



# Westcountry Rivers Trust

Improving multi-species fish passage in the River Exe catchment as part of the

## STRATEGIC EXE WEIRS PROGRAMME

**Invitation to Tender for the Provision of:**

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## Helebridge Weir Removal Design

Helebridge Weir & Hele Bridge, River Exe

**November 2023**

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To be supplied to Westcountry Rivers Trust



Date of Document: 08/11/2023  
Prepared by: Tom Watts  
Authorised by: A. Dowding



**Strategic  
Exe Weirs**

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## 1. Project Officer

For all enquiries and submissions concerning this Invitation to Tender, please contact:

**Tom Watts**

Strategic Exe Weirs Project Officer

Westcountry Rivers Trust, Rain-Charms House, Kyl Cober Parc, Stoke Climsland, Callington,  
Cornwall, PL17 8PH

E: [tomwatts@wrt.org.uk](mailto:tomwatts@wrt.org.uk)

M: 07854 716 263

T: 01579 342 140

All enquiries for further information will be answered to all parties.

## 2. Introduction & Overview

**Client:** Westcountry Rivers Trust

**Principal Designer:** Westcountry Rivers Trust

**Principal Contractor:** TBC

### A. Company Background

Westcountry Rivers Trust (WRT) is an environmental charity (Charity No. 1135007, Company No. 06545646) established in 1994 to secure the preservation, protection, development and improvement of the rivers, streams, watercourses, and water impoundments in the West Country, and to advance the education of the public in the management of water and associated habitats.

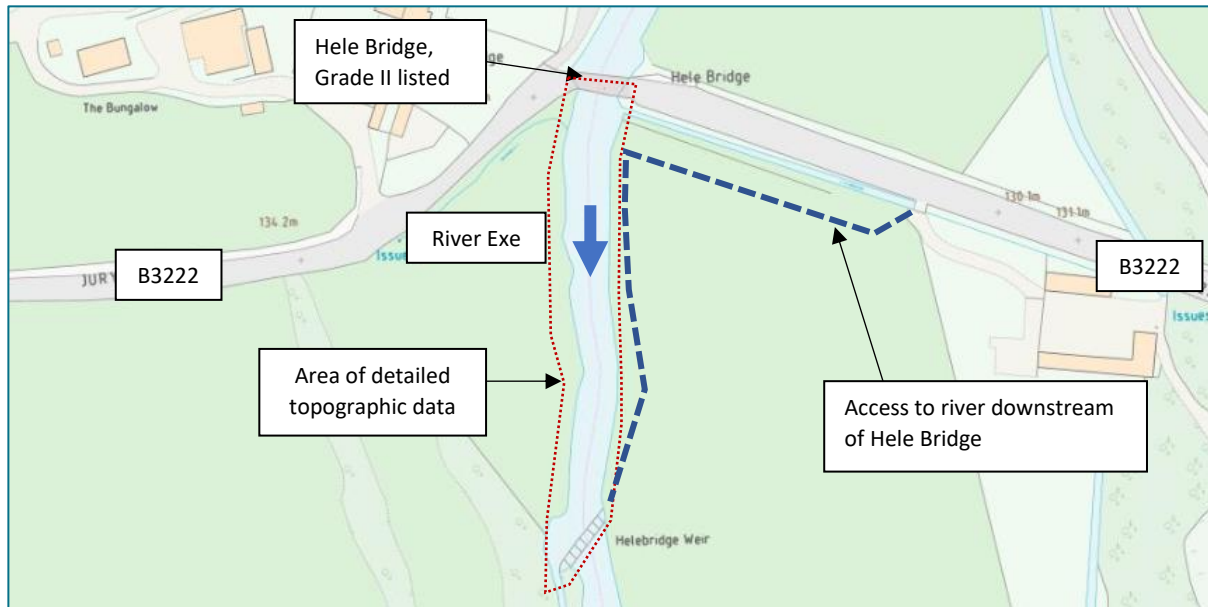
### B. Project Background

The Strategic Exe Weirs programme exists to help recovery of the Exe catchment. Migratory freshwater fish populations have declined globally by 76%, or 93% if considering Europe alone, since the 1970's. Such declines are reflected in Southwest migratory fish populations. Fish are key indicators of ecological function, and thus ensuring connectivity between spawning, juvenile and adult habitat is important to meeting ecological quality targets under The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Efforts to restore Atlantic salmon populations are guided by The Environment Agency's Salmon Five Point Approach, which highlights the need to mitigate migration barriers.

