place associated with the existing weir structure and have the potential to cause temporary disturbance to otters during the

construction phase through demolition activities, machinery movements, increased human presence, noise, and vibration. Accordingly, a derogation licence is sought pursuant to Article 16 of the Habitats Directive and Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 to permit the loss of the identified resting place and temporary disturbance to otters associated with the implementation of the proposed works. Detailed survey findings, assessment of impacts, and proposed mitigation measures are provided in the following sections of this report.

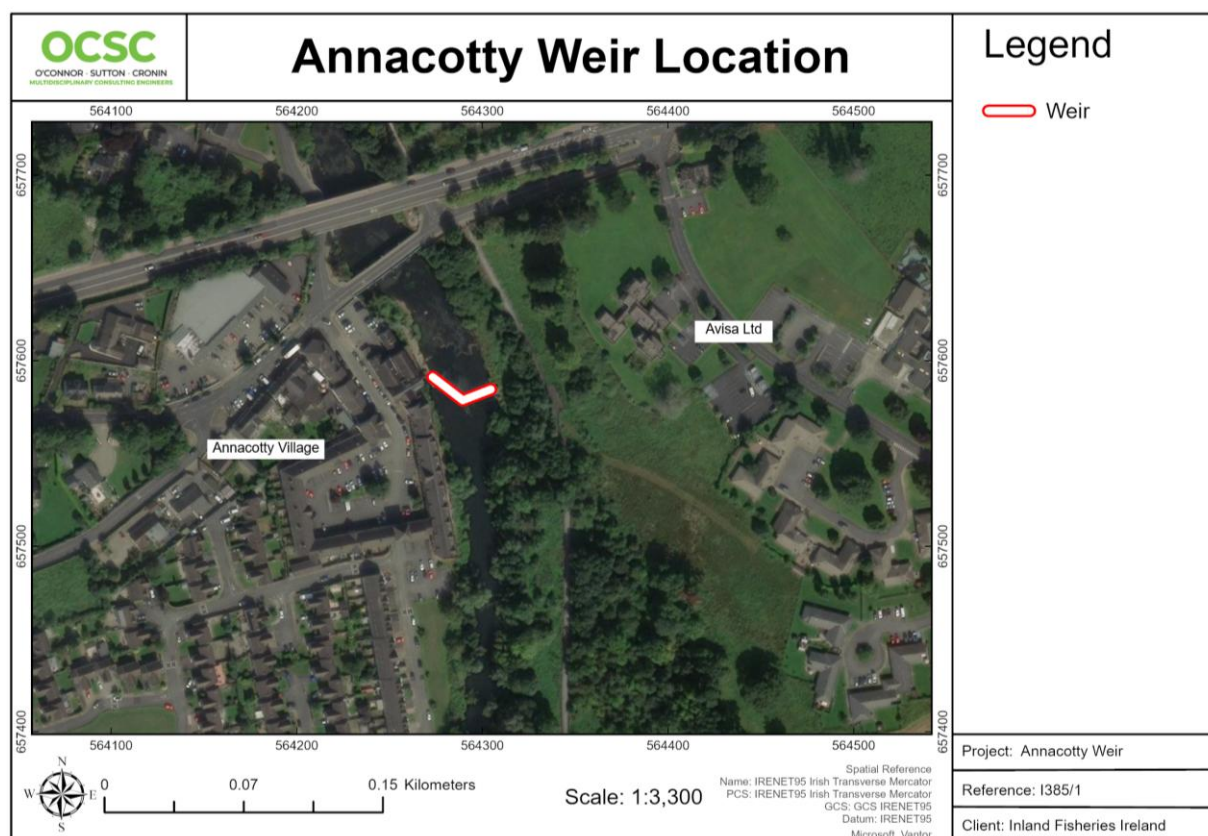


Figure 1.1: Weir Location (Source: OCSC, 2026)

1.2 STATEMENT OF AUTHORITY

Rebecca Duane is a Consultant Ecologist with approximately five years' professional experience in ecological consultancy and environmental assessment throughout Ireland. She is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has undertaken, coordinated, and managed a wide range of ecological projects including Ecological Impact Assessments (EclA), Natura Impact Statements (NIS), Appropriate Assessment Screening Reports, protected species surveys, habitat assessments, freshwater ecology assessments, and environmental constraints assessments associated with infrastructure, renewable energy, river restoration, and public realm developments.

Her experience includes ecological assessment and survey work relating to freshwater and riparian environments, including fisheries-sensitive watercourses, otter, bats, invasive species, aquatic habitats, and qualifying interest habitats and species associated with European sites. She has also been involved in the ecological mitigation strategies, and environmental monitoring programmes for projects located within or hydrologically connected to designated Natura 2000 sites.

Eleanor Burke is an OCSC Director (Environmental) with over 23 years' experience providing environmental and ecological consulting skills. She is a Chartered Scientist and full member of the Institution of Environmental Sciences (MIEnvSc). She has been involved in many large-scale projects across different industries and disciplines including many related to Natura 2000 sites.

Ross Macklin is a Principal Ecologist with Triturus Environmental Ltd. Ross is currently completing a Ph.D. in Environmental Science at University College Cork and holds a B.Sc. (Hons) in Applied Ecology from University College Cork. He is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Ross Macklin carried out the Otter Survey, alongside Consultant Ecologist Rebecca Duane (OCSC), on 11th May 2026. Ross also authored the Otter Survey Report, which is provided in Appendix A of this report.

A site meeting was held with an NPWS Regional Ranger on 16th of April 2026 to discuss the proposed works and appropriate mitigation measures for otter. The recommendations arising from this meeting have been incorporated into this derogation licence application and the proposed mitigation strategy.

1.3 NEED FOR THE PROPOSED DEVELOPMENT

Annacotty Weir represents a significant anthropogenic modification of the River Mulkear and affects natural river processes within the channel. Although a fish pass is present, the structure continues to influence river connectivity, channel morphology, flow patterns, and sediment transport processes.

The proposed removal of the weir forms part of a wider programme of river restoration works intended to improve ecological connectivity and fish passage within the catchment. The project will facilitate more natural river processes and improve access to upstream habitats for migratory and resident fish species.

The principal aims and objectives of the proposed development are as follows:

- to restore longitudinal river continuity within the River Mulkear;
- to improve upstream and downstream fish passage for migratory and resident fish species;
- to support compliance with the objectives of the Water Framework Directive;
- to restore more natural hydromorphological and sediment transport processes within the river channel;
- to improve the ecological condition and environmental status of the River Mulkear;
- to facilitate long-term river restoration and habitat enhancement;
- to ensure no adverse impacts occur to the road bridge immediately downstream of the weir;

- to avoid contributing to increased flood risk; and
- to ensure ongoing stakeholder engagement throughout the project lifecycle.

The proposed development will involve the complete removal of the existing concrete weir structure from the River Mulkear channel using a staged and controlled construction methodology. Temporary instream measures, including construction of a temporary clean stone causeway and temporary flow management measures where required, will be implemented to facilitate safe access and controlled demolition of the structure. The weir will be removed progressively in sections to allow for gradual adjustment of upstream water levels and controlled transition of hydraulic conditions within the channel.

Material suitable for reuse may be retained for localised bank stabilisation, scour protection (if required), or channel reinstatement works where required, with surplus material removed off-site to an appropriately licensed facility. Following removal of the structure, the river channel will be reinstated to a stable and naturalised profile consistent with the surrounding geomorphological and hydraulic conditions.

2 BACKGROUND

2.1 SITE ACCESS AND SET-UP

Access to Annacotty Weir for the proposed works will be obtained via the eastern bank of the River Mulkear through private lands associated with Avista. Permission from the landowner will be obtained prior to the commencement of construction works. Access to the lands will be taken from Woodstown Road via the existing gated entrance located at approximately at ITM 564292, 657671, with plant and machinery utilising the existing private access track within the Avista property to reach the works area.

To facilitate access to the weir, a temporary access route approximately 10m wide will be established extending from the existing track to the river channel and weir structure. A temporary pedestrian access path will also be provided adjacent to the existing Avista pathway to maintain safe access for Avista residents throughout the duration of the construction works (refer to Figure 2.3).

A temporary site compound will be established adjacent to the access track. The compound will provide a controlled area for the parking of machinery, temporary storage of materials and equipment, staff welfare facilities, environmental protection infrastructure, and refuelling. To facilitate the temporary access route and compound, approximately <10 immature alder (*Alnus glutinosa*) and birch (*Betula* spp.) trees located along the eastern riverbank will require removal, together with limited areas of scrub, as shown on Figure 2.1. Should limited vegetation clearance be required within this area, it will comprise small areas of scrub and grassland only. The extent of vegetation clearance has been minimised as far as reasonably practicable to reduce disturbance to riparian habitats and maintain the ecological integrity of the river corridor. All temporary access routes, pedestrian access path and the site compound will be fully reinstated following completion of the works.

The access route, temporary compound and pedestrian access path occur within lands containing recorded invasive plant species. Accordingly, all temporary working areas accessed by machinery or personnel and temporary pedestrian path will be protected using a layered geotextile and clean stone protection system to prevent disturbance and the spread of invasive plant material during the construction phase shall be established in accordance with the project Invasive Species Management Plan (ISMP) (OCSC 2026).



Figure 2.1: Location of temporary works access point to the weir.

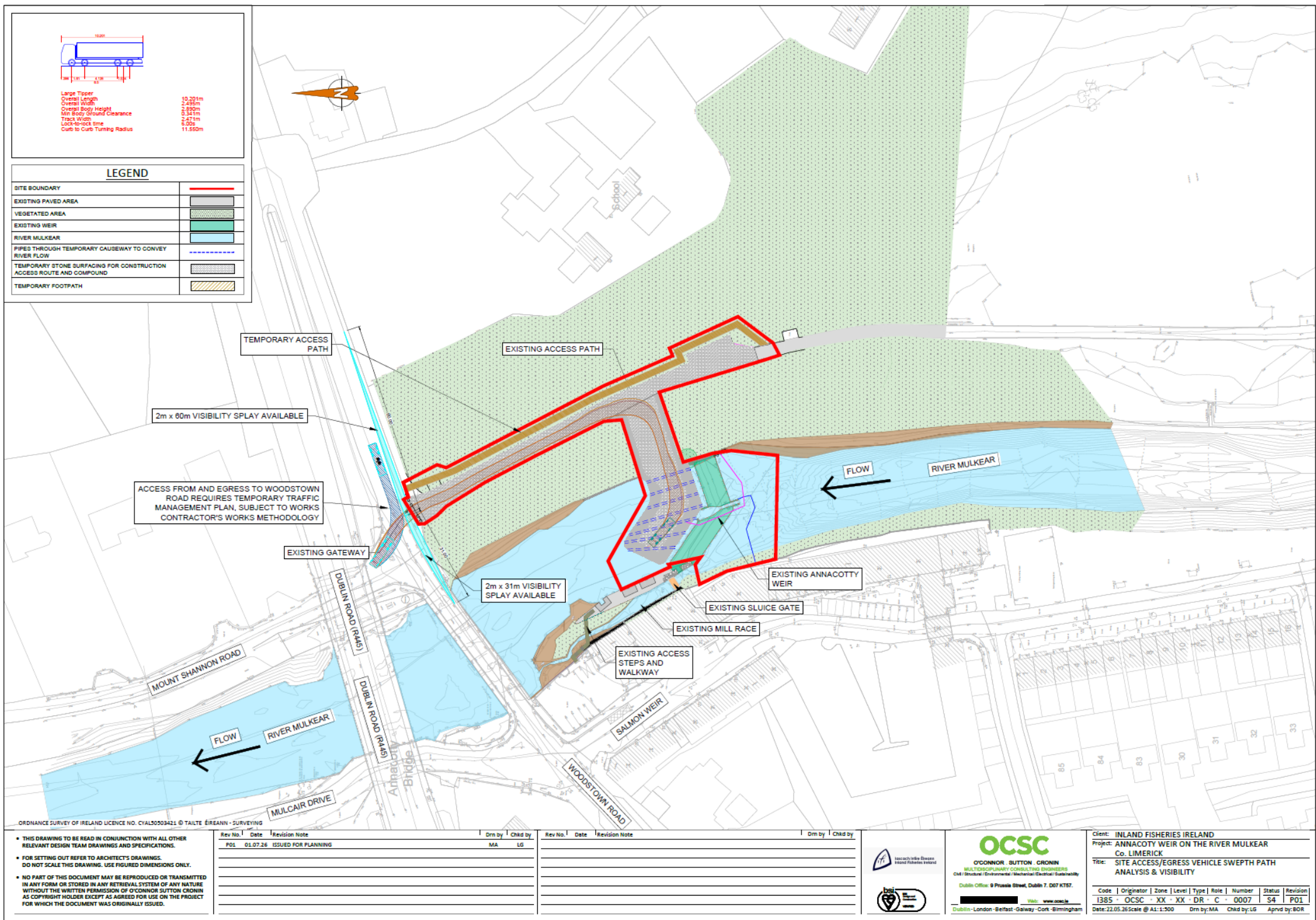


Figure 2.2: Proposed works area for the removal of Annacotty Weir (OCSC, 2026)

2.2 REMOVAL OF THE EXISTING WEIR AND ASSOCIATED STRUCTURES

2.2.1 SEQUENCE OF WORKS

The works will generally be undertaken in a staged and controlled sequence to minimise environmental disturbance and maintain channel stability throughout the construction phase. Initially, the site will be established, including erection of signage and exclusion barriers, confirmation of access routes, establishment of the temporary site compound, and installation of all environmental protection and sediment control measures. The temporary 10m wide access route extending from the existing access track on the eastern bank within lands owned by Avista Ltd. to the weir footprint will be prepared using a geotextile membrane and clean imported aggregate to provide a stable working surface and minimise disturbance to underlying soils and vegetation. A temporary pedestrian access path will be provided adjacent to the existing Avista pathway to maintain uninterrupted access for Avista residents during the works. Both the temporary construction access corridor and the pedestrian access path will utilise a geotextile membrane and clean imported aggregate where required to minimise disturbance to underlying soils and prevent the spread of invasive plant material.

A temporary clean stone causeway will be progressively constructed along the downstream side of the weir extending from the eastern bank. The causeway will comprise clean imported stone placed in layers to form a stable access platform for demolition plant and machinery. The causeway will be carefully profiled and graded to maintain stability under construction loading while minimising encroachment into the active channel and avoiding the creation of localised scour or blockage effects. The formation and stability of the temporary platform will be monitored continuously throughout the works. Flow will be maintained within the River Mulkear at all times (using pipes embedded into the causeway and the open section of causeway at the Mill). Upstream and downstream conditions will be continuously monitored throughout the works to ensure that temporary flow management arrangements remain stable and that no uncontrolled overtopping, erosion, or sediment release occurs. Any temporary diversion or flow control measures implemented will be designed in accordance with relevant Inland Fisheries Ireland (IFI) guidance and sized appropriately to accommodate anticipated river flows during the construction period.

