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Natura Impact Statement

FOR THE PROPOSED DESILTING ACTIVITY WITHIN THE POLLMOUNTY RIVER AT BALLYLEIGH, NEW ROSS, CO. WEXFORD

2025

REPORT NO:	PE_NIS_10326	**AUTHOR:**	Paula Farrell, BSc. & Martin O'Looney, BSc.
DATE:	1st August 2025	**REVIEWED:**	Martin O'Looney, BSc

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EXECUTIVE SUMMARY

Panther Ecology Ltd. was commissioned by Uisce Éireann to prepare a Natura Impact Statement (NIS) as part of due diligence and oversight for the proposed activity which involves the removal of accumulated silt and gravel from the River Pollmounty upstream of the existing weir at Ballyleigh, New Ross, Co. Wexford.

The proposed activity would be located within the boundary of the River Barrow and River Nore SAC (Site Code: 002162).

This report identified the presence of European sites within the potential zone of influence of the proposed activity; the River Barrow and River Nore SAC (Site Code: 002162). The potential for Likely Significant Effects (LSE) to European sites as a result of the proposed activity such as potential surface water quality impacts, introduction of invasive species, habitat destruction, habitat loss, physical disturbance, and impacts from noise and dust were considered and the level of risk posed assessed.

During a Stage 1 Screening for Appropriate Assessment, it was considered that there is potential for a significant effect upon the qualifying interests / special conservation interests of the River Barrow and River Nore SAC due to a potential deterioration in water quality during the de-silting activity and the potential spread of invasive species. Therefore, a Natura Impact Statement (NIS) was prepared.

Due to the mitigation measures outlined within the NIS which will be implemented during the proposed activity, it is considered that there will be no adverse effects on the integrity of the habitats and species for which the aforementioned designated sites have been designated. It is considered that there will be no adverse effect or negative impact, either alone or in combination with other plans or projects, to the integrity of the Natura 2000 network.

1.0 INTRODUCTION

Panther Ecology Ltd was commissioned by Uisce Éireann to prepare a Natura Impact Statement (NIS) Report for the proposed activity which involves the removal of accumulated silt and gravel from the Pollmounty River adjacent upstream of the existing weir at Ballyleigh, New Ross, Co. Wexford (GPS Coordinates: 52.462224, -6.887437).

The principal aim of this study is to assess for Likely Significant Effects (LSE)/adverse effects to European sites (the Natura 2000 network) as a result of this project in accordance with Article 6(3) of the Habitats Directive. This report has been prepared with regards to the European Communities (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997), and the later amendment regulations (S.I. No. 233 of 1998; S.I. No. 237 of 2005, S.I. No. 477 of 2011).

A study was undertaken by Ms Paula Farrell of Panther Ecology Ltd who has a BSc in Wildlife Biology from Munster Technological University (formerly IT Tralee) and has experience in elasmobranch, amphibian, bird, invertebrate and floral surveys and Martin O'Looney of Panther Environmental Solutions who has a BSc Degree in Environmental Science and Technology from Atlantic Technological University Sligo (formerly IT Sligo). This comprised a review of the project, site visits on the 2nd May 2025 to examine the ecological context of the proposed activity, a desk study of the information on European sites within the potential zone of influence of the site and an analysis of the information in the context of the guidance to determine if a Natura Impact Statement is required.

The Appropriate Assessment and Natura Impact Statement shall be undertaken in accordance with the guidance outlined in "*Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities*" (DoEHLG, Dec 2010) and "*Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites*" (EC, Nov 2001) (Revised 2021) and "*Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive*" (EC, 2019).

- DoEHLG (2010) "*Appropriate Assessment of Plans & Projects in Ireland*"
- Environment DG, European Commission (2021) "*Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*", Part 1 and 2.
- Department of the Environment Heritage and Local Government (DoEHLG) Circular Letter SEA 1/08 and NPWS 1/08.
- Department of the Environment Heritage and Local Government (DoEHLG) Circular letter NPWS 1/10 and PSSP 2/10
- OPR Practice Note PN01 (2021) "*Appropriate Assessment Screening for Development Management*"

2.0 LEGISLATIVE CONTEXT

The EU Habitats Directive (92/43/EEC) on the conservation of natural habitats and of wild fauna and flora, as amended by council directive 97/62/EC, 2006/105/EC, and Regulation EC1882/2003 of September 2003, as transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/11), provides the framework for legal protection for habitats and species of European importance. The Natura 2000 network provides an ecological infrastructure for the protection of sites that are of particular importance for rare,

endangered or vulnerable habitats and species within the EU. The Natura 2000 network in Ireland is made up of European Sites which include:

- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)

Article 6(3) of the Habitats Directive establishes the requirement for appropriate assessment when planning new interventions that might affect a Natura 2000 site. Article 6(3) of the Habitats Directive states;

Any plan or project not directly connected with, or necessary to the management of the site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site, and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Stage 1: Screening for Appropriate Assessment (AA)

This stage involves an initial screening assessment of the potential impacts of the project, either alone or in combination with other projects, upon a Natura 2000 site. If it can be concluded that there would be no significant impacts upon Natura 2000 sites, the assessment stops at this stage. If not, or if further assessment is required, the assessment proceeds to Stage 2.

Stage 2: Appropriate Assessment / Natura Impact Statement (NIS)

This stage assesses the impact of the project, alone or in combination with other projects or plans, on the integrity of the Natura 2000 site, with respect to the site's conservation objectives, the site's ecological structure and function and its overall integrity. The output of this stage is an NIS, which also includes any mitigation measures required to avoid, reduce or offset negative impacts of the project. If this stage determines that adverse effects on the Natura 2000 site cannot be excluded, then the plan or project should proceed to Stage 3 or be abandoned.

The proposed removal of accumulated silt and gravel from the River Pollmounty at Ballyleigh, Co. Wexford is not considered to constitute "works" or "development" within the meaning of the Planning and Development Act, 2000, as amended. As such, notwithstanding that the proposed activity will require Appropriate Assessment, it does not require planning permission. The activity will be subject to the Appropriate Assessment process and Uisce Éireann will conduct an Appropriate Assessment, whereby a Natura Impact Statement (NIS) will be prepared and submitted to NPWS pursuant to Regulation 42 of the EC (Birds and Natural Habitats) Regulations 2011, as amended.

3.0 METHODOLOGY

Stage 1 - Screening

Screening is the first stage in the Appropriate Assessment process, and is carried out to determine whether a Stage 2 Appropriate Assessment and a Natura Impact Statement (NIS) is required. Screening addresses and records the reasoning and conclusions in relation to the first two tests of Article 6 (3);

1. Whether a plan or project is directly connected to or necessary for the management of the European (Natura 2000) site; and

2. Whether a plan or project, alone or in combination with other plans or projects, is likely to have significant effects on a European (Natura 2000) site, in view of its conservation objectives.

Screening should be undertaken without the inclusion of mitigation measures. If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 AA and an NIS.

The findings and conclusions of the screening process should be documented, with the necessary supporting evidence and objective criteria. This is of particular importance in the cases where the Appropriate Assessment process ends at the screening stage because the conclusion is that no significant effects are likely.

Following Stage 1 Screening, it was considered that there may be potential for an indirect impact upon the qualifying interests of a European site, therefore, the assessment progressed to Stage 2.

As per Regulation 42(9) of the Habitats Regulations 2011, where a public authority, i.e. UÉ, is required to conduct Appropriate Assessment, it shall prepare a Natura Impact Statement (NIS), compile any other information and evidence, and submit the NIS to the Minister not later than six weeks before it proposes to adopt or undertake the activity to which the NIS relates. Therefore, UÉ will conduct an Appropriate Assessment, whereby an NIS will be prepared and submitted to NPWS pursuant to Regulation 42(9) of the Habitats Regulations. UÉ will not conclude the Appropriate Assessment earlier than six weeks after the date on which the NIS was submitted, as per Regulation 42(10) of the Habitats Regulations. UÉ will prepare an Appropriate Assessment Determination, pursuant to Article 6(3) of the Habitats Directive and Regulation 42(11) of the Habitats Regulations.

Stage 2 – Natura Impact Assessment

The scope of this assessment follows the appropriate assessment statement methodology as defined within the European Commission guidance document "*Assessment of plans and projects significantly affecting Natura 2000 sites"* (2001), Section 3, Part 2. Guidance from the Department of the Environment, Heritage and Local Government "*Appropriate Assessment of Plans and Projects in Ireland*" (2010) "*Assessment of plans and projects in relation to Natura 2000 sites: A Summary"* (2022) and "*Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive*" (2019), "*Appropriate Assessment Screening for Development*

Management" OPR Practice Note PN01 (2021) have also been used in the preparation of this report. In accordance with this guidance, the following methodology has been used to produce this Natura Impact Statement:

Step 1**:** Information Required
Identifying the conservation objectives of the Natura 2000 site and the aspects of the project, alone or in combination with other projects or plans, which have the potential to affect those conservation objectives.

This process involves gathering information for the Natura 2000 site, including the conservation objectives of the site, factors contributing to conservation value, aspects sensitive to change and the existing baseline condition of the site. The principal source of information used for Natura 2000 sites, their qualifying interests and conservation objectives is the National Parks and Wildlife Service (NPWS). Information is also required for the project including the size and scale of the project, the relationship (distance, connectivity etc.) of the project to the Natura 2000 site and the characteristics of existing, proposed or other projects which have the potential to affect the Natura 2000 site.

Step 2: Impact Prediction
This process predicts and identifies the likely impacts of the project on the Natura 2000 site. Potential impacts are identified as; direct and indirect; short or long-term duration; construction, operational or decommissioning; and isolated, interactive and cumulative effects.

Step 3: Conservation Objectives
Once the potential impacts of the project have been predicted and identified, it will be necessary to assess whether these impacts will adversely impact upon the integrity of the Natura 2000 site, as defined by the site's conservation objectives and status of the site. Where it cannot be demonstrated that there will be no adverse impacts upon the Natura 2000 site, mitigation measures must be proposed for the project.

Step 4: Mitigation Measures
Upon the identification of potential impacts, the project will have on the Natura 2000 site (alone or in combination with other projects or plans), mitigation measures will be proposed to eliminate, reduce or offset these negative impacts. Mitigation measures should be considered with preference to the hierarchy of preferred options outlined in the guidance document "*Assessment of plans and projects significantly affecting Natura 2000 sites"*.

3.1 METHODOLOGY BACKGROUND

This Appropriate Assessment has been carried with reference to the following guidelines:

- Appropriate Assessment of Plans and Projects in Ireland. Guidelines for Planning Authorities. DoEHLG, 2010.

- Circular NPWS 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities

- Appropriate Assessment Screening for Development Management OPR Practice Note PN01 March 2021

- Circular L8/08 Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments 2 September 2008

- Assessment of Plans and Projects Significantly Affecting Natura 2000 sites. Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission, 2021.

- Commission Notice "Managing Natura 2000 sites The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission, 2019

- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester.

3.2 DESKTOP RESEARCH

Desktop research was carried out to gather information on the ecology of the site and surrounding areas. The locations of the Natura 2000 sites within the zone of influence of the Pollmounty River, Ballyleigh, New Ross, Co. Wexford were identified from National Parks and Wildlife Service (NPWS) online map viewer and EPA online maps. Other Natura sites beyond were also reviewed and considered for the potential for the project to have a negative effect.

Water quality data from the EPA was reviewed for the assessment of biological and environmental data collected on waterbodies in Ireland as per the Water Framework Directive (WFD) Monitoring Programme of River Ecology Monitoring Results (Assessed May 2025).

Information on the characteristics of the Natura 2000 sites within the potential zone of influence was reviewed from the conservation objectives documents, site synopses and Standard Natura 2000 data forms available on the NPWS website.

3.3 SITE SURVEY

Site characterisation assessments were undertaken on the 2nd May 2025 to examine the ecological context of the proposed activity area, by systematically walking the site, adjacent land and boundaries and determining the habitats present. The habitat survey was undertaken in accordance with the standard methodology outlined in Fossitt's "*A Guide to Habitats in Ireland*", a hierarchical classification scheme based upon the characteristics of vegetation present. The Fossitt system also indicates when there are potential links with Annex I habitats of the E.U. Habitats Directive (92/43/EEC). Cognisance was also taken of the Heritage Council guidelines, "*Best Practice Guidance for Habitat Survey and Mapping*", (Smith *et al.,* 2011). Bird species and signs of fauna activity were also noted. Particular attention was given to the possible presence of habitats and/or species, which are legally protected under Irish and European legislation and to assessing any potential ecological connectivity with Natura 2000 sites or supplementary or stepping stone habitats of relevance to Natura 2000 sites.

4.0 DESCRIPTION OF PROPOSED ACTIVITY

Figure 4.1: Location of the proposed activity within the Pollmounty River (Refer to Appendix C)

The proposed activity will involve the removal of accumulated silt and gravel from the Pollmounty River, upstream of the existing weir at Ballyleigh, New Ross, Co. Wexford (GPS Coordinates: 52.462224, -6.887437) as shown in the location map Figure 4.2. Maps included within Appendix A show the red line boundary. Further imagery of the proposed activity area is provided in Appendix C.

The proposed activity area is located within the boundary of the River Barrow and River Nore SAC (Site Code: 002162).

The site is accessed via an existing entrance from a local road (L4001) off the R729. There will be no alterations to the existing drainage of the site. In addition there will be no tree or hedgerow removal or removal of any terrestrial vegetation. There will be no alterations to the existing use or habitats also.

Deposited materials have accumulated within the Pollmounty River over a period of time as a result of the existing weir downstream of the proposed activity area. The Poulmouty intake is the main water supply for New Ross serving over 7,000 customers. The accumulation of silt limits the availability of water which can lead to water quality issues. As the intake screen cannot remove all silt, particularly during high flow events, this accomodates for the accumulation of silt directly upstream of the weir. As a result, silt is deposited into the raw water sump onsite, requiring removal via confined space entry every 2 months. In addition, the siltation causes issues to the mechanical seals, drives and pipework.

Therefore, de-silting activities are required to be undertaken within the Pollmounty River and within the boundary of the River Barrow and River Nore SAC.

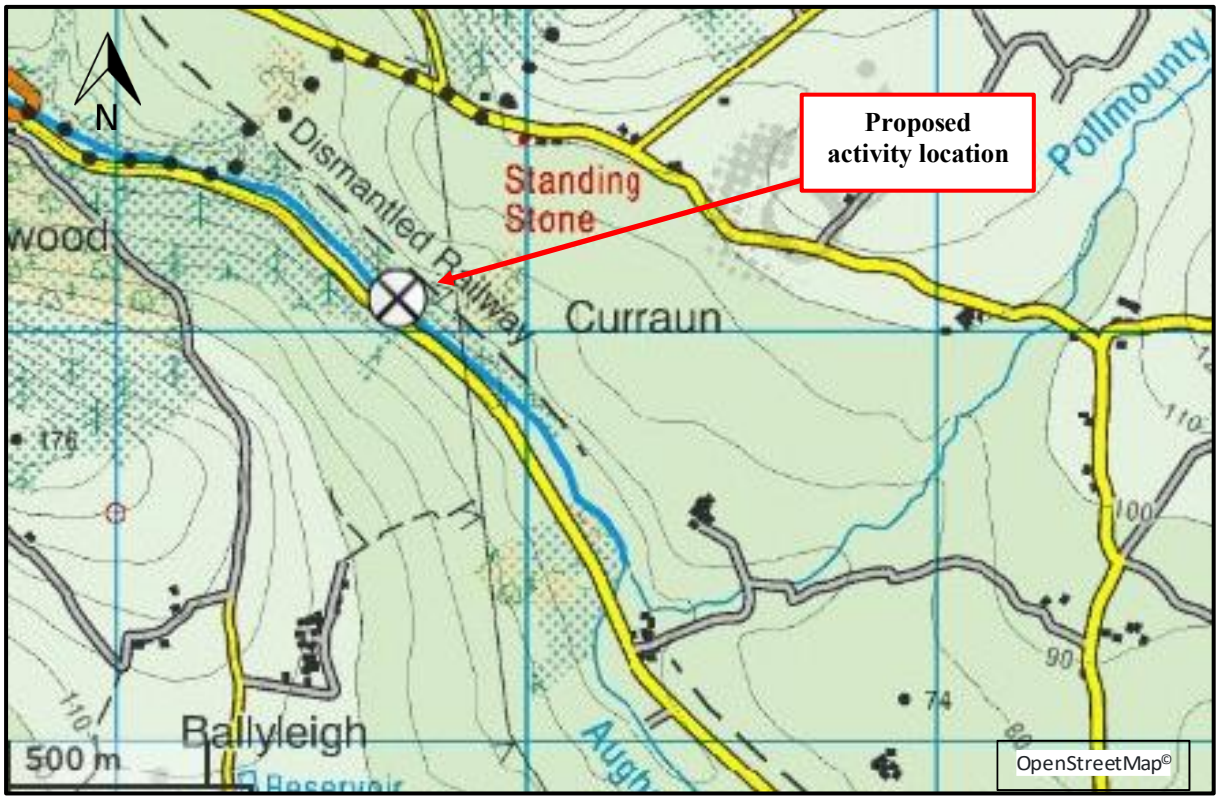

Figure 4.2: Location of Proposed Site at Ballyleigh, New Ross, Co. Wexford

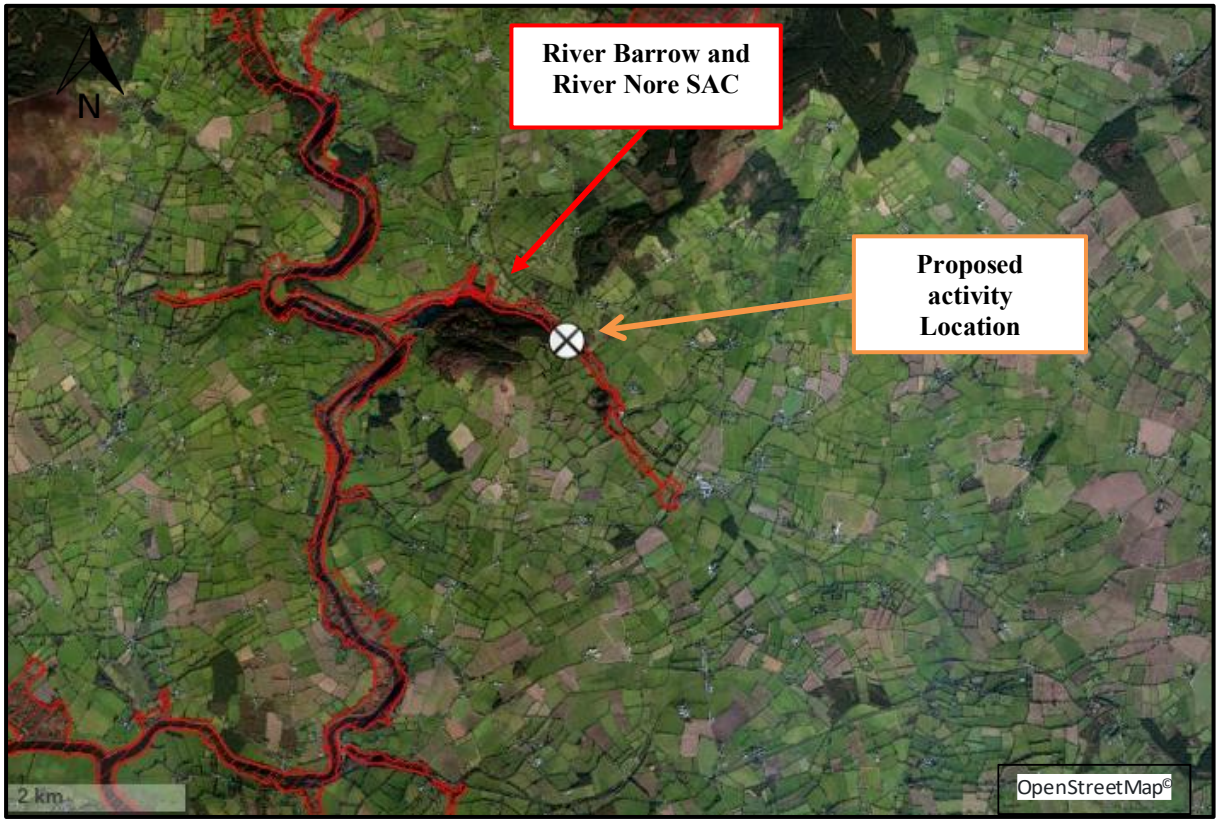

Figure 4.3: Location of Proposed Activity and Natura 2000 Sites

A detailed methodology for siltation removal is as follows;

METHODOLOGY OF PROPOSED ACTIVITY

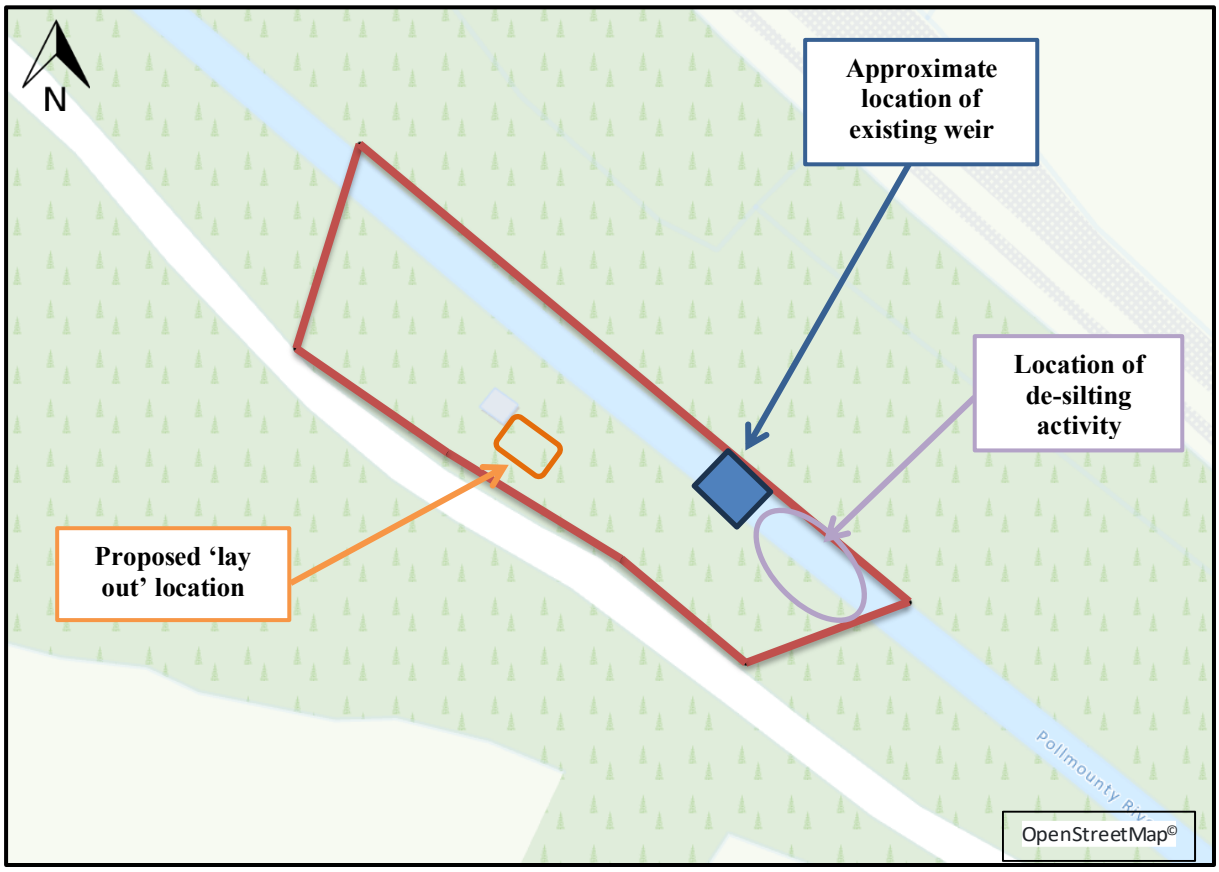

Figure 4.4: Location of Proposed Activity and 'Lay out' area

- The proposed activity will be carried out for c. 2-3 days during the summer period; July 1st to September 30th inclusive, or as otherwise agreed with Inland Fisheries Ireland (IFI). The activity will not be undertaken during high river flows or prior to the forecast of heavy rainfall, i.e. Orange, Yellow or Red rainfall warnings issued by Met Éireann.
- The proposed activity will not deepen the riverbed or alter the riverbanks of the channel.
- Access and egress by personnel and machinery to and from the Pollmounty intake will be via the local road network and the existing access entrance to the intake site.
- Bog mats will be laid along the left riverbank, facing downstream, to provide stable ground conditions for machinery during the proposed activity. Bog mats will be located adjacent to the concrete area of the intake infrastructure.
- The weir planks and associated rocks will be lifted from the river using suitable machinery to lower the water level in the channel.
- When the water level in the channel has dropped, sandbags will be positioned in the river channel to isolate an area of the river channel. The sandbags will be placed *insitu* by suitable machinery and, if necessary, personnel.
- All sandbags will be secured and covered to ensure there will be no inadvertent release of sand to the river. Sand used in sandbags will be washed and free of contaminants.
- The positioning of the sandbags will isolate a longitudinal section of the river channel, while maintaining fish passage in the remainder of the channel.