The Strategic Exe Weirs programme (SEW) is a partnership between WRT and the River Exe and Tributaries Association (RETA), supported by the Environment Agency (EA), South West Water (SWW) and Natural England (NE) to deliver bespoke fish passage solutions to maximise migration flow windows and restore the natural movement of migratory fish native to the River Exe. The projects delivered under Strategic Exe Weirs are part of efforts to secure a sustainable future for migratory fish populations for the ecological integrity of the River Exe, the Barle SSSI, and sustainability of associated fisheries.

### 3. Scope of the Service

#### A) Site Location



**Figure 1:** Location of Helebridge Weir and Hele Bridge, 1:1250 OS Map.

The weir is located ~200 metres downstream of Helebridge Weir, to the East of Dulverton along the B3222. Access to the site downstream of Hele Bridge is possible for suitable offroad vehicles, pending ground conditions. Parking is available either on the south carriageway to the east of Hele Bridge, or at a rough stone layby on the A396 to the East of the above map, opposite the turning for the B3222. Please be advised there is no footpath along the B3222 and high visibility clothing is recommended.

**You are welcome to visit the site by arrangement.** Please let the Project Officer know if you intend to visit the site to prepare your tender response. A member of WRT staff will organise permission and may accompany you to the site.

#### B) Site Information

**Helebridge Weir** is a historic sloping weir of stone construction with concrete capping to facilitate water power at the old sawmills at Pixton Park. The structure is in poor condition with obvious signs of deterioration. The weir is breached at the right-hand bank and is eroded through the middle in places. Piping under the concrete cap is thought to be abundant. There is no longer any reason for this man-made structure to be in the river as no leat (off-take) channel exists and the original ownership is now fragmented.

The preferred option for fish passage improvement at this site is the removal of Helebridge Weir.

Hydraulic modelling has been conducted to inform the options appraisal and removal of Helebridge Weir is feasible (modelling technical note provided). There would be expected water

level changes associated with any channel profile change, and there will be a water level adjustment at the Hele Bridge downstream apron if no mitigation is provided. In removing the weir, the design must provide suitable mitigation to maintain or decrease the head drop over the bridge apron at low flows. This is to avoid reducing the impact of one obstacle while increasing the impact at another.

WRT always aims to provide an holistic solution to improvement projects, and therefore the detailed design is expected to provide a complete weir removal along with the implementation of nature-based, in-channel, habitat improvements that increase channel heterogeneity upstream of the removal site, including any temporary mitigative measures (e.g. coir bank protection) associated with the construction phase.

Channel improvements should utilise material won from the weir removal or locally sourced material (e.g. large woody debris) where possible. Nature-based mitigative interventions should enable free migration for native fish species whilst aiming to retain the water at the Hele Bridge road bridge located upstream.

Major considerations and recommendations for weir removal are as follows:

