

## Know Your River – Ystwyth Salmon & Sea Trout Catchment Summary

### Introduction

This report describes the status of the salmon and sea trout populations in the Ystwyth catchment. Bringing together data from rod catches, stock assessments and juvenile monitoring, it will describe the factors limiting the populations and set out the challenges faced in the catchment.

Action tables set out habitat improvements to restore freshwater productivity of salmon and sea trout populations. These tables also include some work which will be carried out by our partner organisations, not just Natural Resources Wales (NRW).

NRW has a duty, defined in the Environment (Wales) Act 2016 to have Sustainable Management of Natural Resources (SMNR) at the core of everything that we do. By applying the principles of SMNR in all of our activities - from agriculture, forestry and flood defence to development planning - we are undertaking catchment-wide initiatives that will deliver for fish stock improvements. Our reports highlight the importance of considering the whole catchment when identifying and addressing fisheries issues; and of working with partners.

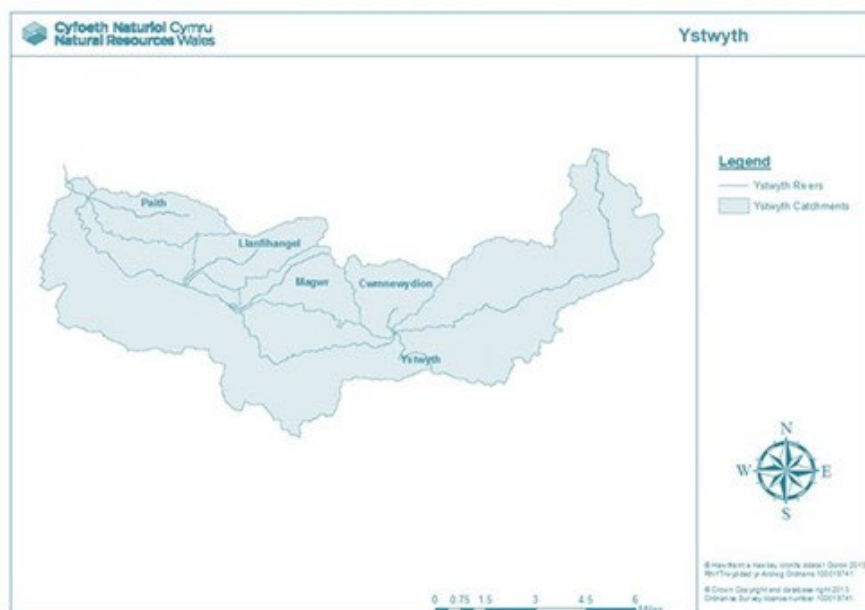
NRW is committed to reporting on the status of salmon stocks in all principal salmon rivers where, in the past, Salmon Action Plans have been produced, and/or, in SAC rivers, where condition assessments have been undertaken under the Habitats Directive. In addition, the status of various fish species in all our rivers is reported as part of Water Framework Directive (WFD) assessments. This report refers to these commitments. Its purpose is to provide, for our customers, an informative and useful summary of stock status and remedial work planned - specifically for anglers, fishery and land owners; as well as other partners.

### Catchment

The Ystwyth rises at above 600 AOD, to the remote uplands of the Cambrian Mountains in the east of the catchment. The Ystwyth has a catchment area of 196 km<sup>2</sup>, and runs 39.9 km westerly through rocky valleys, tracts of coniferous forest, to the glacial lowlands of deciduous woodland and low-lying pasture before entering Cardigan Bay.

The catchment only comprises of developed areas along the lowland floodplain, with much of the population settled at Aberystwyth itself, with few other settlements of any appreciable size.

Remnants of the historic mining are to be found throughout the catchment in the shape of old mine adits, spoil tips, lakes and tracks. The mining industry has also had a great impact on water quality, the fishery and the general ecosystem of the river.

