
LIFE Afon Dyfrdwy

LIFE Dee River



Restoration of freshwater features in Afon Dyfrdwy a Llyn Tegid SAC

CIEEM Conference 2 February 2021

Joel Rees-Jones





**Cyfoeth
Naturiol**
Cymru
**Natural
Resources**
Wales

LIFE programme

The LIFE programme is the EU's funding instrument for the environment and climate action created in 1992. The current funding period 2014-2020 has a budget of €3.4 billion.





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The LIFE Natura 2000 (N2K) Project (2012-2015) used LIFE Nature and Biodiversity Funding to develop a Prioritised Action Framework, which identified the issues that needed to be addressed on all of Wales' Natura 2000 sites (92 SACs and 20 SPAs).



The cost of bringing all of Wales' N2K sites into favourable condition was estimated to be £120 million in 2015

LIFE application 2018: why the Dee?

- River Restoration a priority for NRW
- NRW's business plan '*... improve salmonid stocks in Wales, and their freshwater fisheries habitats... seeking funding opportunities to implement work in RRP's...*'



Year	Total project cost (£)	EU Contribution (£)	Welsh Project cost (£)	EU contribution to Welsh Projects (£)	% UK LIFE funding in Wales	Main Welsh projects
2015	32.63m	15.68m	2.5m*	1.875m*	12%	Mosses
2016	11.72m	7.63m	4m	3m	40%	Raised Bogs
2017	25m	15.65m	11.5m	7.5m	48%	Celtic & SoL
2018	16.78m	9.975m	6.8m	4m	40%	Dee

LIFEDeeRiver

- **Co-ordinating beneficiary – Cyfoeth Naturiol Cymru**
- **Associated beneficiaries – Environment Agency & Snowdonia National Park Authority**
- **Co-financiers – Dwr Cymru**