- i. All rivers and stream are Priority Habitats and subject to S41 of NERC (2006) (England).
- ii. In the flow conditions assessed, Helebridge Weir was assessed as having an impact on upstream migration for **Atlantic salmon** (*Salmo salar*), **brown/sea trout** (*Salmo trutta*), grayling (*Thymallus thymallus*), **juvenile eels** (*Anguilla anguilla*), **lamprey species** (*Lampetra spp.* and *Petromyzon marinus*) and cyprinid species (e.g. *Leuciscus leuciscus*). Target species are highlighted in **bold**.
- iii. Migratory salmonids are known to traverse the weir and utilise upstream recruitment habitat. Helebridge Weir is causing unnatural delays to upstream and downstream migration to and from key salmonid spawning habitat in the Exe catchment and has therefore been included in the Strategic Exe Weirs programme for fish passage improvements.
- iv. A Preliminary Ecological Appraisal report (Feb 2022) and Heritage Impact Assessment report (Nov 2021) will be supplied. Any ecological and heritage constraints are to be considered in the design.
- v. Helebridge Weir is located within Exmoor National Park. The Exmoor National Park Local Plan promotes conserving habitats in a changing climate and improving links between land and sea (4.45), action for Priority Habitats including freshwater rivers (4.56), action for Priority Species and breeding areas (4.65), encouraging landscape permeability for healthy wildlife populations (4.68) and recognising importance of ecological networks (4.69). The proposals are specifically designed for conservation and restoration of Priority Species cited as most important in the current partnership plan 2 and to meet conditions under Policy CE-S3.
- vi. Helebridge Weir is in a state of decay, and has breached to the riverbed / bedrock at the right-hand bank for a span of approximately 5 metres. Flow velocities and turbulence preceding and within the breach create difficult fish passage conditions in most flows. There is a risk that if allowed to continue to deteriorate in an uncontrolled fashion, fish passage may be further impacted should the weir collapse in a way as to make fish passage more difficult.

- vii. Following extensive engagement with relevant stakeholders and subsequent options appraisal, WRT propose that Helebridge Weir should be removed from the River Exe channel in a controlled manner to restore a more natural open habitat connectivity for native migratory fish.
- viii. Fencing in the area is in a poor condition and the landowners are currently in the process of improving their farm management practice under the “Upstream Thinking Project”, which involves repositioning fencing 5m back from the river at the site.
- ix. Helebridge Weir is located approximately 200 metres downstream of Hele Bridge (Grade II listed). Removal of Helebridge Weir will have impact on water levels immediately downstream of Hele Bridge, with risk of increasing the head drop at the Hele Bridge apron. This must be mitigated by maintaining or reducing the head drop as part of removing Helebridge Weir and providing suitable nature-based mitigation to maintain water levels at the bridge whilst improving river habitat and heterogeneity between the weir and bridge.
- x. A hydrological assessment technical note (Oct 2023) including flow duration and percentage exceedance values is supplied. This details flow modelling to assess expected changes in water levels upstream and downstream of Helebridge Weir and Hele Bridge for partial and full removal if no mitigation exists.
- xi. The weir owners have expressed their desire to retain some ability to use the reach of the River Exe between Helebridge Weir and Hele Bridge for recreational activities. This includes retention of some water depth for bathing where possible. Landowners also expressed an interest to establish a fishing beat in the area.
- xii. Hele Bridge road bridge apron is acting as a partial fish migration barrier, by presenting a hydraulic drop from the invert surface to the downstream water level. The hydraulic drop exists during low flows but is drowned in high flow conditions. Immediately downstream of the hydraulic drop are boulders limiting the approach for leaping in low-medium flows. This *may* be addressed as part of the design as an option, OR the default design parameters should be that no increased head drop is allowed.
- xiii. A draft concept plan is provided to illustrate project ideas, please refer to Appendix C. This is an illustration of project ideas and discussions with the landowner to aid communications. The designer is at liberty to adopt this concept or disregard it with an explanation that continues aiding good communications with the stakeholders.
- xiv. Current conceptual ideas include introducing a limited number of partial pre-barrage (or large roughening) interventions, constructed from natural stone or large woody debris between Helebridge Weir and Hele Bridge. It is proposed that the semi-pre-barrages will facilitate and promote:
  - a) Open access for fish migration and equal or improved migration at Hele Bridge
  - b) Retain current water levels or reduce hydraulic drop immediately downstream of Hele Bridge off the foundation apron
  - c) Aid in maintaining riverbed levels or increasing gravel accumulation to promote increased connectivity of the river with the floodplain downstream of Hele Bridge
  - d) Increased heterogeneity of the river channel and increased diversity of habitat to promote increased biodiversity

- xv. Topographic data will be supplied by WRT in file formats: DWG & PDF.