- Accumulated material within the area isolated by the sandbags will be removed using suitable machinery. Once the initial area of material has been removed, the machine will be positioned within the sandbagged isolated area.
- The removed material will be loaded to a small dumper and transferred to the designated 'lay out' area (refer to figure 4.4). The designated 'lay out' area will be situated adjacent to the Generator Shed, set back from the riverbank.
- The above steps, involving the placement of sandbags in the river channel and creation of isolated areas for the associated removal of accumulated material, will be repeated in an upstream direction along the right riverbank and then in a downstream direction along the left riverbank until accumulated materials have been removed from the activity area.
- Material deposited at the 'lay out' area will be inspected by an ecologist throughout the duration of the activity. The ecologist will remove any protected species from the removed materials and return them to the River Pollmounty at an accessible and suitable location. The material will undergo a final inspection by an ecologist before removal offsite. The material will then be removed off site to a licensed waste facility.
- Upon completion of the activity, the weir planks and rocks will be reinstated.

The estimated duration for the proposed activity is 2-3 days. De-silting activity would be confined to the immediate activity area and would not necessitate any activity outside of this area as per the red line boundary map (see Appendix A). The proposed activity will not require the importation of any materials.

The following project elements of the proposed activity have been examined for relevance to possible effects on the Natura 2000 sites;

- Disturbance to Protected Species
- Sediment & Hydrocarbon Runnoff
- Stormwater & Waste Water
- Impact on Protected Habitats
- Dust and Noise
- Invasive Species

5.0 BASELINE ECOLOGICAL CONDITIONS

5.1 DESKTOP SURVEYS

5.1.1 NBDC RECORDS

In addition to the site walkover, flora and fauna records were reviewed on the National Biodiversity Data Centre (NBDC) website for the proposed development site and vicinity for the past 30 years. No protected plant species under the Flora (Protection) Order, 2022 (S.I. No. 235 of 2022) were recorded within the 10km square (Tetrad – S73) in which the proposed development site is located.

Endangered or threatened flora within this tetrad are Blue Fleabane (*Erigeron acer*), Nettle-leaved Bellflower (*Campanula trachelium*), Round-leaved Crane's-bill (*Geranium rotundifolium*) and Sharp-leaved Fluellen (*Kickxia elatine*).

Eight invasive plant species listed in the Third Schedule of the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) as amended 2015 (S.I. No. 355 of 2015) were recorded within the 10km square (Tetrad – S73: Water Fern (*Azolla filiculoides*), Giant-rhubarb (*Gunnera tinctoria*), Himalayan Knotweed (*Persicaria wallichii*), Indian Balsam (*Impatiens glandulifera*), Japanese Knotweed (*Fallopia japonica*), Nuttall's Waterweed (*Elodea nuttallii*), Rhododendron ponticum and Three-cornered Garlic (*Allium triquetrum*).

Protected fauna species of note recorded within the NBDC 10km square ((Tetrad – S73) include the protected species, Common Frog (*Rana temporaria*), Twaite Shad (*Alosa fallax*), River Lamprey (*Lampetra fluviatilis*), Sea Lamprey (*Petromyzon marinus*), Brown Long-eared Bat (*Plecotus auritus*), Daubenton's Bat (*Myotis daubentonii*), Eurasian Badger (*Meles meles*), Eurasian Red Squirrel (*Sciurus vulgaris*), European Otter (*Lutra lutra*), Lesser Noctule (*Nyctalus leisleri*), Pine Marten (*Martes martes*), Pipistrelle (*Pipistrellus pipistrellus sensu lato*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and West European Hedgehog (*Erinaceus europaeus*).

High impact invasive species listed in the Third Schedule of the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) include *Corbicula fluminea*, American Mink (*Mustela vison*), Grey Squirrel (*Sciurus carolinensis*) and Sika Deer (*Cervus nippon*).

Bird species of note include Barn Owl (*Tyto alba*), Swallow (*Hirundo rustica*), Black-headed Gull (*Larus ridibundus*), Common Kestrel (*Falco tinnunculus*), Common Kingfisher (*Alcedo atthis*), Linnet (*Carduelis cannabina*), Pheasant (*Phasianus colchicus*), Common Sandpiper (*Actitis hypoleucos*), Common Snipe (*Gallinago gallinago*), Starling (*Sturnus vulgaris*), Swift (*Apus apus*), Eurasian Teal (*Anas crecca*), Eurasian Tree Sparrow (*Passer montanus*), European Golden Plover (*Pluvialis apricaria*), Great Black-backed Gull (*Larus marinus*), Great Cormorant (*Phalacrocorax carbo*), Herring Gull (*Larus argentatus*), House Martin (*Delichon urbicum*), House Sparrow (*Passer domesticus*), Lesser Black-backed Gull (*Larus fuscus*), Little Egret (*Egretta garzetta*), Little Grebe (*Tachybaptus ruficollis*), Mallard (*Anas platyrhynchos*), Mute Swan (*Cygnus olor*), Northern Lapwing (*Vanellus vanellus*), Peregrine Falcon (*Falco peregrinus*), Rock Pigeon (*Columba livia*), Sand Martin (*Riparia riparia*),

Short-eared Owl (*Asio flammeus*), Spotted Flycatcher (*Muscicapa striata*) and the Yellowhammer (*Emberiza citrinella*).

5.1.2 WATER QUALITY

Surface Water Quality

The proposed activity is located within the Barrow Catchment (ID 14), Sub Catchment Barrow_SC_150. The proposed activity will be undertaken within the Pollmounty River (EPA Code: 14P03 – Order 3). This river is also located within the boundary of the River Barrow and River Nore SAC (Site Code: 002162). It flows for approximately 2.2km (hydrologically downstream) in a westerly direction where it joins the River Barrow (EPA Code: 14B01 – Order 6) confluence. There are no additional mapped watercourses within proximity of the proposed activity area. Other watercourses within the area include the Aughananagh River (EPA Code: 14A03 – Order 2) located approximately 1.1km downstream. The Aughnacrew (EPA Code: 14A07 – Order 3) is also located approximately 800m upstream of the site. See figure 5.1 for mapped watercourses within the vicinity of the proposed activities.

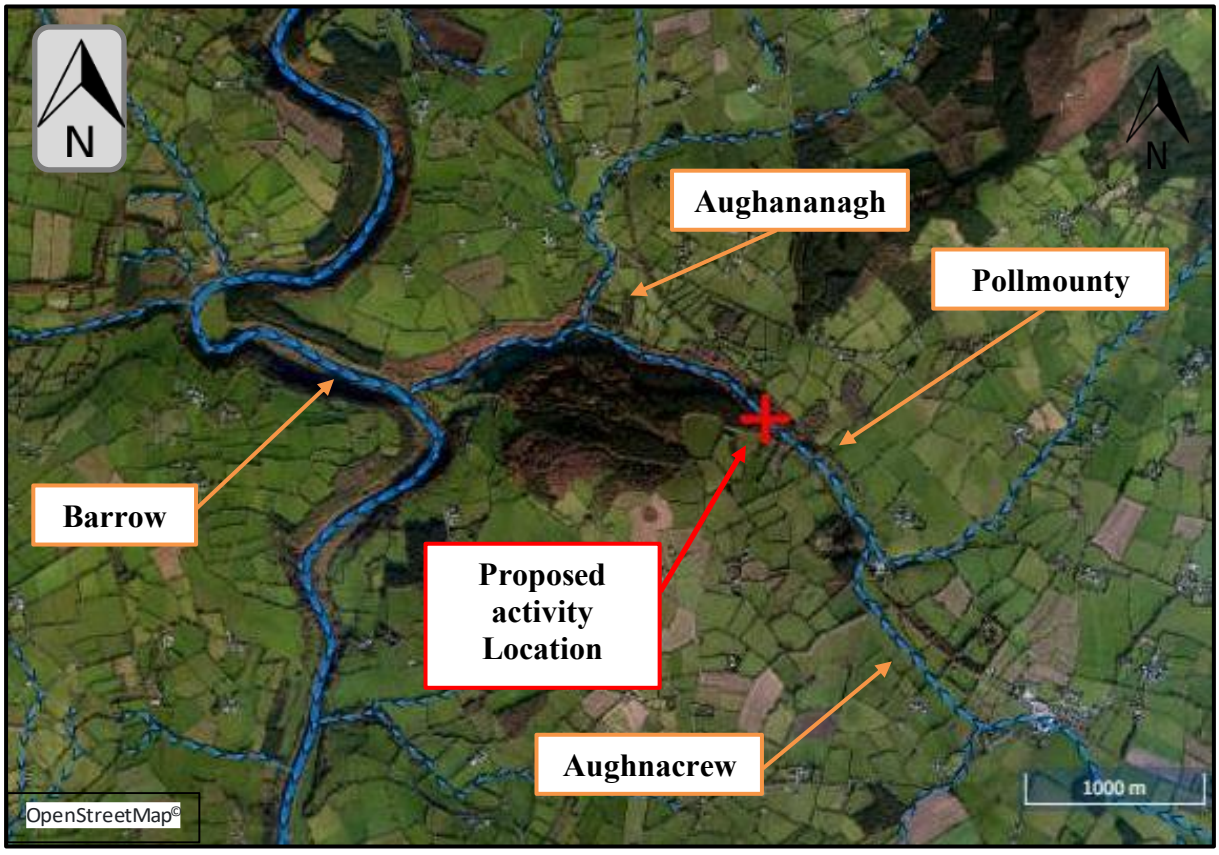

Figure 5.1: Watercourses in proximity of the proposed activity area

The Conservation Objectives document for the River Barrow and River Nore Special Area of Conservation shows that water quality objectives have been set for White-clawed Crayfish (*Austropotamobius pallipes*) and Atlantic Salmon (*Salmo salar*), with a Q3-4 (moderate status) and Q4 (good status) values set as objectives in freshwater. While water quality objectives have also been set for Twaite Shad (*Alosa fallax*) with a target of oxygen levels no lower than 5mg/l, it is unlikely they are present within the Pollmounty River. According to *The Status of EU*

Protected Habitats and Species in Ireland (NPWS 2019b), "*the navigation weir on the River Barrow at its upper tidal limit prevents upriver migration*".

The Environmental Protection Agency (EPA) undertakes surface water monitoring along the Rivers Aughnacrew and Pollmounty. The results for the nearest monitoring stations with available information (as per Table 5.1) for the period 2003 – 2023 are summarised in Figure 5.2 below for indicative purposes.

Table 5.1: Water Monitoring Stations on the Aughnacrew and Pollmounty Rivers River in proximity to the activity

STATION NO.	STATION LOCATION	EASTING	NORTHING	APPROX. LOCATION RELATIVE TO PROPOSED ACTIVITY
RS14A070500	Br just u/s Pollmounty R confl	276208	134344	904m Upstream (on Aughnacrew)
RS14P030300	d/d Aughananagh R confl	274473	135515	1.2km downstream (on Pollmounty)

As can be seen in Figure 5.2, the Rivers Aughnacrew and Pollmounty are mainly achieving a water quality status of between Q3-4 (Moderate) and Q4 (High) in recent years.

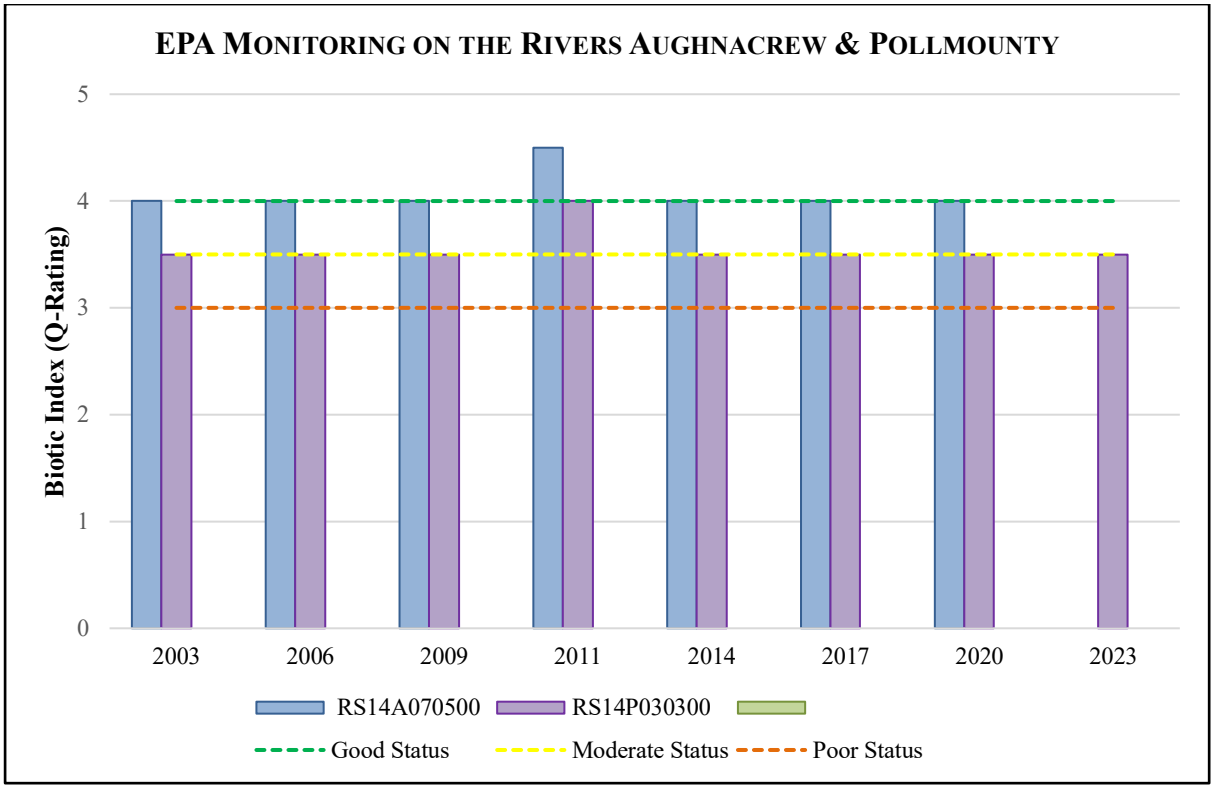

Figure 5.2: EPA Ecological Monitoring of the Rivers Aughnacrew & Pollmounty from 2003 – 2023

EPA comments on the most recent monitoring results for the Aughnacrew River are as follows: "*The Aughnacrew remained in unsatisfactory condition at Ballinvegga Bridge in 2023*."

EPA comments on the most recent monitoring results for the Pollmounty River are as follows: "*The unsatisfactory Moderate condition of the Pollmounty continues in 2023*."

In addition to available EPA monitoring data for freshwater habitats, the EPA also undertake monitoring of transitional and coastal waters downstream of the proposed activities. See figure 5.3 for mapped transitional and coastal waters.

The section of the River Barrow where the Pollmounty flows into just 2.2km downstream of the site is part of the Upper Barrow Estuary. All watercourses from the proposed activity area and downstream eventually flow into the Eastern Celtic Sea which has a water quality status of unpolluted and is not at risk.

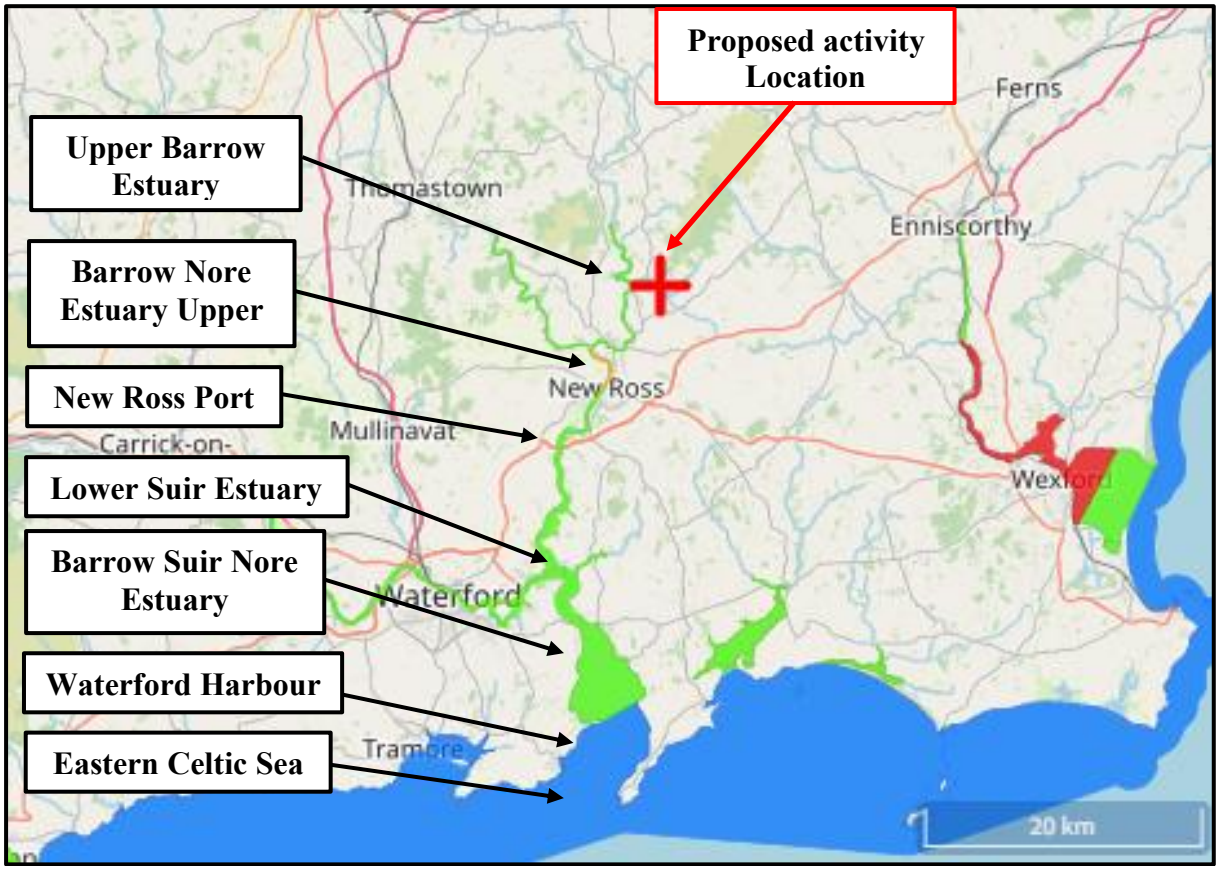

Figure 5.3: Transitional and coastal waters in proximity of the proposed activity area

Table 5.2: Water Quality status of transitional and coastal waters in proximity to the activity

NAME	EU CODE	DISTANCE TO ACTIVITY	STATUS	RISK FACTOR
Upper Barrow Estuary	IE_SE_100_0300	1.7km SW	Intermediate	At risk
Barrow Nore Estuary Upper	IE_SE_100_0250	6.7km SW	Potentially Eutrophic	At risk
New Ross Port	IE_SE_100_0200	8.7km SW	Intermediate	At risk
Lower Suir Estuary	IE_SE_100_0500	21.6km SW	Intermediate	At risk
Barrow Suir Nore Estuary	IE_SE_100_0100	19.5kn SW	Intermediate	At risk

NAME	EU CODE	DISTANCE TO ACTIVITY	STATUS	RISK FACTOR
Waterford Harbour	IE_SE_100_0000	30.2km S	Unpolluted	At risk
Eastern Celtic Sea	IE_SE_050_0000	28km S	Unpolluted	Not at risk

Water Framework Directive

The EU Water Framework Directive (2000/60/EC) requires all Member States to protect and improve water quality in all waters to achieve good ecological status at the latest, by 2027. It was given legal effect in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003). It applies to rivers, lakes, groundwater, and transitional coastal waters. The Directive requires the preparation of River Basin Management Plans to protect and improve water quality.

According to the *HA 14 Barrow Catchment Report* (EPA, 2024), the section of the Pollmounty River in which the proposed activities are located (Pollmounty_010) had a water quality status of moderate during the period 201-2021 and is considered 'at risk'.

The Water Framework Directive (WFD) status during the period 2016-2021 of the Aughnacrew and Pollmounty both upstream and downstream of the proposed activity area is good.

The Upper Barrow Estuary downstream of the proposed activities has a moderate water quality status and is considered 'at risk' as per the WFD 3rd Cycle.

Groundwater Quality

The proposed development is located within a Locally Important (Poor) Aquifer – Bedrock which is moderately productive only in local zones. The subsoil is described as till derived from granites and bedrock outcrop or subcrop with moderate permeability. Groundwater vulnerability is extreme. Groundwater here has natural characteristics that make it extremely vulnerable to contamination by human activities. There are no karst features or wells/springs that have been identified within the immediate vicinity according to the GSI groundwater data viewer maps (Assessed 13th June 2025). According to the online EPA maps, groundwater quality at the proposed development has a status of Good according to the most recent data (2016-2021).

5.1.3 Preliminary Flood Risk Assessment

According to the Preliminary Flood Risk Assessment (PFRA) Mapping tool by the OPW, the proposed development site is located within an area of fluvial or pluvial flood, indicative of 10% AEP (10-yr) event, 1% AEP (100-yr) event or 0.1% AEP (1000-yr) event. However, it should be noted that this map is based on broad-scale simple analysis and may not be accurate

for a specific location. According to local knowledge of the activity area, flooding is known to occur often.

The proposed activity will take place between 1st July and 30th September during dry conditions, outside of and not after periods of heavy rainfall. Therefore, given the short duration, and cognisance of weather conditions, it is not anticipated that the proposed activity would have a significant impact on a protected site due to flooding.

5.2 FIELD SURVEYS

The proposed activity area is located within a rural environment with residential dwellings scattered in a ribboned like fashion along the local road network. Agricultural lands dominate the wider environment. Woodlands and artificial surfaces are the dominant terrestrial habitats within the boundary. A private road and locked gated entrance provide access to the activity area.

5.2.1 HABITATS

A site characterisation assessment was undertaken on the 2nd May 2025 to examine the ecological context of the project site, by systematically walking the site and boundaries and determining the habitats present. During the site assessment the following habitats were observed.

The Pollmounty River is classified as an **eroding/upland river (FW1).** It was approximately 4-5m wide however, width varied throughout. The flow upstream of the weir was regular and sluggish while downstream the water was more turbulent. The difference in flow can be explained by increased sedimentation upstream as a result of the weir. The water was clear and between 1-2m in depth. The main areas of deposition were observed upstream of the weir with some deposition also noted adjacent the river banks, particularly along the river bends. Plant species recorded within and close to the river's edge included Water Crowfoot (likely *Ranunculus Penicillatus* – prior to fruiting) and Reed Canary-grass (*Phalaris arundinacea*). Water Crowfoot was not recorded immediately downstream of the weir with only few plants recorded immediately upstream within the de-silting area. This plant occurred more frequently upstream of the proposed activity area. This habitat has links to the Annex I habitat, water courses of plain to montane levels with the *Ranunculion fluitans* and *Callitricho-Batrachion* vegetation [3260]. However, it is noted that "*Crowfoot-dominated reaches frequently have low diversity and are of low conservation value, and an abundance of the species generally indicates poor condition and damage*" (NPWS. 2019 b).

Figure 5.4: (Left) Absence of significant vegetation within the proposed activity area. (Right) Water Crowfoot upstream of proposed activity area.