Once the temporary causeway has been established, removal of the existing concrete weir structure will proceed in a controlled and phased manner using suitable mechanical plant. The weir will be dismantled progressively in small sections, generally working from the most stable and accessible areas first, in order to avoid sudden destabilisation of the riverbed or uncontrolled release of retained material. All broken concrete, stone, and associated arisings will be removed immediately from the watercourse and transferred to designated temporary storage or disposal areas outside the floodplain. Measures will be implemented throughout the works to prevent the discharge of silt-laden water downstream, including the use of sediment containment measures, settlement controls, and turbidity monitoring. Works will cease immediately should elevated flows, instability within the temporary platform, or any environmental incident occur.

Following completion of weir removal, the riverbed and adjacent channel margins will be regraded and reinstated to provide a stable and naturalised channel profile through the former weir footprint. Disturbed areas

will be backfilled and stabilised using clean stone or suitable granular material where required, ensuring continuity between upstream and downstream bed levels. The temporary causeway will then be progressively removed in stages, generally in reverse order of construction, to avoid sudden release of trapped sediments and to allow gradual re-establishment of natural flow conditions within the channel. Upon completion of all works, the river channel, banks, and margins will be inspected to confirm that the channel is stable, free-flowing, and clear of all construction materials and debris.

2.2.2 PLANT, MATERIALS AND RESOURCES

The temporary causeway will comprise clean, durable, angular stone or imported aggregate of suitable grading to provide a stable temporary platform capable of supporting construction plant and controlled demolition activities associated with the removal of Annacotty Weir. All imported material will be free from excessive fines, organic matter, contaminants, invasive plant material, and other deleterious substances that could adversely affect water quality or aquatic habitats within the River Mulkear and Lower River Shannon SAC.

Plant anticipated to be required for the works includes tracked excavators, dumpers, compactors, hydraulic breakers or chisel attachments for controlled concrete demolition, lifting and handling equipment, pumps where temporary dewatering is required, and turbidity and environmental monitoring equipment. All machinery and equipment entering the site will be maintained in good working order and inspected regularly to ensure that no leaks, defects, or pollution risks are present.

All plant will be operated by suitably qualified and competent personnel. Drip trays, spill kits, absorbent materials, and appropriate hydrocarbon control measures will be available on site at all times. Plant refuelling and maintenance activities will be undertaken within designated areas away from the active watercourse wherever practicable.

No plant will enter the wetted channel except where specifically required as part of the approved construction sequence and where appropriate environmental protection, biosecurity and sediment control measures are in place. Machinery operating within or adjacent to the river channel will do so in a controlled manner to minimise disturbance to bed substrates, aquatic habitats, and water quality.

2.2.3 REINSTATEMENT AND COMPLETION

On completion of the weir removal, the temporary causeway and all associated temporary works shall be completely removed. The riverbed and banks shall be reinstated, reprofiled and stabilised, and the site shall be left free from waste, excess stone, silt, concrete debris and temporary access materials. The footprint previously occupied by the weir structure shall be regraded to provide a continuous channel profile with an approximate gradient of 1:23, thereby eliminating the existing vertical drop and facilitating the gradual transition of flow through the former weir location. This approach will promote hydraulic continuity, reduce the potential

for localised scour and erosion, and improve fish passage and aquatic habitat connectivity within the River Mulkear.

The completed channel shall be restored using appropriately sized boulders and graded rock to create a stable, natural channel that replicates the surrounding river morphology and provides hydraulic diversity, habitat variability and long-term channel stability. This approach will restore more natural flow conditions, sediment transport processes and aquatic habitat connectivity, while reducing the potential for localised scour and bank erosion.

All disturbed temporary access routes, site compound areas and riverbanks shall be reinstated following completion of the works. Reinstatement shall include replacement of topsoil where required, stabilisation of disturbed ground, erosion control measures where necessary, and seeding and planting with appropriate native vegetation.

2.2.4 BANK STABILISATION

Following removal of Annacotty Weir, localised riverbank restoration works may be required at selected locations where engineering assessment identifies a risk of bank erosion, instability, or localised scour arising from changes to flow conditions within the River Mulkear. The extent and location of any restoration or stabilisation measures shall be limited to the minimum necessary to maintain channel stability while preserving the natural character and ecological function of the river corridor.

Riverbank restoration works may include the use of suitable natural materials, native vegetation establishment, erosion protection measures, or other appropriate techniques as required. Any measures implemented shall be designed to integrate with the surrounding river environment and minimise impacts on riparian habitats.

Access to sections of riverbank affected by Giant Hogweed (*Heracleum mantegazzianum*) and Indian Balsam (*Impatiens glandulifera*) shall be undertaken in accordance with the project Invasive Species Management Plan (ISMP). Machinery, equipment and personnel accessing these areas shall comply with all biosecurity procedures to prevent the spread of invasive species within the site and to adjacent lands.

Any material excavated during the works that is suitable for reuse may be utilised as part of the reinstatement and restoration works where appropriate. Material deemed unsuitable for reuse, including contaminated material or material containing invasive plant propagules, shall be managed in accordance with the Resource Waste Management Plan and relevant waste legislation.

Upon completion of the works, all temporary construction facilities, temporary access route, temporary pedestrian path and temporary site compound shall be removed and disturbed areas reinstated. Reinstatement

measures may include seeding and planting with appropriate native vegetation, where required, to promote recovery of disturbed habitats and assist long-term bank stability

2.2.5 SLUICE

An existing sluice structure is located adjacent to Annacotty Weir on the River Mulkear and is associated with a historic mill race channel linked to former mill infrastructure historically present within Annacotty village. Historical records indicate that Annacotty developed around grain mills which utilised the hydropower of the River Mulkear through diversion structures, mill races, and associated water management infrastructure.

The existing sluice structure and associated mill race will be retained as part of the proposed Annacotty Weir Removal Works and are not proposed for direct removal or modification. However, the removal of Annacotty Weir is anticipated to reduce upstream water levels within the currently impounded reach of the River Mulkear and restore more natural river gradients and flow conditions upstream of the existing structure.

As a consequence of the reduced upstream impoundment, there is potential for reduced water availability within the sluice channel and historic mill race following completion of the proposed works. During periods of low river flow and reduced water levels within the River Mulkear, flows entering the old mill race may significantly reduce or cease entirely, which may result in periodic drying of sections of the sluice and mill race channel. The extent and duration of any such drying will be dependent on seasonal flow conditions and the hydraulic connectivity remaining between the River Mulkear and the retained sluice structure following removal of the weir.

2.3 LIMITATIONS

This Otter Derogation Licence Report has been prepared for the sole use of Inland Fisheries Ireland (“the Client”). No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by OCSC.

The report has been prepared in line with the best industry standards. The methodology adopted and the sources of information used by OCSC in providing its services are outlined in this Report. The assessment undertaken by OCSC and described was undertaken in April 2025 to June 2026 and is based on the information available during that period. The scope of this report and the services are accordingly factually limited by these circumstances.

OCSC disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report which may come or be brought to OCSC's attention after the date of the Report. The conclusions presented in this report represent OCSC's best professional judgement based on a review of the relevant information available at the time of writing. The opinions and conclusions presented are valid only to the extent that the information provided was accurate and complete.

2.4 POLICY

2.4.1 LOWER RIVER SHANNON SAC CONSERVATION OBJECTIVES AND NATURA IMPACT STATEMENT FINDINGS

The proposed Annacotty Weir Removal Works are located within the Lower River Shannon Special Area of Conservation (SAC) (Site Code: 002165), a European site designated under the Habitats Directive for the protection of a range of Annex I habitats and Annex II species, including Atlantic Salmon (*Salmo salar*), Sea Lamprey (*Petromyzon marinus*), River Lamprey (*Lampetra fluviatilis*), Brook Lamprey (*Lampetra planeri*) and Otter (*Lutra lutra*).

Annacotty Weir currently represents a significant artificial barrier within the River Mulkear and adversely affects river continuity, fish passage, sediment transport processes and the availability of suitable spawning and nursery habitat for a number of Qualifying Interest fish species of the SAC. The structure presents a particular obstacle to lamprey species and may delay or restrict the upstream migration of Atlantic Salmon and other migratory fish species seeking access to spawning habitat within the catchment.

A Natura Impact Statement (NIS) was prepared to assess the implications of the proposed development for the Lower River Shannon SAC. The NIS concluded that the removal of Annacotty Weir constitutes a necessary conservation measure for several Qualifying Interest species of the SAC, including Atlantic Salmon, Sea Lamprey, River Lamprey and Brook Lamprey. The project has been specifically designed to restore ecological connectivity, improve fish passage, enhance habitat availability and support the achievement of the Conservation Objectives of the SAC.

The NIS further concluded that the proposed development is directly connected with and necessary to the management of the Lower River Shannon SAC for these Qualifying Interest species. The removal of the barrier will restore longitudinal connectivity within the River Mulkear, improve access to upstream spawning and nursery habitats, promote more natural sediment transport processes, and contribute to the long-term ecological functioning of the river system.

The proposed development therefore represents a river restoration project of significant ecological importance that will deliver long-term benefits for the conservation and management of the Lower River Shannon SAC and its Qualifying Interest species. The project also contributes to wider national and European objectives relating to biodiversity enhancement, river restoration, ecological connectivity, fisheries management and the implementation of the Water Framework Directive.

Accordingly, the proposed works are being undertaken primarily to achieve environmental and conservation benefits and form part of Inland Fisheries Ireland's programme of river restoration and fisheries enhancement measures within the Shannon catchment.

2.4.2 EU Biodiversity Strategy for 2030

The EU Biodiversity Strategy for 2030 aims to protect nature and reverse the degradation of ecosystems across Europe. As a central component of the European Green Deal, the Strategy establishes a framework of commitments and actions to be achieved by 2030, structured around four key pillars: Protect Nature, Restore Nature, Enable Transformative Change, and EU Action to Support Biodiversity Globally.

The Strategy identifies the restoration of freshwater ecosystems and the natural functions of rivers as a key priority. It highlights the need to restore river connectivity, riparian zones, and floodplains, including through the removal of artificial barriers, to support the achievement of favourable conservation status for riverine habitats and species protected under Directives 92/43/EEC and 2009/147/EC. A principal target of the Strategy is the restoration of at least 25,000 km of rivers to a free-flowing state by 2030, primarily through the removal of obsolete barriers and the restoration of wetlands and floodplains.

2.4.3 WATER FRAMEWORK DIRECTIVE

Under the EU Water Framework Directive (WFD), all water bodies in Ireland are required to achieve at least 'Good' ecological status or potential. River continuity is identified within the WFD as a key hydromorphological quality element and is recognised as an important criterion in achieving Good Ecological Status (GES) or Good Ecological Potential (GEP). High river continuity is defined as a condition where river processes remain largely undisturbed by anthropogenic activity, thereby allowing the natural migration of aquatic organisms and the uninterrupted transport of sediment.

2.4.4 Water Action Plan 2024: A River Basin Management Plan for Ireland 2022–2027

The Water Action Plan 2024: A River Basin Management Plan for Ireland 2022–2027 represents Ireland's third-cycle River Basin Management Plan (RBMP), prepared in accordance with the requirements of the Water Framework Directive. The Plan establishes a framework for protecting, improving, and restoring water quality through targeted monitoring and management measures.

According to the Central Statistics Office (CSO), approximately 58% of monitored water bodies in Ireland achieved 'good' ambient water quality status in 2022, while 42% failed to meet this threshold. The RBMP aims to improve approximately 800 water bodies during the 2022–2027 cycle, including significant improvements to support 150–300 water bodies in achieving 'good' ecological status by 2027.

The RBMP identifies several hydromorphology-related actions relevant to proposed fish passage improvement works, including:

- Hymo 1: Establishment of a Hydromorphology Expert Group to support the National Hydromorphology Programme in addressing the impacts of historical river barriers and improving natural flow processes.
- Hymo 3: Development by Inland Fisheries Ireland (IFI) of a restoration programme to mitigate the impacts of historical in-channel and near-channel construction works through the National Barriers Programme.
- Hymo 4: Preparation of a Sectoral Action Work Plan for Hydromorphology to address pressures affecting water bodies, including barriers, channelisation, drainage, sedimentation, and flood protection infrastructure.
- Hymo 9: Advancement of additional river restoration and mitigation measures

IFI was also tasked with addressing Annacotty Weir as a National priority action under Hymo 6: *"IFI will lead a pilot project to be undertaken for the Annacotty Weir in County Limerick. The project will provide an opportunity to test a collaborative and ecology focussed design approach. It will also test enhanced community engagement opportunities that go beyond the standard consultation practices involved in the planning process, thereby assisting with the design and implementation of the national restoration programme. The pilot project is initially examining the feasibility of mitigation and will progress to the next stages, as appropriate"*

3 BASELINE INFORMATION

3.1 PRE-EXISTING INFORMATION ON SPECIES AT LOCATION AND ENVIRONS

The Eurasian Otter (*Lutra lutra*) is listed on Annex II and Annex IV of the Habitats Directive and is afforded strict protection under the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). Otter is a Qualifying Interest species of the Lower River Shannon SAC, within which the proposed Annacotty Weir Removal Works are located.

The River Mulkear and its associated riparian corridor provide highly suitable otter habitat, supporting foraging, commuting, territorial marking, and resting opportunities. The river supports a diverse fish community, including Atlantic Salmon (*Salmo salar*), Brown Trout (*Salmo trutta*), Lamprey species, European Eel (*Anguilla anguilla*), and other aquatic fauna which provide an important prey resource for otters.

A review of available information, together with site-specific surveys undertaken in 2025 and 2026, confirmed the presence of otter activity within the study area. Evidence recorded during surveys included spraints, footprints, slides, couches, and an active holt. Three resting places were identified within the vicinity of the proposed works comprising an active holt (H2), an upstream couch (C2), and a couch located beneath the existing weir structure (C3). The active holt and upstream couch will be retained and protected throughout the works, while couch C3 will require removal under derogation due to its location within the footprint of the proposed weir removal works.

The River Mulkear forms part of a wider connected river network extending throughout the Lower River Shannon SAC and provides extensive suitable habitat for otter both upstream and downstream of the proposed works area. Consequently, otters utilising the site form part of a wider and well-connected population within the Shannon catchment.