## C) Services Required

- i. Some Services & Utilities Checks have been performed for preliminary investigations and have been supplied by WRT as part of this ITT, however, WRT expects the awarded contractor to perform their own searches to confirm design feasibility. Water (underground) and electricity (overhead) are known to be site factors.
- ii. An option of Ground Investigations according to the Consultant's assessment and agreement with the Client as to whether they are needed.
- iii. Production of a Location Plan and Site Plan. Plans to be as per Exmoor National Park Authority planning permission specification.
- iv. Detailed Designs (RIBA Stage 4) for Helebridge Weir removal, including mitigative habitat enhancement to improve upstream and downstream fish passage for all species, as far as practicable.
- v. Mitigation of altered water levels immediately downstream of Hele Bridge road bridge is to be considered as integral to the design to remove Helebridge Weir.
- vi. An option of improving fish passage under Hele Bridge road bridge, specifically during low-flow conditions for classically designated non-migratory (or more accurately potamodromous) brown trout, is to be considered as an optional addition in the design. This is so that it can be addressed as part of this project and construction phase works, or, if limited by collaboration with further stakeholders, can be addressed at a later date.
- vii. Flood Risk Assessment – A revised hydrological assessment of the confirmed Detailed Design and Flood Risk Assessment suitable for planning applications and supporting permissions. The document should specify new predicted water levels immediately downstream of Hele Bridge road bridge.
- viii. Appropriate risk assessments will be required for all elements of the services. Under CDM 2015 this includes a Designers Risk Assessment (DRA).
- ix. Optioneering for the above outcomes is welcomed against your experience. WRT have provided a concept, based on technical input, however, WRT are not technical design experts, and while operating as Principal Designer under CDM regulations WRT expect the appointed designer to provide comment on feasibility, health and safety, and budget practicality of options based on your technical experience.
- x. The consultant must ensure that all elements conform to all relevant British and European Standards, and in compliance with the latest edition of:
  - Environment Agency Fish Pass Manual
  - CIRIA River Weirs - Design, maintenance, modification, and removal
  - Civil Engineering Specification for the Water Industry, 7<sup>th</sup> edition



- xi. A draft NEC4 Professional Services Short Contract representative of the final version has been supplied. A final version will be provided at appointment, with opportunity to review before acceptance.

## D) Timescale

The tender process is anticipated to follow the timeline presented in the table below:

Date	Action
<b>14<sup>th</sup> November 2023</b>	Invitation To Tender released.
<b>23<sup>rd</sup> November 2023</b>	All queries to be submitted.
<b>28<sup>th</sup> November 2023</b>	All queries to be addressed and returned to all applicants.
<b>8<sup>th</sup> December 2023</b>	ITT Deadline for design quotes.
<b>18<sup>th</sup> December 2023</b>	Notification of intent to award tender (out of office 22 <sup>nd</sup> Dec - 2 <sup>nd</sup> Jan).
<b>5<sup>th</sup> January 2024</b>	Signed NEC4 contract awarded & delivered.
<b>1<sup>st</sup> March 2024</b>	Delivery of detailed design suitable for planning permission submission.

## E) Special site considerations

- i. The site is located within Exmoor National Park and as such the aesthetic appeal of any delivery may be considered as a major factor in any subsequent planning application.
- ii. Hele Bridge weir is Grade II listed and supports a major route to Dulverton village. There must be no negative impact on the current and future structural stability of Hele Bridge as a result of removing Helebridge Weir. Mitigating the expected reduction in water level immediately downstream of Hele Bridge, and therefore possible subsequent increased risk of erosion, or decreased fish passability, is a major consideration for this project. Fish passage and erosion must experience no net negative impact, and positive impact where possible.
- iii. WRT welcome open discussion with the awarded contractor about any proposed concepts and future designs. WRT are willing to assess all suitable suggestions according to the site constraints.