A woodland occurs adjacent the Pollmounty River to the south-east. It has been designated as an **Alluvial Woodland [91E0]** within the River Barrow and River Nore SAC however, the species composition within the immediate vicinity of the activity are not consistent with the target and positive indicator species for this habitat type (O'Neil & Barron, 2013). It is more akin to **Riparian woodland (WN5)/Mixed broadleaved/conifer woodland (WD2)**. The species within the woodland are a mix of native and non-native species, typically not associated with Riparian woodlands in Ireland however, the field layer is. In addition, the woodland is known to succumb to periodic flooding although upper levels may be outside the flood zone. The addition of Beech displays human interference and modification of this woodland. The species composition is comprised of Beech (*Fagus* spp.) closest to the road followed by Spruce (*Picea* spp.) with Elm (*Ulmus* spp.), Grey Willow (*Salix cinerea*), Hazel (*Corylus avellana*) and few Ash (*Fraxinus excelsior*) along the banks of the watercourse. The tree canopy was sparser in proximity to the existing weir. The ground flora includes Bramble (*Rubus fruticosus* agg.), Broad Buckler-fern (*Dryopteris dilatata*), Honeysuckle (*Lonicera periclymenum*), Creeping Buttercup (*Ranunculus repens*), Yorkshire Fog (*Holcus lanatus*), Reed Canary-grass (*Phalaris arundinacea*), Great Wood-rush (*Luzula sylvatica*), Nettle (*Urtica dioica*), Dock (*Rumex* spp.), Cleavers (*Galium aparine*), Tutsan (*Hypericum* spp.), Wild Angelica (*Angelica sylvestris*), Early Dog-violet (*Viola reichenbachiana*), Hemlock Water-dropwort (*Oenanthe crocata*), Opposite-leaved Golden-saxifrage (*Chrysoplenium oppositifolium),* Native Bluebells (*Hyacinthoides non-scripta*), Holly (*Ilex aquifolium*), Herb Robert (*Geranium robertianum*), Ragwort (*Jacobaea vulgaris*), Wood Sorrel (*Oxalis acetosella*), Meadowsweet (*Filipendula ulmaria*), Pendulous Sedge (*Carex pendula*), Water Figwort (*Scrophularia umbrosa*), Brooklime (*Veronica beccabunga*) and a variety of grasses (*Poa* spp.). Areas closest to the watercourse in depressions or in proximity to waterflow from road drainage were wet underfoot. These areas were more abundant with Water-cress (*Nasturtium officinale*), Sweet Grass (*Glyceria* pp.) and Willowherbs (*Epilobium* spp.). Road and upland drainage eventually entered the Pollmounty watercourse. As noted above, the tree species identified within the immediate area of the proposed activity do not correlate with the positive and indicator species outlined for this Annex I habitat designation however, the surveyed area for this activity was confined to the proposed activity area only and does not represent the entirety of this potential annexed habitat. The herb layer however does include some correlating species. According to a report by O'Neill and Barron (2013) on Alluvial Forests in Ireland, "*The herbaceous layer includes many large species such as Filipendula ulmaria, Angelica sylvestris and Carex acutiformis, vernal species such as Ranunculus ficaria and Anemone nemorosa, and other indicative species such as Carex remota, Lycopus europaeus, Urtica dioica and Geum rivale"*.

An area of **scrub (WS1)** occurs in proximity of the accessway and was dominated by Brambles (*Rubus fruticosus* agg.). Scrub also occurs along the boundary of the watercourse, parallel to the generator shed. The composition is comprised of Alder (*Alnus* spp.), Sycamore (*Acer pseudoplatanus*), Grey Willow (*Salix cinerea*), Holly (*Ilex aquifolium*), Yellow Flag (*Iris pseudacorus*) and Meadowsweet (*Filipendula ulmaria*).

The vehicle access and existing buildings including cemented and paved areas are classified as **Buildings and artificial surfaces (BL3).** This was a species poor habitat due to impenetrable surfaces and high disturbance. Plant species recorded include Greater Plantain (*Plantago major),* Broad-leaved Dock (*Rumex obtusifolius*), Dandelion (*Taraxacum* agg.), Willowherbs (*Epilobium* spp.), Daisy (*Bellis perennis*), Spear Thistle (*Cirsium vulgare*) and Moss (Bryophyta).

Adjacent the existing accessway, areas of **recolonising bare ground (ED3)** were identified. It had been recently cut. The species composition was comprised of Yorkshire Fog (*Holcus lanatus*), Daisy (*Bellis perennis*), Creeping Buttercup (*Ranunculus repens*), Yellow Pimpernel (*Lysimachia nemorum*), Bramble (*Rubus fruticosus* agg.), Dandelion (*Taraxacum* agg.), Herb Robert (*Geranium robertianum*), Nettle (*Urtica dioica*), Selfheal (*Prunella vulgaris*), Bush Vetch (*Vicia sepium*), Cat's-ear (*Hypochaeris radicata*), Common Field-speedwell (*Veronica persica)* and Rough Hawkbit (*Leontodon hispidus*).

Habitats of note outside the activity area

Similar to the woodland described above, the woodland akin to **Riparian woodland (WN5)/Mixed broadleaved/conifer woodland (WD2)** also occurs to the south-west of the site.

An area of **dry meadows and grassy verges (GS2)** is located to the west of the site in proximity of the generator shed. Again, this had been cut recently. Plants recorded include Yorkshire Fog (*Holcus lanatus*), Dandelion (*Taraxacum* agg.), Bramble (*Rubus fruticosus* agg.), Creeping Buttercup (*Ranunculus repens*), Willowherbs (*Epilobium* spp.), Clover (*Trifolium* spp.), Dock (*Rumex* spp.), Brooklime (*Veronica beccabunga*), Greater Stitchwort (*Stellaria holostea*), Common Chickweed (*Stellaria media*) and Nettle (*Urtica dioica*).

No other habitats associated with the River Barrow and River Nore SAC were identified.

No third schedule invasive flora or flora of conservation significance were recorded within the boundary of the site.

Indian Balsam, a third schedule invasive species was identified outside of the proposed activity area adjacent the Pollmounty watercourse. There will be no activities within this area.

See Appendix C for photo log of the site. See figure 5.5 for habitat map.

Figure 5.5: Habitat Map

Table 5.3 Summary of Habitats Identified at and Adjacent the Proposed Project Site

HABITAT CLASSIFICATION HIERARCHY		
LEVEL 1	**LEVEL 2**	**LEVEL 3**
F - Freshwater	**FW -** Watercourses	**FW1 –** Eroding/upland Rivers
G – Grassland and marsh	**GS** – Semi-improved grassland	**GS2 –** Dry meadows and grassy verges
W – Woodland and scrub	**WD -** Highly modified/non-native woodland	**WD2 –** Mixed broadleaved /conifer woodland
	WN – Semi-natural woodland	**WN5 –** Riparian woodland
	WS – Scrub/transitional woodland	**WS1 -** Scrub
E – Exposed rock and disturbed ground	**ED –** Disturbed ground	**ED3 –** Recolonising bare ground
B – Cultivated and built land	**BL –** Built land	**BL3 –** Buildings and artificial surfaces

5.2.2 FAUNA

Bird species noted during both site walkover includes Chiffchaff (*Phylloscopus collybita*), Chaffinch (*Fringilla coelebs*), Robin (*Erithacus rubecula*), Blackbird (*Turdus merula*), Wren, Goldcrest (*Regulus regulus*), Dunnock (*Prunella modularis*), Great Tit (*Parus major*) and Song Thrush (*Turdus philomelos*).

No birds are Red listed under the BoCCI classification (Gilbert *et al*, 2021). Goldcrest are Amber listed. None of the bird species recorded at the proposed activity site are listed under Annex I of the E.U. Birds Directive.

Kingfisher are not listed as a qualifying interest of the River Barrow and River Nore SAC although this species could be within the area. According to Cummins et al (2020), Kingfisher require "*tall vertical banks with soft material which they can dig their burrows".* Differential methods may provide bias for potential suitable habitat as a survey covered on foot has limitations however, using binoculars to view the banks on the opposite sides, it is unlikely they would be suitable for nesting Kingfisher. The banks of the Pollmounty watercourse were approximately 0.5-1m above the surface of the water and straight as opposed to vertical. Some vegetation overhung the banks inhibiting view however, there were limited areas of bare mud. This section of the Pollmounty watercourse is unlikely to support suitable nesting habitat for Kingfisher.

Kingfisher are known to perch on tall vegetation within and along watercourses for hunting. There was limited perching vegetation within the proposed activity area. Some overhanging trees outside the activity area could offer suitable perching habitat for Kingfisher, should they hunt in the area. No proposed activity will take place outside of the project area. There was no evidence of or signs of Kingfisher within the immediate area of the site.

Otter have two basic requirements; prey and suitable safe refuges to rest. Otter typically maintain couches above ground in reed beds or dense scrub and holts underground. Binocular and in-stream investigations for Otter were conducted as part of this assessment to ascertain the presence of Otter. Evidence of Otter (prints) were identified on an area of deposited silt along the margin of the Pollmounty watercourse. This area is within the proposed activity area. A mammal path was observed emerging from the Pollmounty watercourse on the northern bank. It was not possible to access this area. The mammal path could be that of Otter. No other evidence of Otter including holts, couches, slides or spraints were observed within the immediate activity area. There are some areas of taller vegetation and scrub within and adjacent the proposed activity area which could offer suitable couch habitat for Otter however, the taller vegetation on the south side of the watercourse was in a scattered fashion. The overhanging vegetation limited on-foot investigations however, the absence of holts was confirmed by in-stream investigations. It is considered that Otter likely use the area for hunting and/or feeding. The removal of accumulated silt within the proposed activity area would not be considered to have a direct impact on Otter given the absence of holts and considering that they are not a sedentary species. However, an indirect impact may occur due to a deterioration in water quality via the release of suspended solids. This will be assessed further.

Figure 5.6: Evidence of Otter on silt laden margins within the proposed activity area

As noted in section 5.2.3, the proposed activity area could support suitable habitat for Lamprey species, and Freshwater Crayfish but would be unsuitable for Freshwater Pearl Mussel or Salmonoid species.

Other fauna typical of that found throughout the rest of Ireland, which may be found in the area include Bat species (Chiroptera), Common Frog (*Rana temporaria*), Smooth Newt (*Lissotriton vulgaris),* Pine Marten (*Martes martes*) and Red Squirrel (*Sciurus vulgaris*).

As the proposed activity is located within the vicinity of a number of trees, there is potential for bat roosts onsite or within the area. Bats would also likely use the watercourse for feeding and commuting. Amphibians such as the Common Frog and Smooth Newt could use the habitats onsite for breeding and hibernating. These species were not found during the site assessment. Pine Marten and Red Squirrel are known to occur within both deciduous and conifer woodlands and therefore, may be present onsite also. However, there will be no tree or terrestrial vegetation removal required to facilitate the proposed activity. Therefore, a direct impact to these species is not predicted. Water quality impacts are discussed in section 7.3.

5.2.3 Aquatic Ecology Assessment of the Poulmounty River

The site characterisation assessment included surveying of aquatic habitats and species was undertaken on 2nd May 2025. The subject extent of the Poulmounty River (EPA Code:14P03) is c. 150m in length. The width of the river throughout is c. 5.0 to 6.5m. The habitat here is Eroding/upland rivers (FW1). River depth generally ranged from 0.3 to 0.5 metres.

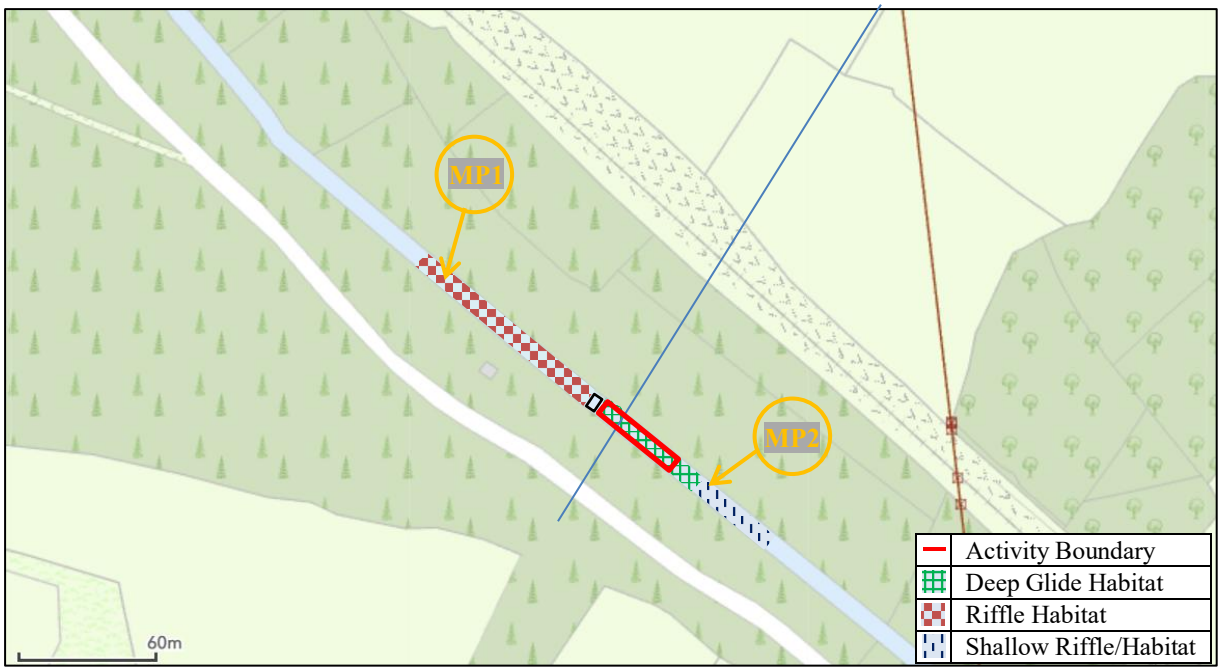

Figure 5.7: Freshwater Habitat Map

Upstream of the proposed activity area, a patchwork of larger stone riffle habitat and gravel over sand glide habitat predominate, providing good spawning ground for salmonid species. Slight to moderate siltation is noted upstream of the activity area. The Poulmounty and Barrow Rivers are not designated as salmonid rivers (S.I. No 84 of 1988), however the main stem and its tributaries support angling for salmon, trout and coarse fish species. The activity area does not contain suitable holding areas or spawning habitat for salmonid species, however, fish may get trapped in the isolated area.

The activity area is classified as a glide habitat (intermediate between still pool and turbulent riffle) over the deposited sand and silt upstream of the intake works. The silt has predominantly accumulated on the northern area of the river, with a deeper channel running along the southern bank to the intake works. This area provides ideal habitat for juvenile River Lamprey (*Lampetra fluviatilis*) and Brook Lamprey (*Lampetra planeri*) ammocoetes. These species have been recorded within the Pollmounty River. The muddy bank may also provide suitable burrow locations for White-clawed Crayfish (*Austropotamobius pallipes*), however, none were noted on the day of the assessment.

A series of installed boulder features for c. 75m downstream provide good riffle habitat with intermittent small pool areas. Sand and silt, characteristic of that upstream of the intake works, has shallow accumulations over stone substrate in pool areas. Refuges within the boulder pools and muddy bank burrows would provide good habitat for adult White-clawed Crayfish (*Austropotamobius pallipes*), which have been recorded at Graiguenamanagh on the Barrow main channel.

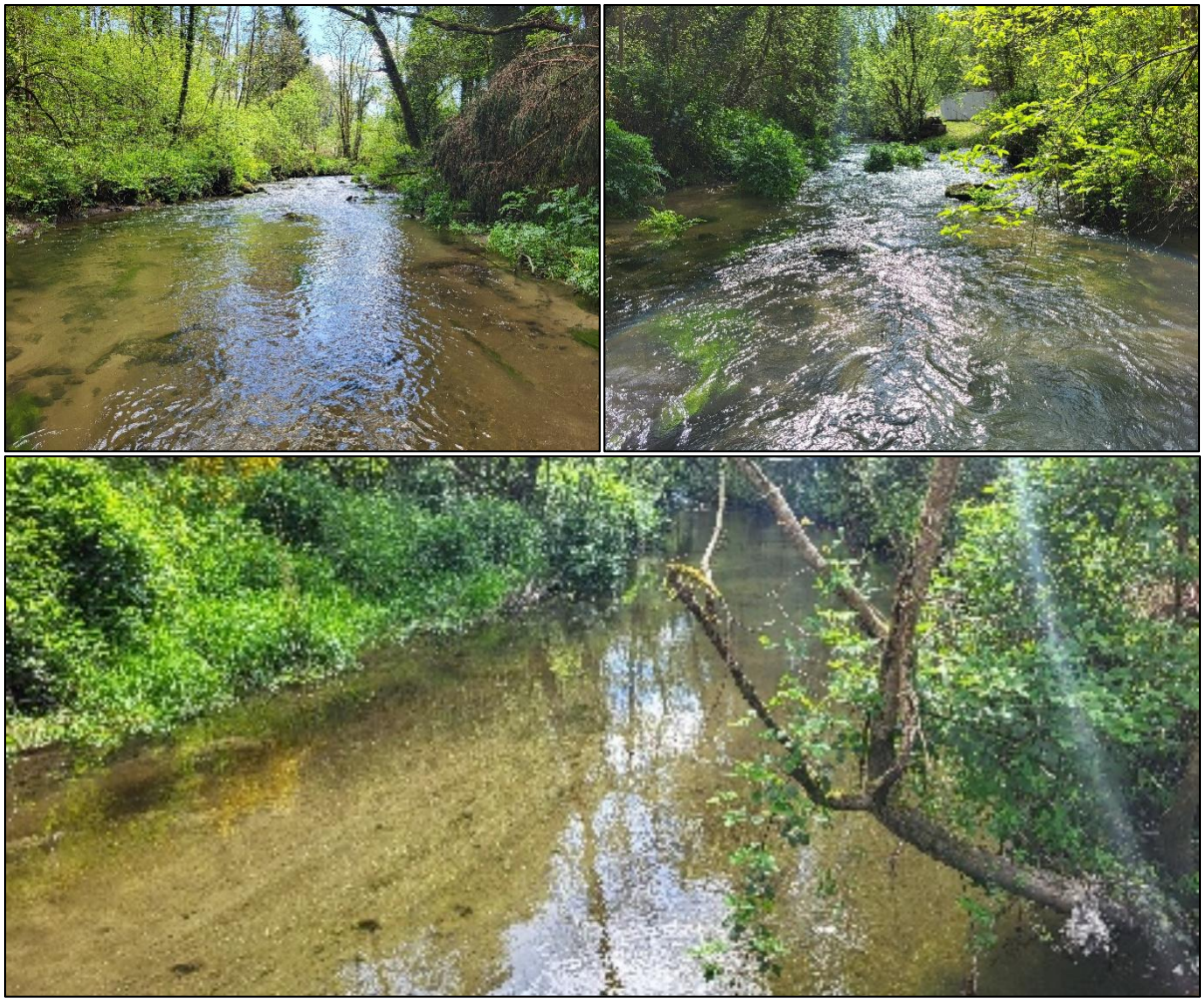

Figure 5.8: View of upstream MP1 (top left), downstream MP2 (top right) and activity area (bottom).

Freshwater Pearl Mussel (*Margaritifera margaritifera*) are known to be extinct from the main channel of the River Barrow, however communities may still exist in less influenced tributaries such as the known population in Mountain River (EPA Code:14M01) No Pearl Mussel was noted during the instream survey of the activity area, however, populations may exist upstream

of the study area. The siltation occurring within the study area would make this unsuitable for Freshwater Pearl Mussel. The site is not located within a catchment listed in the Pearl Mussel Regulations S.I. 296 of 2009, as amended.

Throughout the entire survey stretch there is high shading and riparian tree cover of c. 50-90%, with flora and tree species as noted above.

Macroinvertebrate Assessment

Overall, 19 species of macroinvertebrates were recorded within the study area.

Monitoring Point Site 1 was riffle / glide habitat upstream of the activity area, with a gravel// sand / silt substrate and larger stone beds. This site was located c. 50m upstream of the proposed instream activity area.

There was a total of 14 species of macroinvertebrates recorded at this location. There were no pollutant sensitive Group A species recorded. Group B macroinvertebrates are also pollutant sensitive. The Caddisfly species *Glossosoma boltoni* and *Sericostoma personatum* were recorded. Group C was the highest represented group with 10 of the 14 taxa recorded and were generally small numbers to numerous. Species included the crustacean *Gammarus dubeni*, Jenkins Spire Snail *Potamopyrgus antipodarum*, Riffle Beetle *Limnius volckmari*, Mayfly nymph *Serratella ignita* and Caddisfly *Hydropsyche siltalai.* There was one pollutant tolerant Group D *Glossiphonia complanata* leech present and no Group E species recorded.

Monitoring Point Site 2 was a range of glide and pool habitats interspersed between large boulder riffle areas with shallow sand / silt substrate over cobble and stone. This site was located c. 100m downstream of the proposed instream activity location.

There was a total of 15 species of macroinvertebrates recorded at this location. A single pollutant sensitive Group A species was recorded, being the Stonefly *Isoperla grammatica* being present (which may have been washed downstream). Group B macroinvertebrates are also pollutant sensitive and the Caddisfly species *Glossosoma boltoni* and *Sericostoma personatum* were recorded. The Group C was similar MP1 with 10 of the 15 taxa recorded and were generally small numbers to numerous. Species included the crustacean *Gammarus dubeni*, Riffle Beetle *Limnius volckmari*, Mayfly nymph *Serratella ignita*, Caddisfly *Hydropsyche siltalai* and Jenkins Spire Snail *Potamopyrgus antipodarum.* There were no pollutant tolerant Group D or Group E species recorded.

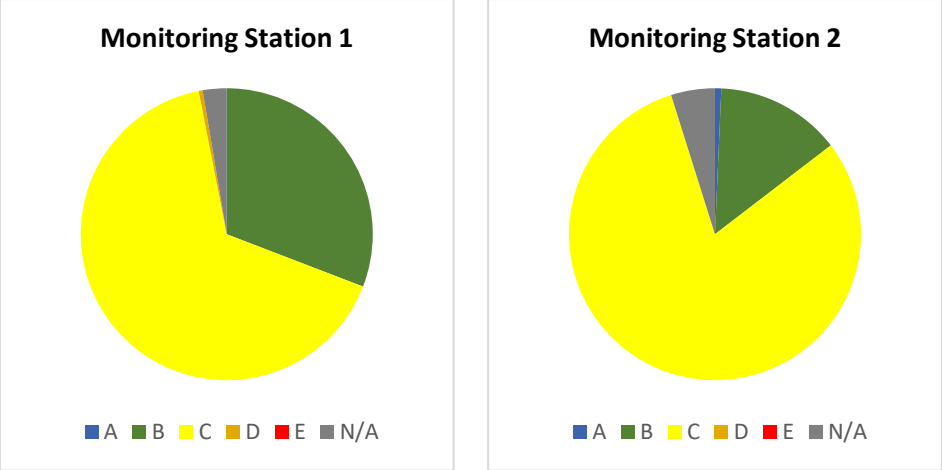

Figure 5.9: Sensitivity Groups for upstream MP1 and downstream MP2.

Table 5.4: Results of the on-site macroinvertebrate survey

	Sensitivity Group	Stations	
		MP1	MP2
PLECOPTERA – Stonefly			
Leuctridae			
Leuctra inermis	B	*	*
Perlodidae			
Isoperla grammatica	B		*
EPHEMEROPTERA – Mayfly			
Ephemerellidae			
Serratella ignita	C	***	****
TRICHOPTERA – Caddisfly			
Rhyacophilidae			
Rhyacophila dorsalis	C	*	*
Hydropsychidae			
Hydropsyche siltalai	C	***	****
Sericostomatidae			
Sericostoma personatum	B	****	****
Limnephilidae			
Limnephilis spp.	B		*
Glossosomatidae			
Glossosoma boltoni	B	*****	***
CRUSTACEA – Crustaceans			
Gammarus			
Gammarus duebeni	C	******	******
COLEOPTERA – Beetles			
Elminthidae	C	*	
Elmis aenea	C	*	***
Limnius volckmari	C	****	*****
Esolus parallelepipedus	C		*
Dytiscidae			
Oreodytes davisii	C	*	*
PLANARIIDAE – Flatworms			
Polycelis sp.	C	*	*
HIRUDINEA – Leeches			
Glossiphonidae			

	Sensitivity Group	Stations	
		MP1	MP2
Glossiphonia complanata	D	*	
DIPTERA – True Flies			
Chironomidae	C		*
Chironomous sp.	E		
Ceratopogonidae	N/A	***	
Dicranota	N/A		***
OLIGOCHAETE			
Lumbriculidae	N/A	*	***
MOLLUSCA			
Hydrobiidae			
Potamopyrgus antipodarum	C	*****	****
Q-RATING		3-4	3-4
TAXON RICHNESS		14	15
TOTAL ABUNDANCE		227	146

**= Present*	*** = Scarce/Few*	**** = Small Numbers*	***** = Fair Numbers*
****** = Common*	******* = Numerous*	******** = Dominant*	********* = Excessive*
(t) = sample taken in sub-optimal conditions and must be taken as tentative.			