3.2 STATUS OF THE SPECIES IN THE LOCAL/REGIONAL AREA

Otter is widely distributed throughout Ireland and is considered to be one of the country's most widespread protected mammal species. National surveys have demonstrated that otters occur throughout most river catchments, lakes, estuaries and coastal habitats across the country.

Within the local and regional context, the River Mulkear provides high-quality otter habitat and forms part of the Lower River Shannon SAC, which supports a well-established otter population. The extensive network of rivers, tributaries, riparian habitats, wetlands, and associated aquatic ecosystems within the Shannon catchment provides abundant foraging habitat, resting opportunities, and dispersal corridors for the species.

The surveys undertaken for the proposed development confirmed that otters are actively utilising the River Mulkear corridor, as evidenced by the presence of an active holt, multiple couches, spraints, footprints, and other field signs. The presence of several resting places within a relatively short stretch of river is indicative of regular otter use of the area. However, the identified resting places represent only a small component of the available habitat resource within the wider catchment.

The impacts associated with the proposed development are confined to a single couch (C3) located beneath the existing weir structure. The active holt (H2), upstream couch (C2), and the wider River Mulkear corridor will remain available throughout and following the works. Given the extent of suitable habitat available locally and regionally, the proposed development is not expected to adversely affect the conservation status of otter within the River Mulkear, the Lower River Shannon SAC, or the wider Shannon catchment.

3.3 OTTER SURVEY METHODOLOGY

A baseline otter survey of the River Mulkear in the vicinity of the proposed Annacotty Weir Removal Works was undertaken on 9th June 2025 and 7th August 2025. A follow-up survey was subsequently undertaken with Consultant Ecologist Rebecca Duane (OCSC) and Principal Ecologist Ross Macklin (Triturus Environmental Ltd.) on 11th May 2026 to further assess otter activity and the status of breeding and resting places within the study area. A detailed Otter Survey Report prepared by Triturus Environmental Ltd. and written by Ross Macklin (Principal Ecologist) is provided in Appendix A of this derogation licence application. The report presents the findings of the otter surveys undertaken on 11th May 2026 together with subsequent monitoring of couch C1 and includes a full assessment of otter activity, resting places, habitat utilisation, and the implications of the proposed Annacotty Weir removal works for the species.

The survey area comprised approximately 850m of river corridor upstream of Annacotty Weir and approximately 250m downstream of the weir, including all associated riparian habitats considered potentially affected by the proposed works. Particular attention was given to areas of suitable otter habitat including riparian woodland, scrub, exposed riverbanks, tree root systems, stone walls, bridge structures, and other natural and artificial features capable of supporting otter breeding and resting places. See Figure 2.1 for the survey location.

The surveys broadly followed established otter survey methodologies as described by Lenton et al. (1980), Chanin (2003), Bailey & Rochford (2006), and the Transport Infrastructure Ireland (TII) Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes (TII, 2008). However, rather than relying solely on spot check surveys from accessible locations, the survey involved a systematic search of the entire accessible river corridor within the study area. Both banks of the River Mulkear were surveyed where access permitted, together with all suitable riparian habitats and potential resting features occurring within the survey area.

Surveys were undertaken by experienced ecologists under suitable weather and survey conditions and included systematic searches for evidence of otter activity, including spraints, footprints, slides, feeding remains, couches, holts, pathways, and other characteristic field signs. Potential breeding and resting places were assessed for suitability and evidence of use in accordance with current best practice guidance.

To supplement the field surveys, remote camera monitoring was undertaken under licence from the National Parks and Wildlife Service (NPWS) between 27th February 2026 and 16th April 2026 to investigate activity associated with a suspected otter resting place identified during the survey process. The findings of the survey and monitoring programme were used to inform the assessment of potential impacts associated with the proposed Annacotty Weir removal works.

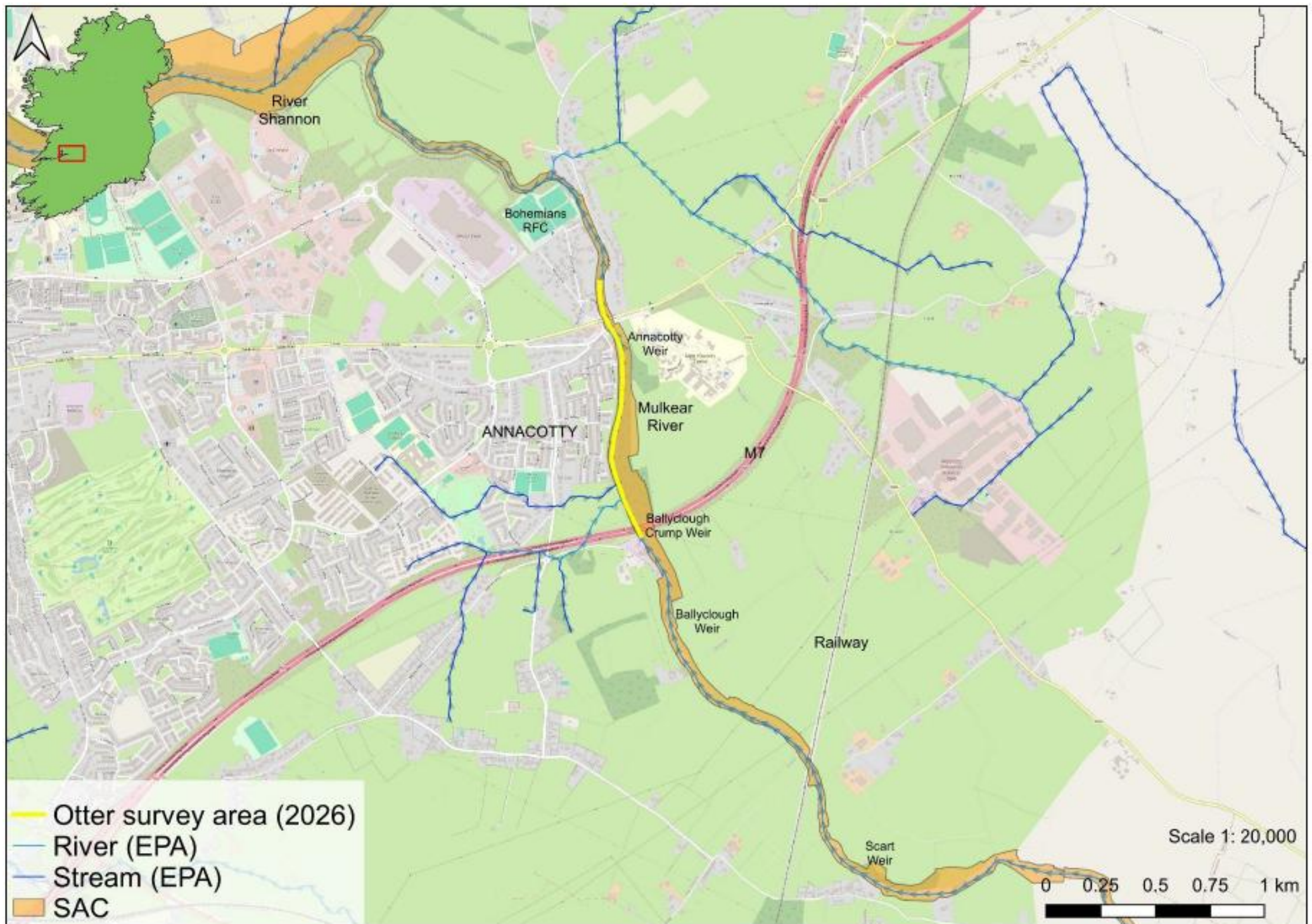


Figure 3.1: Otter survey area (linear length 1.2km) in the vicinity of the proposed Annacotty Weir Fish Passage project on the Mulkear River, Co. Limerick (Triturus 2026)

4 FIELD SURVEY RESULTS

4.1 OTTER SIGNS

The Otter (*Lutra lutra*) is a protected species under the Wildlife Act of 1976 (as amended) and the Wildlife (Amendment) Act of 2000 in Ireland and under the EU Habitats Directive (Directive 92/43/EEC) in the European Union. These acts grant legal protection to otters and their habitats to ensure their conservation and well-being. Under the Wildlife Act, it is illegal to intentionally disturb, harm, or kill otters, possess or sell otters or their parts, or damage or destroy their breeding or resting places (holts). Otters are also protected from habitat destruction or degradation that may directly or indirectly harm their populations. Under the Habitats Directive, otters are listed as a protected species, specifically under Annex II and Annex IV. This listing means that member states of the EU are obligated to take necessary measures to ensure the conservation of otters and their habitats.

An otter survey undertaken on 11th May 2026 by OCSC Ecologist Rebecca Duane and Triturus Environmental Principal Ecologist Ross Macklin identified a total of 32 otter signs within the study area. Evidence of otter activity included active and inactive holts, couches, spraints, latrines, footprints, slides, and feeding remains distributed along approximately 850m upstream and 250m downstream of Annacotty Weir. The results confirm that the River Mulkear corridor in the vicinity of Annacotty Weir is regularly utilised by otters for commuting, foraging, resting, and sheltering purposes.

The survey identified a regular otter couch (C2) at beneath mature Ash (*Fraxinus excelsior*) and Alder (*Alnus glutinosa*) trees located behind an old masonry wall approximately 32m upstream. Well-defined slides connected the couch directly to the River Mulkear, indicating regular use. A second couch (C3) was identified immediately downstream of the existing weir structure at beneath concrete and boulders associated with the existing weir footprint. Multiple sprainting locations were recorded in association with this feature. Although evidence suggested that use of the couch may fluctuate in response to activity at nearby resting places, the feature was confirmed as an active otter resting site. The locations of these otter features can be seen on Figure 4.2.

An active excavated holt (H2) was also identified approximately 100 m upstream of Annacotty Weir beneath mature Alder root systems. The holt comprised an entrance approximately 0.3 m × 0.3 m in size located approximately 2 m above baseflow level, with a couch area present on the bank top. More than 30 associated spraints were recorded within the vicinity of the holt, indicating regular and ongoing otter activity.

To further establish the status of couch C3, a Licence to Photograph or Video Record Protected Wild Animals at Breeding Sites or Resting Places was granted by the National Parks and Wildlife Service (NPWS) on 12th February 2026 and remains valid until 31st December 2026. Monitoring was undertaken using a Spypoint FLEX E-36 infrared trail camera positioned adjacent to the couch entrance. The monitoring confirmed repeated

use of the couch by otters over multiple consecutive nights, thereby confirming the active status of the feature and its importance within the River Mulkear corridor. A photograph on the couch is shown on Figure 4.1.

A further inactive historic otter holt (H1) was identified upstream of Annacotty Weir. The feature comprised a partially collapsed entrance measuring approximately 0.3m × 0.3m located beneath a dead Ash tree approximately 2m above summer baseflow level. The entrance was partially obscured by Ivy (*Hedera helix*) and no evidence of recent activity was recorded during surveys. The feature is considered inactive and is located outside the zone of influence of the proposed works. The precautionary 150m disturbance buffer associated with this holt does not overlap with the proposed weir removal works area and can be seen on Figure 4.3. Another couch (C1) was identified approximately 300m upstream of Annacotty Weir. This feature is located well beyond the precautionary 150m disturbance buffer generally applied to otter holts and couches during construction works (TII, 2009) and therefore falls outside the zone of influence of the proposed Annacotty Weir Removal Works. Given the separation distance between the couch and the proposed construction activities, no direct or indirect disturbance effects are anticipated. Consequently, this feature does not form part of the current derogation licence application and no specific mitigation measures are required beyond the general otter protection measures implemented for the project.

Otter (*Lutra lutra*) is a Qualifying Interest species of the Lower River Shannon SAC, within which the weir is located. The confirmed presence of an active holt (H2), two active couches (C3 and C2), extensive field signs throughout the survey area, and repeated camera-confirmed use of couch C3 demonstrate the importance of the River Mulkear corridor for otters. As the proposed Annacotty Weir removal works involve instream works, removal of the existing weir structure adjacent to the couch C3, and construction activities occurring within the precautionary disturbance zone of H2 and C2, otter cannot be scoped out of the assessment and requires detailed consideration within the EclA, NIS, and derogation licence application.

A detailed Otter Survey Report prepared by Triturus Environmental Ltd. and written by Ross Macklin (Principal Ecologist) is provided in Appendix A of this derogation licence application. The report presents the findings of the otter surveys undertaken on 11th May 2026 together with subsequent monitoring of couch C1 and includes a full assessment of otter activity, resting places, habitat utilisation, and the implications of the proposed Annacotty Weir Removal Works for the species. A summary of otter signs recorded during the survey on the 11th of May 2026 is shown on Table 4.1.

Table 4.1: Summary of Otter Signs Recorded within the Annacotty Weir Study Area (11th May 2026)

Otter Sign Type	Number Recorded
Active Holts	1
Inactive Holts	1
Couches	2
Spraints	19
Jelly	1
Latrines	4
Footprints	3
Slides	1
Total Signs Recorded	32



Figure 4.1; Otter couch at the base of the Annacotty weir.