## 4. ITT Responses

### A) Respondent Guidelines

You are required to submit a written proposal, either hard copy or electronically to the **Project Officer** by the deadline.

- i. All proposals should include the following:
  - Details of company experience in fish passage or river engineering and hydrogeomorphology design
  - Costings; including breakdown of delivery items
  - An estimation of timescale and outline programme
  - Details of staff to be delivering the work including relevant experience (e.g. CV)
  - Completed draft NEC4 Professional Services Short Contract supplied
- ii. The draft NEC4 template provided requires you to fill out: The *Consultant's* insurance details, the *Consultant's* Contract Data, the *Consultant's* Offer, the Price List, and to sign the contract as a formal offer.
- iii. A detailed breakdown in the Price List of the NEC4 Professional Services Short Contract allows for partial project invoices, against the specified item costs, if required.
- iv. You are expected to supply all required information, or clearly state the reason for being unable to do so. Any return supplied must make it clear if any part of the Contractor's offer does not comply with the Contract Data or the Works Information provided.
- v. In submitting a quotation, you are stating you are suitably qualified and experienced in work of this nature. If your tender is successful and the contract awarded, you are required to provide:
  - Risk Assessments for any site visits planned and work undertaken.
  - Current insurance certificates for Employer Liability, Professional Indemnity and Public Liability.
  - Details of proposed sub-contractors and current insurances (if applicable)
  - Health & Safety information
- vi. Any assumptions used in preparing responses should be clearly stated. Any appropriate supporting documents e.g. programmes, plans, company brochures, organisation charts should be included with the tender submission.

### B) Tender Assessments: Evaluation and Process

- i. A set of evaluation criteria has been prepared by WRT for the evaluation of every submission. Within each stage an initial evaluation will consider whether or not every requirement contained within the ITT has been fulfilled. The evaluation criteria will be based on price (40%) and quality

(60%) with quality being assessed on ability to meet the requirements (25%), delivery/timescales (25%) and staffing arrangement (10%).

- ii. All operations must strictly comply with all relevant Health and Safety, legal requirements and British & European codes of Best Practice.
- iii. If you have any queries, please do not hesitate to contact WRT.

### **C) Confidentiality**

- i. All information supplied by WRT in this tender to date, and any further information supplied during the tender process, is confidential and must not be shared with any other organisations unless WRT agree permission in writing. The confidentiality extends to all recipients of this information.
- ii. This competitive invitation to tender process has been performed anonymously. Prospective contractor / invitee details will not be shared with other contractors by WRT. Any sensitive information shared with WRT as part of your response shall remain so between WRT and the prospective contractor. All enquiries for further information will be summarised anonymously and answered to all parties.

### **D) Finance**

- i. This project is financed under the Strategic Exe Weirs partnership programme.
- ii. Funding for this contract is sponsored by the Natural England Species Recovery Fund.
- iii. Invoicing terms are detailed in the NEC4 contract.
- iv. When invoicing, the invoice must clearly state the awarded NEC4 contract.