With regard to the macroinvertebrate assemblage recorded at the proposed activity area;

- The macroinvertebrate fauna recorded at MP1 would classify the site with a Q-rating of Q3-4, equivalent to WFD status "Moderate". However, the sample is on the upper end of this classification and suspected wash down Group A at MP2 indicate that Q4 is highly likely.
- MP2 was assigned a Q-rating of Q3-4, equivalent to WFD status "Moderate". Taxon richness at this site is similar to that found upstream, and the lower abundances of pollution tolerant species is considered to be indicative of the more limited sample areas (due to high coverage of boulders). Water quality varying to Q4 would also not be unexpected here. However, moderate siltation is evident in depositing areas.

The principal direct risk to freshwater ecology would be potential loss of Lamprey ammocoetes during the removal of accumulated materials and the capturing of fish species within the isolated area during the proposed activity preparations. The appropriate removal of fish and lamprey species from the project area by trained personnel would be effective to prevent losses.

The principal indirect risk to freshwater ecology would be potential suspended solids concentrations and siltation downstream of the activity. It is noted that, while siltation is evident downstream of the proposed activity area, this does not appear to be having a significant effect on the Q rating of the river or availability of prey species for fish in free flowing areas. Potential additional siltation from the project would be expected to add to existing siltation mainly in depositing areas. As the proposed activity would be relatively minor and limited in timeframe, it is not considered that the project would have a significant impact on water quality provided that appropriate mitigation as outlined in section 9, is in place.

6.0 EUROPEAN SITES (NATURA 2000 SITES) WITHIN ZONE OF INFLUENCE

In assessing the zone of influence of this project upon European sites, the following factors must be considered:

- Potential impacts arising from the project,
- The location and nature of European sites,
- Pathways between the activity and European sites.

There is no standard radius that can be used to select which European sites are to be analysed. This can only be determined by looking at the zone of influence of the project at hand.

Four Special Protection Area (SPA) sites occur within the potential zone of influence from the proposed activity. Five Special Area of Conservation (SAC) sites occur within the potential zone of influence of the proposed activity.

Maps detailing European sites within the potential zone of influence of the proposed activity area are included as Appendix B below. For this assessment, the site considered to be within the potential zone of influence of the proposed activity is the River Barrow and River Nore SAC (Site Code: 002162) due to location within the SAC boundary and hydrological connection with the proposed activity area.

The proposed activities are not anticipated to have the potential to cause a significant effect upon any other Natura 2000 site.

TABLE 6.1.1: NATURA 2000 SITES POTENTIAL WITHIN THE ZONE OF INFLUENCE				
SITE CODE	**DISTANCE**	**SITE NAME**	**QUALIFYING INTERESTS**	**PATHWAY/COMMENTS**
002162	Within boundary	River Barrow and River Nore SAC	[1130] Estuaries [1140] Mudflats and sandflats not covered by seawater at low tide [1310] Salicornia and other annuals colonising mud and sand [1330] Atlantic salt meadows [1410] Mediterranean salt meadows [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [4030] European dry heaths [6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [7220] Petrifying springs with tufa formation [91A0] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91E0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior [1016] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1029] *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1092] *Austropotamobius pallipes* (White-clawed Crayfish) [1095] *Petromyzon marinus* (Sea Lamprey) [1096] *Lampetra planeri* (Brook Lamprey) [1099] *Lampetra fluviatilis* (River Lamprey) [1103] *Alosa fallax fallax* (Twaite Shad) [1106] *Salmo salar* (Salmon) [1355] *Lutra lutra* (Otter) [4121] *Trichomanes speciosum* (Killarney Fern)	Potential for direct impacts to protected species within the SAC during in-stream activities. Potential indirect impact to habitats and species downstream due to potential release of hydrocarbons and/or sediments during in-stream activities. Screened in for further assessment.
000770	3km NE	Blackstairs Mountains SAC	[4010] Northern Atlantic wet heaths with *Erica tetralix* [4030] European dry heaths	No direct downstream hydrological connection. Located upstream of proposed activity area. Habitats not found onsite.

				No proposed activities within this SAC. No likely significant effects due to absence of direct hydrological connection, absence of associated habitats onsite, distance, scale and nature of the proposed activities. No further assessment required. Screened out.
000784	8km NE	Slaney River Valley SAC	[1130] Estuaries [1140] Mudflats and sandflats not covered by seawater at low tide [1330] Atlantic salt meadows [1410] Mediterranean salt meadows [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [4030] European dry heaths [91A0] Old sessile oak woods with Ilex and Blechnum in the British Isles [91E0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* [1029] *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1095] *Petromyzon marinus* (Sea Lamprey) [1096] *Lampetra planeri* (Brook Lamprey) [1099] *Lampetra fluviatilis* (River Lamprey) [1103] *Alosa fallax* (Twaite Shad) [1106] *Salmo salar* (Salmon) [1355] *Lutra lutra* (Otter) [1365] *Phoca vitulina* (Harbour Seal)	No direct hydrological pathways. Not located within same catchment. Significant terrestrial distance from proposed activity area. No likely significant effects due to absence of hydrological connection, associated habitats, distance, scale and nature of proposed activities. No further assessment required. Screened out.

004233	9.6km W	River Nore SPA	[A229] Kingfisher (*Alcedo atthis*)	No direct downstream hydrological connection. Located on River Nore, not Barrow. Land/Air Pathway No likely significant effects due to absence of direct hydrological connection, distance, scale and nature of the proposed activities. No further assessment required. Screened out.
000697	20km SE	Bannow Bay SAC	[1130] Estuaries [1140] Mudflats and sandflats not covered by seawater at low tide [1210] Annual vegetation of drift lines [1220] Perennial vegetation of stony banks [1310] Salicornia and other annuals colonising mud and sand [1330] Atlantic salt meadows [1410] Mediterranean salt meadows [1420] Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) [2110] Embryonic shifting dunes [2120] Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2130] Fixed coastal dunes with herbaceous vegetation (grey dunes)	No direct hydrological connection. Significant distance from the proposed activity area. No likely significant effects due to absence of direct hydrological connection, absence of associated habitats onsite, distance, scale and nature of the proposed activities. No further assessment required. Screened out.
004076	21km E	Wexford Harbour and Slobs SPA	[A004] Little Grebe (*Tachybaptus ruficollis*) [A005] Great Crested Grebe (*Podiceps cristatus*) [A017] Cormorant (*Phalacrocorax carbo*)	No direct hydrological connection.

			[A028] Grey Heron (*Ardea cinerea*) [A037] Bewick's Swan (*Cygnus columbianus bewickii*) [A038] Whooper Swan (*Cygnus cygnus*) [A046] Light-bellied Brent Goose (*Branta bernicla hrota*) [A048] Shelduck (*Tadorna tadorna*) [A050] Wigeon (*Anas penelope*) [A052] Teal (*Anas crecca*) [A053] Mallard (*Anas platyrhynchos*) [A054] Pintail (*Anas acuta*) [A062] Scaup (*Aythya marila*) [A067] Goldeneye (*Bucephala clangula*) [A069] Red-breasted Merganser (*Mergus serrator*) [A082] Hen Harrier (*Circus cyaneus*) [A125] Coot (*Fulica atra*) [A130] Oystercatcher (*Haematopus ostralegus*) [A140] Golden Plover (*Pluvialis apricaria*) [A141] Grey Plover (*Pluvialis squatarola*) [A142] Lapwing (*Vanellus vanellus*) [A143] Knot (*Calidris canutus*) [A144] Sanderling (*Calidris alba*) [A149] Dunlin (*Calidris alpina*) [A156] Black-tailed Godwit (*Limosa limosa*) [A157] Bar-tailed Godwit (*Limosa lapponica*) [A160] Curlew (*Numenius arquata*) [A162] Redshank (*Tringa totanus*) [A179] Black-headed Gull (*Chroicocephalus ridibundus*) [A183] Lesser Black-backed Gull (*Larus fuscus*) [A195] Little Tern (*Sterna albifrons*) [A395] Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A999] Wetland and Waterbirds	Land/Air Pathway No likely significant effects due to absence of direct hydrological connection, distance, scale and nature of the proposed activities. No further assessment required. Screened out.
004033	23km S	Bannow Bay SPA	[A046] Light-bellied Brent Goose (*Branta bernicla hrota*) [A048] Shelduck (*Tadorna tadorna*) [A054] Pintail (*Anas acuta*) [A130] Oystercatcher (*Haematopus ostralegus*) [A140] Golden Plover (*Pluvialis apricaria*) [A141] Grey Plover (*Pluvialis squatarola*) [A142] Lapwing (*Vanellus vanellus*)	No direct hydrological connection. Land/Air Pathway No likely significant effects due to absence of direct

			[A143] Knot (*Calidris canutus*) [A149] Dunlin (*Calidris alpina*) [A156] Black-tailed Godwit (*Limosa limosa*) [A157] Bar-tailed Godwit (*Limosa lapponica*) [A160] Curlew (*Numenius arquata*) [A162] Redshank (*Tringa totanus*) [A999] Wetland and Waterbirds	hydrological connection, distance, scale and nature of the proposed activities. No further assessment required. Screened out.
004237	28.7km S	Seas off Wexford SPA	[A001] Red-throated Diver (*Gavia stellata*) [A009] Fulmar (*Fulmarus glacialis*) [A013] Manx Shearwater (*Puffinus puffinus*) [A016] Gannet (*Morus bassanus*) [A017] Cormorant (*Phalacrocorax carbo*) [A018] Shag (*Phalacrocorax aristotelis*) [A065] Common Scoter (*Melanitta nigra*) [A176] Mediterranean Gull (*Larus melanocephalus*) [A179] Black-headed Gull (*Chroicocephalus ridibundus*) [A183] Lesser Black-backed Gull (*Larus fuscus*) [A184] Herring Gull (*Larus argentatus*) [A188] Kittiwake (*Rissa tridactyla*) [A191] Sandwich Tern (*Sterna sandvicensis*) [A192] Roseate Tern (*Sterna dougallii*) [A193] Common Tern (*Sterna hirundo*) [A194] Arctic Tern (*Sterna paradisaea*) [A195] Little Tern (*Sterna albifrons*) [A199] Guillemot (*Uria aalge*) [A200] Razorbill (*Alca torda*) [A204] Puffin (*Fratercula arctica*)	Weak/remote hydrological pathway via Celtic Sea. Land/air pathway. Significant terrestrial and hydrological distance. No likely significant effects due to absence of direct hydrological connection, distance, scale and nature of the proposed activities. No further assessment required. Screened out.
000764	35km S	Hook Head SAC	[1160] Large shallow inlets and bays [1170] Reefs [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts [1349] *Tursiops truncatus* (Common Bottlenose Dolphin) [1351] *Phocoena phocoena* (Harbour Porpoise)	Weak/remote hydrological pathway via the Celtic Sea. No associated habitats occur onsite. Significant distance from proposed activity area.

				No likely significant effects due to dilution effect, distance, scale and nature of the proposed activities. No further assessment required. Screened out.

6.1 RIVER BARROW AND RIVER NORE SAC (SITE CODE: 002162)

This SAC is composed of the freshwater stretches of the Barrow and Nore catchments, as far upstream as the Slieve Bloom Mountains, and the tidal elements and estuary as far downstream as Creadun Head in Waterford. The larger tributaries include the Lerr, Fushoge, Mountain, Aughnavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. The site is an SAC selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive:

TABLE 6.1.2: ANNEX I HABITATS	
CODE	**DESCRIPTION**
1130	Estuaries
1140	Tidal Mudflats and Sandflats
1170	Reefs
1310	*Salicornia* Mud
1330	Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*)
1410	Mediterranean salt meadows (*Juncetalia maritimi*)
3260	Floating River Vegetation
4030	Dry Heath
6430	Hydrophilous Tall Herb Communities
7220	Petrifying Springs*
91A0	Old Oak Woodlands
91E0	Alluvial Forests*

* *denotes a priority habitat*

TABLE 6.1.3: ANNEX II SPECIES		
CODE	**COMMON NAME**	**SCIENTIFIC NAME**
1016	Desmoulin's Whorl Snail	*Vertigo moulinsiana*
1029	Freshwater Pearl Mussel	*Margaritifera margaritifera*
1092	White-clawed Crayfish	*Austropotamobius pallipes*
1095	Sea Lamprey	*Petromyzon marinus*
1096	Brook Lamprey	*Lampetra planeri*
1099	River Lamprey	*Lampetra fluviatilis*
1103	Twaite Shad	*Alosa fallax*
1106	Atlantic Salmon	*Salmo salar*
1355	Otter	*Lutra lutra*
1421	Killarney Fern	*Trichomanes speciosum*
1990	Nore Freshwater Pearl Mussel	*Margaritifera durrovensis*

An excerpt from the site synopsis for River Barrow and River Nore SAC (2024) is included below;

This site consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains, and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Major towns along the

edge of the site include Mountmellick, Portarlington, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow, and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore".

Good examples of alluvial forest (a priority habitat on Annex I of the E.U. Habitats Directive) are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Rusty Willow (*S. cinerea subsp. oleifolia),* Crack Willow (*S. fragilis*) and Osier (*S. viminalis*), along with Iris (*Iris pseudacorus),* Hemlock Water-dropwort (*Oenanthe crocata*), Wild Angelica (*Angelica sylvestris),* Thin-spiked Wood-sedge (*Carex strigosa*), Pendulous Sedge (*C. pendula*), Meadowsweet (*Filipendula ulmaria*), Common Valerian (*Valeriana officinalis*) and the Red Data Book species Nettle-leaved Bellflower (*Campanula trachelium*).

A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the E.U. Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, *Palustriella commutata* and *Eucladium verticillatum*, have been recorded.

The best examples of old oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadohir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the 16th century and has the most complete written record of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens. It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Bellflower and the moss Leucodon sciuroides. The rare Myxomycete fungus, Licea minima has been recorded from woodland at Abbeyleix.

Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by oak (*Quercus* spp.), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Downy Birch (*Betula pubescens),* with some Beech (*Fagus sylvatica*) and Ash (*Fraxinus excelsior*). All the trees are regenerating through a cover of Bramble (*Rubus fruticosus* agg.), Foxglove (*Digitalis purpurea*), Great Wood-rush (*Luzula sylvatica*) and Broad Buckler-fern (*Dryopteris dilatata*).

Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the floodplain of the river is intact. Characteristic species of the habitat include Meadowsweet, Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Indian Balsam (*Impatiens glandulifera*), an introduced and invasive species, is abundant in places.

Floating river vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include water-starworts (*Callitriche* spp.), Canadian Pondweed (*Elodea canadensis*), Bulbous Rush (*Juncus bulbosus*), water-milfoils (*Myriophyllum* spp.), the pondweed Potamogeton x nitens, Broad-leaved Pondweed (*P. natans),* Fennel Pondweed (*P. pectinatus*), Perfoliated Pondweed (*P. perfoliatus*) and crowfoots (*Ranunculus* spp.). The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996).

Dry heath at the site occurs in pockets along the steep valley sides of the rivers especially in the Barrow Valley and along the Barrow tributaries where they occur in the foothills of the Blackstairs Mountains. The dry heath vegetation along the slopes of the river bank consists of Bracken and Gorse (*Ulex europaeus*) with patches of acidic grassland vegetation.

Salt meadows occur at the southern section of the site in old meadows where the embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (*Phragmites australis*) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickcloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed.

Glassworts (*Salicornia* spp.) and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones.

The estuary and the other E.U. Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves.

Other habitats which occur throughout the site include wet grassland, dunes, marsh, reedswamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds.

Seventeen Red Data Book plant species have been recorded within the site, most in the recent past. These are Killarney Fern (*Trichomanes speciosum*), Divided Sedge, Clustered Clover, Basil Thyme (*Acinos arvensis*), Red Hemp-nettle (*Galeopsis angustifolia*), Borrer's Saltmarsh-grass, Meadow Barley, Opposite-leaved Pondweed (*Groenlandia densa*), Meadow Saffron/Autumn Crocus (*Colchicum autumnale*), Wild Clary/Sage, Nettle-leaved Bellflower, Saw-wort (*Serratula tinctoria*), Bird Cherry (*Prunus padus*), Blue Fleabane (*Erigeron acer*), Fly Orchid (*Ophrys insectifera*), Ivy Broomrape (*Orobanche hederae*) and Greater Broomrape. Of these, the first nine are protected under the Flora (Protection) Order, 2015. Divided Sedge was thought to be extinct but has been found in a few locations in the site since 1990. In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge, Field Garlic (*Allium oleraceum*) and Summer Snowflake. Six rare

lichens, indicators of ancient woodland, are found including *Lobaria laetevirens* and *L. pulmonaria.* The rare moss *Leucodon sciuroides* also occurs.

The site is very important for the presence of a number of E.U. Habitats Directive Annex II animal species including Freshwater Pearl Mussel (*Margaritifera margaritifera*), White-clawed Crayfish, Salmon, Twaite Shad, three lamprey species – Sea Lamprey, Brook Lamprey and River Lamprey, the tiny whorl snail Vertigo moulinsiana and Otter. This is one of only a handful of spawning grounds in the country for Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.

The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat, Badger, Irish Hare and Common Frog. The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater mussel species, *Anodonta anatina* and *A. cygnea*.

The site is of ornithological importance for a number of E.U. Birds Directive Annex I species, including Greenland White-fronted Goose, Whooper Swan, Bewick's Swan, Bar-tailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh, both in Co. Laois, and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country. The old oak woodland at Abbeyleix has a typical bird fauna including Jay, Long-eared Owl and Raven. The reedbed at Woodstown supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail.

Land use at the site consists mainly of agricultural activities – mostly intensive in nature and principally grazing and silage production. Slurry is spread over much of the area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within the site. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (*Prunus laurocerasus*) and Rhododendron (Rhododendron ponticum). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein.

Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows add further interest to this site.

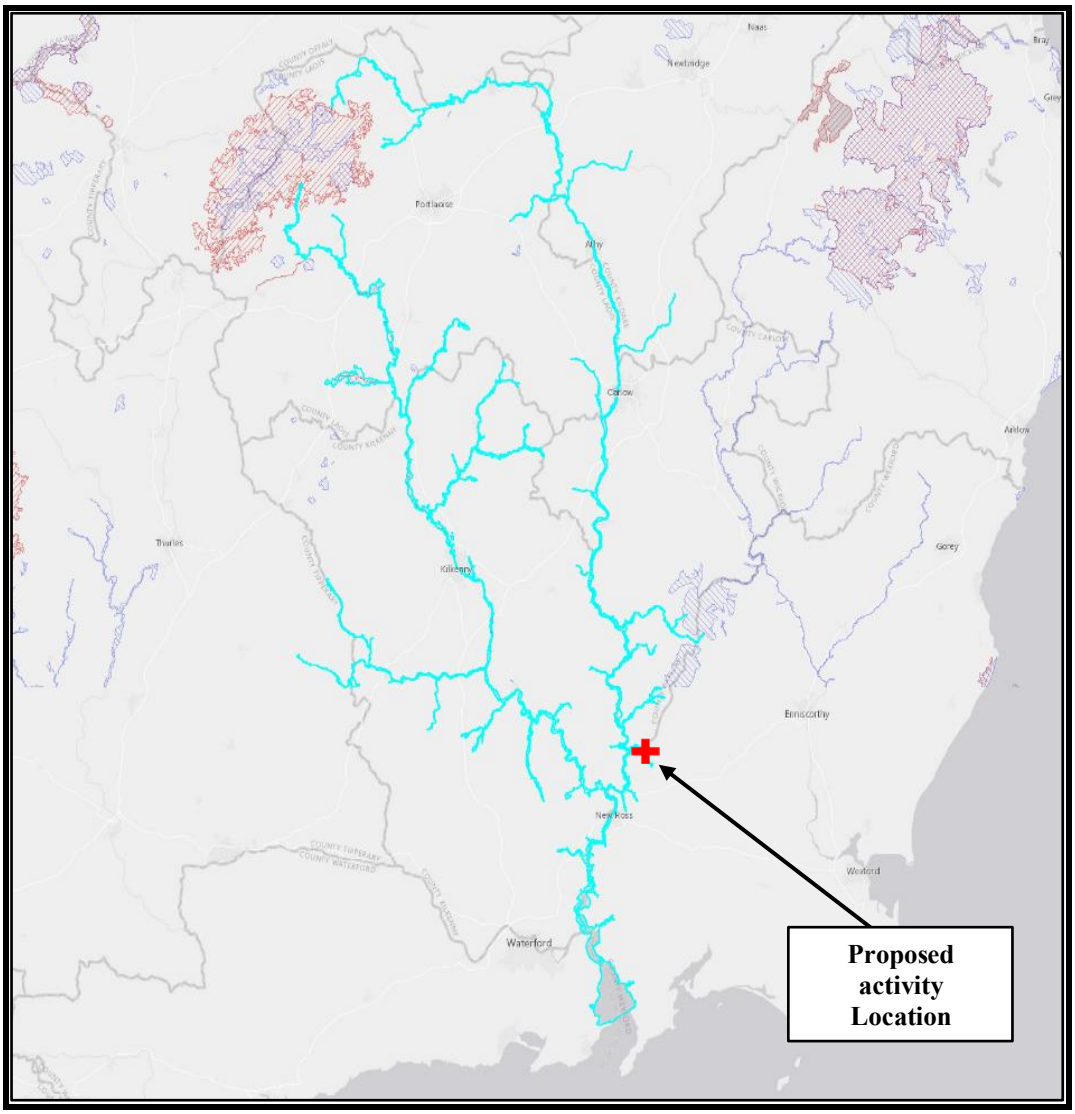

Figure 5.1: River Barrow and River Nore SAC

The conservation objectives for the SAC site are to maintain or restore the favourable conservation condition of the qualifying interests. Site specific conservation objectives (SSCOs) for the qualifying interests of the River Barrow and River Nore SAC are provided in the table below, where available from the NPWS document "Conservation Objectives: River Barrow and River Nore SAC 002162" (NPWS, 2025).