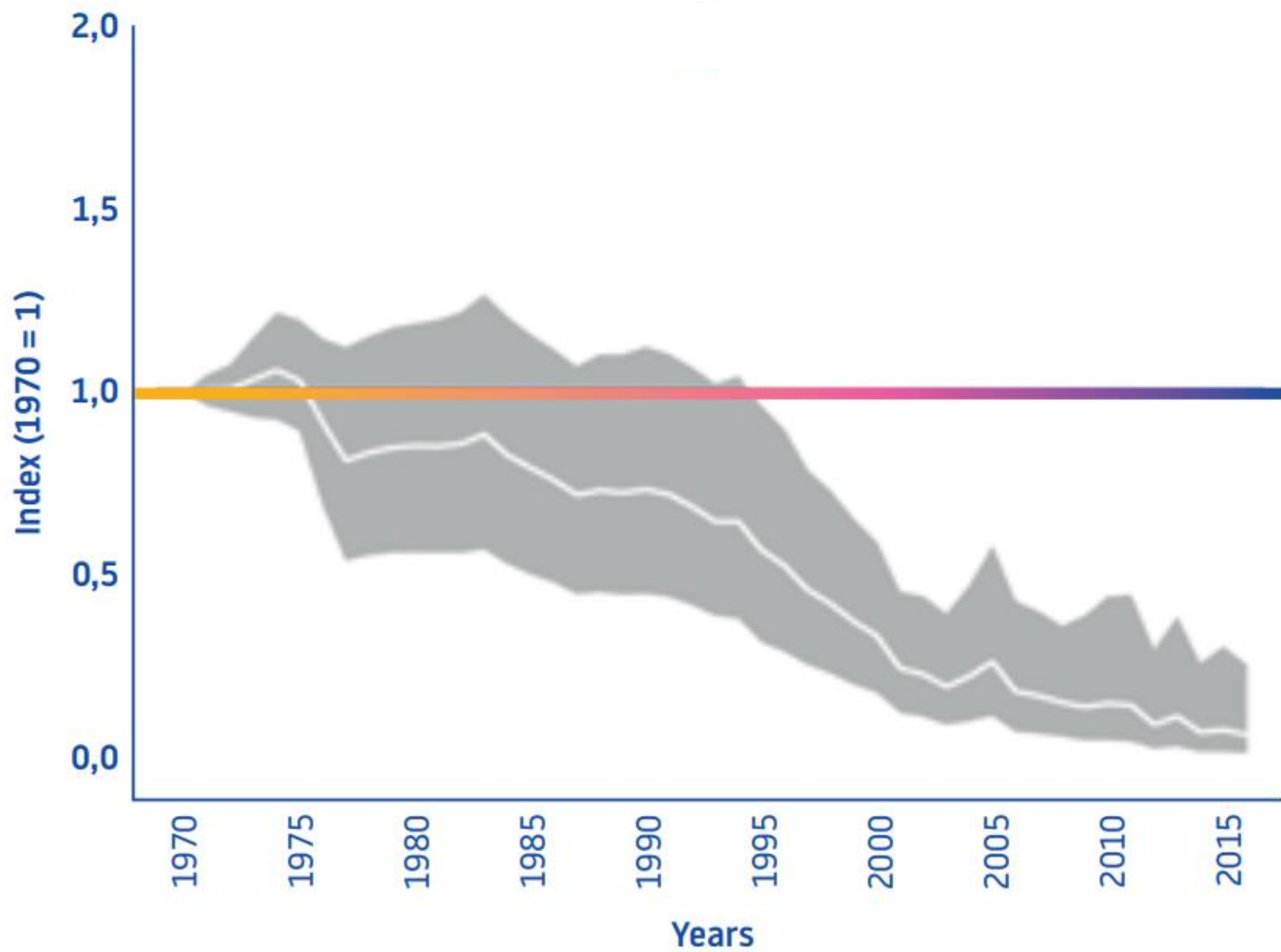
31 December 2024

£6.8m total project cost (£4m from EU)



Species and habitats for which SAC is designated







Objectives

- **Remove the constraints to fish migration and wider ecological connectivity.**
- **Restore or improve natural riverine physical processes, features and physical habitats in at least 55km of river.**
- **Improve agricultural and forestry land management practices to reduce the input of nutrients and sediment entering the SAC.**
- **Initiate conservation management for the critically endangered Fresh Water Pearl Mussel (FWPM)**
- **Establish and build long-term positive relationships with key stakeholders during and beyond the life of the project.**