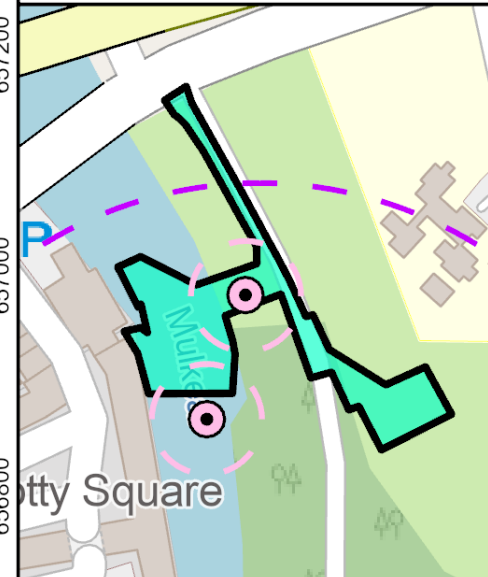
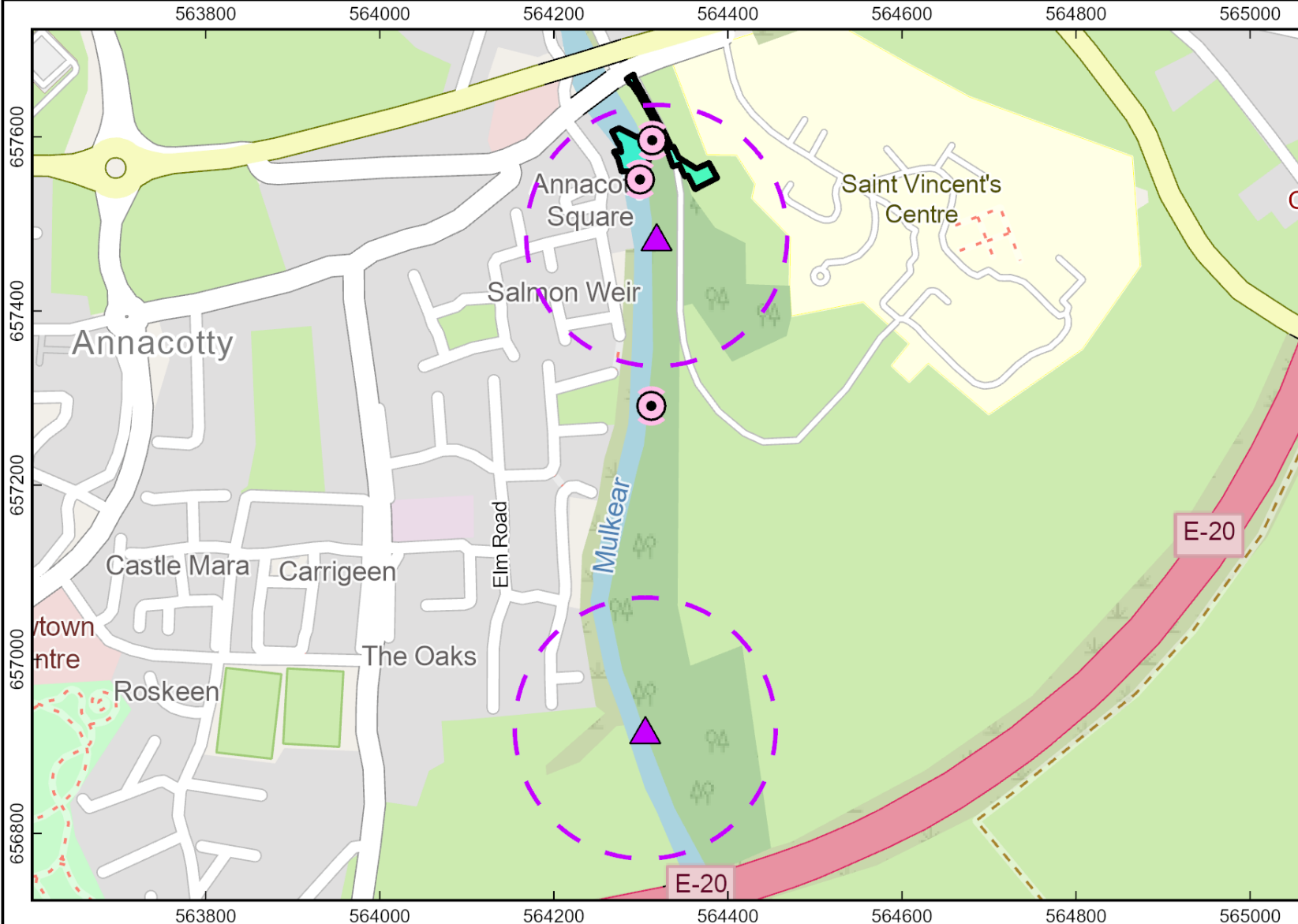


Figure 4.2: Otter signs location identified during the Otter survey on 11th May 2026 (Triturus 2026)

Otters Signs and Site Boundary

Legend

-  Site Outline
-  Couch
-  Holt
-  150m holt buffer
-  20m couch buffer



0 0.25 0.5 Kilometers

Scale: 1:10,000

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
PCS: IRENET95 Irish Transverse Mercator
GCS: GCS IRENET95
Datum: IRENET95

Sources: Map data © OpenStreetMap contributors, Microsoft, Esri Community Maps contributors, Map layer by Esri

Project: Annacotty Weir

Reference: I385/1

Client: Inland Fisheries Ireland

Figure 4.3: Otter Survey map outlining holt/couch buffer and site boundary (OCSC 2026)

4.2 CAMERA MONITORING

Following the identification of a suspected otter couch associated with the existing Annacotty Weir structure during baseline otter surveys, remote camera monitoring was undertaken under a National Parks and Wildlife Service (NPWS) licence to photograph and film a protected wild animal. The licence is valid between February 2026 and December 2026 and is used to determine the activity status of the feature and to provide additional information on otter use of the area in advance of the proposed Annacotty weir removal works.

A Spypoint Flex E-36 trail camera was installed adjacent to the suspected couch entrance on 27th February 2026 and remained in place until 16th April 2026. The camera was positioned on a post approximately 0.5m above ground level. The camera was orientated towards the entrance of the feature and configured to record both still images and motion-triggered footage. No external lighting or audio recording equipment was utilised. To minimise disturbance, the camera was located more than 2 m from the entrance and access was restricted to existing paths. Site visits were kept to a minimum throughout the monitoring period and equipment was installed and maintained in accordance with the conditions of the NPWS licence.

The camera monitoring programme provided continuous coverage of the feature throughout the survey period and allowed activity at the suspected couch to be assessed without the need for repeated close approach by surveyors. The use of remote monitoring reduced potential survey-related disturbance and enabled otter activity to be recorded over an extended period.

The monitoring confirmed that the suspected feature functioned as an otter couch, with multiple recordings obtained of otters entering and exiting the resting place during the monitoring period. The camera footage therefore confirmed active use of the feature by otters and informed the assessment of potential impacts associated with the proposed works. The otter presence can be seen on Figure 4.4.



Figure 4.4: Otter seen exiting a couch on a trail camera on the 8th of March 2026

5 DEROGATION LICENCE

The Eurasian Otter (*Lutra lutra*), together with its breeding sites and resting places, is protected under the Wildlife Acts 1976-2023 and pursuant to Articles 12, 13 and 16 of Council Directive 92/43/EEC (Habitats Directive) as an Annex IV species. Otter surveys undertaken in support of the proposed Annacotty Weir Removal Works identified an active otter holt (H2), an otter couch located beneath the existing weir structure (C3), and a second otter couch located upstream of the weir (C2).

The active holt (H2) and upstream couch (C2) are located outside the direct footprint of the proposed works and will be retained. However, the couch located beneath the existing weir structure (C3) occurs directly within the footprint of the proposed weir removal works and will be lost as a consequence of the removal of the structure. Under a NPWS Sections 9 & 23(6)b licence in the February to December 2026 period a trail camera monitoring was undertaken at C3 to determine its level of use by otters. The monitoring confirmed periodic use of the couch by otters, indicating that it functions as a resting place within the wider River Mulkear territory. In addition, construction activities associated with the removal of the weir, fish pass removal, channel reprofiling, riverbed reinstatement, bank stabilisation works, temporary access construction, and associated machinery movements have the potential to result in temporary disturbance to otters utilising the River Mulkear corridor.

The proposed works comprise the removal of Annacotty Weir and the existing fish pass structure to restore longitudinal connectivity within the River Mulkear, improve fish passage for migratory and resident fish species, restore more natural hydromorphological processes, improve sediment transport, and contribute to the conservation objectives of the Lower River Shannon SAC. The project forms part of Inland Fisheries Ireland's wider programme of river restoration and fisheries enhancement works aimed at improving ecological connectivity and restoring natural river processes within Irish river systems.

A range of alternatives were assessed during project development, including partial weir removal, refurbishment of the existing fish ladder, lowering of the weir, construction of rock-ramp fish passes, bypass channel options, and the do-nothing scenario. Following technical, hydraulic, environmental, and fisheries assessment, complete removal of the weir was identified as the preferred option as it provides the greatest long-term environmental benefit through restoration of river continuity and natural river processes.

Applying the precautionary principle, a derogation licence is sought pursuant to Article 16 of the Habitats Directive and Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 to permit disturbance of otters and the loss of the couch located beneath the existing weir structure (C3) arising from implementation of the proposed works.

A mitigation-by-design approach has been incorporated into the project design and the Ecological Impact Assessment (EclA) and Natura Impact Statement (NIS). Project-specific mitigation will be implemented and will include pre-construction otter surveys, supervision by the appointed Ecological Clerk of Works (ECow),

protection of retained otter resting places, timing restrictions where required, monitoring of otter activity prior to commencement of works, and post-construction monitoring. These measures have been developed to minimise disturbance to otters and ensure that the favourable conservation status of the species is maintained within the local area. The ECoW shall oversee the implementation of all otter mitigation measures throughout the construction phase and shall have authority to recommend modifications to working methods, timing, or sequencing of works where necessary to protect otters and their resting places.

Given the unavoidable loss of the couch located beneath the weir structure (C3) and the potential for temporary disturbance to otters in H2 and C2 during construction, a derogation licence is requested.

Applicant: Inland Fisheries Ireland (IFI)

Ecologist: Rebecca Duane, BSc, MCIEEM, Consultant Ecologist, O'Connor Sutton Cronin (OCSC)

Species: Eurasian Otter (*Lutra lutra*)

Activity: Annacotty Weir Removal Works, River Mulkear, Annacotty, Co. Limerick

Timeline: May 2027 to November 2027

Subject to completion of pre-construction otter surveys immediately prior to commencement of works and implementation of all mitigation measures.

5.1 TEST 1 - REASON FOR THE DEROGATION

The derogation is sought under Article 16(1)(c) of the Habitats Directive and Regulation 54(2)(c) of the European Communities (Birds and Natural Habitats) Regulations 2011, namely:

“(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment”.

The proposed development comprises the removal of Annacotty Weir and the associated fish pass structures on the River Mulkear, County Limerick. The project is being undertaken by Inland Fisheries Ireland (IFI) to improve fish passage, restore ecological connectivity, enhance aquatic habitat quality, and reinstate more natural river processes within the River Mulkear.

Beneficial Consequences of Primary Importance for the Environment

The proposed works will provide substantial long-term environmental benefits through the restoration of longitudinal river connectivity, improved upstream and downstream fish passage, restoration of more natural sediment transport processes, and enhancement of aquatic habitat quality within the River Mulkear.

Annacotty Weir currently acts as an artificial barrier within the river system and has altered natural hydromorphological processes. Removal of the structure will allow the river to function in a more natural manner, improving ecological conditions for migratory and resident fish species and supporting wider aquatic biodiversity throughout the catchment.

The project will contribute to the restoration of natural channel processes, including improved flow diversity, sediment movement, channel adjustment, habitat formation and ecological resilience. These benefits extend beyond the immediate footprint of the works and will contribute to the long-term ecological functioning of the River Mulkear and downstream habitats.

The proposed development supports broader national and European environmental objectives relating to river restoration, biodiversity enhancement, ecological connectivity, fisheries management, and implementation of the Water Framework Directive (2000/60/EC). The project is also consistent with the objectives of the Habitats Directive (92/43/EEC), the Birds Directive (2009/147/EC), and the River Basin Management Plan for Ireland.

Importantly, the accompanying Natura Impact Statement (NIS) concluded that the proposed development constitutes a necessary conservation measure for a number of Qualifying Interests of the Lower River Shannon SAC, including Atlantic Salmon (*Salmo salar*), Sea Lamprey (*Petromyzon marinus*), River Lamprey (*Lampetra fluviatilis*), Brook Lamprey (*Lampetra planeri*) and Freshwater Pearl Mussel (*Margaritifera margaritifera*). The NIS concluded that the project is therefore directly connected with and necessary to the management of the Lower River Shannon SAC. The removal of Annacotty Weir will restore ecological connectivity and improve access to upstream spawning, nursery and refuge habitats for these Annex II species, thereby contributing directly to the conservation objectives of the SAC.

The proposed works are also specifically identified within the Water Action Plan under Action HYMO-6, which recognises Annacotty Weir as a pilot river restoration project. The action identifies Inland Fisheries Ireland as the lead organisation and acknowledges the project's role in testing a collaborative and ecology-focused approach to river restoration, while supporting enhanced community engagement and informing the future implementation of wider national river restoration measures. The inclusion of Annacotty Weir within a nationally recognised restoration programme further demonstrates the environmental significance of the project and its contribution to the restoration of ecological connectivity and natural river processes within the catchment.

Relationship to Otters

Otter surveys identified an active holt (H2), an upstream couch (C2), and a couch located beneath the existing weir structure (C3). While the couch beneath the weir structure will be lost as a consequence of the proposed works and temporary disturbance may occur during construction, the active holt and upstream couch will be retained. Extensive suitable resting, commuting, and foraging habitat will remain available throughout the River Mulkear corridor.

While construction activities will result in temporary disturbance within the vicinity of the works area, this disturbance will be limited to the duration of the construction period only. Following completion of the works, construction activities, noise and human presence associated with the project will cease and the surrounding river corridor will continue to provide extensive suitable habitat for otter. The permanent impact of the project is therefore limited to the loss of a single couch, while the wider otter habitat resource and ecological functionality of the River Mulkear corridor will remain intact and available for continued use by otter.

A project-specific Otter mitigation will be implemented, incorporating pre-construction surveys, ecological supervision, timing restrictions, protection measures for retained resting sites, and post-construction monitoring. These measures will ensure that impacts on otters are minimised, and that the favourable conservation status of the species is maintained.

Although the works will result in the permanent loss of a single otter couch and temporary disturbance during the construction period, the active holt and additional resting sites will remain available and protected. Temporary disturbance associated with construction activities will cease upon completion of the works, while the wider River Mulkear corridor will continue to provide extensive suitable habitat for otter. Subject to implementation of the proposed mitigation measures, the favourable conservation status of otter will be maintained. The project therefore meets the requirements of Article 16(1)(c) as a development providing beneficial consequences of primary importance for the environment.

Conclusion

The proposed development will deliver significant and long-term environmental benefits through the restoration of river connectivity, improvement of fish passage, enhancement of aquatic habitats, restoration of natural river processes, and support of wider biodiversity objectives within the River Mulkear catchment.

While the works will result in the loss of a single otter couch and temporary disturbance within the vicinity of retained resting places, the active holt and additional resting sites will remain available and protected. Subject to implementation of the proposed mitigation measures, the favourable conservation status of otter will be maintained. It would be worth mentioning also that although the closure of couch will be permanent, temporary disturbance to the area will be for the duration of the construction period only.

The proposed works are therefore considered to satisfy the requirements of Article 16(1)(c) of the Habitats Directive on the basis that they provide beneficial consequences of primary importance for the environment.

5.2 TEST 2 - ABSENCE OF ALTERNATIVE SOLUTIONS

A range of alternative solutions were considered by Inland Fisheries Ireland (IFI) during the development of the Annacotty Weir Fish Passage Improvement Scheme. These alternatives were assessed in terms of their ability to achieve the project objectives, namely the restoration of fish passage, improvement of ecological connectivity, restoration of natural river processes, and enhancement of aquatic habitats within the River Mulkear.