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
[1130] Estuaries			
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes	Habitat area was estimated using OSI data and the defined Transitional Water Body area under the Water Framework Directive as 3,856ha
Community distribution	Hectares	The following sediment communities should be maintained in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand community complex; Fine sand with *Fabulina fabula* community.	
Community structure: extent	Hectares and distribution	Conserve the extent of Sabellaria alveolata reef community, subject to natural processes.	
Community structure: quality	Honeycomb reef structure	Conserve the high quality of the Sabellaria alveolata reef community, subject to natural processes.	
[1140] Tidal Mudflats and Sandflats			
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	Habitat area was estimated using OSI data as 926ha
Community distribution	Hectares	The following sediment communities should be maintained in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand community complex	
[1170] Reefs			
Habitat Area	Hectares	The permanent area is stable or increasing, subject to natural processes.	Habitat area estimated as 17.20ha based on information from site-specific survey in February 2024 (NPWS internal files) and orthophotography.
Distribution	Occurrence	The permanent area is stable or increasing, subject to natural processes.	
Community Extent	Hectares	Conserve the following community type in a natural condition: Sheltered to moderately exposed intertidal reef community complex in a natural condition, subject to natural processes.	
Community structure: extent	Hectares and distribution	Conserve the extent of Sabellaria alveolata reef community, subject to natural processes.	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Community structure: quality	Honeycomb reef structure	Conserve the high quality of the Sabellaria alveolata reef community, subject to natural processes.	
[1310] Salicornia Mud			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.	The Ringville sub-site was mapped and no additional areas of potential Salicornia mudflat were identified from an examination of aerial photographs, giving a total estimated area of 0.03ha. Note further unsurveyed areas maybe present within the site
Habitat distribution	Occurrence	No decline, subject to natural processes	
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain or where necessary restore natural circulation of sediments and organic matter, without any physical obstructions	
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated.	
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project	
Vegetation structure: negative indicator species: *Spartina anglica*	Hectares	No significant expansion of Spartina. No new sites for this species and an annual spread of less than 1% where it is already known to occur	
[1330] Atlantic Salt Meadows			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession	Four sub-sites were mapped and additional areas of potential saltmarsh were identified from an examination of
Habitat distribution	Occurrence	No decline, subject to natural processes	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	aerial photographs, giving a total estimated area of Atlantic salt meadow of 35.07ha. Note further unsurveyed areas maybe present within the site
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession.	
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project	
Vegetation structure: negative indicator species: *Spartina anglica*	Hectares	No significant expansion of *Spartina*. No new sites for this species and an annual spread of less than 1% where it is already known to occur	
[1410] Mediterranean Salt Meadows			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Dunbrody Abbey - 0.08ha, Rochestown - 0.04ha, Ringville - 6.70ha	Three sub-sites were mapped and no additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area of Mediterranean salt meadow of 6.82ha. Note further unsurveyed areas maybe present within the site
Habitat distribution	Occurrence	No decline, subject to natural processes	
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain or where necessary restore natural circulation of sediments and organic matter, without any physical obstructions	
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	
Vegetation structure: vegetation cover	% cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated.	
Vegetation composition: typical species and sub-communities	% cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project	
Vegetation structure: negative indicator species: *Spartina anglica*	Hectares	No significant expansion of *Spartina*. No new sites for this species and an annual spread of less than 1% where it is already known to occur	
[3260] Floating River Vegetation			
Habitat distribution	Occurrence	No decline, subject to natural processes	The full distribution of this habitat and its sub-types in this site is currently unknown. The basis of the selection of the SAC for the habitat is the presence of an excellent example of the vegetation assemblage associated with tidal reaches of large rivers between Enniscorthy and Polladerg townland. Due to regular disturbance (through variations in flow), river macrophytes rarely reach a climax condition but frequently occur as transient communities. A natural (relatively unmodified) flow regime is required for
Habitat area	Kilometres	Area stable or increasing, subject to natural processes	
Hydrological regime: river flow	Metres per second	Maintain appropriate hydrological regimes	
Hydrological regime: groundwater discharge	Metres per second	The groundwater flow to the habitat should be permanent and sufficient to maintain tufa formation	
Substratum composition: particle size range	Millimetres	The substratum should be dominated by large particles and free from fine sediments	
Water chemistry: minerals	Milligrammes per litre	The groundwater and surface water should have sufficient concentrations of minerals to allow deposition and persistence of tufa deposits	
Water quality: suspended sediment	Milligrammes per litre	The concentration of suspended solids in the water column should be sufficiently low to prevent excessive deposition of fine sediments	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Water quality: nutrients	Milligrammes per litre	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition	both plant communities and channel geomorphology to be in favourable condition, exhibiting typical dynamics for the river type
Vegetation composition: typical species	Occurrence	Typical species of the relevant habitat sub-type should be present and in good condition	
Floodplain connectivity	Area	The area of active floodplain at and upstream of the habitat should be maintained	
[4030] Dry Heath			
Habitat distribution	Occurrence	No decline from current habitat distribution, subject to natural processes	Spatial extent currently unmapped but indicated as occurring on the steep, free-draining, river valley sides especially the Barrow and tributaries in the foothills of the Blackstairs Mountains. Dry heath in this SAC occurs on free-draining nutrient poor soils and is often characterised by gorse and open acid grassland areas. And locally bilberry and woodrush. Bracken appears to be quite dense in places and before any management action is considered its rate of spread needs to be established as well as its threat, if any, to other dry heath species and its potential value to Important fauna (e.g. Twite). Broomrape is dependent on gorse at this site as it is parasitic on gorse roots. It is recorded as occurring on steep slopes above New Ross. A small area of excellent dry coastal heath at Ballyhack is
Habitat area	Hectares	Area stable or increasing, subject to natural processes. Habitat area is not known but estimated as less than 400ha of the area of the SAC, occurring in dispersed locations	
Physical structure: free-draining, acid, low nutrient soil; rock outcrops	Occurrence	No significant change in soil nutrient status, subject to natural processes. No increase or decrease in area of natural rock outcrop	
Vegetation structure: sub- shrub indicator species	Percentage cover	Cover of characteristic sub- shrub indicator species at least 25%: gorse (*Ulex europaeus*) and where rocky outcrops occur bilberry (*Vaccinium myrtillus*) and woodrush (*Luzula sylvatica*). Some rock outcrops support English stonecrop (*Sedum anglicum*), sheep's bit (*Jasione montana*) and wild madder (*Rubia peregrina*) as well as important moss and lichen assemblages	
Vegetation structure: senescent gorse	Percentage cover	Cover of senescent gorse less than 50%	
Vegetation structure: browsing	Percentage cover	Long shoots of bilberry with signs of browsing collectively less than 33%	
Vegetation structure: native trees and shrubs	Percentage cover	Cover of scattered native trees and shrub less than 20%	
Vegetation composition: positive indicator species	Number	Number of positive indicator species at least 2 e.g. gorse and associated dry heath/ acid grassland flora	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Vegetation structure: positive indicator species	Percentage cover	Cover of positive indicator species at least 60%. This should include plant species characteristic of dry heath in this SAC including gorse, bilberry and associated acid grassland flora	interspersed with patches rock and of dry lowland grassland and has a high species diversity. Notably there is an excellent range of Clover (*Trifolium*) species including the legally protected clustered clover, a species known only from one other site in Ireland. Also *T. ornithopodiodes, T. striatum* and *Torilus nodosa.*
Vegetation composition: bryophyte and non-crustose lichen species	Number	Number of bryophyte or non- crustose lichen species present at least 2	
Vegetation composition: bracken (*Pteridium aquilinum*)	Percentage cover	Cover of bracken less than 10%	
Vegetation structure: weedy negative indicator species	Percentage cover	Cover of agricultural weed species (negative indicator species) less than 1%	
Vegetation composition: non-native species	Percentage cover	Cover of non-native species less than 1%.	
Vegetation composition: rare/scarce heath species	Location, area and number	No decline in distribution or population sizes of rare, threatened or scarce species, including Greater Broomrape (*Orobanche rapum-genistae*) and the legally protected clustered clover (*Trifolium glomeratum*)	
Vegetation structure: disturbed bare ground	Percentage cover	Cover of disturbed bare ground less than 10% (but if peat soil less than 5%)	
Vegetation structure: burning	Occurrence	No signs of burning within sensitive areas	
[6430] Hydrophilous Tall Herb Communities			
Habitat distribution	Occurrence	No decline, subject to natural processes	Distribution of this habitat in this site is currently unknown. Considered to occur in association with some riverside woodlands, unmanaged river islands and in narrow bands along the floodplain of slow-flowing stretches of river. This habitat requires winter inundation, which results in deposition of naturally
Habitat area	Hectares	Area stable or increasing, subject to natural processes	
Hydrological regime: Flooding depth/height of water table	Metres	Maintain appropriate hydrological regimes	
Vegetation structure: sward height	Centimetres	30-70% of sward is between 40 and 150cm in height	
Vegetation composition: broadleaf herb: grass ratio	Percentage	Broadleaf herb component of vegetation between 40 and 90%	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Vegetation composition: typical species	Number	At least 5 positive indicator species present	nutrient-rich sediment. Bare ground, due to natural indundation processes may often be present. Attribute and target based on the Irish Semi-natural Grassland Survey (O'Neill et al., 2010)
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control- NB Indian balsam (*Impatiens glandulifera*), monkeyflower (*Mimulus guttatus*), Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*)	
[7220] Petrifying Springs			
Habitat area	Square metres	Area stable or increasing, subject to natural processes	Full distribution of this habitat in this site is currently unknown. It has been described in woodlands at Dysart, between Thomastown and Inistioge. Current hydrological regimes are unknown. Petrifying springs rely on permanent irrigation, usually from upwelling groundwater sources or seepage sources. Water chemistry is currently unknown. Water supply to petrifying springs is characteristically oligotrophic and calcareous The bryophytes *Cratoneuron commutatum* and *Eucladium verticillatum* are diagnostic of this habitat.
Habitat distribution	Occurrence	No decline	
Hydrological regime: height of water table; water flow	Metres; metres per second	Maintain appropriate hydrological regimes	
Water quality	Water chemistry measures	Maintain oligotrophic and calcareous conditions	
Vegetation composition: typical species	Occurrence	Maintain typical species	
[91A0] Old Oak Woodlands			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, at least 85.08ha for sub-sites surveyed	The sizes of at least some of the existing woodlands need to be increased in order

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Habitat distribution	Occurrence	No decline.	to reduce habitat fragmentation and benefit those species requiring 'deep' woodland conditions. Oak regenerates poorly. In suitable sites ash can regenerate in large numbers although few seedlings reach pole size. Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources. Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem. The following are the most common invasive species in this woodland type: Beech (*Fagus sylvatica*), Rhododendron (*Rhododendron ponticum*), Cherry laurel (*Prunus laurocerasus*)
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer	
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	
Woodland structure: natural regeneration	Seedling:sapling:pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least 30m^3/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter	
Woodland structure: veteran trees	Number per hectare	No decline	
Woodland structure: indicators of local distinctiveness	Occurrence	No decline	
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	
Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including oak (*Quercus petraea*) and birch (*Betula pubescens*)	
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	
[91E0] Alluvial Forests			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, at least 181.54ha for sites surveyed	The sizes of at least some of the existing woodlands need to be increased in order to reduce habitat fragmentation and
Habitat distribution	Occurrence	No decline.	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	benefit those species requiring 'deep' woodland conditions. Alder and oak regenerate poorly. Ash often regenerates in large numbers although few seedlings reach pole size. Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem. Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources. The following are the most common invasive species in this woodland type: Sycamore (*Acer pseudoplatanus*), Beech (*Fagus sylvatica*), Rhododendron (*Rhododendron ponticum*), Cherry laurel (*Prunus laurocerasus*), Dogwood (*Cornus sericea*), Himalayan honeysuckle (*Leycesteria formosa*) and Himalayan balsam (*Impatiens grandiflora*).
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer	
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	
Woodland structure: natural regeneration	Seedling:sapling:pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	
Hydrological regime: Flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least $30m^3$/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder)	
Woodland structure: veteran trees	Number per hectare	No decline	
Woodland structure: indicators of local distinctiveness	Occurrence	No decline	
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	
Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including ash (*Fraxinus excelsior*) alder (*Alnus glutinosa*), willows (*Salix* spp) and locally, oak (*Quercus robur*)	
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	
[1016] Desmoulin's Whorl Snail			

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Distribution: occupied sites	Number	No decline. Two known sites: Borris Bridge, Co. Carlow S711503; Boston Bridge, Kilnaseer S338774, Co. Laois.	
Population size: adults	Number per positive sample	At least 5 adults snails in at least 50% of samples	
Population density	Percentage positive samples	Adult snails present in at least 60% of samples per site	
Area of occupancy	Hectares	Minimum of 1ha of suitable habitat per site	
Habitat quality: vegetation	Percentage of samples with suitable vegetation	90% of samples in habitat classes I and II	
Habitat quality: soil moisture levels	Percentage of samples with appropriate soil moisture levels	90% of samples in moisture class 3-4	
[1029] Freshwater Pearl Mussel			
Distribution: Ballymurphy	Kilometres	Restore distribution at 3.91km.	The conservation objective applies to the Ballymurphy, Mountain and Nore freshwater pearl mussel populations, which are listed on the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009 (Statutory Instrument No. 296 of 2009). The Ballymurphy population is confined to the Ballymurphy (or Ballyroughan Little) River, a tributary of the Barrow River. The population is distributed from above Earl's Bridge down to the bridge at Clashganna. Given the severe decline since 2004 and the scattered distribution it is highly likely the species range has contracted.
Distribution: Mountain	Kilometres	Restore distribution at 9.45km.	The Mountain population is confined to the Mountain River, a tributary of the Barrow River. The population is distributed from just upstream of its confluence with the

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
			Kiledmond River down to where the Mountain joins the main channel of the Barrow River. The best habitat for the species is upstream of Borris.
Distribution: Nore	Kilometres	Restore distribution at 21.13km.	The Nore population stretches from Poorman's Bridge to Lismaine Bridge, with most of the population found between Poorman's Bridge and just upstream of the bridge at Ballyragget (Moorkens, 1996). However, given the severe decline upstream of New Bridge, it is more likely that the range has contracted.
Population size: Ballymurphy	Number of adult mussels	Restore Ballymurphy population to at least 1,000 adult mussels	The population in 2024 was estimated to be 30 adult mussels.
Population size: Mountain	Number of adult mussels	Restore Mountain population to at least 4,000 adult mussels	The continual decline in numbers and no evidence of recruitment together with the 2016 monitoring results suggests that the population in the Mountain is unlikely to exceed 200 individual mussels in 2024.
Population size: Nore	Number of adult mussels	Restore Nore population to at least 5,000 adult mussels	The total counts from all post-2014 surveys estimate the freshwater pearl mussel population in the Nore at 100 individuals, unless some of the short term captive bred individuals released in 2014 have survived.
Population structure: recruitment	Percentage per size class	Restore to at least 20% of population no more than 65mm in length; and at least 5% of population no more than 30mm in length.	The species is known not to have reproduced successfully in the River Nore since 1970.
Population structure: adult mortality. Ballymurphy	Percentage	No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution.	The Ballymurphy failed the target for dead shells in 2009 with hundreds of dead shells on the river bed (DEHLG, 2010) and again in 2022 when a further 44 dead shells were recorded.

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Population structure: adult mortality. Nore	Percentage	No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution.	The Nore failed the target for dead shells in 2009 (DEHLG, 2010) but it was unknown if the dead shells observed belonged to mussels that recently died or to mussels that died several years earlier because, as the Nore River water is highly calcareous, the dead shells do not erode quickly.
Suitable habitat: extent	Kilometres	Restore suitable habitat in more than 3.91km in the Ballymurphy, 5.3km in the Mountain and 16.72km in the Nore system.	While, the Mountain River was found to have extensive areas of physically good juvenile habitat, it is intermittently compromised by siltation to the extent that juveniles are killed and adults are stressed.
Suitable habitat: condition	Kilometres	Restore condition of suitable habitat	-
Water quality: macroinvertebrates and phytobenthos (diatoms)	Ecological quality ratio (EQR)	Restore water quality- macroinvertebrates: EQR greater than 0.90 (Q4-5 or Q5); phytobenthos: EQR greater than 0.93	-
Substratum quality: filamentous algae (macroalgae); macrophytes (rooted higher plants)	Percentage	Restore substratum quality- filamentous algae: absent or trace (less than 5%); macrophytes: absent or trace (less than 5%)	-
Substratum quality: sediment	Occurrence	Restore substratum quality- stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment	-
Substratum quality: oxygen availability	Redox potential	Restore to no more than 20% decline from water column to 5cm depth in substrate	-
Hydrological regime: flow variability	Metres per second	Restore appropriate hydrological regime	-
Host Fish	Number	Maintain sufficient juvenile salmonids to host glochidial larvae	-
Fringing habitat: area and condition	Hectares	Restore the area and condition of fringing habitats necessary to support the population	-
[1092] White-clawed Crayfish			

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Distribution	Occurrence	No reduction from baseline	The crayfish is present almost throughout this SAC. The records extend as far downstream as Thomastown on the Nore and Graiguenamanagh on the Barrow. Alien crayfish species are identified as major direct threat to this species and as disease vector. Crayfish need high habitat heterogeneity. Larger crayfish must have stones to hide under, or an earthen bank in which to burrow. Hatchlings shelter in vegetation, gravel and among fine tree-roots. Smaller crayfish are typically found among weeds and debris in shallow water. Larger juveniles in particular may also be found among cobbles and detritus such as leaf litter. These conditions must be available on the whole length of occupied habitat
Population structure: recruitment	% occurrence of juveniles and females with eggs	Juveniles and/or females with eggs in at least 50% of positive samples	
Negative indicator species	Occurrence	No alien crayfish species	
Disease	Occurrence	No instances of disease	
Water quality	EPA Q value	At least Q3-4 at all sites sampled by EPA	
Habitat quality: heterogeneity	Occurrence of positive habitat features	No decline in heterogeneity or habitat quality	
[1095] Sea Lamprey			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	Artificial barriers can block or cause difficulties to lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. Juveniles burrow in areas of fine sediment in still water. Lampreys spawn in clean gravels.
Population structure of juveniles	Number of age/size groups	At least three age/size groups present	
Juvenile density in fine sediment	Juveniles/m²	Juvenile density at least 1/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
[1096] Brook Lamprey			
Distribution	% of river accessible	Access to all water courses down to first order streams	Artificial barriers can block lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. It is impossible to distinguish between brook and river lamprey juveniles in the field. Juveniles burrow in areas of fine sediment in still water. Lampreys spawn in clean gravels.
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	
Juvenile density in fine sediment	Juveniles/m²	Mean catchment juvenile density of brook/river lamprey at least 2/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	
[1099] River Lamprey			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem and major tributaries down to second order accessible from estuary	Artificial barriers can block lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. It is impossible to distinguish between brook and river lamprey juveniles in the field. Juveniles burrow in areas of fine sediment in still water. Lampreys spawn in clean gravels.
Population structure of juveniles	Number of age/size groups	At least three age/size groups of river/brook lamprey present	
Juvenile density in fine sediment	Juveniles/m²	Mean catchment juvenile density of brook/river lamprey at least 2/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	
[1103] Twaite Shad			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	In some catchments, artificial barriers block twaite shads' upstream migration,

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Population structure- age classes	Number of age classes	More than one age class present	thereby limiting species to lower stretches and restricting access to spawning areas. Regular breeding has been confirmed in the River Barrow in recent years, but not in the Nore.
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning habitats	
Water quality- oxygen levels	Milligrammes per litre	No lower than 5mg/l	
Spawning habitat quality: Filamentous algae; macrophytes; sediment	Occurrence	Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plants) growth	
[1106] Atlantic Salmon			
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary	Artificial barriers block salmons' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. Smolt abundance can be negatively affected by a number of impacts such as estuarine pollution, predation and sea lice (*Lepeophtheirus salmonis*). Salmon spawn in clean gravels. Q values based on triennial water quality surveys carried out by the EPA.
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded	
Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling	
Out-migrating smolt abundance	Number	No significant decline	
Number and distribution of redds	Number and occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes	
Water quality	EPA Q value	At least Q4 at all sites sampled by EPA	
[1355] Otter			
Distribution	% positive survey sites	No significant decline	Otters need lying up areas throughout their territory where they are secure from

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 122.8ha above high water mark (HWM); 1136.0ha along river banks / around ponds	disturbance. Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater and wrasse and rockling in coastal waters Otters will utilise freshwater habitats from estuary to headwaters within 80m of the shoreline.
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 857.7ha	
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 616.6km	
Extent of freshwater (lake) habitat	Hectares	No significant decline. Area mapped and calculated as 2.6ha	
Couching sites and holts	Number	No significant decline	
Fish biomass available	Kilograms	No significant decline	
[1421] Killarney Fern			
Distribution	Location	No decline. Three locations known, with three colonies of gametophyte and one sporophyte colony	'Juvenile' sporophytes, which appear as small entire fronds, are known from this site. However, it is unknown whether they are due to apogamous growth or sexual reproduction.
Population size	Number	Maintain at least three colonies of gametophyte, and at least one sporophyte colony of over 35 fronds	
Population structure: juvenile fronds	Occurrence	At least one of the locations to have a population structure comprising sporophyte, unfurling fronds, 'juvenile' sporophyte and gametophyte generations	
Habitat extent	m^2	No loss of suitable habitat, such as shaded rock crevices, caves or gullies in or near to, known colonies. No loss of woodland canopy at or near to known locations	
Hydrological conditions: visible water	Occurrence	Maintain hydrological conditions at the locations so that all colonies are in dripping or damp seeping habitats, and water is visible at all locations	
Hydrological conditions: humidity	Number of dessicated fronds	No increase. Presence of dessicated sporophyte fronds or gametophyte mats indicates conditions are unsuitable	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Light levels: shading	Percentage	No changes due to anthropogenic impacts	
Invasive species	Occurrence	Absent or under control	
[1990] Nore Freshwater Pearl Mussel			
Distribution	Kilometres	Maintain at 15.5km.	The population stretches from Poorman's Bridge (S407859) to Lismaine Bridge (S442660), with most of the population found between Poorman's Bridge and the Avonmore Creamery above Ballyragget (S 440 722). The extant wild population of Nore freshwater pearl mussel is estimated as 300 adult individuals. Mussels of no more than 65mm are considered 'young mussels' and may be found buried in the substratum and/or beneath adult mussels. Mussels of no more than 30mm are 'juvenile mussels' and are always buried in the substratum. This species is known not to have reproduced successfully in the River Nore since 1970. Juvenile mussels require full oxygenation while buried in gravel. Salmonid fish are host to the larval form of freshwater pearl mussels and thus, they are essential to the completion of the life cycle. As native brown trout appear to be favoured by the Nore freshwater pearl
Population size: adult mussels	Number	Restore to 5,000 adult mussels	
Population structure: recruitment	Percentage per size class	Restore to at least 20% of population no more than 65mm in length; and at least 5% of population no more than 30mm in length	
Population structure: adult mortality	Percentage	No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution	
Habitat extent	Kilometres	Restore suitable habitat in length of river corresponding to distribution target (15.5km) and any additional stretches necessary for salmonid spawning	
Water quality: Macroinvertebrate s and phytobenthos (diatoms)	Ecological quality ratio (EQR)	Restore water quality- macroinvertebrates: EQR greater than 0.90; phytobenthos: EQR greater than 0.93	
Substratum quality: Filamentous algae (macroalgae), macrophytes (rooted higher plants)	Percentage	Restore substratum quality- filamentous algae: absent or trace (<5%)	
Substratum quality: sediment	Occurrence	Restore substratum quality- stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment.	
Substratum quality: oxygen availability	Redox potential	Restore to no more than 20% decline from water column to 5cm depth in substrate	

TABLE 6.1.4 CONSERVATION OBJECTIVES (2025): RIVER BARROW AND RIVER NORE SAC			
ATTRIBUTE	**MEASURE**	**TARGET**	**SELECTED NOTES**
Hydrological regime: flow variability	Metres per second	Restore appropriate hydrological regimes	mussel, it is particularly important that these are not outcompeted by stocked fish.
Host fish	Number	Maintain sufficient juvenile salmonids to host glochidial larvae	

River Barrow and River Nore SAC Conservation Status

According to the Habitat's Directive, favourable conservation status of a habitat is achieved when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined below.

According to the Habitat's Directive, favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.
-

The conservation statuses for the qualifying interests of the River Barrow and River Nore SAC site are outlined below.

Table 6.1.5: Conservation Status: River Barrow and River Nore SAC

CODE	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS*
1130	Estuaries	Inadequate
1140	Tidal Mudflats and Sandflats	Inadequate
1170	Reefs	Inadequate
1310	*Salicornia* Mud	Favourable
1330	Atlantic Salt Meadows	Inadequate
1410	Mediterranean Salt Meadows	Inadequate
3260	Floating River Vegetation	Inadequate
4030	Dry Heath	Bad
6430	Hydrophilous Tall Herb Communities	Bad
7220	Petrifying Springs	Inadequate
91A0	Old Oak Woodlands	Bad
91E0	Alluvial Forests	Bad
1016	Desmoulin's Whorl Snail	Inadequate
1029	Freshwater Pearl Mussel	Bad
1092	White-clawed Crayfish	Bad
1095	Sea Lamprey	Bad
1096	Brook Lamprey	Favourable
1099	River Lamprey	Unknown
1103	Twaite Shad	Bad
1106	Atlantic Salmon	Inadequate

CODE	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS*
1355	Otter	Favourable
1421	Killarney Fern	Favourable
1990	Nore Freshwater Pearl Mussel	Bad

**Sourced from the Status of EU Protected Habitats and Species in Ireland (NPWS, 2019b and 2019c).*

7.0 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

7.1 DISTURBANCE TO PROTECTED HABITATS AND SPECIES

The proposed activity area is located within the boundary of the European site, the River Barrow and River Nore SAC (Site Code: 002162). Due to this activity, there is the potential for likely significant effects upon a protected site through loss or destruction of habitat, fragmentation of habitat, disturbance of habitat and/or direct reduction in species density.

The proposed activity area is partly located within a woodland. According to the Conservation Objectives Report, the section of woodland located within and adjacent the proposed activities is Alluvial Forest [91E0]. As noted in section 5.2.1, this woodland lacks the typical associated species for this Annex I habitat type. There will be no tree or vegetation removal. The machinery will be operated to avoid any damage to trees. Therefore, there will be no potential for any direct significant effects to this habitat. This is a terrestrial habitat with no water quality attributes. There are also no listed water quality threats or pressures associated with this habitat (NPWS 2019b) however, pollutants from hydrocarbons can cause a negative impact. Invasive species are listed as a threat/pressure to this habitat and is discussed further in section 7.2.

The woodland onsite does not have any links to Old Oak Woodlands [91A0]. The closest mapped Old Oak Woodlands is located approximately 1.6km to the south-west (2.4km hydrologically downstream) of the proposed activity. This is a terrestrial habitat with no water quality attributes listed within the Conservation Objectives report. No direct significant effects are predicted given that there will be no proposed activities within this habitat. There were no third schedule invasive species recorded within the proposed activity area, however, the third schedule invasive species Indian Balsam was recorded in proximity of the proposed activities. Although the risk of spread is low, the potential for indirect significant effects to occur still exists. Invasive species are listed as a threat to this habitat. This is discussed in section 7.2.