Staff

Senior Responsible Officer – Nick Thomas

Finance and Admin Officer – Cerys Jones

Senior Officer, River Restoration – Gethin Morris

Communications Officer – Megan McNutt

River Restoration Officer – Rob Llewellyn-Smith

Land Management Officers – Ifor Potts and Tomos Wynne

Senior Officer, Monitoring – Rich Cove

Senior Officer, Procurement – Cathy Mackinlay

Project Manager – Joel Rees-Jones

LIFEDeeRiver Actions

A - Preparatory actions

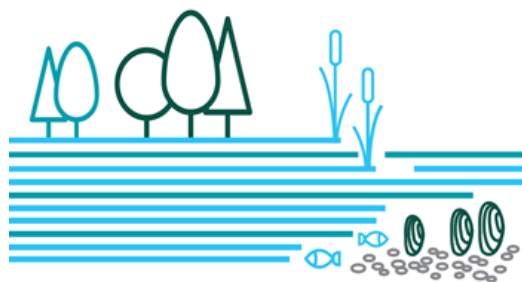
B - Land purchase

C - Conservation actions











D - Monitoring and impact assessment

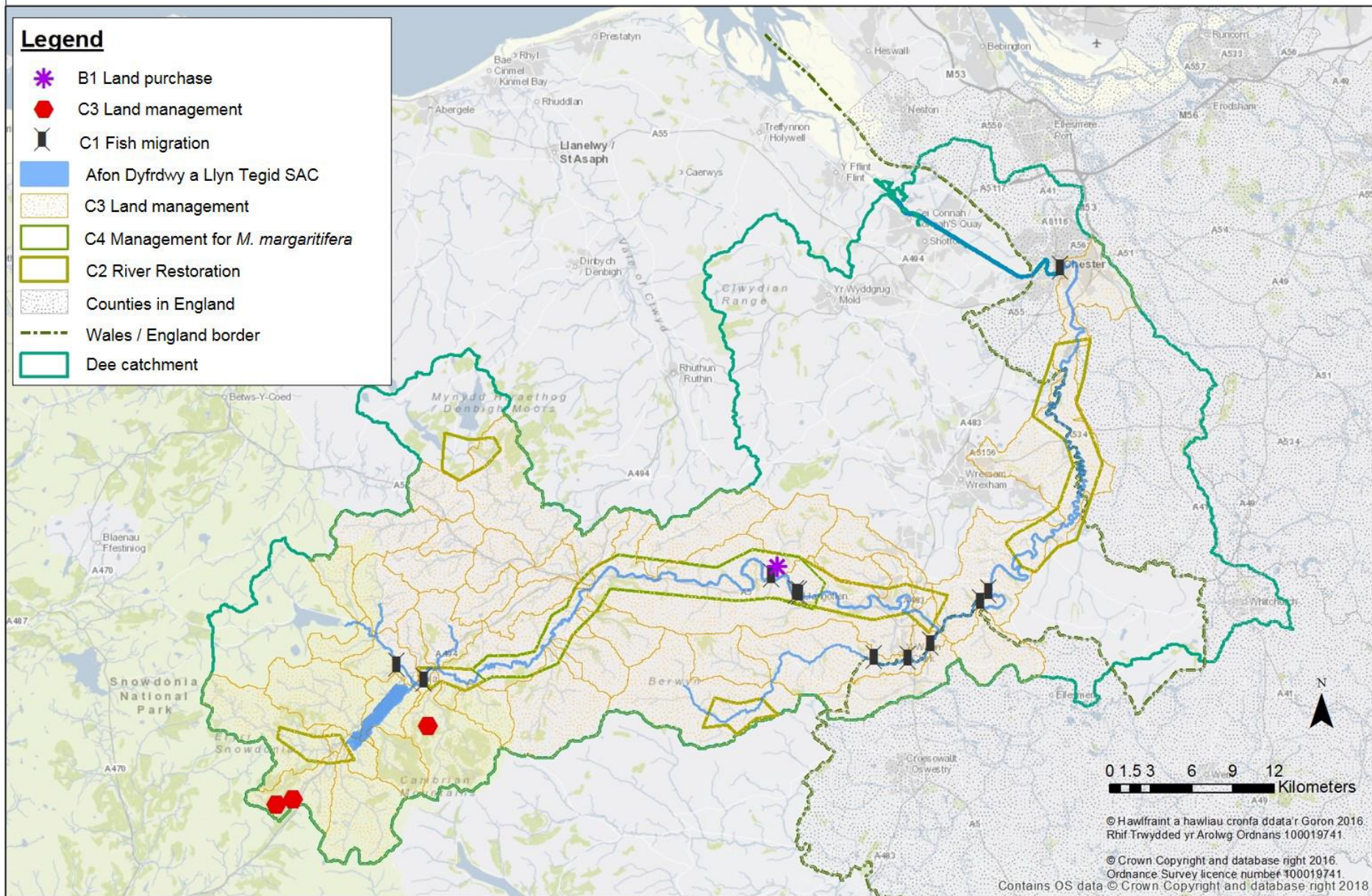
E - Communications and dissemination actions

F - Project management



Legend

-  B1 Land purchase
-  C3 Land management
-  C1 Fish migration
-  Afon Dyfrdwy a Llyn Tegid SAC
-  C3 Land management
-  C4 Management for *M. margaritifera*
-  C2 River Restoration
-  Counties in England
-  Wales / England border
-  Dee catchment



Weir modification

- Erbistock Weir
- Llangollen weir upstream
- Llangollen weir downstream
- Tryweryn Weir
- Morlais weir



Tryweryn weir removal



Morlas Brook – location is key!



**CHIRK WEIR - FISH PASS
HYDRAULIC DESIGN**

Project: CHIRK WEIR
Location: GWA
Client: NATURAL RESOURCES WALES
Scale: 1:100 @ A1

Project Details:
 Project Name: CHIRK WEIR
 Project Number: 1000
 Project Date: 10/01/2024
 Project Status: IN PROGRESS
 Project Manager: J. JONES
 Project Engineer: S. SMITH
 Project Designer: M. DAVIES
 Project Checker: A. EVANS
 Project Approver: C. ROBERTS

Scale: 1:100 @ A1

North Arrow: [North Arrow pointing up]

Legend:
 [Symbol] NOTCH
 [Symbol] KEY CLAMP AND RAILING
 [Symbol] KEY POSITIONED TO WEIR CREST USING STAINLESS STEEL PINS
 [Symbol] MAINTENANCE WALKWAY
 [Symbol] ROTATING SCREEN
 [Symbol] DEBRIS SHOOT
 [Symbol] MILL LEAF RESIDUES
 [Symbol] PERTURBATION BOULDERS
 [Symbol] LARGER BOULDERS PROVIDING COVER AND REFUGE AREAS
 [Symbol] SUPPORT BOULDERS PLACED EITHER SIDE AND FIXED INTO THE WEIR AT AN APPROXIMATE DEPTH OF 3.5M FOR ADDITIONAL SUPPORT
 [Symbol] INDICATIVE ROCK PLACEMENT