Option I - Do Nothing

The do-nothing scenario would involve retaining Annacotty Weir and the existing fish pass structures in their current condition and undertaking no intervention within the river channel.

This option was considered unsatisfactory as it would fail to address the existing barriers to fish passage and would not improve ecological connectivity within the River Mulkear. The current hydromorphological alteration of the river would remain, together with the associated impacts on sediment transport and habitat quality. The environmental objectives of the project, including restoration of natural river processes and enhancement of aquatic habitats, would therefore not be achieved.

Option C - Refurbishment of Existing Fish Ladder

IFI assessed the potential to repair, modify, or refurbish the existing fish ladder structures associated with Annacotty Weir.

This option was considered unsatisfactory as the existing fish ladder is understood to be suboptimal in facilitating fish passage due to its overall condition, positioning on the weir, steep gradient, and limited functionality for a range of fish species, particularly lamprey and eel species. Significant structural modifications would likely be required to bring the fish pass in line with modern fish passage standards, resulting in costs and engineering requirements comparable to construction of a new structure. Furthermore, refurbishment would not restore natural river processes or address the wider hydromorphological impacts associated with the continued presence of the weir.

Option D - Lowering of the Existing Weir

Lowering the existing weir and combining this with the installation of additional fish passage structures was considered.

While this option would provide some improvement in fish passage and partially restore river processes, a substantial artificial structure would remain within the channel. Consequently, the option would not fully restore ecological connectivity, sediment transport processes, or natural channel morphology. The environmental benefits would therefore be significantly less than those achieved through removal of the structure.

Option E - Downstream Rock Ramp Fish Pass

Construction of a downstream rock-ramp fish pass was assessed as a potential solution to improve fish passage.

While rock-ramp fish passes can provide passage opportunities for a range of fish species, the existing weir would remain in situ and continue to influence channel morphology, flow dynamics, and sediment transport. The option would therefore improve fish passage but would not achieve the broader river restoration objectives associated with removal of the barrier.

Option F - Upstream Rock Ramp Fish Pass

Construction of an upstream rock-ramp fish pass involving partial modification of the existing structure was also considered.

As with Option E, this alternative would improve fish passage but would retain the existing barrier within the river system. The option would require substantial engineering intervention while continuing to maintain an artificial structure within the channel. Consequently, the ecological benefits would be lower than those associated with complete barrier removal.

Option G - Bypass Channel

Construction of a bypass channel around the existing weir was assessed.

This option was considered unsatisfactory due to the significant land take requirements, engineering complexity, and requirement for additional structures to maintain suitable flow conditions. The option would also leave the existing weir structure in place and would not fully restore natural channel processes.

Option A - Partial Weir Removal

Partial removal of the weir was identified as a potentially viable river restoration measure and would provide significant improvements to fish passage and ecological connectivity.

However, hydraulic assessment and engineering design development concluded that complete removal of the structure would provide the greatest environmental benefit and would achieve the project objectives more

effectively. Partial removal would retain elements of the existing structure within the channel and therefore continue to exert some influence on channel processes and river morphology.

Preferred Option - Complete Weir Removal (Option B)

Following assessment of all feasible alternatives, complete removal of Annacotty Weir was identified as the preferred option. This option provides the greatest improvement in fish passage, ecological connectivity, sediment transport, channel morphology, and restoration of natural river processes. It also offers the greatest long-term environmental benefit for the River Mulkear and contributes most effectively towards the conservation objectives of the Lower River Shannon SAC.

Alternatives Specifically Relating to Otters

In addition to the engineering and fish passage considerations outlined above, the potential to avoid impacts on otter was considered throughout the options appraisal process. The identified otter resting places, comprising an active holt (H2), an upstream couch (C2), and a couch located beneath the existing weir structure (C3), are located within or immediately adjacent to the area required for construction access and instream works. Consequently, all engineering options involving refurbishment, modification, lowering, partial removal, or complete removal of the weir would result in temporary disturbance within the vicinity of the identified otter resting places during the construction phase. The only option that would completely avoid disturbance to the active holt and couches, and avoid the loss of couch C3, would be the do-nothing option.

Alternative construction access arrangements were also considered during project design. However, due to the physical constraints of the site, including the location of the existing weir, the adjacent mill race and sluice gate, existing riverbanks, surrounding infrastructure, health and safety requirements, and the need to provide safe access for plant and machinery undertaking instream works, no feasible alternative access route was identified that would avoid the vicinity of the identified otter resting places. The selected access route utilises the existing access path on lands owned by Avista Ltd. and represents the most practical and least environmentally damaging means of accessing the works area. Consequently, temporary disturbance to the active holt (H2) and couches (C2 and C3) could not be completely avoided under any feasible construction access scenario.

Retention of the structure through implementation of the do-nothing option was not considered feasible as it would prevent achievement of the primary objectives of the project, including restoration of fish passage, improvement of ecological connectivity, restoration of natural river processes, and delivery of the associated conservation benefits for the Lower River Shannon SAC.

Temporary exclusion of otters from the couch beneath the weir structure (C3) was also considered but would not avoid the eventual loss of the couch, as the structure supporting it must be removed as part of the preferred restoration option.

Alternative construction methodologies were also reviewed. However, because couch C3 is located directly beneath the existing weir structure and within the area required for demolition and restoration works, no practicable construction methodology was identified that would allow the project objectives to be achieved while avoiding the permanent loss of this couch. Similarly, although alternative access and construction approaches were considered, no feasible option was identified that would completely avoid temporary disturbance to the active holt (H2) and upstream couch (C2) during the construction period.

Accordingly, while all feasible alternatives were considered, no satisfactory alternative solution was identified that would achieve the objectives of the project while completely avoiding impacts on otter resting places.

Conclusion

Following assessment of all feasible engineering, ecological and construction alternatives, it was concluded that there is no satisfactory alternative solution capable of delivering the objectives of the Annacotty Weir Removal Works while completely avoiding impacts on otter resting places. All feasible options involving modification, refurbishment, partial removal or complete removal of the weir would result in temporary disturbance to the active holt (H2) and couches (C2 and C3) during the construction phase, while the do-nothing option was the only alternative capable of avoiding such impacts. However, the do-nothing option was discounted as it would fail to achieve the primary objectives of the project, including restoration of fish passage, ecological connectivity, natural river processes, and delivery of the associated conservation benefits for the Lower River Shannon SAC.

Furthermore, no practicable construction methodology was identified that would allow the project objectives to be achieved while avoiding the permanent loss of the couch located beneath the existing weir structure (C3), as the couch is situated within the footprint of the structure that must be removed. The selected option therefore represents the solution that provides the greatest environmental benefit while minimising impacts on otter through the implementation of a project-specific Otter Mitigation, ecological supervision by an Ecological Clerk of Works (ECoW), and post-construction monitoring.

Accordingly, it is concluded that there is no satisfactory alternative solution capable of delivering the objectives of the proposed works while completely avoiding impacts on otter resting places.

5.3 TEST 3 - IMPACT ON CONSERVATION STATUS

The derogation is sought due to the presence of a regular otter couch located beneath the existing weir structure (C2), a regular couch located upstream of the weir (C2), and an active excavated otter holt (H2) within the vicinity of the proposed Annacotty weir removal works. The proposed works will result in the permanent loss of the couch located beneath the existing weir structure (C3) and have the potential to cause temporary disturbance to otters during the construction phase.

Otter surveys undertaken by Triturus Environmental Ltd and OCSC identified a regular couch at (C2) beneath ash (*Fraxinus excelsior*) and alder (*Alnus glutinosa*) trees behind an old masonry wall, with well-defined slides extending to the River Mulkear. A second couch was identified immediately downstream of the weir structure (C3) beneath concrete and boulders associated with the existing weir footprint. Multiple sprainting locations were recorded in association with this feature, confirming regular use. An active excavated holt (H2) was also recorded approximately 100m upstream of the weir beneath alder root systems. The holt contained a clearly defined entrance and couching area, with more than 30 associated spraints recorded in the surrounding area, confirming active use by otters.

Of the three identified resting places, only the couch located beneath the existing weir structure (C3) lies within the footprint of the proposed weir removal works and will be directly affected. The regular couch located behind the masonry wall (C2) and the active holt (H2) will be retained in situ. No direct works are proposed within these resting places and no excavation, modification, or destruction of either feature will occur.

The survey results indicate that otters utilise a network of resting places within the River Mulkear corridor in the vicinity of the proposed works. In addition to the active holt (H2), the regular couch located at C3, and the couch located beneath the existing weir structure (C2), a regular couch (C1) and an inactive holt (H1) were identified upstream of the proposed works area (refer to Figure 3.2). The presence of multiple breeding and resting places within a relatively confined section of the River Mulkear demonstrates the suitability of the river corridor for otters and the availability of alternative resting habitat within the wider area.

As illustrated on Figure 4.3, the proposed weir removal works are located outside the standard 20m protection buffer applied to couch C1 and outside the 150m protection buffer associated with holt H1. Both features will therefore be retained and will not be subject to direct impacts arising from the proposed works. Appropriate exclusion zones and additional mitigation measures will be implemented throughout the construction phase to ensure that the functionality of these resting places is maintained.

Consequently, while couch C2 will be lost as a result of the proposed works, alternative resting places will remain available within the local river corridor. The loss of a single couch is therefore not expected to adversely affect the ability of otters to utilise the area, maintain territories, or continue to use the River Mulkear corridor for commuting, foraging, resting, and breeding purposes.

The presence of multiple resting places within a confined section of the River Mulkear demonstrates the availability of suitable resting habitat within the wider river corridor. Consequently, while couch C2 will be lost as a result of the proposed works, the active holt (H2), regular couch (C3), and additional alternative resting opportunities will remain available. The loss of a single couch is therefore not expected to adversely affect the ability of otters to utilise the area or maintain their territory within the River Mulkear catchment.

The River Mulkear corridor within and surrounding the study area provides extensive suitable habitat for otters, including riparian woodland, scrub, riverbanks, mature tree root systems, masonry structures, and other natural and artificial refuges suitable for resting and sheltering. The presence of multiple resting sites within a relatively short section of river demonstrates the availability of suitable habitat and indicates that otters utilise a network of resting locations within the wider river corridor. The loss of couch C2 therefore represents the loss of a single resting feature within a substantially larger area of available habitat.

Potential impacts on otters will be limited to temporary construction-related disturbance arising from noise, vibration, increased human presence, and machinery activity, together with the permanent loss of couch C2. These impacts will be minimised through implementation of a project-specific Otter mitigation, including pre-construction surveys, EcOW supervision, timing restrictions where required, monitoring of otter activity, protection of retained resting places, and post-construction monitoring.

Following completion of the works, the River Mulkear will continue to provide extensive commuting, foraging, and resting habitat for otters. Furthermore, removal of Annacotty Weir will restore more natural river processes, improve ecological connectivity, improve fish passage, and enhance aquatic habitat quality within the river corridor. These improvements are expected to contribute positively to the ecological functioning of the river system and may provide indirect benefits to otters through enhancement of aquatic ecosystems and prey availability.

The proposed works will not result in the loss of the active holt (H2), will not affect the regular couch located at C2, will not fragment the river corridor, and will not affect the ability of otters to commute, forage, breed, or disperse within the River Mulkear catchment. The local otter population will continue to have access to extensive suitable habitat both upstream and downstream of the proposed works area.

It is therefore concluded that, subject to implementation of the proposed mitigation measures, the loss of couch C3 and temporary construction-related disturbance will not adversely affect the favourable conservation status of otter (*Lutra lutra*) within its natural range. The proposed development will not result in a significant negative impact on the local otter population or the wider conservation status of the species within the River Mulkear catchment.

5.4 DEROGATION LICENCE CHECKLIST

The following summary information provides responses to four key issues which will be considered during the derogation licence decision making process;

5.4.1 EXPLANATION AS TO WHY THE DEROGATION LICENCE IS REQUIRED AND WHY NO SATISFACTORY ALTERNATIVE EXISTS

The derogation is sought under Article 16(1)(c) of Regulation 54(2) given that the proposed works are;

- (c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

As outlined in section 5.2 above, no suitable or viable alternative designs for the couch to remain exist.

This has been concluded following a detailed options appraisal.

The derogation licence is sought under Article 16(1)(c) of the Habitats Directive, as transposed under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended), on the basis that the proposed works are required for imperative reasons of overriding public interest and will deliver beneficial consequences of primary importance for the environment.

The proposed works comprises the removal of Annacotty Weir, removal of the existing fish pass, channel reprofiling, gravel embankment construction, and associated bank stabilisation measures within the River Mulkear. The primary objective of the scheme is to restore ecological connectivity within the River Mulkear and improve fish passage for key fish species through removal of a significant anthropogenic barrier, while also restoring more natural hydromorphological processes within the river channel.

Ecological surveys identified an active otter holt (H2), an active otter couch located beneath the existing weir structure (C3), and an active otter couch upstream of the weir (C2). While the proposed works have been designed to avoid direct impacts on H2 and C2, both features are located within the wider zone of influence of the construction works and may be subject to temporary disturbance arising from construction noise, vibration, visual disturbance, increased human presence, and machinery operation during the construction phase. Similarly, the couch located beneath the weir structure (C3) will be directly affected by the proposed removal of the existing weir.

No satisfactory alternative exists that would avoid disturbance to these otter resting places while simultaneously achieving the objectives of the project. Retention of the existing weir structure would prevent achievement of the primary environmental objectives of the scheme, namely restoration of ecological connectivity and improved fish passage within the River Mulkear. Likewise, the physical constraints of the site and the location of the river channel mean that construction activities cannot be relocated sufficiently to eliminate all potential disturbance effects on H2, C3, and C2.

A range of mitigation measures have been incorporated into the project design and are detailed within the EcIA, NIS, and CEMP. These measures include EcOW supervision, pre-construction checks, exclusion zones, site signage, acoustic screening where practicable, restrictions on lighting, and monitoring of otter activity before, during, and following construction works. However, despite the implementation of these measures, the potential for temporary disturbance of H2 and C2 by proximity, together with the direct loss of C3 associated with removal of the weir structure, cannot be entirely excluded.