No areas of heath or marsh / swamp habitats occur in the activity area; therefore, the proposed activity area does not contain any habitat which would have potential links to Dry Heath [4030]. Dry Heath is currently unmapped however it is known to occur on steep-free draining valley sides especially along the River Barrow and tributaries in the Blackstairs Mountains. This habitat is not within or adjacent the activity area boundary. No direct or indirect significant effects are predicted.

There are three distinctive communities considered under the Annex I habitat, Hydrophilous Tall Herb Communities [6430]. Species commonly found within this habitat include Meadowsweet, Wild Angelica, Yellow Iris, Loosestrife species, Common Valerian, Lady's-Mantle, Water Avens and Lesser Meadow-rue. Great wood-rush may be present but should not dominate (NPWS 2019a). The target for this habitat type is five species as per O'Neill et al. (2010). Four potential positive indicator species were identified however *Glyceria maxima* and *Phalaris arundinacea* are seen as negative indicators. While the proposed activity area contains some listed species of the Hydrophilous Tall Herb Communities habitat, their percentage cover is limited with grasses, sedges and Willowherbs dominating closer to the water's edge and with Brambles and Ferns dominating further south which limits the potential for this habitat to be within the proposed activity area. Although, the conditions onsite (i.e. frequent flooding/inundation with deposition of sediments) could potentially support this habitat type. The focus of the activity is to remove deposited silt and sedimentation rather than removing the existing vegetation both within the watercourse and along the banks. Therefore, should this habitat be within the vicinity, a direct impact is not expected. Although there are no water quality attributes, threats or pressures listed for these habitats, a deterioration in water quality can have a negative impact on this habitat. A potential threat to Hydrophilous tall herb community can arise due to the spread of invasive species should this habitat occur within the vicinity. This is discussed further in section 7.2.

The tidal stretches of the River Barrow are located 2.2km (hydrologically) downstream from the proposed activity area, therefore qualifying interests associated with saltwater and tidal conditions could occur downstream of the proposed activities. These habitats include Estuaries [1130], Mudflats and saltflats [1140], salicornia and other annuals colonising mud and sand [1310], Atlantic salt meadows [1330] and Mediterranean salt meadows [1410]. These habitats do not occur within the proposed activity area and therefore, no direct significant effects are expected to occur.

During the site assessment, no Killarney Fern [1421] was present with the closest records located approximately 8km to the north-west (12km hydrologically upstream). There are no records of Killarney Fern downstream of the proposed activity area.

In the absence of swamp, fen and marsh habitat within the proposed activity area, and in the absence of historic records, it is considered that the proposed activity area would not be suitable to support populations of Desmoulin's Whorl Snail [1016]. According to the Conservation Objectives report for the River Barrow and River Nore SAC, the closest records for this species are located approximately 15km north-west (23km hydrologically upstream) from the activity area. Given that these species were not recorded onsite and given that known records are located upstream, direct and indirect significant effects are not expected.

There was minimal vegetation within the proposed activity area with reeds and herbs occurring along the riverbanks. Few individuals of Water Crowfoot (*Ranunculus* spp.) were noted within the immediate activity area with more individuals occurring further upstream. Therefore, it is unlikely that this Annex I habitat occurs within the proposed activity area. Areas outside of the proposed activity would be more suitable and is likely to occur in upstream locations. As noted in section 5.2.1, an abundance of this species is considered of low conservation value within the Annex I habitat water courses of plain to montane levels with the *Ranunculion fluitans* and *Callitricho-Batrachion* vegetation [3260]. It is considered that the proposed activity is unlikely to cause any direct significant effects on this habitat given the limited vegetation within the

immediate area. There is potential for an indirect significant effect to occur due to a deterioration in water quality should this habitat be located downstream.

A significant impact to Reefs [1170] and petrifying springs [7220] habitats are not predicted. These habitats don't occur within the proposed activity area. There are no water quality attributes associated with Reefs. Reefs are currently unmapped within the Conservation Objectives Report however, they are known to occur approximately 27km to the south on the Barrow, Nore, Suir Estuary. Petrifying springs occur along the River Nore as opposed to the River Barrow. Therefore, no direct or indirect significant effects are predicted.

The River Pollmounty would likely contain aquatic freshwater species of conservation value. The project will require the proposed activity within the watercourse.

Loss of suitable habitat, pollution, human disturbance, modification of watercourses, drainage and lighting can have a significant impact on Otter [1355]. Evidence of Otter (footprints) and potential paths accessing the watercourse were identified within the proposed activity area. No holts or couches were located within the immediate activity area. The vegetation either side of the Pollmounty River could offer suitable couch habitat. Although no Otter holts were identified from instream assessments, the banks could offer opportunities for Otter holts. Otter have been recorded both upstream and downstream on the River Barrow. The nearest NBDC records for Otter are located approximately 3.8km to the north-west (Bailey, 2004) or 6.9km (hydrologically) upstream. The proposed activity will not be undertaken outside of daylight hours so as to not impact nocturnal fauna in terms of human disturbance. Significant effects due to lighting are not predicted as no lighting is required to facilitate the proposed activity. Otter are not sedentary and would move if disturbed during the proposed activities. Given the small area, absence of holts or couches within the immediate activity area, with no proposed activity to the River banks and short duration, it is not anticipated that the proposed activity would have the potential to cause a direct significant effect upon otter due to habitat loss or disturbance. However, there is potential for an indirect significant effect associated with a deterioration in water quality that could impact upon Otter prey.

During the enactment of the proposed activity, the release of sediments could have an impact on filter feeding freshwater species such as Freshwater Pearl Mussel [1029]. Changes to the hydrological conditions or physical alteration could also have an impact on this species. The 2025 Conservation Objectives Report for this species applies to Ballymurphy, Mountain and Nore Pearl Mussel populations. The closest mapped populations of Pearl Mussel are located approximately 11.3km to the north (19km hydrologically upstream), along the Ballyroughan Little watercourse. Freshwater Pearl Mussel are at risk of morphological and hydrological changes caused by sedimentation and enrichment. Riverbeds that have become clogged with silt and vegetation are unsuitable for the survival of young mussels (NPWS, 2019c). The freshwater study has determined that the section of the Pollmounty River in which the proposed activities will be undertaken is currently unsuitable for Freshwater Pearl Mussel due to sedimentation. Regardless of the existing waterworks, it appears that there is a significant volume of sedimentation within the watercourse itself from activities upstream which would naturally deposit in pool areas. Given the absence of suitable habitat or presence of this species within the proposed activity area, it is considered that there is no potential for any direct significant effects such as physical disturbance or loss of suitable habitat. An indirect significant effect can occur due to the release of sediments during the proposed activities as the larvae use a temporary salmonid host such as Atlantic Salmon. An impact to Salmonoids could have an indirect significant effect on Freshwater Pearl Mussel.

Activities within a watercourse have the potential to cause significant effects on freshwater species due to a deterioration in water quality from sedimentation and release of potential pollutants such as hydrocarbons. The release of sediments could also have a direct impact upon Atlantic Salmon [1106] spawning grounds. Water quality targets of a Q4 have been set for Atlantic Salmon. The listed threats and pressures includes agricultural, forestry and aquaculture water/marine pollution activities and physical alteration to waterbodies. The freshwater assessment has determined that the habitats within the immediate proposed activity area would not support suitable habitat for Atlantic Salmon however, areas identified upstream could be suitable. According to the Conservation Objectives report for the River Barrow and River Nore SAC, "*Artificial barriers block salmons' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas*." There are no NBDC records for Salmon upstream or downstream of the proposed activity area however, Salmon have been recorded within proximity of the proposed activities and further upstream on the Pollmounty River (IFI, 2020). Given the absence of suitable spawning habitats, a loss in habitat is not predicted. Given that this species has been recorded within the Pollmounty, there is potential for the proposed activities to cause direct physical disturbance to this species. There is also potential for an indirect significant effect to occur due to a deterioration in water quality. This is discussed in section 7.3.

Twaite Shad [1103] spend most of their lives in estuaries and coastal waters. They return to freshwater habitats in order to spawn in the lower reaches of main rivers and tributaries. This species spawns over rocky substrates. The Conservation Objectives report acknowledges that "*In some catchments, artificial barriers block twaite shads' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas*". Kick-sampling surveys between 2013-2018 noted the presence of spawning within the upper estuarine habitats of the Barrow (NPWS, 2019 c). Threats and pressures to this species include invasive species. Water quality targets include oxygen levels of no less than 5mg/l. A deterioration in water quality and loss of suitable spawning habitats can have a significant impact on this species. There are NBDC records for Shad approximately 4.1km north-west (5.1km hydrologically upstream) along the River Barrow near Saint Mullins. The habitats within the proposed activity would be considered sub-optimal. Therefore, direct significant effects are not predicted. The proposed activities have the potential to cause indirect significant effects via a deterioration in water quality, should this species occur downstream of the proposed activity area.

The proposed activity also poses a potential risk to Lamprey sp. if present within the immediate activity area or within watercourses downstream. During the freshwater assessment, ideal habitat for River and Brook Lamprey ammoceotes was noted. There are no known records of Lamprey species within the Pollmounty River. NBDC has records for River Lamprey only, upstream on the River Barrow at St. Mullins. As a result of the proposed activity, there is a potential risk of physical disturbance, suitable habitat loss, sedimentation, release of suspended solids and a deterioration in water quality and mortality. Direct significant effects could occur due to direct physical disturbance and loss of suitable habitat if present within the activity area. Indirect significant effects could occur due to the release of sediments, an impact to prey species and a deterioration in water quality downstream.

The proposed activity could pose a risk to Freshwater White-clawed Crayfish [1092] via physical disturbance, loss of suitable habitat and a deterioration in water quality. According to *The Status of EU protected habitats and Species in Ireland Species Assessment* Report (2019), Freshwater White-clawed crayfish are most often found in first order streams however, it uses a broader spectrum of habitats where there is sufficient lime. It is also known to thrive in hard

water with a typical pH of 7 or above and calcium concentrations of at least 5mg/l. Data obtained from catchments.ie show pH of 7.7 on the 11th February 2025 at the monitoring station RS14P030300 while the Calcium of 15mg/l was recorded on the 21st June 2012 for the same station along the Pollmounty River. It is associated with good quality status rivers but has been recorded in watercourses with a Q value of 3. Juveniles live among gravel or submerged tree roots, larger Crayfish hide under stones or dig burrows in banks and brooding females require undisturbed shelter over a prolonged winter/spring period. The freshwater assessment determined that while Crayfish were not recorded, there is potential suitable habitat along the muddy banks. According to the 2025 Conservation Objectives report for the River Barrow and River Nore SAC, this species is recorded throughout the River Barrow with the nearest mapped record located approximately 8km north-west (12km hydrologically upstream) on the River Barrow. There are no NBDC records of Crayfish within the Pollmounty watercourse. Due to the methodology involving the removal of deposited material and potential for this species to be within the area, there could be a direct significant impact as a result. An indirect effect could occur due to the release of sediments and a deterioration in water quality should this species occur within the vicinity of the proposed activity area. There is also potential for the spread of Crayfish plague whilst undertaking the proposed activities, particularly in areas where Crayfish are likely to occur. According to NBDC, there have been a number of Crayfish outbreaks within the River Barrow. The establishment of this disease has the potential to cause a 100% mortality of the native Irish Crayfish. This disease has been confirmed within the River Barrow at the Royal Oak Bridge in 2017 and is easily transmitted via water. As a result, appropriate control measures to prevent the spread of this disease during the proposed activities, will be implemented. These measures are included within section 9.

It is not envisaged that protected species would be significantly impacted upon by the activity due to noise generated as the surrounding area is located within a rural setting. Fauna in the area would be accustomed to human generated noise from vehicular and agricultural activities commonly audible within rural areas. While there would be increased noise emissions during the proposed activity, these would not be considered to pose a significant risk owing to the transient nature of activity, short duration and the small scale of proposed activity. The proposed activity will be carried out during daylight hours, therefore would not cause significant disturbance to nocturnal species foraging at the river. In addition, fauna would become habituated with noises during the proposed activities.

The proposed de-silting activity would be confined to the immediate area upstream of the existing weir (as per the red line boundary map) with the main activity being the removal of accumulated sediment within the river bed. The proposed activity will not deepen the riverbed or alter the riverbanks of the channel. In addition, there will be no removal of any terrestrial vegetation or trees onsite.

All removed materials will be placed within a designated lay out area adjacent the generator shed. An ecologist will be onsite during the activity phase to check removed materials for protected species. Once all removed materials have been checked, the materials will be transported offsite to a licensed waste facility.

The potential disturbance on protected habitats and species due to dust during the activity would not be considered significant, given the temporary nature of the activity and the scale of the project. It is considered that the operational phase of the activity would not have the potential to have a likely significant effect upon designated sites due to air emissions given the nature of the activity (intake).

Due to this proposed activity within the Pollmounty River and the potential for protected species and habitats within the area, it is considered that the proposed activity would not have the potential to cause a likely significant effect on the protected habitats and species of the River Barrow and River Nore SAC due to habitat fragmentation with no removal of any protected habitat. However, it is considered that due to the proposal of isolating areas of the watercourse, de-watering and removing accumulated material, there is potential for the loss/ direct disturbance to freshwater species, loss of potential suitable habitat and a deterioration in water quality. In addition, there is potential for the third schedule invasive species Indian Balsam to spread downstream to sensitive habitats or further within the Alluvial forests. It is therefore considered that mitigation measures would need to be implemented during the project to ensure there is no significant impact upon the SAC.

7.2 INVASIVE SPECIES

Under Regulation 49(2) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) as amended 2015 (S.I. No. 355 of 2015), save in accordance with a licence granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to any plant which is included in Part 1 of the Third Schedule shall be guilty of an offence. Materials containing invasive species such Indian Balsam are considered "controlled waste", and, as such, there are legal restrictions on their handling and disposal. Under Regulation 49(7) of the European Communities (Birds and Natural Habitats) Regulations 2011, it is a legal requirement to obtain a license to move "vector materials" listed in the Third Schedule, Part 3.

Table 7.1: National Biodiversity Data Centre records of Third Schedule invasive species within 10km square (Tetrad – S73) of the proposed activity.

THIRD SCHEDULE INVASIVE FLORA	
Water Fern (*Azolla filiculoides*)	Three-cornered Garlic (*Allium triquetrum*)
Rhododendron ponticum	Nuttall's Waterweed (*Elodea nuttallii*)
Japanese Knotweed (*Fallopia japonica*)	Indian Balsam (*Impatiens glandulifera*)
Himalayan Knotweed (*Persicaria wallichii*)	Giant-rhubarb (*Gunnera tinctoria*)

The spread of invasive plant and animal species can negatively impact on the conservation objectives of certain Annex I habitats and species designated within River Barrow and River Nore SAC.

No third schedule invasive species were noted within the proposed activity boundary during the site assessment however, Indian Balsam (*Impatiens glandulifera*) was recorded within 5-10m of the proposed activity area. Indian Balsam grows in monospecific stands outcompeting native species. Flowering occurs between June and October with seed capsules produced shortly afterwards. The slightest touch causes the seed capsules to explode.

Threats and pressures (NPWS, 2019b) in relation to invasive species are associated with the following habitats; Alluvial Forest [91E0] (*Acer pseudoplatanus, Fagus sylvatica, Aesculus hippocastanum, Impatiens glandulifera* and *Ribes* spp. (i.e. *Ribes nigrum* and *Ribes rubrum*), Old Oak Woodlands [91A0] (Rhododendron ponticum), Hydrophilous Tall Herb Communities

[6430] (*Impatiens glandulifera*), Estuaries [1130] (no listed invasive), salicornia and other annuals colonising mud and sand [1310] (*Spartina anglica*) and Atlantic salt meadows [1330] (*Spartina anglica*). It is considered that Indian Balsam cannot tolerate high salinity of mudflats. It is a terrestrial species found generally along watercourse margins. Therefore, this species is unlikely to cause a significant effect on salicornia and other annuals colonising mud and sand [1310] (*Spartina anglica*) and Atlantic salt meadows [1330] (*Spartina anglica*). However, there is potential for this species to spread to the other listed protected habitats during the proposed activities.

Given the proximity of this species to the proposed activity area, caution must be taken to prevent any spread of this third schedule invasive plant species further within the site or to downstream habitats. Avoidance measures as opposed to treatment measures will be implemented as the woodland is not under the ownership of Uisce Éireann.

The risk of invasive species being introduced to the proposed activity area during the project is considered to be low, with no import of materials with the potential to contain invasive flora species. Materials removed during the project would be stored onsite and will then be exported offsite to a licensed facility.

Given the nature of the proposed activity, there would be no significant risk of introducing invasive species during the operational phase. Therefore, it is considered that there would be no significant risk to protected habitats and species as a result of invasive species from the proposed activity.

7.3 POTENTIAL IMPACTS ON WATER QUALITY

The proposed activity is located within the Barrow Catchment and within the boundaries of the River Barrow and River Nore SAC. The location of the proposed activity is within the Pollmounty River.

The proposed activity would not be considered to impact upon the listed habitats and species of the SAC during the operational phase due to deleterious effects on water quality as the intake area and weir is already in operation. In-stream assessments determined that there is an existing significant load of silt carried within the Pollmounty watercourse from upstream activities. The weir itself causes water to slow upstream allowing for silt to deposit in proximity of the weir. The intake screen does remove some silt from the water however, this is limited. It is therefore considered that the operational phase is unlikely to cause any increase in the release of sediments downstream. There will be no changes to the existing operational phase, with no significant removal of vegetation or any activities within the watercourse and therefore, no impacts to protected habitats or species is predicted. There will also be no alterations of exiting drainage within the proposed activity area.

Although the proposed activity is located within a low to medium fluvial flood area (Floodmaps, 2025), the modelled flood risk is for a 1 in 100 year event. The proposed activity will be undertaken between 1st July and 30th September or when agreed with IFI during dry conditions and outside periods of heavy rainfall. Therefore, the risk of an impact due to flooding is unlikely. Also, it should be noted that the estimated duration of the proposed activity will be approximately 2-3 days, further preventing an impact due to flooding. Therefore, it is not anticipated that the proposed activity will have any likely significant impact on the River

Barrow and River Nore SAC due to a deterioration in water quality in terms of flooding during the activity or continued operation.

In the event of suspended solids becoming entrained in surface water run-off from the designated lay out area, there is considered to be no significant risk of impact on water quality as suspended solids would likely be retained at the proposed activity area as run-off percolates to the ground. In addition, the removed materials will not be placed near the banks of the watercourse.

During the proposed activity, a deterioration in water quality can arise through the release of suspended solids via the removal of accumulated material within the isolated area of the channel. Although considered low, there is also a potential risk for the release of hydrocarbons during the proposed activity as machinery will be positioned along the edge and within the Pollmounty River. While the machinery will operate within a dry and isolated area, the risk still exists and caution must be taken. A deterioration in water quality has the potential to cause a significant impact upon the qualifying interests of the River Barrow and River Nore SAC, particularly qualifying interests which have conservation objectives relating to water quality, such as aquatic fauna; Lamprey Sp, Otter, Twaite Shad, Freshwater White-clawed Crayfish, and Atlantic Salmon. In addition, habitats sensitive to water quality and marine pollution or release of sediments are also at risk such as water courses of plain to montane levels with the Ranunculion fluitans and Callitricho-Batrachion vegetation [3260], Estuaries [1130], tidal mudflats [1140], salt meadows. Listed threats and pressures of these habitats include marine pollution, morphological changes and pollution to surface/groundwaters. There are no threats, pressures or water quality attributes associated with Alluvial forests [91E0], however, pollution of waterbodies could negatively impact on the species composition for this habitat. Therefore, the precautionary principle should be applied. While the risk of a deterioration in water quality is considered low, likely significant effects ultimately cannot be ruled out. It is therefore considered that control measures would need to be implemented during the activity phase to ensure there is no likely significant impact upon the SAC.

7.4 SCREENING CONCLUSION

In order for an effect to occur, there must be a pathway between the source and the receptor (the SAC/SPA). Where a pathway does not exist, an impact cannot occur.

The proposed activity is located within the boundary of the River Barrow and River Nore SAC (Site Code: 002162).

Where it cannot be ruled out that beyond reasonable scientific doubt and in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the Proposed Activity, individually or in combination with other projects and/or plans, would be likely to have a significant effect on a European Site, a Stage 2 Natura Impact Statement is required.

As detailed above, it is considered that the proposed activity could result in likely significant effects to the protected habitats and species of the River Barrow and River Nore SAC due to a deterioration in water quality and direct physical disturbance. Therefore, a Natura Impact Statement is required.

8.0 ASSESSMENT OF ADVERSE EFFECTS: STAGE 2 APPROPRIATE ASSESSMENT

The proposed activity has the potential to impact upon the qualifying interests of the River Barrow and River Nore SAC due to a potential deterioration in water quality and direct physical disturbance during the proposed activity.

During this activity, there is potential for water quality deterioration through the release of suspended solids during the removal of accumulated material within the Pollmounty River. Suspended solids within isolated areas could become entrained in surface water run-off and could affect aquatic qualifying interests / special conservation interests through deposition. Nutrients can be bound in suspended solids, therefore, a significant increase in suspended solids can result in excessive eutrophication, leading to the deoxygenation of waters and subsequent asphyxia of aquatic species. An increase in sediments has the potential to impact upon fish species by damaging gravel beds required for spawning, smothering fish eggs and in extreme cases, by interfering with the gills of fish. An increase in suspended solids also has the potential to reduce water clarity, which can impact the light penetration of water and may also affect certain behaviours of aquatic fauna such as foraging success.

A potential source of chemical contamination would be from the release of hydrocarbons (oils, fuels) from machinery and equipment during eh proposed activity phase. Hydrocarbons can affect water quality, potentially resulting in toxic conditions for aquatic flora and fauna. Oil films on the water surface can disrupt oxygen diffusion from the atmosphere, resulting in de-oxygen of waters.

Third Schedule Invasive species under Regulations 49 & 50 in the European Communities (Birds and Natural Habitats) Regulations 2011, have the potential to change the species composition of a habitat by outcompeting native species. Indian Balsam spreads vigorously and can form monospecific stands. It is considered a high risk of impact. Given that the seed pods explode at the slightest touch, there is potential for seeds to be carried by watercourses.

While every effort will be made to prevent an impact upon any protected species, there is still a risk of potential mortality of protected freshwater species listed within the River Barrow and River Nore SAC during the project.

The tables below briefly outline the occurrence of the qualifying interests of the River Barrow and River Nore SAC in relation to the proposed activity area, taking cognisance of the NPWS "*Conservation Objectives: River Barrow and River Nore SAC Site Code: 002162*", in addition to Volumes 1, 2 and 3 of the 2019 NPWS Reports, *"The Status of EU Protected Habitats and Species in Ireland*". The following tables also outline which of the qualifying interests and special conservation interests may be impacted upon by a potential deterioration in water quality from the project.