Notes:
 1. NON ENCLOSED ROTATING DRUM SCREEN HAS ACCESS FOR CRANE TO LIFT OUT FOR MAINTENANCE
 2. GATED ENTRANCE TO MAINTENANCE DOCK
 3. KEY CLAMP AND RAILING
 4. BANK TO BE REINFORCED
 5. SCREEN WITH SPACING AT 1.5M
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 15. INDICATIVE ROCK PLACEMENT

Revisions:
 Rev. No. | Date | Description | Status
 1. | 10/01/2024 | Initial Design | Approved
 2. | 15/01/2024 | Revisions to Screen Spacing | Approved
 3. | 20/01/2024 | Final Design | Approved

Approval:
 Project Engineer: [Signature]
 Project Manager: [Signature]
 Project Approver: [Signature]

Scale: 1:100 @ A1

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Chester weir
Manley Hall
Bala gauging weir
Chirk weir
Brynkinallt weir
Horseshoe Falls

Construction of fish passage solutions



River Restoration

- Introduce gravel, boulders and large woody debris (LWD) into the river
- Create a more sinuous planform
- Improve the riparian zone through managed grazing, fencing and/or planting
- Remove historic artificial bank protection
- Breach embankments



Stock exclusion fencing



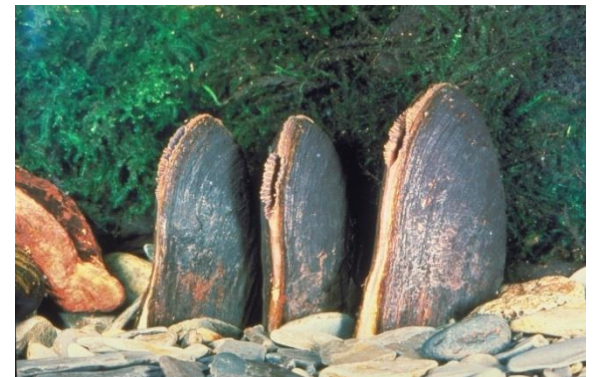
Land management

- Improved water management in forestry within the SAC catchment
- Work with farmers and land managers to reduce nutrients, sediments and chemicals in the SAC catchment



C4. Conservation management for *Margaritifera margaritifera*

- Pearl mussel captive rearing and release.



Monitoring and impact assessment



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Wales**

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

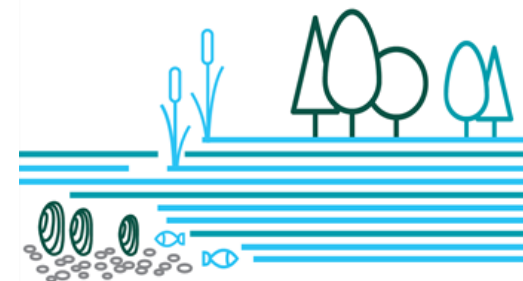
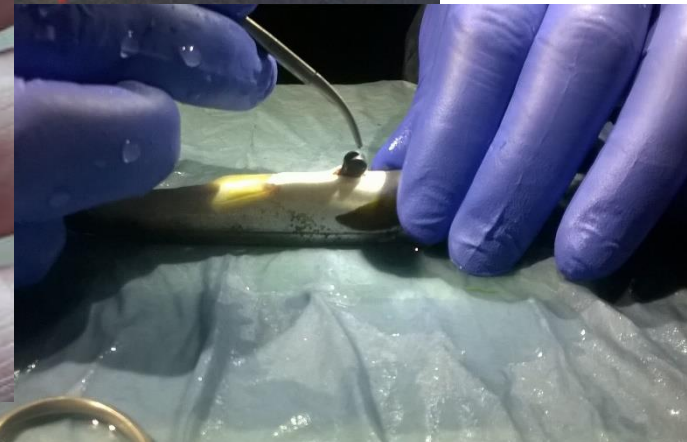
CORE MANAGEMENT PLAN
INCLUDING CONSERVATION OBJECTIVES