Accordingly, a derogation licence is sought on a precautionary basis to permit temporary disturbance of otters associated with H2 and C2 during the construction phase and to permit the disturbance and removal of couch C3 as part of the Annacotty Weir Removal Works

5.4.2 EVIDENCE THAT THE ACTIONS PERMITTED BY THE DEROGATION WILL NOT BE DETRIMENTAL TO THE MAINTENANCE OF THE SPECIES AT A FAVOURABLE CONSERVATION STATUS

An active otter holt (H2), an active otter couch beneath the existing weir structure (C3), and an active otter couch upstream of the weir (C2) were identified during ecological surveys of the study area. The proposed Annacotty Weir Removal Works will result in the direct loss of couch C3 due to the removal of the existing weir structure. In addition, temporary disturbance effects associated with construction activities, including noise, vibration, visual disturbance, increased human presence, and machinery operation, have the potential to affect the active holt (H2) and active couch (C2) due to their proximity to the proposed works.

Notwithstanding this, the proposed development is not expected to adversely affect the maintenance of otter (*Lutra lutra*) at a favourable conservation status within its natural range. The River Mulkear forms part of an extensive and well-connected riparian corridor that provides abundant alternative resting, foraging, and commuting habitat for otters both upstream and downstream of the proposed works area. The loss of a single couch and temporary disturbance associated with the construction phase will therefore not result in the loss of a significant proportion of available otter habitat within the wider catchment.

A comprehensive suite of mitigation measures has been incorporated into the project design to minimise disturbance to otters throughout the construction phase. These measures include ecological supervision by an Ecological Clerk of Works (ECoW), pre-construction surveys and checks, establishment of exclusion zones around retained otter resting places, erection of warning signage, implementation of acoustic screening where practicable, control of construction lighting, and monitoring of otter activity before, during, and following construction works. These measures have been specifically designed to minimise disturbance effects and maintain the functionality of the retained holt (H2) and couch (C2) throughout the duration of the project.

The proposed disturbance impacts will be temporary and localised to the construction phase only. Following completion of the works, the River Mulkear corridor will remain available to otters for commuting, foraging, and resting purposes. Furthermore, the restoration of more natural river processes and improved ecological connectivity resulting from the removal of Annacotty Weir is expected to provide long-term ecological benefits within the river corridor, including benefits to fish populations that form part of the otter prey resource.

Accordingly, it is considered that the actions permitted under the derogation licence will not be detrimental to the maintenance of otter populations at a favourable conservation status within their natural range and will not

adversely affect the long-term viability, distribution, or conservation status of the species within the River Mulkear catchment or the wider Lower River Shannon SAC.

5.4.3 DETAILS OF ANY MITIGATION MEASURES PLANNED FOR THE SPECIES AFFECTED BY THE DEROGATION AT THE LOCATION, ALONG WITH EVIDENCE THAT SUCH MITIGATION HAS BEEN SUCCESSFUL ELSEWHERE.

A comprehensive suite of mitigation measures will be implemented to minimise disturbance to otters, their resting places, commuting routes, foraging habitat, and prey resources during the construction phase of the Annacotty Weir Removal Works. The proposed measures have been developed in accordance with recognised best practice guidance for otter conservation (e.g. NPWS, 2021; IFI, 2016; TII, 2009) and are consistent with measures successfully implemented on river restoration, fisheries improvement, bridge replacement, flood relief, and other instream infrastructure projects throughout Ireland.

The mitigation measures are outlined in full within the accompanying EcIA, NIS, CEMP and are summarised below:

- An ECoW shall be appointed for the duration of the construction phase. The ECoW shall oversee all instream works, bank stabilisation works, vegetation clearance, temporary access installation, and activities undertaken within the River Mulkear corridor and shall ensure compliance with all otter mitigation measures.
- Pre-construction inspections of the active holt (H2), the couch beneath the weir (C3), and the upstream couch (C2) shall be undertaken immediately prior to commencement of works to confirm their status and identify any changes in activity levels.
- Trail camera monitoring of H2 and C2 may be undertaken under an appropriate NPWS photography/video monitoring licence, where required, to establish baseline activity levels prior to construction and to monitor any potential behavioural responses during and following the works. Monitoring results shall inform any adaptive management measures required during the construction phase.
- All site personnel shall receive a toolbox talk from the ECoW prior to commencement of works. This shall identify the locations of H2 and C2, explain their ecological sensitivity, and outline the procedures required to prevent disturbance of otters during construction.
- Exclusion zones shall be established around H2 and C2 and clearly marked on site. Warning signage shall be erected where appropriate and no storage of materials, refuelling, parking of machinery, stockpiling, welfare facilities, or construction activities shall be permitted within these exclusion areas.
- Temporary acoustic screening barriers shall be installed between the main construction area and H2/C2 where practicable in order to reduce construction-related noise and visual disturbance. The barriers shall remain in place for the duration of the most intensive construction activities.

- The Contractor shall comply with the noise and vibration management measures contained within the CEMP, including BS 5228-compliant construction practices, soft-start procedures, and restrictions on unnecessary noise generation in the vicinity of retained otter resting places.
- Construction activities shall be restricted to normal daytime working hours insofar as practicable. Should any works outside daylight hours be required, directional and hooded lighting shall be used to prevent illumination of H2, C2, the river corridor, or adjacent riparian habitats.
- Vegetation clearance shall be limited to the minimum area required to facilitate the works. No vegetation clearance is proposed within the immediate vicinity of H2 or C2 and habitat connectivity along the River Mulkear corridor shall be maintained throughout the construction phase.
- Open excavations associated with the temporary works area, access route, or construction activities shall be inspected regularly and appropriate measures implemented where necessary to prevent accidental entrapment of otters. Any pipes or culverts temporarily stored on site shall be capped or otherwise secured when not in use.
- The ECoW shall undertake periodic inspections throughout the construction phase to ensure mitigation measures remain effective and to identify any evidence of disturbance or changes in otter activity. Where necessary, additional mitigation measures shall be implemented following consultation with NPWS.
- All vibration-generating activities shall be undertaken using a soft-start approach. Prior to commencing full weir demolition, concrete breaking, fish pass removal, and other vibration-generating activities associated with the removal of Annacotty Weir, machinery shall operate at reduced intensity for a short period to allow any otters present within the vicinity to move away from the immediate area if required.
- Weir demolition, concrete breaking, fish pass removal, and other vibration-generating activities associated with the removal of Annacotty Weir shall progress gradually and sequentially rather than through a single intensive demolition event. Where practicable, the duration of continuous vibration-generating works shall be minimised and works shall be undertaken during daylight hours only. The Ecological Clerk of Works (ECoW) shall be informed in advance of any significant rock-breaking activities and shall have authority to recommend modifications to the working methodology if excessive disturbance to otters is observed.
- Strict water quality protection measures shall be implemented throughout the construction phase to protect otter foraging habitat and prey resources within the River Mulkear. Measures shall include the installation of appropriate sediment control measures, pollution prevention procedures, designated refuelling areas, spill response protocols, and controls relating to the storage and use of fuels, oils, chemicals, and concrete products. All instream works shall be undertaken in accordance with the project Construction Environmental Management Plan (CEMP), Ecological Impact Assessment (EclA), and Natura Impact Statement (NIS). Maintenance of water quality is an important component of the otter mitigation strategy as otters are dependent upon healthy aquatic ecosystems and adequate prey availability. Protection of fish populations, aquatic habitats, and water quality within the River Mulkear will therefore contribute to maintaining the ecological conditions required to support otters throughout the construction phase.

The mitigation measures outlined above represent recognised best practice for the protection of otters during instream construction and river restoration projects. Measures including pre-construction surveys, ECoW supervision, exclusion zones, protection of retained resting places, soft-start procedures, phased demolition, habitat protection measures, water quality controls, and post-construction monitoring have been successfully implemented on numerous fisheries enhancements, river restoration, bridge replacement, and flood relief schemes throughout Ireland. The proposed mitigation package is considered proportionate to the scale of impacts associated with the Annacotty Weir Removal Works and is expected to minimise disturbance to otters, maintain the functionality of retained resting places, preserve habitat connectivity, and ensure that the favourable conservation status of otter is maintained within the River Mulkear catchment

Couch Removal

Following receipt of the required derogation licence from the National Parks and Wildlife Service (NPWS), removal of otter couch C3 shall be undertaken under the supervision of the Ecological Clerk of Works (ECoW). Prior to commencement of works, the couch shall be subject to pre-construction surveys and monitoring to establish levels of activity and determine whether the feature is being actively utilised by otters. Monitoring may include inspection for tracks, spraints, feeding remains, slides, footprints and, where required under a separate NPWS Licence to Photograph or Video Record Protected Wild Animals at Breeding Sites or Resting Places, remote camera monitoring. The results of this monitoring shall inform the final timing and implementation of couch exclusion measures.

Immediately prior to removal, the couch shall be inspected by the ECoW to confirm its occupancy status. The entrance and surrounding area shall be checked for fresh evidence of use and the couch shall only be removed following confirmation that no otters are present within the structure. To encourage natural displacement from the couch, a staged exclusion process shall be implemented. This shall involve gradual disturbance of the couch entrance and surrounding cover over a number of days prior to demolition of the weir structure. Vegetation and cover immediately surrounding the couch entrance shall be carefully reduced under ecological supervision, allowing any otter using the feature to relocate naturally to alternative resting sites within the River Mulkear corridor, including the retained holt (H2) and upstream couch (C2). Complete removal of the couch shall not occur until the ECoW is satisfied that the feature is no longer occupied.

Following successful exclusion, the couch shall be removed using a staged and supervised approach during the initial phases of the weir removal works. Prior to any mechanical demolition, all accessible vegetation, accumulated debris, and loose material associated with the couch entrance shall be carefully removed by hand under the supervision of the ECoW to allow a final inspection of the feature. Any cavities, crevices, or voids associated with the couch shall then be progressively opened up using hand tools where practicable, with sufficient time allowed between stages to identify any signs of occupancy and to ensure that no otter remains within the structure.

Once the ECoW has confirmed that the couch is unoccupied, demolition of the weir structure in the vicinity of the couch may commence. Mechanical plant shall work progressively towards the couch location from the outer sections of the structure, removing material in small sections rather than undertaking a single demolition event. Material immediately surrounding the couch shall be carefully lifted away and inspected as it is removed. The couch chamber and any associated voids shall be exposed gradually, allowing continuous visual inspection by the ECoW throughout the process. Any rubble, stonework, or structural elements forming part of the couch shall be removed sequentially to avoid collapse of concealed voids and to ensure that any previously undetected animal has an opportunity to leave the area.

The ECoW shall remain present during the removal of the couch and shall direct the pace and sequence of works in the vicinity of the feature. All inspections and observations shall be recorded as part of the derogation licence compliance process. Should any evidence of otter presence be identified during the works, activities shall cease immediately and NPWS shall be consulted regarding the appropriate course of action. A minimum period of 3-5 days shall be allowed between commencement of the staged exclusion process and final removal of the couch, unless otherwise agreed with NPWS, to provide sufficient opportunity for any otter using the feature to relocate naturally to alternative resting places within the territory.

The ECoW shall be present during couch removal works and shall maintain a record of all inspections, monitoring results, exclusion measures, and removal activities undertaken under the derogation licence. Following removal of the couch, monitoring of H2 and C2 shall continue throughout the construction phase to confirm continued utilisation of the River Mulkear corridor by otters and to assess any behavioural response to the works. This staged approach will ensure that couch C3 is removed in a controlled manner, minimise the potential for disturbance or injury to otters, and facilitate natural relocation to alternative resting places available within the local area.

Following completion of the works, post-construction monitoring of otter activity shall be undertaken by the ECoW to confirm continued use of the River Mulkear corridor by otters and to assess use of retained resting places. Subject to the implementation of the above measures, the removal of couch C3 is not expected to adversely affect the local otter population or the favourable conservation status of the species within its natural range.

Summary

The only otter resting place that will be directly affected by the proposed development is couch C3, which is located beneath the existing weir structure and will be removed as part of the weir removal works. However, H2 and C2 will be retained and protected throughout the project. The combination of avoidance measures, exclusion zones, acoustic screening, ecological supervision, monitoring, and water quality protection measures will minimise disturbance to retained otter resting places and ensure that the River Mulkear corridor continues to function as suitable otter habitat throughout the construction phase.

While short-term disturbance associated with vibration from rock breaking cannot be entirely excluded, the gradual soft-start methodology, staged demolition sequence, and retention of alternative resting places within the River Mulkear corridor will ensure that any disturbance effects are temporary, localised, and not detrimental to the maintenance of otter at a favourable conservation status

These measures have been widely implemented on comparable river restoration, fisheries enhancement, and instream construction projects throughout Ireland and are considered effective in reducing disturbance impacts on otters and maintaining the functionality of breeding, resting, commuting, and foraging habitats during construction works.

5.4.4 MONITORING OF THE IMPACTS OF THE DEROGATION

The objective of the monitoring programme is to verify that:

- The derogation licence conditions have been implemented correctly.
- Couch C3 was successfully excluded and removed without injury or mortality to otter.
- H2 and C2 remain available and functional as resting places.
- Otters continue to utilise the River Mulkear corridor during and following the construction phase.
- The favourable conservation status of otter within the local area is maintained.
- Any unforeseen impacts are identified and addressed through adaptive management measures where required.

Monitoring and Reporting

The ECoW shall maintain records of all pre-construction surveys, trail camera monitoring, inspections, exclusion measures, mitigation measures, couch removal activities, and post-construction monitoring undertaken pursuant to the derogation licence.

Monitoring of the retained holt (H2) and couch (C2) shall continue during the construction phase and following completion of the works to confirm continued use of the River Mulkear corridor by otters and to assess the effectiveness of the mitigation measures. Should monitoring identify any unforeseen impacts on otters or their resting places, additional mitigation measures shall be implemented in consultation with the National Parks and Wildlife Service (NPWS), where required.

Following completion of the works, a Derogation Compliance Report shall be prepared by the ECoW and submitted to NPWS. The report shall summarise the mitigation measures implemented, results of pre-construction, construction and post-construction monitoring, details of the staged exclusion and removal of couch C3, any incidents or corrective actions undertaken, and an assessment of the effectiveness of the

mitigation measures. The report shall demonstrate compliance with the conditions of the derogation licence and confirm whether the objectives of the derogation have been successfully achieved.

5.4.5 AS MUCH INFORMATION AS POSSIBLE TO ALLOW A DECISION TO BE MADE ON THIS APPLICATION.

Trail camera monitoring was under a National Parks and Wildlife Service (NPWS) licence between February 2026 and March 2026 to establish the activity status of the couch located beneath the existing weir structure and to provide additional information on otter usage of the proposed works area. The monitoring confirmed regular use of the couch by otters and provided further evidence of continued otter activity within the immediate vicinity of the proposed works.