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
[1140] Tidal Mudflats and Sandflats	The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest mapped examples of this qualifying interest is located approximately 9.7km south (16km hydrologically downstream) of the proposed activity (NPWS, 2011). Given the absence of this qualifying interests within the proposed activity area, a direct significant effect is not predicted. While there are no water quality attributes listed within the Conservation Objectives Report, marine pollution is listed as a threat/pressure (NPWS, 2019b). There is potential for adverse effects on this habitat due to a deterioration in water quality given the hydrological connectivity. Therefore, the precautionary principle is being applied.	Yes
[1170] Reefs	The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest mapped examples of this qualifying interest is located approximately 28km south (38km hydrologically downstream) of the proposed activity (NPWS, 2011). Given the absence of this qualifying interests within the proposed activity area, a direct adverse effect is not predicted. There are no water quality attributes listed within the Conservation Objectives Report or threats/pressures associated with water quality (NPWS, 2019b). Therefore, no indirect adverse effects are predicted.	No
[1310] Salicornia Mud	The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest mapped examples of this qualifying interest is located approximately 19km south (>24km hydrologically downstream) of the proposed activity (NPWS, 2011). Given the absence of this qualifying interests within the proposed activity area, a direct significant effect is not predicted. There are no water quality attributes listed within the Conservation Objectives Report or threats/pressures associated with water quality (NPWS, 2019b). Invasive species are listed as a threat to this habitat although conditions of this habitat would be deemed unsuitable for Indian Balsam. Therefore, there is no potential for an indirect adverse effect to occur due to the spread of invasive species.	No
[1330] Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*)	The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest mapped examples of this qualifying interest is located approximately 16km south (24km hydrologically downstream) of the proposed activity	Yes

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	(NPWS, 2011). Given the absence of this qualifying interests within the proposed activity area, a direct significant effect is not predicted. Invasive species are listed as a threat/pressure to this habitat (NPWS, 2019b). However, conditions of this habitat would be deemed unsuitable for Indian Balsam. Therefore, there is no potential for an adverse effect to occur due to the spread of invasive species. There is potential for adverse effects on this habitat due to a deterioration in water quality given the hydrological connectivity. Therefore, the precautionary principle is being applied.	
[1410] Mediterranean salt meadows (*Juncetalia maritimi*)	The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest examples of this qualifying interest is located approximately 14.5km south (22km hydrologically downstream) of the proposed activity (NPWS, 2011). Given the absence of this qualifying interests within the proposed activity area, a direct significant effect is not predicted. There is potential for adverse effects on this habitat due to a deterioration in water quality given the hydrological connectivity. Therefore, the precautionary principle is being applied.	Yes
[1130] Estuaries	The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest mapped examples of this qualifying interest is located approximately 2.2km (hydrologically) downstream of the proposed activity (NPWS, 2011). Given the absence of this qualifying interests within the proposed activity area, a direct significant effect is not predicted. While there are no water quality attributes listed within the Conservation Objectives Report, marine pollution and invasive species are listed as a threat/pressure (NPWS, 2019b). Therefore, given the distance and proposed activities, there is potential for an indirect adverse effect to occur due to a deterioration in water quality and spread of invasive species.	Yes
[3260] Floating River Vegetation	The proposed activity area is located within the current distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The Conservation Objectives for this qualifying interest include water quality attributes. There was limited evidence to suggest that this habitat occurs within the proposed activity area however, locations upstream where greater densities of Water Crowfoot have been identified are likely linked to this habitat. Given the absence of any proposed activities within these locations, direct adverse effects are not predicted. Point source pollution of surface/groundwaters are listed	Yes

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	as a threat/pressure to this habitat. There is potential for the proposed activity to have indirect adverse effects upon this qualifying interest due to a potential deterioration in water quality during the proposed activity.	
[4030] Dry Heath	The proposed activity is located within the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The SAC Conservation Objectives report notes that the spatial extent of this habitat is currently unmapped, but is indicated as occurring on steep, free-draining river valley sides. This habitat does not occur within the proposed activity area, therefore direct adverse effects are not predicted. Dry heath is a terrestrial habitat, therefore a potential deterioration in water quality during the proposed activity would not be anticipated to have an indirect adverse effect upon this qualifying interest.	No
[6430] Hydrophilous Tall Herb Communities	The proposed activity is located within the current known distribution, the current range and favourable reference range of this qualifying interest (NPWS, 2019b). The SAC Conservation Objectives report notes that the distribution of this habitat within the SAC site is currently unknown, but is considered to occur at some riverside woodlands, river islands and in narrow bands along the floodplain of slow-flowing river stretches. There will be no removal of bankside vegetation during the proposed activity. In addition, this designated habitat is unlikely to occur within the immediate activity area. Therefore, no direct adverse effects are predicted. Water quality is not listed as a conservation objective for this qualifying interest. Given that this habitat is located within areas inundated with floodwaters, a deterioration in water quality has the potential to cause an adverse significant effect on this habitat. Invasive species are also listed within the conservation objectives report. Therefore, there is potential for an adverse indirect effect to occur due to the spread of invasive species and a deterioration in water quality during the proposed activity.	Yes
[7220] Petrifying Springs*	The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest mapped example of this qualifying interest is located approximately 16km to the west on the River Nore (NPWS, 2011). Given the distance, absence of pathway receptor relationship, nature, scale and extent of the proposed activity, it is not predicted that the proposed activity would have any direct or indirect adverse effects upon this qualifying interest.	No

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
[91A0] Old Oak Woodlands	The proposed activity is located within the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). According to the SAC Conservation Objectives report, old oak woodlands are located approximately 1.6km south-west (2.4km hydrologically downstream) the proposed activity area. This habitat does not occur within the proposed activity area, therefore, no direct adverse effects are predicted. However, the report notes that further unsurveyed areas may be present within the SAC. Old oak woodlands are a terrestrial habitat, therefore a potential deterioration in water quality during the proposed activity would not be predicted to have an indirect adverse effect upon this qualifying interest. In addition, there are no water quality attributes set for this habitat. However, invasive species are listed. Although the risk is considered low, an indirect adverse effect could occur due to the potential spread of an invasive species downstream.	Yes
[91E0] Alluvial Forests*	The proposed activity is located within the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). According to the SAC Conservation Objectives report, the proposed activity is located within an area designated as alluvial forests. The report also notes that further unsurveyed areas may be present within the SAC. There are no water quality attributes within the Conservation Objectives report for this habitat nor are there any listed threats/pressures associated with water quality (NPWS, 2019b). A potential deterioration in water quality could alter the species composition of this habitat given the close proximity to the proposed activities. Indian Balsam is noted as being a negative indicator of this habitat type and considered a threat/pressure (NPWS, 20119b). Although the risk is considered low given that no invasive species were located within the immediate activity area, the potential to spread this invasive species still exists. Therefore, the precautionary principle should be applied in terms of a potential deterioration in water quality and spread of invasive species.	Yes
[1016] Desmoulin's Whorl Snail (*Vertigo moulinsiana*)	The Desmoulin's whorl snail is the largest of the whorl snail species occurring in wetlands in Ireland. It favours damp or wet habitats such as swamps, fens and marshes, where it lives mostly in moss, leaves and decaying vegetation (NPWS, 2019c). Desmoulin's whorl snail feeds on living and dead stems and leaves of tall plants in wetland habitats. The proposed activity is located outside the current known distribution, current range and the favourable reference range of this qualifying interest (NPWS, 2019c). According to the SAC Conservation Objectives report, the nearest record of Desmoulin's whorl snail is located approximately 15km north-west (23km	No

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	hydrologically upstream) from the proposed activity. Given the distance of this qualifying interest upstream from the activity area and given that water quality is not listed as a conservation objective for this qualifying interest, it is not predicted that the activity would have the potential to have a direct or indirect adverse effect upon the Desmoulin's whorl snail.	
[1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1990] Nore Freshwater Pearl Mussel (*Margaritifera durrovensis*)	Freshwater pearl mussels (both *Margaritifera margaritifera* and *M. m. durrovensis*) are long-lived, bivalve molluscs found in clean, fast-flowing rivers. *M. margaritifera* is widespread in Ireland, however, the population has been in decline for a long time, with the current decline attributed to a combination of hydrological and morphological changes, sedimentation and enrichment of its habitat (NPWS, 2019a). The Nore Pearl Mussel (*M. m. durrovensis*) is a hard-water form of the Freshwater Pearl Mussel and is only found within the River Nore's main channel. Previously, the Nore pearl mussel was reported separately as taxon 1990 (*M. durrovensis*), however genetic research has since placed the Nore population within the *Margaritifera margaritifera* taxon (NPWS, 2019c). The species has an unusual life cycle. Eggs develop into the larval stage (glochidia), which are brooded in the female gills before being released into open water. A small number are inhaled by passing salmonid fish, which act as the mussels' temporary hosts. Once mature enough to exist independently, they fall off their hosts and bury into gravel where they filter feed (Moorkens, 2000). Freshwater Pearl Mussel are sensitive to sedimentation and nutrient enrichment. Furthermore, as the larval stages rely on salmonid fish hosts, any potential impact on salmonid fish can have an impact upon the Pearl Mussel. The proposed activity is not located within the current known distribution, current range and favourable reference range of the Freshwater Pearl Mussel (NPWS, 2019c). The SAC Conservation Objectives report notes that the nearest mapped populations of *Margaritifera margaritifera* are on the Ballyroughan Little River 11.3km north (19km hydrologically upstream) of the proposed activity. The proposed activity it not considered to contain suitable supporting habitat for this species. In addition no Pearl Mussels were identified within the freshwater assessment. Therefore, a direct adverse effect on this species is not predicted. A deterioration in water quality could impact on Salmonid fish thereby indirectly impacting on	Yes Yes

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	Freshwater Pearl Mussel. The release of sediments also has to potential to have an indirect adverse effect on Salmonoids.	
[1092] White-clawed Crayfish (*Austropotamobius pallipes*)	The White-clawed Crayfish is the only native crayfish species found in Ireland and is a relatively long-lived species with a maximum life of 10 years. It occurs in both streams and lakes in Ireland and requires relatively hard water with a pH of 7 or above and calcium concentrations of at least 5mg/l. White-clawed crayfish are omnivorous, with young crayfish more reliant than adults on animal foods. The proposed activity area is located within the distribution and the current range but outside the favourable reference range of this qualifying interest (NPWS, 2019c). The SAC Conservation Objectives report notes that crayfish are present almost throughout the SAC. The Conservation Objectives for this qualifying interest include water quality attributes. According to the Conservation Objectives report, Crayfish have been recorded approximately 8km north-west (12km hydrologically upstream) from the proposed activity within the River Barrow The closest NBDC records for White Clawed Crayfish are located approximately 4.1m (hydrologically) downstream of the proposed activity within the River Dinin [North]. The Conservation Objectives for this qualifying interest include water quality attributes. In addition, there is potential suitable supporting habitat for this species within the proposed activity area. As there is potential for this species to be found within the proposed activity area or downstream, there is potential for the activity to have a direct adverse effect upon this qualifying interest due to direct physical disturbance and an indirect adverse effect due to a potential deterioration in water quality during proposed activity. The proposed development also has the potential to spread Crayfish plague.	Yes
[1095] Sea Lamprey (*Petromyzon marinus*)	Lamprey can play an important role in processing nutrients, nutrient storage, and nutrient cycling in streams. In addition, they aid in creating spawning beds for salmonid species by altering the river channel and bed. Sea lamprey are an anadromous species, with adults living at sea and migrating to freshwater for spawning in late May or June. The fertilised eggs hatch within days, with the larvae burrowing into fine sediment where they filter feed for a number of years. Transformation to young adults occurs in summer and young adults can be found migrating downriver to estuarine waters in autumn – winter.	Yes

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	The proposed activity is located within the current known distribution, current range and favourable reference range of the Sea Lamprey (NPWS, 2019c). The SAC Conservation Objectives report notes that upstream migration may be inhibited by artificial barriers, and that artificial barriers are currently preventing juvenile lampreys from accessing the full extent of suitable habitat. Lamprey species have been recorded throughout the Barrow Catchment. There are no records for Lamprey sp. within the Pollmounty Catchment (IFI, 2020). Changes in water quality have the potential to impact on the population of Sea Lamprey, the main water quality impacts are from agricultural runoff; however, potential pollutants from proposed activity cannot be ruled out. The freshwater assessment has determined that while no Lamprey species were recorded, there is potential suitable habitat for this species within the proposed activity area. As there is potential for this species to be found within the proposed activity area or downstream, there is potential for the activity to have a direct adverse effect upon this qualifying interest due direct physical disturbance and an indirect impact due to a potential deterioration in water quality during proposed activity.	
[1096] Brook Lamprey (*Lampetra planeri*)	The brook lamprey is the smallest of the three lampreys native to Ireland and is the only species that is non-parasitic and spends all its life in freshwater. Adults spawn in spring, excavating shallow nests in gravel areas of reduced flow. Adult fish die after spawning. After hatching, larvae drift/swim downstream to areas with a fine silt composition. They burrow into this bed material and live as filter feeders for years before transforming into young adult fish. The young adults overwinter before migrating short distances upstream to gravelled areas where they spawn. River lamprey are an anadromous species, with adults living at sea and migrating to freshwater for spawning in March and April. The adult fish die after spawning. The fertilised eggs hatch within days, with the larvae burrowing into fine sediment where they filter feed for a number of years before transforming into adult fish. The young river lamprey then migrate downriver to estuarine waters. River and brook lamprey are indistinguishable as larvae. The mature adult forms are distinguishable on the basis of body size. Lamprey surveys have necessarily focussed on juvenile lamprey. Consequently, the vast majority of available data relates to "*Lampetra* sp." and cannot be assigned to one species or the other.	Yes
[1099] River Lamprey (*Lampetra fluviatilis*)		

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	The proposed activity area is located within the current known distribution, current range and favourable reference range of brook lamprey, but outside of the current known distribution, current range and favourable reference range of River lamprey (NPWS, 2019c). Lamprey species have been recorded throughout the Barrow Catchment, upstream of the proposed activity area (IFI, 2020). The closest NBDC record for Lamprey is at Saint Mullins, located approximately 5km to the north-west. There are no known records of Lamprey within the Pollmounty River or downstream of the proposed activity area. The SAC Conservation Objectives report notes that diffuse source pollution maybe having localised impacts on populations of *L. fluviatilis*. Water quality impacts from runoff have the potential to impact on the populations of both species. As there is potential for this species to be found within the proposed activity area or downstream, there is potential for the activity to have a direct adverse effect upon this qualifying interest due direct physical disturbance and an indirect adverse effect due to a potential deterioration in water quality during proposed activity.	
[1103] Twaite Shad (*Alosa fallax*)	Twaite Shad spend most of their life in estuaries and coastal waters but migrate upriver to spawn in late spring. Following spawning, adult Twaite Shad return to estuaries. Limited knowledge indicates that Irish Twaite Shad may live in estuarine waters for at least two full years prior to going to sea. The proposed activity is located within the current known distribution, current range and favourable reference range of the Twaite Shad (NPWS, 2019c). The habitat requirements for this species are not fully understood although they are known to spawn at night in a shallow area near deeper pools in which fish congregate. There nearest NBDC record for this species is located approximately 4.1km north-west (5.1km hydrologically upstream) of the proposed activity. Given the absence of suitable habitat within the proposed activity area, there is no potential for a direct adverse effect to occur to this species. The Conservation Objectives for this qualifying interest include water quality attributes. Therefore, the proposed activity has the potential to cause direct and indirect adverse effects due to a deterioration in water quality.	Yes
[1106] Atlantic Salmon (*Salmo salar*)	Atlantic Salmon use rivers to reproduce and as nursery areas. Eggs are deposited during winter in river gravels. The eggs hatch into alevins in spring, which in turn develop into fry. The fry feed for the summer and autumn, gradually becoming parr. Fry and parr feed primarily upon invertebrates. The Irish population generally comprises fish that spend two winters in freshwater before going to sea in spring as smolts. Adults spend 1-3 years at sea, feeding upon crustaceans and fish as they migrate to feeding grounds in the North	Yes

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	Atlantic. The majority of Irish fish spend one winter at sea before returning to their natal rivers, mainly during the summer, as grilse. The proposed activity is located within the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019c). There are no NBDC records for this species on the Pollmounty River however, this species has been recorded within proximity of the proposed activity area according to the Barrow Catchment report (IFI, 2020). The Conservation Objectives for this qualifying interest include water quality attributes. It has been determined that habitats within the proposed activity are currently unsuitable for this species however, habitats upstream are considered suitable. Therefore, it is possible that Salmon are within the proposed activity area. As there is potential for this species to be found within the proposed activity area or downstream, there is potential for the activity to have a direct adverse effect upon this qualifying interest due direct physical disturbance and an indirect adverse effect due to a potential deterioration in water quality during proposed activity.	
[1355] Otter (*Lutra lutra*)	Otters have two basic requirements: aquatic prey and safe refuges where they can rest. Otters are opportunistic predators with a broad and varied diet. In freshwater areas, a variety of fish will be taken, while crayfish and frogs can be important locally or seasonally. The proposed activity is located within the current distribution, current range and favourable reference range of otter (NPWS, 2019c). A significant impact on water quality could indirectly impact upon this qualifying interest by causing a reduction in prey populations and availability. The National Otter Survey of Ireland 2010/12 (Reid *et al.*, 2013) report noted that the occurrence of otter within survey sites for the south-eastern river basin district was 70.8%. The most recent NBDC records for Otter was recorded approximately 3.8km to the north-west (Bailey, 2004) (6.9km hydrologically upstream). The site assessment revealed evidence (prints) to support the likelihood of Otter in the proposed activity area however, no Otter holts or couches were identified within the immediate area. It is not anticipated that the proposed activity would have a direct adverse effect on Otter however, a significant impact on water	Yes

TABLE 8.1 RIVER BARROW AND RIVER NORE SAC POTENTIAL IMPACTS SUMMARY		
QUALIFYING INTEREST	**OCCURRENCE / ASSESSMENT**	**POTENTIAL FOR ADVERSE EFFECTS**
	quality could cause an indirect adverse effect upon this qualifying interest by causing a reduction in prey populations and availability.	
[6985] Killarney Fern (*Vandenboschia speciosa*)	The Killarney fern is a type of filmy fern, with characteristically thin, membranous, translucent fronds. This fern grows in deeply shaded, humid areas such as dripping caves, crevices and overhangs of cliffs, within stream gullies, by waterfalls and on the floor of damp woodlands (NPWS, 2019c). The proposed activity is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019c). According to the SAC Conservation Objectives report, the nearest record of Killarney Fern is located approximately 8km north-west (12km hydrologically upstream) of the proposed activity area. This species does not occur within the proposed activity area. It is therefore predicted that the proposed activity would not have the potential to cause any adverse effects upon this qualifying interest either directly or indirectly.	No

River Barrow and River Nore SAC and River Nore SPA Conservation Objectives

The relevant site-specific conservation objectives for the qualifying interests which have been identified as being potentially impacted upon by the activity are outlined below.

Floating River Vegetation
The concentration of suspended solids in the water column should be sufficiently low to prevent excessive deposition of fine sediments. Concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition. The release of suspended solids and a deterioration in water quality could cause an indirect adverse effect on this qualifying interest.

Hydrophilous Tall Herb Communities
A deterioration in water quality and spread of invasive species have the potential to cause indirect adverse effects to this qualifying interest.

Estuaries
A deterioration in water quality and spread of invasive species have the potential to cause indirect adverse effects to this qualifying interest.

Tidal Mudflats and Sandflats
A deterioration in water quality has the potential to cause indirect adverse effects to this qualifying interest.

Atlantic Salt Meadows
A deterioration in water quality have the potential to cause indirect adverse effects to this qualifying interest.

Mediterranean Salt Meadows
A deterioration in water quality has the potential to cause indirect adverse effects to this qualifying interest.

Alluvial Forests
A deterioration in water quality and spread of invasive species have the potential to cause indirect adverse effects to this qualifying interest.

Old Oak Woodlands
Invasive species can cause negative adverse effects on this habitat.

Freshwater Pearl Mussel (*Margaritifera margaritifera*)
Restore substratum quality, stable cobble and gravel substrate with very little fine material. No artificially elevated levels of fine sediment. Restore water quality for macroinvertebrates to EQR greater than 0.90 (Q4-5 or Q5) for phytobenthos to EQR greater than 0.93. A potential deterioration in water quality has the potential to affect fish (Salmon) populations therefore, an indirect adverse effect may occur.

White-clawed Crayfish (*Austropotamobius pallipes*)
Water quality (EPA Q value): At least Q3-4 at all sites sampled by EPA. There is potential for a direct adverse effect due to direct physical disturbance and an indirect adverse effect due to a deterioration in water quality.

Sea Lamprey (*Petromyzon marinus*)
There is a potential for a direct impact to this species due to direct physical disturbance and a deterioration in water quality.

Brook Lamprey (*Lampetra planeri*) and River Lamprey (*Lampetra fluviatilis*)
There is a potential for a direct impact to this species due to direct physical disturbance and a deterioration in water quality.

Twaite Shad
There is potential for a direct adverse effect due to direct physical disturbance and an indirect adverse effect due to a deterioration in water quality.

Atlantic Salmon (*Salmo salar*)
Water quality (EPA Q value): At least Q4 at all sites sampled by EPA. There is potential for a direct adverse effect due to direct physical disturbance and an indirect adverse effect due to a deterioration in water quality.

Otter (*Lutra lutra*)
Fish biomass available: A potential deterioration in water quality may affect fish populations and availability, therefore an indirect adverse effect may occur.

Nore Freshwater Pearl Mussel (*Margaritifera durrovensis*)
Water quality: Restore water quality to an ecological quality ratio of greater than 0.90 for macroinvertebrates and greater than 0.93 for phytobenthos. Host Fish: Maintain sufficient juvenile salmonids to host glochidial larvae. A potential deterioration in water quality has the potential to affect fish (Salmon) populations therefore, an indirect adverse effect may occur.

9.0 MITIGATION MEASURES

This assessment has determined that the proposed activity has the potential to impact upon the River Barrow and River Nore SAC due to a potential deterioration in water quality, direct physical disturbance due to the removal of accumulated material within the Pollmounty river and spread of a third schedule invasive species, Indian Balsam.

As discussed in Section 8.0, it is considered that the project has the potential to impact upon the following qualifying interests of the River Barrow and River Nore SAC;

• [3260] Floating River Vegetation • [1130] Estuaries • [1140] Tidal Mudflats and Saltflats • [1330] Atlantic Salt Meadows • [1410] Mediterranean Salt Meadows • [6430] Hydrophilous tall herb communities • [1103] Twaite Shad	• [1029] Freshwater Pearl Mussel • [1092] White-clawed Crayfish • [1095] Sea Lamprey • [1096] Brook Lamprey • [1099] River Lamprey • [1106] Atlantic Salmon • [1355] Otter • [1990] Nore Freshwater Pearl Mussel

9.1 MANAGEMENT OF ACTIVITY

Figure 9.1: Location of the proposed activity area

9.1.1 MITIGATION MEASURES PRIOR TO COMMENCEMENT OF THE PROPOSED ACTIVITY

- The proposed activity shall take place between 1st July and 30th September unless otherwise agreed upon by Inland Fisheries Ireland;
- The proposed activity will not be undertaken during periods of heavy rainfall, high river flows or orange/yellow/red rainfall warnings issued by Met Eireann;
- The contractor will schedule the proposed activity after and during a period of dry weather;
- The contractor will ensure all relevant personnel are trained in identifying invasive species, particularly Indian Balsam, prior to the commencement of the proposed activity;
- A toolbox talk will be given at the proposed activity area by an ecologist to all relevant personnel on the monitoring and mitigation measure requirements to be implemented prior to commencement of the proposed activity;
- The contractor will maintain effective communication with the operating foremen through the toolbox talk to ensure there would be no risk of water pollution and all measures are enacted during the proposed activity;
- The contractor will effectively communicate the tasks to be completed prior to commencement of the proposed activity through the toolbox talk;
- Record of all visual inspections to be kept on file and available for review by relevant authorities;
- An ecologist will undertake a preliminary survey of the proposed activity area to confirm if an Otter holt has become established prior to the commencement of any activity on the day. If an otter holt is found, all proposed activity will immediately cease. Further investigations will be undertaken by an ecologist to determine if the holt is active or inactive. If active, no proposed activity will be undertaken within 150m of holts containing breeding females or cubs. NPWS will be consulted to determine if and when the proposed activity can commence. No wheeled or tracked machinery will be used within 20m of an active but non-breeding Otter holt. No digging or vegetation clearance will take place within 15m of such holts unless granted under a licence;
- Where an active Otter holt is found within the proposed activity area and it is determined by an ecologist that the proposed activity may cause a negative impact to the holt, a derogation licensed will be sought from NPWS;
- An ecologist will conduct a preliminary survey prior to the commencement of any proposed activities, to confirm that Indian Balsam is not present within the proposed activity area. The onsite ecologist will also familiarise themselves with the location of the nearest stands of Indian Balsam to maintain a sufficient distance, particularly from any potential plants in seed, to prevent further spread within the woodland.;
- The ecologist will determine an exclusion zone for personnel and machinery after the preliminary survey for Indian Balsam has been completed. Infested areas will be fenced off with a buffer of 7m. Where possible, brightly coloured construction tape or rope will be placed adjacent the proposed activity area to limit access to machinery which could potentially spread this species. Signage restricting access will be clearly visible. All proposed activities within 7m of infested areas will be supervised by a suitably qualified ecologist;
- Machinery will not operate within any area where Indian Balsam is present;
- Sand used within sandbags will be washed prior to any proposed activity and will be free of any contaminants.

- The supervising Ecologist will seek a Crayfish licence from NPWS prior to the proposed activities should this species be encountered.

9.1.2 BIOSECURITY MEASURES

During all phases of the proposed activity, biosecurity protocols must be followed to ensure non-native invasive species and diseases such as crayfish plague are not introduced to the proposed activity area;

- All personnel must implement the 'Clean – Check – Dry' principles, ensuring that all personal protective equipment (PPE), and equipment and machinery is clean and dry upon arrival at the proposed activity area. This will include the power washing and steam cleaning of equipment and machinery with water >65ºC prior to arrival onsite;
- Upon completion of the proposed activity, the contractor must check and clean all PPE, equipment and machinery visually by inspecting all equipment that has come into contact with the water for evidence of attached plant or animal material, or adherent mud or debris. This should be done before leaving the proposed activity area. Remove any attached or adherent material (vegetation and debris) before leaving the activity area of operation;
- High-pressure steam cleaning, with water > 65ºC, is recommended for machinery that will be moved from one watercourse to another. Many roadside garages provide these facilities. After cleaning, visually inspect the equipment to ensure that all adherent material and debris has been removed;
- It is recommended to apply disinfectant to the undercarriage and wheels of the vehicle/machine after steam cleaning or power hosing;
- Wet or live wells and other water retaining compartments in machinery must be cleaned, rinsed or flushed with a 1% solution of Virkon Aquatic or another proprietary disinfection product. Alternatively, a 5% solution (100 ml / 20 litre solution) of chlorine bleach should be used. Rinse thoroughly with clean water;
- Prior to commencement of any new activity, the contractor must ensure that all PPE, equipment and machinery are dry.
- If drying out of PPE, equipment and machinery is not feasible, disinfection using Virkon Aquatic must be carried out, as per the manufacturer's instructions.