FOR

**RIVER DEE AND BALA LAKE/AFON DYFRDŴ
TEGID SAC**

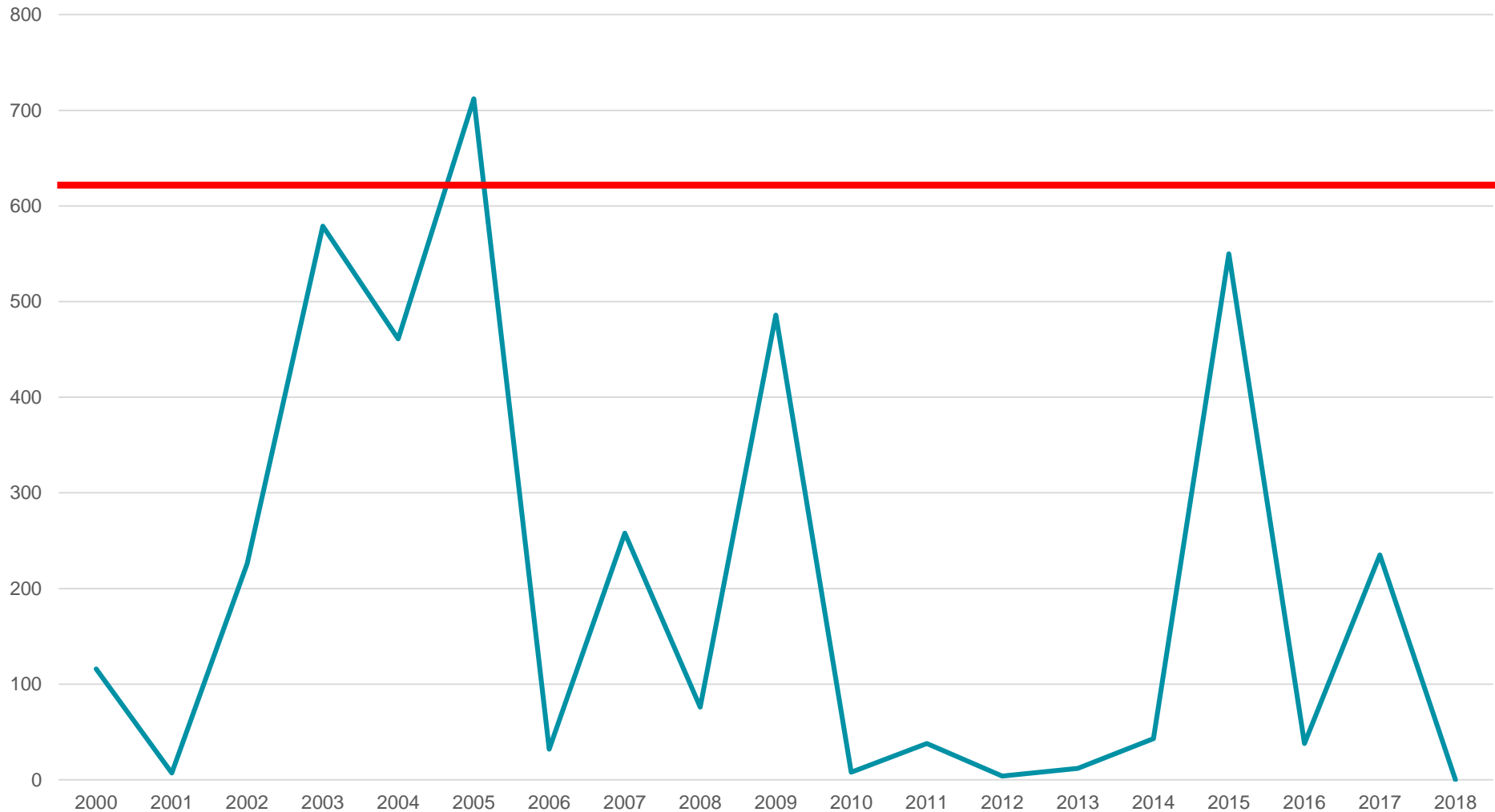
Version: 10 - David Hatcher and Heather Garrett
Date: 13.3.08

Approved by: NR Thomas – 15th April 2008





River lamprey catch



Outcomes of the project

1. Restoration of natural riverine processes and morphology
2. Habitats and species moved towards favourable conservation status (Habitats Directive)
3. Reduction in pollution of river with biodiversity and drinking water benefits
4. Improved Salmon and other fish populations



Grayling *Thymallus thymallus*

The future....

- **Get involved!**



@LIFEAfonDyfrdwy



#LIFEDeeRiver

- **4Rivers for LIFE – South Wales on Usk, Cleddau (E&W), Teifi and Tywi**

Diolch yn fawr iawn am wrando

LIFEDeeRiver@cyfoethnaturiolcymru.gov.uk