A baseline otter survey of the River Mulkear in the vicinity of Annacotty Weir was undertaken in June and August 2025, with a follow-up survey completed in May 2026 (Triturus, OCSC 2026) to further assess otter activity within the study area and to inform the positioning of future trail camera monitoring locations. The surveys identified multiple otter signs throughout the study area, including holts, couches, spraints, slides, and footprints, confirming regular use of the river corridor by otters.

The findings of the surveys and monitoring programme confirm that the River Mulkear supports an active otter population and that the weir structure currently provides a resting place for otters. As the proposed works will result in the loss of the couch located beneath the weir, a derogation licence is being sought to permit disturbance and loss of this resting place. The application is supported by detailed mitigation measures designed to minimise impacts on otters and to ensure that the favourable conservation status of the species is maintained within the local area.

6 VERIFICATION

This report was compiled by Rebecca Duane BSc, Ecologist; reviewed by Eadaoin Butler, BSc, Ecologist; and authorised by Eleanor Burke, BSc, MSc, DAS, MEnvSc, CSci, OCSC Director (Environmental).



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APPENDIX A: TRITURUS OTTER SURVEY REPORT

Otter (*Lutra lutra*) survey of the Lower Mulkear River as part of the Annacotty Weir Fish Passage Project, Co. Limerick (2026)



Prepared by Triturus Environmental Ltd. for OCSC

June 2026

***Please note this report contains sensitive information on the breeding/resting places of otter that are protected by law. This information should not be published in the public domain without express permission of the NPWS**

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1. Introduction

1.1 Background

Triturus Environmental Ltd. were contracted by OCSC, on behalf of Inland Fisheries Ireland to undertake a European otter (*Lutra lutra*) survey on the Mulkear River in the vicinity of Annacotty Weir, Co. Limerick (**Figure 2.1**). The survey would inform impact assessment for the Annacotty Fish Passage Project, which aims to restore fish passage through the Annacotty Weir, a known barrier to migration, by removing the weir structure (**Plate 2.1**). This weir, associated with a former mill, is a concrete-faced sloped structure with a centrally located 'Denil' fish pass (Rooney et al., 2015).

The survey would inform otters spatial use of Mulkear River upstream and downstream of the proposed barrier removal project. This would include the identification of potential breeding (holt) and resting (couch) areas given these habitations are protected under the Wildlife Acts 1976-2023 and pursuant to the requirements of Articles 12, 13 and 16 of the Habitats Directive (92/43/EEC) (NPWS, 2021). The findings of the survey would inform impact assessment and design for the scheme inclusive of mitigation to protect otter populations.

1.2 Otter legislative protection

The Eurasian otter (*Lutra lutra*) is a species of conservation concern and high priority having suffered major declines in its range and population throughout Europe since the 1950s. It is classified as 'near threatened' by the IUCN Red List with a decreasing population trend and, as such, is listed in Appendix I of CITES, Appendix II of the Bern Convention (Council of Europe, 1979) and Annexes II and IV of the EU Habitats Directive (92/43/EEC).

Otters, along with their breeding and resting places, are also protected under provisions of the Irish Wildlife Acts 1976-2023. Otters have additional protection because of their inclusion in Annex II and Annex IV of the Habitats Directive 92/43/EEC, which is transposed into Irish law by the European Union (Birds and Natural Habitats) Regulations 2011-2021.

The protection of otters is outlined in Article 51(1) and (2):

Protection of fauna referred to in the First Schedule;

51.(1) *The Minister shall take the requisite measures to establish a system of strict protection for the fauna consisting of the species referred to in Part 1 of the First Schedule.*

51.(2) *Notwithstanding any consent, statutory or otherwise, given to a person by a public authority or held by a person, except in accordance with a license granted by the Minister under Regulation 54, a person who in respect of the species referred to in Part 1 of the First Schedule (listed below). Items (b) and (d) may be considered most relevant to developments.*

- (a)** *deliberately captures or kills any specimen of these species in the wild,*
- (b)** *deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration,*

- (c) deliberately takes or destroys eggs of those species from the wild,*
- (d) damages or destroys a breeding site or resting place of such an animal, or*
- (e) keeps, transports, sells, exchanges, offers for sale or offers for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive, shall be guilty of an offence.*

According to the NPWS (2021), *'it should also be noted that in the case of Regulation 51(d) any action resulting in damage to, or destruction of, a breeding or resting place of an animal may constitute an offence unless a derogation licence has been granted and this action does not need to be deliberate'*. Furthermore, *'breeding and resting places are protected even when the animals are not using them, once there is a high probability that they will return'* (CJEU Case C-477/19) (NPWS, 2021). Regulation 51(d) therefore places a strict responsibility of due diligence on anyone proposing to conduct an 'action or project' that can 'damage or destroy' the breeding place of Annex IV species.

In an Irish context, according to the most recent Article 17 reporting (NPWS, 2025), otters remain at 'Favourable' conservation status with a stable trend. Otters were previously 'Near Threatened' (Marnell, 2009) based on a 20-25% decline between 1980 and 2005 (Bailey & Rochford, 2006). However, the current conservation status in Ireland is now of 'Least Concern' (Marnell et al., 2019). This data was supported by the most recent Otter Survey of Ireland 2023-2024 covering 1,063 sites with otters present at 65% [95%CI 62 - 68%] of sites in ROI and 66% [58 - 74%] of sites in NI (Reid et al., 2025). The results were supportive of a ubiquitous otter distribution nationally, despite the report concluding that the occupancy had likely declined since the 1980s. Regardless of the positive national outlook, otters remain 'Near Threatened' at a global level according to the IUCN Red List (Loy et al., 2022).

2. Methodology

2.1 Desktop review of otter records

A desktop review of published and unpublished data for the wider survey area was undertaken in respect of otter. Data pertaining to otters held by the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) was also reviewed for context on known distributions.

2.2 Otter sign survey

A walkover otter survey was undertaken on the Mulkear River on the 11th May 2026 during base flow water conditions. The survey area comprised 1.2km of linear riverine habitat (inclusive of both banks) of the Mulkear River (**Figure 2.1**). The survey was completed by Ross Macklin, Alvis Pagan of Triturus Environmental Ltd. and Rebecca Duane of OCSC.

The survey was also completed during dry and bright conditions which ensured that a good representation of habitat marked by otter could be recorded in the field, including territorial marking or marking of feeding areas. The survey also deliberately coincided with a prolonged dry period to minimise rain washout of otter signs (spraint, smears etc.). The late May 2026 survey fell within the end of the optimal survey period for otter sign surveys, i.e. before the June to August period when otter signs are significantly reduced due to behavioural changes and/or more difficult to detect due to vegetation growth (Triturus, pers. obs.).

Each otter sign was logged by type, location (handheld GPS), condition and approximate age for later interpretation to distinguish differences in habitat use and activity. Spraints were subjectively assessed as either fresh (very recent), mixed-age (recent & older spraints, typically indicative of a regular marking site) or old (spraint degrading and not recently deposited). Furthermore, indicative counts of spraint (i.e. number of individual spraints) and the number of sprainting sites (often separate clusters in one area) were noted. This helped indicate the frequency of otter marking that can clarify preferential use of habitat over time. For example high marking frequency often demarcates more important territory.

2.3 Total corridor otter survey (TCOS) methodology

The survey broadly followed the best practice 'standard survey' methodology for otter as recommended by Bailey & Rochford (2006), Chanin (2003) and Lenton et al. (1980) (all based on observations by Erlinge, 1967). However, methodology differed in that the entire waterline was surveyed rather than the standard 500-600m sections selected at regular (5-8km) intervals from accessible points (e.g. bridges). The novel survey technique, known as a total corridor otter survey (TCOS) (Macklin et al., 2019), involved a continuous, unbiased survey effort along both banks of each survey watercourse, encompassing the entire channel and riparian zones in addition to any adjoining intertidal areas or other waterbodies. Triturus have employed this comprehensive otter survey methodology in many other large-scale projects across Ireland, including the Dublin Otter Survey (2018-2019), DLR Otter Survey (2019-2020), Fingal Otter Survey (2024-2025), Carlow Otter Survey (2025) and Monaghan Otter Survey (in prep.).

Total corridor survey methodology typically involves the use of two (or more) surveyors working independently (in tandem) along each bank of an individual watercourse (where practical). This also facilitates one to work from a more elevated position (e.g. bank top) with one surveying (with appropriate PPE such as a dry suit or chest waders) from within the channel or watercraft. This holistic approach, whilst labour intensive, increases the likelihood of otter sign detection and facilitates a more accurate estimation of otter usage and activity at the river or catchment scale. This is especially true of more cryptic signs such as holts and couches that are often located in poorly accessible areas often not covered by a standard survey approach. This approach had consistently identified higher densities of otter signs than less intensive survey efforts (pers. obs.).



Plate 2.1 Annacotty Weir with 'Denil' fish pass facing downstream on the 11th May 2026

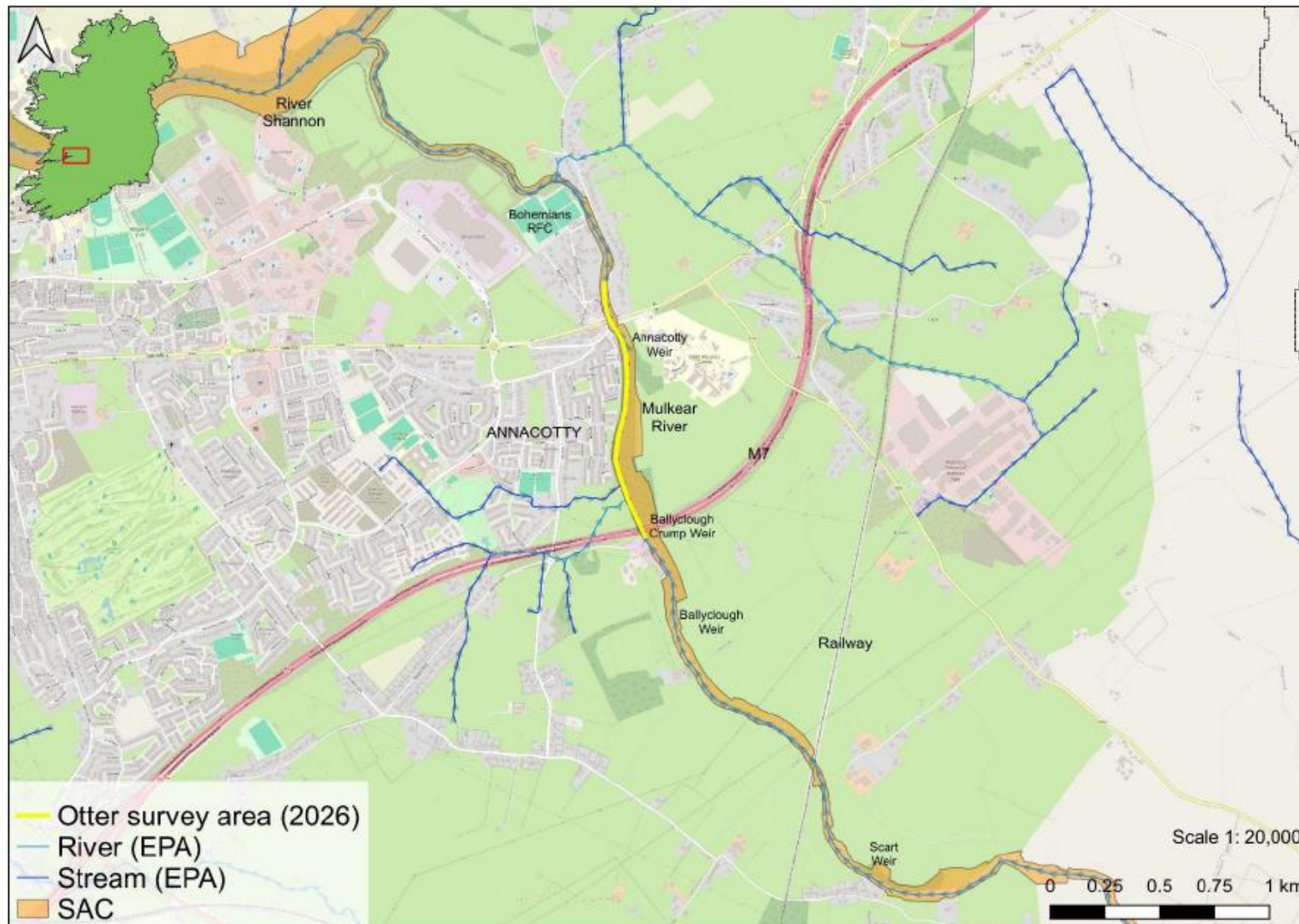


Figure 2.1 Otter survey area (linear length 1.2km) in the vicinity of the proposed Annacotty Weir Fish Passage project on the Mulkear River, Co. Limerick

3. Desktop review

There were no records for otter on the lower Mulkear with records restricted upstream of the Limerick Railway crossing, 1km upstream of the current survey area (NBDC, accessed 4th June 2026). The small number of records is considered both due to a lack of extant otter survey coverage in the catchment and limited public submission of otter records.

From known historical surveys, a total of 10 no. otter signs were recorded via a total corridor otter survey (TCOS) undertaken along approx. 1.6km of the lower River Mulkear downstream of the current survey area in September 2022 by Triturus Environmental Ltd. The survey was undertaken between the UL Bohemians RFC and the River Shannon confluence. Signs were mostly concentrated around the faster riffle-glide zones between deep glide and pool areas.

4. Results

4.1 Otter records

A total of $n=32$ otter signs were recorded within the 1.2km survey area (east & west banks) on the 11th May 2026. This equates to a density of 26.7 otter signs per linear kilometre which is considered among the highest densities recorded in our nationwide surveys (pers. obs.). Spraint sites ($n=19$) accounted for the majority (59%) of all signs recorded, followed by latrines¹ ($n=4$) and prints ($n=3$). A single anal jelly² and slide were also recorded (**Table 4.1**).

A low number of legally protected holts ($n=2$) and couches ($n=2$) were identified during the survey (**Figures 4.1, 4.2 & 4.3**). These were clustered on the low disturbance areas on the east bank of the Mulkear River upstream of the weir in mature mixed broadleaved woodland (WD1) (**Figures 4.2 & 4.3**). Downstream of the Annacotty Weir otter signs were typically represented by spraint sites apart from a single couch in an undercut rock overhang contiguous with Annacotty Weir on the east bank of the river.

Further detailed notes on individual otter signs are provided in the database of otter signs (**Appendix A**). An interpretation of the relevance of the otter survey findings is presented in the Discussion (section 5).