### **E) ITT Acceptance**

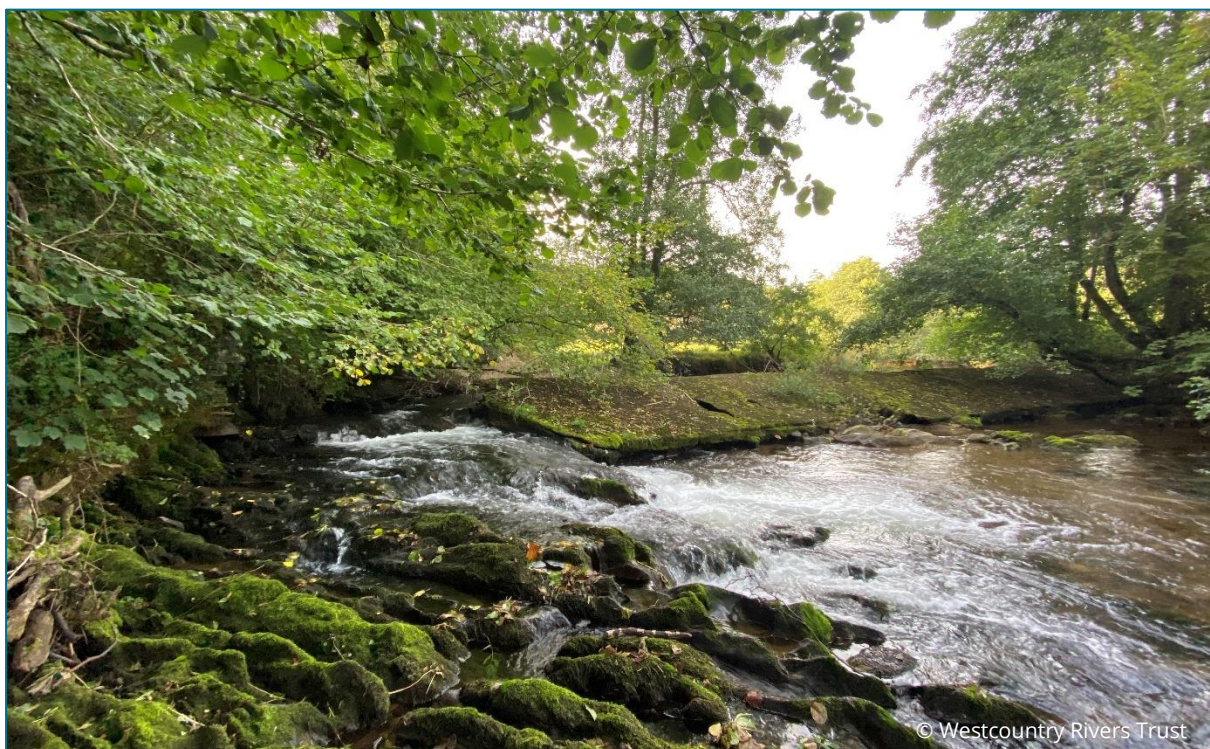
- v. To simplify exchange of information regarding this Invitation to Tender (ITT) please nominate one point of contact with relevant telephone number/s and email address.
- vi. Please direct any questions regarding this ITT content or process to the Westcountry Rivers Trust Project Officer. All questions should be submitted to the email address [tomwatts@wrt.org.uk](mailto:tomwatts@wrt.org.uk).
- vii. Please make sure any questions are submitted in good time for answers to be collated and distributed. A deadline may be in place for any queries to facilitate the fair tendering process for all respondents, but should be no later than 1 week prior to submission deadline.
- viii. Where there is a valid reason, WRT reserve the right not to accept your submission, or any other quotations received. WRT are not liable for any cost you may incur in the preparation of your quotation.
- ix. If you have any queries, please do not hesitate to contact WRT and we look forward to receiving your response.



## 5. Photographs for Reference



**Plate 1:** Looking north (upstream). View of the weir and breach on the RHB.



**Plate 2:** Looking north (upstream). View of the weir and breach on RHB.





**Plate 3:** Looking south (downstream), showing the channel above the weir.



**Plate 4:** Looking north (upstream), showing the upstream channel towards the Grade II listed Hele Bridge.





**Plate 5:** Looking north (upstream) towards Hele Bridge.



**Plate 6:** Looking south (downstream) from Hele Bridge.





**Plate 7:** Looking north (upstream) from Hele Bridge.

## Appendix A: Local native fish species

Fish species considered native at Helebridge Weir. Greyed boxes indicated species accepted as naturalised.