9.1.3 MITIGATION MEASURES DURING THE PROPOSED ACTIVITY

Measures that will be implemented to ensure that there will be no adverse effect to the listed habitats or species, as listed above, of the River Barrow and River Nore SAC due to a potential deterioration in water quality and spread of invasive species:

- The contractor will liaise with Inland Fisheries Ireland and will undertake the proposed activity during the allowed timeframe as above;
- The contractor will continue to monitor changes in weather and will not undertake any of the proposed activity during periods of heavy rainfall or status orange, yellow or red rainfall warnings issued by Met Eireann, to limit the potential for suspended solids to become entrained within surface water run-off;
- Where heavy machinery is required to operate on the banks of the Pollmounty watercourse, the heavy machinery will not operate at the edge of the banks of the

Pollmounty watercourse but will maintain at a distance required allowing only for the hydraulic arm to reach the river bed;

- Where machinery will operate within the Pollmounty River, a dry isolated area will be created as detailed below;
- Bankside machinery will not operate within the exclusion area for Indian Balsam;
- Bog mats will be laid along the left riverbank adjacent the existing concrete area of the intake infrastructure, facing downstream, to provide stable ground conditions for machinery during the proposed activity.;
- Once the bog mats are in place, the weir planks and associated rocks will be removed from the Pollmounty River using suitable machinery, to lower the water level in the channel;
- When water levels in the Pollmounty River have dropped, sandbags will be placed within the river channel to isolate a longitudinal section of the river using suitable machinery. These sandbags will be first positioned upstream allowing for freshwater species to safely seek refuge elsewhere;
- All sandbags will be secured in place and covered to prevent any potential for the release of sand into the Pollmounty River;
- The remainder of the Pollmounty River will not be isolated, allowing for the passage of freshwater species;
- Accumulated materials within the isolated area will be removed using suitable machinery and loaded within a small dumper. The dumper will transport removed materials and deposit them within a designated 'lay out' area adjacent the generator shed. This will be set back from the River bank;
- Machinery within the watercourse will only operate within the isolated areas;
- The proposed activity will not deepen the river bed or alter the riverbanks of the Pollmounty River;
- There will be no alterations to the banks of the Pollmounty watercourse;
- Retain vegetation at margins on non-activity side of channels;
- Avoid disturbance to low velocity, niche or alcove locations (located on the southern bank);
- The operating foremen will maintain a distance of atleast 1m from the nearside riverbank in order to retain lateral silting areas and allow re-colonisation area for Lamprey and Crayfish species;
- The above steps, involving the placement of sandbags in the river channel and creation of isolated areas for the associated removal of accumulated material, will be repeated in an upstream direction along the right riverbank and then in a downstream direction along the left riverbank until accumulated materials have been removed from the activity area;
- An ecologist will inspect the removed materials within the 'lay out' area for any protected species. Where protected species have been found, the ecologist will remove the species from the deposited materials and return them to the Pollmounty River at an accessible and suitable location. The ecologist will undertake a final inspection of the removed materials prior removal offsite. The removed materials will be directed off site to a licensed waste facility. As noted in section 9.1.1, a licence will be sought prior.
- All plant machinery will be monitored daily for leaks by the operators and contractor;
- All plant machinery and equipment will be maintained in good working order and will be visually inspected every day;
- All small plants such as generators and pumps will be stood in drip trays capable of holding 110% of their tank contents;

- Spill kits, adequately stocked with spill clean-up materials such as booms and absorbent pads, would be readily available at the proposed activity area;
- The contractor will ensure the relevant site personnel are trained in spillage control;
- Materials such as hydrocarbons will be stored in designated areas on hardstanding away from a watercourse. Chemicals / fuels / generators at storage areas will be either bunded or set on appropriately sized drip trays which are regularly checked (at least daily) and emptied appropriately when required;
- Re-fuelling will not be undertaken within the proposed activity area;
- In the unlikely event of a suspected deterioration in water quality within the Pollmounty River due to the proposed activities, the activity will immediately cease, an investigation into the cause and source of the deterioration in water quality will be undertaken and the relevant NPWS and Inland Fisheries Ireland personnel informed. The cause/source of the deterioration in water quality will be addressed and fixed to stop the source of such deterioration in water quality. In the event of leakage of hydrocarbons, typically a rainbow-like sheen would be observed on top of the water. This may result in a fish kill downstream and daily inspections should be undertaken. A cloudy plume within the water could indicate the release of sediments outside of the proposed activity area. This could impact freshwater species downstream. If such an impact was to occur, the proposed activity will only commence when agreed to by Inland Fisheries Ireland and/or the NPWS;
- Should a protected fauna species such as Otter (*Lutra lutra*) be found during the project either hunting or swimming in or near the isolated area, the proposed activity will immediately cease. The activities will only commence once it has been confirmed by an onsite ecologist that the Otter is no longer present.

9.1.4 MITIGATION MEASURES AFTER THE PROPOSED ACTIVITY HAS CEASED

- The sand bags will be removed from the proposed activity area and taken to a licensed facility once the proposed activity has ceased;
- All removed weir planks and rocks will be reinstated;
- The contractor will ensure all machinery and equipment has been taken from the activity area and that no materials associated with the proposed activity remain.

Reference documents:

- *Control of Water Pollution from Construction Sites; guidance for consultants and contractors*" 2001;
- Construction Industry Research and Information Association (CIRIA) guidelines "*Control of Water Pollution from Construction Sites; guidance for consultants and contractors*" 2001;
- *Guidelines for the treatment of Otters prior to the construction of national road schemes*, (National Roads Authority, 2008).

It is therefore considered that due to the mitigation measures to be implemented, there will be no adverse effect to water quality and to the protected habitats and species of the River Barrow and River Nore SAC as a result of the proposed activity.

10 IN-COMBINATION EFFECTS

The following plans and projects were reviewed and considered for in-combination effects with the proposed activity:

- Wexford County Development Plan 2022-2028
- Carlow County Development Plan 2022-2028
- Proposed and permitted developments in the area available on Wexford and Carlow County Council planning system.

The proposed activity area is located within the townland of Ballyleigh, approximately 8.4km from New Ross (centre), Co. Wexford. The site is accessed via an existing entrance off the L4001. The L4001 joins the R729 approximately 871m to the north-west of the site, providing connectivity to New Ross.

Table 10.1: Recent planning applications close to the proposed activity area

APPLICATION NO.	DEVELOPMENT TYPE	OUTCOME	APPROXIMATE DISTANCE
20241230	Permission for works to uprate the existing Great Island - Kellis 220kV.	Granted - Conditional	78m SE
21185	Permission for the construction of a two storey dwelling, detached domestic garage, proprietary treatment system and all ancillary site works.	Granted - Conditional	647m N
19311	Permission for the erection of a dwelling house, domestic garage/store, treatment system and percolation area and all associated site works.	Granted - Conditional	738m N
2460019	Permission for the construction of an above ground slurry store and associated site works.	Granted - Conditional	911m N
16316	Permission for the erection of a cubicle house with slatted slurry storage tank and all associated site works.	Granted - Conditional	911m N
2299	Permission for the construction of (a) a slatted shed, (b) a lean-to roof over an existing cattle handling yard, (c) a new milking parlour, dairy and drafting area (d) a collecting yard with slatted tank and associated site works.	Granted - Conditional	911m N
18113	Permission to demolish the existing two storey dwelling house and to erect a new 4 bedroom two storey dwelling house repositioned on the same site and to install a new sewage treatment system with soil polishing filter and associated site works.	Granted - Conditional	1.5km NW
20211539	Permission for the erection of a fully serviced dwelling house and domestic garage.	Granted - Conditional	1.1km SW
20250137	Permission for alterations and extensions to dwelling.	Granted - Conditional	901m SW
22400	Permission to (1) demolish existing fire damaged dwelling (2) erection of a new replacement dwelling (3) upgrade of existing septic tank to a treatment system with percolation area and all associated site works.	Granted - Conditional	1.2km N

Potential in-combination effects are discussed under the following headings.

10.1 HABITAT LOSS / FRAGMENTATION

As discussed, the proposed activity is located within the boundary of a European site, the River Barrow and River Nore SAC. As there will be no removal of any terrestrial vegetation, trees or activities within the banks of the Pollmounty watercourse, the proposed activity is not expected to have any direct effects upon a protected site through loss or destruction of protected habitats or fragmentation of habitats listed within the SAC. There will also be no excavation of the Pollmounty riverbed or physical interventions in the landscape.

No live protected species listed within the River Barrow and River Nore SAC were found within the immediate activity area however, as there is suitable supporting habitats for some species, they are likely to be present within the Pollmounty watercourse and within the proposed activity area. Evidence of Otter was noted within the proposed activity area also. The proposed activity will involve the removal of sediments within the Pollmounty watercourse only. Therefore, no loss of potential Otter habitat is predicted. Suitable machinery operated by an experienced and skilled driver will ensure the riverbanks remain intact. In addition, measures to maintain a 1m distance from the nearside riverbank where possible will ensure potential Lamprey and Crayfish habitat will remain intact.

An ecologist will be onsite during the proposed activity and will conduct a preliminary survey for Indian Balsam, to define an exclusion zone for machinery. With the measures to be implemented, the proposed activity is not expected to cause the spread of a third schedule invasive species. This proposed activity will avoid contact with Indian Balsam as opposed to treating this species.

The surrounding land-use of the proposed activity area is mainly rural with forestry and agricultural land within the immediate vicinity. There are some one-off dwellings also located along the local roads. There will be no alteration to any protected habitat onsite nor will there be any alteration to the existing use of the activity area.

Developments identified on the Wexford and Carlow County Councils planning site within the vicinity of the applicants proposed activity area are mostly residential and agricultural developments that were all granted subject to conditions. Should future planning applications be submitted for the area, it is likely that they would also be located within the limit of Ballyleigh on land identified for residential/agricultural use.

Therefore, it is unlikely that future proposed developments would result in the loss or fragmentation of designated habitats of the River Barrow and River Nore SAC. Therefore, no in-combination effects on habitat loss / fragmentation are anticipated.

10.2 DISTURBANCE TO SPECIES

Disturbance to species may arise through noise emissions and human activity, particularly during the proposed activity. The main in-combination noise and human activity effects would be from any residential, agricultural activity and traffic along the L4001 within the area. The proposed activity area is located within the boundary of the River Barrow and River Nore SAC.

Fauna within the SAC and the general area around the proposed activity area would be accustomed to human and agricultural noises commonly audible. The proposed activity will be undertaken over a 2-3 day period, thereby limiting further disturbance to protected species in the area. Given the limited timeframe, machinery and nature of the proposed activity, the proposed activity would not be expected to cause a significant disturbance to local fauna.

With regards to protected freshwater fauna and qualifying interests of the River Barrow and River Nore SAC, the proposed activity has the potential to cause a direct adverse effect due to direct physical disturbance and potential habitat loss on some of the qualifying interests. The measures to be implemented will ensure that freshwater species can move freely out of the proposed isolation area prior to any proposed activities or they will be extracted by an ecologist and returned to the Pollmounty watercourse.

In addition, any removed materials will be inspected by an ecologist prior to its exportation from the proposed activity area to a licensed waste facility.

The presence of humans and heavy machinery has the potential to cause disturbance to protected mammals during the course of the proposed activity. Given that evidence of Otter was found during the site assessment, there is a potential risk that this species may be impacted due to disturbance however, given that no otter holts or couches were found within the proposed activity area, the risk of disturbance is considered low. If Otter are present in the area, they would likely move further away from the disturbance. Disturbance would only be for a short duration.

No vegetation will be removed as part of the project. Therefore, there will be no loss of vegetation associated with protected species.

Should a protected species be encountered during the proposed activity, the onsite ecologist will undertake an investigation and the proposed activity will only re-commence when it is safe to do so as outlined within the mitigation measures above.

During the proposed activity, waste material (consisting of materials removed using heavy machinery) would be removed to a licenced waste facility. Therefore, owing to the surrounding rural/agricultural land use and close proximity to the local road network, it is considered that the proposed activity will not significantly increase cumulative noise impacts, or other disturbance effects due to human activity, which would pose an adverse risk to designated sites or species and habitats within the River Barrow and River Nore SAC.

10.3 DETERIORATION IN WATER QUALITY

Continued implementation of the Water Framework Directive would result in achieving, or maintaining, improvements to water quality in the Barrow Catchment. Activities such as this could act in combination with existing environmental pressures on the Barrow Catchment, including agriculture, anthropogenic, domestic and urban wastewater, urban run-off, industry and forestry. There will be no alterations to the existing drainage onsite or existing soil infiltration. However, as noted in Section 7.3, it is considered that the proposed activity would not pose a risk upon a Natura 2000 site due to a deleterious effect on water quality, during the operational phase.

During the proposed activity, it is considered that any potential impact on water quality would be effectively managed by the proposed mitigation measures. Therefore, in-combination effects would not be expected. The project footprint would be small in scale with limited plant and equipment required. The proposed duration will be 2-3 days during dry weather conditions. The proposed methodology includes the creation of dry isolated areas preventing any potential for silt laden surface water run-off from entering the Pollmounty River. To further prevent any potential adverse effects on the River Barrow and River Nore SAC, additional water quality mitigation measures within this report will be implemented during the proposed activity phase.

Mitigation measures will be also put in place to protect against spills and runoff during the proposed activity. This will mitigate any adverse effect on the water quality of the River Barrow and River Nore SAC.

11.0 CONCLUSION

It is not anticipated that the proposed activity, subject to mitigation measures, by itself or in combination with other developments, would impact negatively upon the Natura 2000 network during the proposed activity preparation or operational phases of the project.

The proposed activity area is located within the boundary of the River Barrow and River Nore SAC (Site Code: 002162). A number of sensitive habitats and species have been identified within the proposed activity area and downstream which are at risk of direct physical disturbance, loss of potential suitable habitat and a deterioration in water quality without appropriate mitigation. It is considered that there would be no potential risk of an adverse effect upon the qualifying interests / special conservation interests of the River Barrow and River Nore SAC due to the proposed mitigation measures that will be implemented as outlined within section 9 of this report.

It is the conclusion of this Natura Impact Statement that, subject to mitigation measures to be implemented, there would be no potential for an adverse effect on European sites as a result of the proposed activity. This conclusion refers to the project by itself or in combination with other projects, developments or activity.

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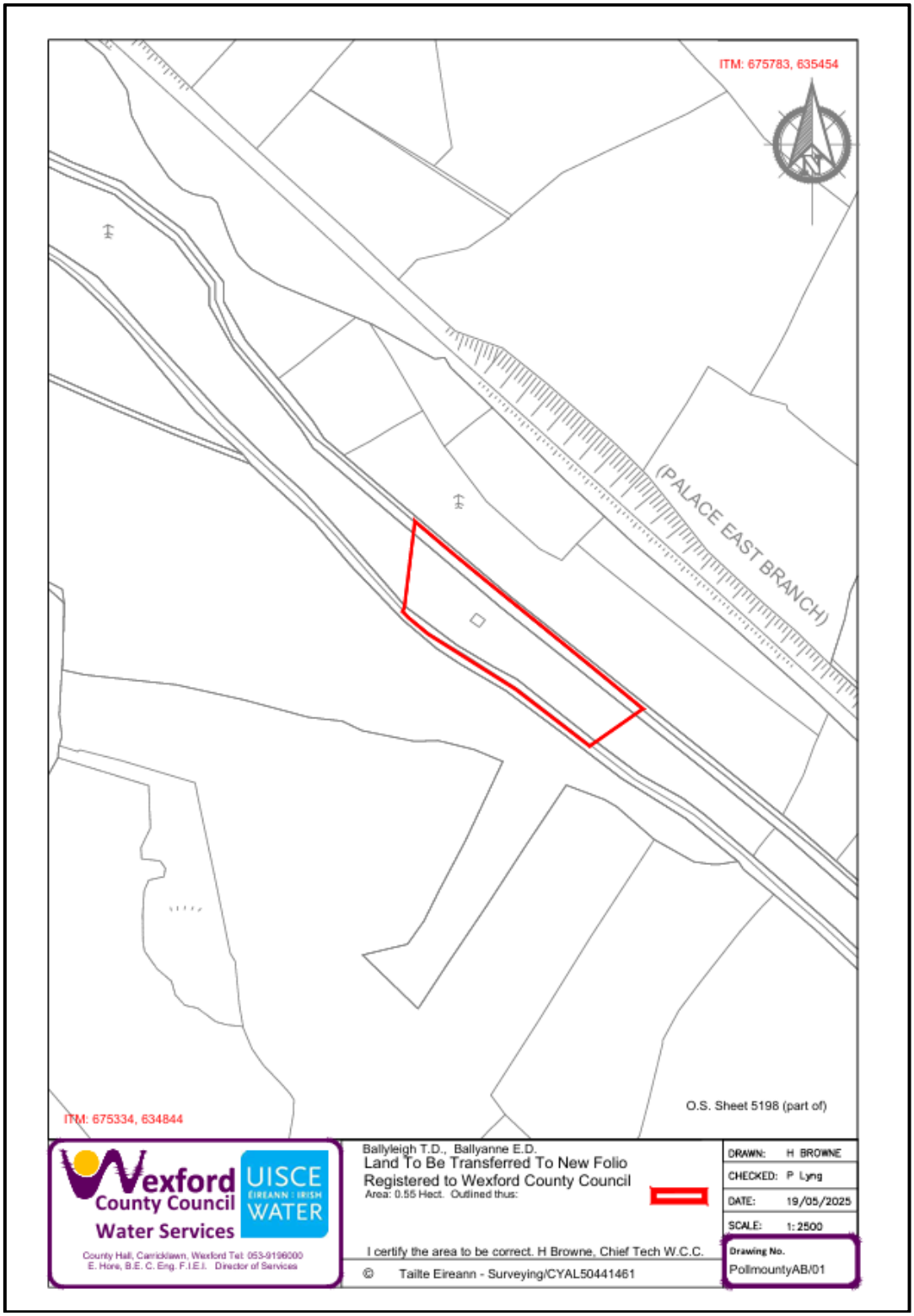
APPENDIX A

PROPOSED ACTIVITY RED LINE BOUNDARY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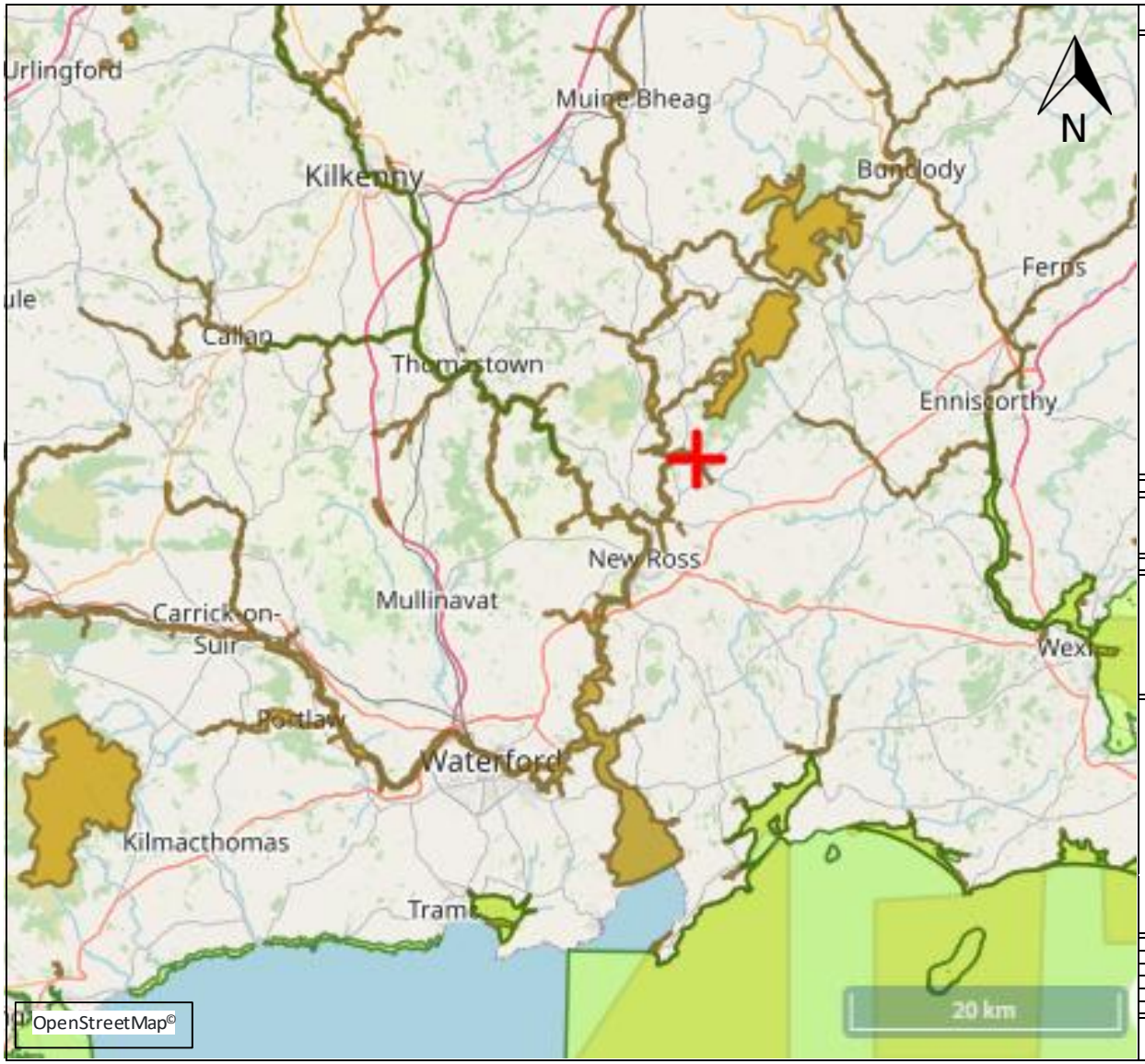
(PALACE EAST BRANCH)
ITM: 675334, 634844
O.S. Sheet 5198 (part of)
Wexford County Council
Water Services
UISCE EIREANN : IRISH WATER
County Hall, Carricklawn, Wexford Tel: 053-9196000
E. Hore, B.E. C. Eng. F.I.E.I. Director of Services
Ballyleigh T.D., Ballyanne E.D.
Land To Be Transferred To New Folio
Registered to Wexford County Council
Area: 0.55 Hect. Outlined thus:
I certify the area to be correct. H Browne, Chief Tech W.C.C.
© Tailte Eireann - Surveying/CYAL50441461
DRAWN: H BROWNE
CHECKED: P Lyng
DATE: 19/05/2025
SCALE: 1:2500
Drawing No.
PollmountyAB/01

APPENDIX B

PROTECTED SITE MAPS



Notes

– Location of Proposed Activity

- SAC

- SPA

Project Title:

Protected Sites Map

Client Name:

PANTHER ECOLOGY LTD

UNITS 3 & 4
S.E.T.U CARLOW CAMPUS
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Drawing Status:	**Scale:**	NTS	A4
Report	**Datum:**		EPA Maps
Drawing Number:	**Drawn:**		PE
NIS 10326	**Checked:**		MF
Revision:	**Approved:**		-
	Date:		18/06/2025

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APPENDIX C

PHOTO LOG

Plate 1: Existing access road off the L4001

Plate 2: Upland/eroding Rivers (FW1)

Plate 3: Existing Pollmounty intake and BL3 surfaces

Plate 4: Alluvial forests [91E0]

Notes:

APPENDIX D
PHOTO LOG

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file location:		scale: N/A	A4
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drawing no.	rev	checked:	MF
NIS_10326	A	approved:	-
		date:	02/05/2025

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Plate 5: Scrub (WS1)

Plate 6: Recolonising bare ground (ED3) along road

Plate 7: Generator shed and BL3 habitats

Plate 8: Proposed 'lay out' area

Notes:

APPENDIX D
PHOTO LOG

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file location:		scale: N/A	A4
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drawing no.	rev	checked: MF	
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