Table 4.1 Summary of otter signs recorded in May 2026

Otter sign	Total no.
Spraint site	19
Latrine	4
Jelly	1
Holt	2
Couch	2
Slide	1
Prints	3
Total	32

¹ Latrines are defined as regularly used faecal/spraint deposition sites with digging behaviour, often on sand, mud or grass (pers. obs.) and are often associated with resting otter (Findlay et al., 2023)

² gelatinous secretion of anal scent glands without prey remains (Lampa et al., 2008)



Figure 4.1 Overview of all otter signs recorded during the May 2026 survey on the Lower Mulkear River, Co. Limerick

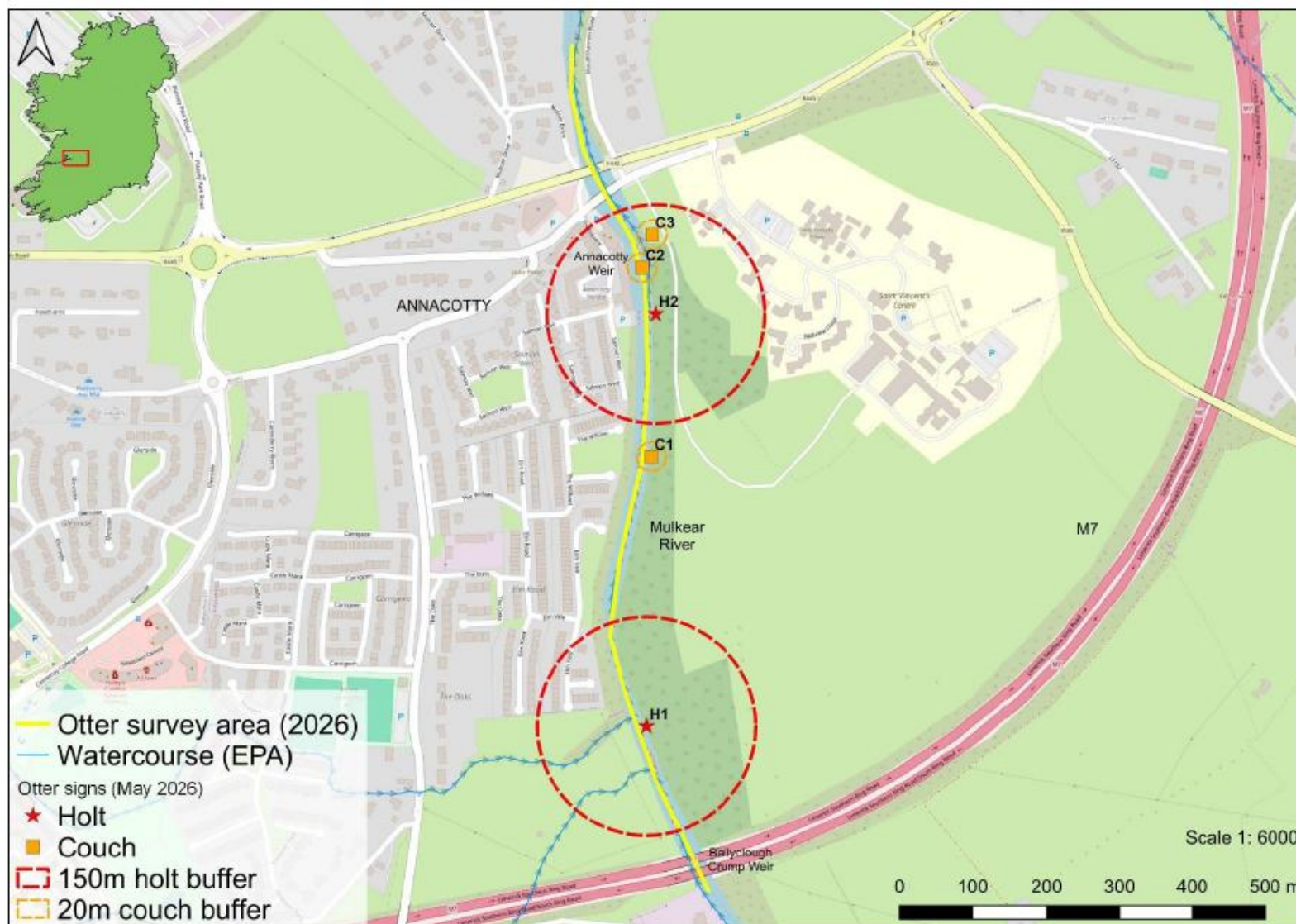


Figure 4.2 Overview of otter breeding (holts) and resting areas (couches) identified in May 2026



Figure 4.3 Overview of otter breeding (hols) and resting areas (couches) identified in May 2026



Plate 4.1 Otter prints in mud on the west bank of the Mulkear River upstream of Annacotty Weir



Plate 4.2 Otter spraint site on a crack willow tree (*Salix x fragilis* agg.) on the west bank of the Mulkear River, upstream of Annacotty Weir



Plate 4.3 A regular otter sprainting site on a boulder with burnt mosses downstream of the M7 (west bank)



Plate 4.4 Holt (H1) with nearby spraint on the east bank of the Mulkear River downstream of the M7 crossing



Plate 4.5 Couch area (C1) under giant hogweed with numerous spraints, bare earth with slide to Mulkear River



Plate 4.6 Active otter holt (H2) with numerous spraint sites and slide to Mulkear River on the east bank upstream of Annacotty Weir



Plate 4.7 Couch site (C3) with spraint under rock overhang adjoining Annacotty Weir, east bank



Plate 4.7 Spraint site on tree mainstem with nearby slide to Mulkear River downstream of Annacotty Weir

5. Discussion

5.1 Otter sign distribution

The otter survey recorded a total of $n=32$ otter signs on the Mulkear River upstream and downstream of Annacotty Weir. The survey coverage of approximately 1.2km linear length of river equated to a density of 26.7 otter signs per linear kilometre. This is considered among the highest densities of otter signs recorded from nationwide surveys conducted by Triturus Environmental over the past decade (pers. obs.). The high density of otter signs supports the international importance of the Mulkear River given the species is a qualifying interest of the Lower River Shannon SAC (002165). The adoption of a total corridor survey approach (TCOS; Macklin et al., 2019) provided a robust baseline of otter habitat utilisation via sign marking in the vicinity of the Annacotty Weir Fish Passage Project. This provided longitudinal context of the most important areas of otter habitat relative to the weir barrier.

In keeping with the known marking behaviour of otter in Irish rivers, spraint sites and latrines accounted for the majority (72%) of all signs recorded (**Table 4.1**). These were typically associated with characteristic prominent features including mossy boulders, muddy paludal areas, underneath bridges, stream confluences and tree root systems or mainstems of trees. Scent marking, inclusive of spraint sites, urination, anal jellies and latrines, is routinely associated with these areas and serves a variety of territorial and communicative functions in otter populations (Sittenthaler et al., 2020; Mumm & Knörnschild, 2018; Almeida et al., 2012; Remonti et al., 2011; Kean et al., 2011; Hutchings & White, 2000; Kruuk, 1992).

A typical diversity of fish for the River Mulkear was recorded via electro-fishing the river downstream of Annacotty, with Atlantic salmon, brown trout, river lamprey, lamprey (*Lampetra* sp.), European eel, gudgeon (*Gobio gobio*), stone loach (*Barbatula barbatula*), minnow (*Phoxinus phoxinus*), three-spined stickleback (*Gasterosteus aculeatus*) and invasive dace (*Leuciscus leuciscus*) captured in September 2025 (Triturus, 2025). The Mulkear River is a nationally important salmon river but is repeatedly failing to meet its conservation limit (TEGOS, 2025). Nonetheless, the Ballyclough Crump Weir and the fast water in the vicinity of Annacotty Bridge in vicinity of the otter survey area were particularly good quality nursery areas for salmon with abundant instream refugia supporting higher numbers of 0+ and $\geq 1+$ parr (Triturus, 2025). The lower Mulkear River is also an internationally important site for sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*) and brook lamprey (*Lampetra planeri*) (Triturus, 2023). Important lamprey spawning sites are also located within the otter survey area downstream of Annacotty Weir (Gallagher et al., 2022, 2019). Consequentially, the Mulkear River present high foraging opportunities for otter. Otters are considered an adaptable generalist species with high trophic flexibility and can utilise a wide range of prey resources though fish remain their primary dietary component (Triturus data; Drake et al., 2023; Krawczyk et al., 2016; Reid et al., 2013).

5.2 Otter breeding & resting areas

The survey area in the lower Mulkear River is considered of high value for otter, with abundant resident and migratory prey resources and mature riparian cover that was poorly accessible to humans. This east bank upstream of the weir represented particularly high suitability in this regard. Legally protected³ potential breeding (2 no. holt sites) and resting areas (2 no. couch sites) were recorded in the study area being concentrated on the east bank upstream of Annacotty Weir (**Figures 4.2 & 4.3**, results). Otter holt (H1) was situated on the east bank of the Mulkear River near the M7 crossing but did not show recent signs of activity given the entrance was partially overgrown despite a nearby older spraint being present (**Plate 4.4; Figures 4.2 & 4.3**). Holt H2 was active at the time of survey with very regular mixed age spraint, eroded soil, a nearby active couch and well-worn slides to the Mulkear River (**Plate 4.6, Figures 4.2 & 4.3**). Two couch sites were located on the poorly accessible east bank of the Mulkear River upstream of the weir in dense invasive scrub with well-worn slides to the Mulkear River (i.e. couches C1 & C2; **Figures 4.2 & 4.3**). Couch site C3 by contrast was recorded in an undercut rocky ledge contiguous with Annacotty Weir on the east bank (**Figures 4.2 & 4.3**).

The potential breeding (holts; H1 & H2) and resting areas (couches; C1 & C2) were all situated in lower disturbance areas of channel with good otter seclusion with exception of couch (C3; moderate disturbance). In accordance with Transport Infrastructure Ireland Guidance thresholds for otter (TII, 2008), 20m and 150m buffers around couch and holt areas respectively are shown relative to the proposed fish barrier removal project (**Figure 4.3, 4.4**). Otter breeding areas (holts) are especially sensitive to direct human disturbance (Mason & Macdonald, 2009), with otter reproductive success known to be higher in less disturbed habitat, hence their preferential fidelity for low disturbance areas of habitat (Brazier & Macklin, 2020; Macklin et al. 2019; Scorpio et al., 2016; Ruiz-Olmo et al., 2011; Loy et al., 2009; Kruuk, 2006). The narrower, low vegetation cover between the weir and Annacotty Bridge (west bank) by contrast with upstream and downstream areas had reduced suitability for holts and couches. These habitations of otter also invariably located in areas of low disturbance with high rates of seclusion (Triturus pers. obs.; Tolrà et al., 2024; Weinberger et al., 2019).

³ Otters, along with their breeding and resting places, are protected under provisions of the Irish Wildlife Acts 1976-2023 and pursuant to the requirements of Articles 12, 13 and 16 of the Habitats Directive (92/43/EEC) as an Annex IV species

6. References

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7. Appendix A – Otter sign database 11th May 2026

Sign no.	Type	No. spr	Age	Notes	ITM x	ITM y
MLK001	Spraint	1(1)	Old	Old spraint site on mature crack willow tree		
MLK002	Prints	na	Recent	Otter prints on muddy pauldal under crack willow tree		
MLK003	Spraint	1(1)	Old	Old spraint on crack willow mainstem		
MLK004	Spraint	1(1)	Old	Spraint on muddy root base of grey willow		
MLK005	Spraint	2(2)	Old	Old spraint and prints on muddy roots of willow near sewage outfall		
MLK006	Spraint	na	na	Prints on muddy margin under white willow tree		
MLK007	Latrine	2(5)	Mixed age	Mixed aged spraint on mud at stream confluence on muddy plinth		
MLK008	Spraint	1(1)	Old	Old spraint on mossy boulders with scorched moss		
MLK009	Spraint	1(1)	Old	Old spraint on burnt mosses downstream of M7 crossing under grey willow		
MLK010	Jelly	1(3)	Recent	Recent jelly on mossy boulders below fish pass downstream of M7		
MLK011	Spraint	6(20)	Mixed age	Mixed age spraint on concrete plinth of fish pass at M7 crossing		
MLK012	Latrine	1(1)	Recent	Recent latrine on sand under M7 road bridge		
MLK013	Latrine	1(1)	Old	Old latrine on sand bank under sycamore		
MK014	Prints	na	Old	Old prints on muddy bank under sycamore		
MK015 (H1)	Holt (H1)	1(1)	Old	Old holt partially and covered with ivy. 0.3m x 0.3m entrance excavated in soil with tunnel 2m above summer base flow under dead ash on bank top		
MK016	Slide	na	Slide	Well-worn slide to Mulkear River		
MK017	Spraint	1(1)	Old	Old spraint on crack willow mainstem		
MK018	Prints	na	Recent	Prints on muddy bank		
MK019 (C1)	Couch (C1)	2(11)	Mixed age	Couch with mixed age spraint under oak and giant hogweed with regular slide to river		
MK020	Spraint	1(7)	Mixed age	Mixed age spraint on crack willow mainstem with trails and slides to river		
MK021	Spraint	2(8)	Mixed age	Mixed age spraint and latrines on sand and grey willow with numerous prints		
MK022	Latrine	2(5)	Mixed age	Regular latrine with well-worn slide to Mulkear River		
MK023 (H2)	Holt (H2)	3(30)	Mixed age	Excavated holt under alder roots with 0.3m x 0.3m entrance excavated in soil, 2m above base flow with couch area on adjoining bank top with numerous spraints		

Sign no.	Type	No. spr	Age	Notes	ITM x	ITM y
MK024	Spraint	2(3)	Mixed age	Spraint on mud with numerous prints		
MK025 (C2)	Couch (C2)	3(34)	Mixed age	Regular couch with slides to Mulkear under ash and alder behind old masonry wall		
MK025 (C3)	Couch (C3)	2(5)	Mixed age	Couch under concrete and boulders immediately downstream of weir with spraint sites		
MK026	Spraint	1(1)	Recent	Recent spraint on boulders		
MK027	Spraint	1(2)	Recent	Spraint on concrete plinth of Annacotty Heron's Bridge		
MK028	Spraint	2(3)	Mixed age	Spraint on alder roots		
MK029	Spraint	2(3)	Mixed age	Spraint on boulders under sycamore with slide to Mulkear River		
MK030	Spraint	2(8)	Mixed age	Regular spraint on crack willow main stem		
MK031	Spraint	1(1)	Old	Recent spraint on rock		
MK032	Spraint	1(1)	Recent	Recent spraint on bridge cutwater		



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