Species	Migratory behaviour <i>Barrier impact at ~Q85</i>	International legislation	UK legislation
<b>Atlantic salmon</b> ( <i>Salmo salar</i> )	Anadromous  <i>Low impact</i>	EC Habitats Directive 1992 Annex II, III, V. Bern Convention 1979 Appendix III. OSPAR Convention 1992.	Conservation of Habitats and Species Regulations 2017 Schedule 4 Natural Environment and Rural Communities Act 2006 S41 Priority species of principal importance. Salmon and Freshwater Fisheries Act 1975.
<b>Sea/brown trout</b> ( <i>Salmo trutta</i> )	ST: Anadromous BT: Potamodromous  <i>Low impact</i>	-	Natural Environment and Rural Communities Act 2006 S41 Priority species of principal importance.
<b>European eel</b> ( <i>Anguilla anguilla</i> )	Catadromous  <i>Low impact</i>	European Eel Regulations 2007. OSPAR Convention 1992.	Eel (England & Wales) Regulations 2009 Natural Environment and Rural Communities Act 2006 S41 Priority species of principal importance.
<b>Sea lamprey</b> ( <i>Petromyzon marinus</i> )	Anadromous  <i>Total barrier</i> ( <i>Lamprey assessed as one species group</i> )	EC Habitats Directive 1992 Annex II. Bern Convention 1979 Appendix III. OSPAR Convention 1992.	Natural Environment and Rural Communities Act 2006 S41 Priority species of principal importance.
<b>River lamprey</b> ( <i>Lampetra fluviatilis</i> )	Potamodromous  <i>Total barrier</i>	EC Habitats Directive 1992 Annex IIa, Va. Bern Convention 1979 Appendix III.	Conservation of Habitats and Species Regulations 2010 Schedule 4 Natural Environment and Rural Communities Act 2006 S41 Priority species of principal importance.
<b>Brook lamprey</b> ( <i>Lampetra planeri</i> )	Potamodromous  <i>Total barrier</i>	EC Habitats Directive 1992 Annex II. Bern Convention 1979 Appendix III.	Natural Environment and Rural Communities Act 2006 S41 Priority species of principal importance.
<b>Grayling</b> ( <i>Thymallus thymallus</i> )	Potamodromous  <i>High impact</i>	Bern Convention 1979 Appendix III.	-
<b>Bullhead</b> ( <i>Cottus gobio</i> )	Potamodromous  <i>Not assessed.</i> <i>Suspected high impact.</i>	EC Habitats Directive 1992 Annex II.	-
<b>Stone loach</b> ( <i>Barbatula barbatula</i> )	Potamodromous  <i>Not assessed.</i> <i>Suspected high impact.</i>	-	-
<b>Minnow</b> ( <i>Phoxinus phoxinus</i> )	Potamodromous  <i>Not assessed.</i> <i>Suspected high impact.</i>	-	-



## Appendix B: SNIFFER fish passage survey results

A formal fish passage survey was performed by Westcountry River Trust in September 2021, as part of the Strategic Exe Weirs programme, following the 'Coarse resolution rapid assessment methodology to assess obstacles to fish migration (2008)' developed by the Scotland and Northern Ireland Forum For Environmental Research (SNIFFER)<sup>1</sup>. The results have been displayed in the table below. Estimated figures are displayed in blue. No abstraction point was present:

16 Helebridge Weir	Upstream migration		Downstream migration		Abstraction point Upstream		Abstraction point Downstream	
	Current cond.	High flows	Current cond.	High flows	Current cond.	High flows	Current cond.	High flows
Adult salmon (AS)	0.6	0.3	1	1	No abstraction point			
Adult trout (AT)	0.6	0.3	1	1	-	-	-	-
Adult Grayling (AG)	0.3	0	1	1	-	-	-	-
Cyprinids (C)	0.3	0	1	1	-	-	-	-
Adult Lamprey (AL)	0.3	0.3			-	-		
Juvenile Eel (JE)	0.6	0.3			-	-		
Juvenile Salmonid (JS)	0.3	0	1	1	-	-	-	-
Juvenile Lamprey (JL)			1	1	-	-	-	-
Adult Eel (AE)			1	1	-	-	-	-

<sup>1</sup> SNIFFER. WFD111 (2a) Coarse resolution rapid-assessment methodology to assess obstacles to fish migration: Field manual level A assessment

## Appendix C: Concept Plan

All drawings for illustration of WRT conceptualisation only and not prescriptive. Size of elements are not to scale.