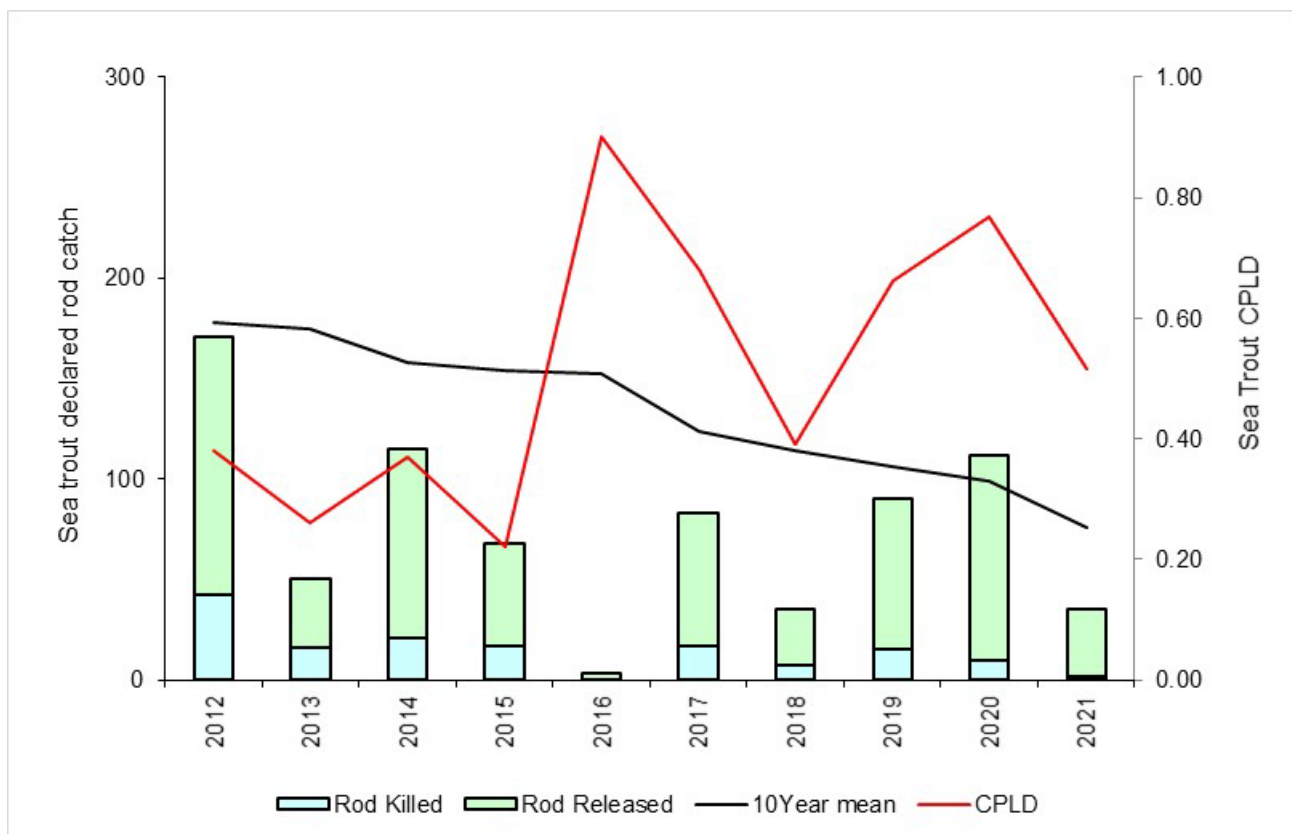


## Rod Catches

The following table/graph below shows the total declared rod catch for sea trout on the Ystwyth. Salmon rod catches are very low on the Ystwyth, and as the catchment is not classed as a principal salmon river we have not included this data. Six salmon were caught on the Ystwyth in 2021.

### Sea Trout Rod Catch

Year	Caught	Rod Killed	Rod Released	10 Year mean	Percentage released	Catch per license day
2021	35	2	33	76.2	94	0.515
2020	112	10	102	98.8	91	0.767
2019	90	15	75	106.1	83	0.662
2018	35	7	28	113.7	80	0.390
2017	83	17	66	123.4	80	0.680
2016	3	0	3	152.7	100	0.900
2015	68	17	51	154.3	75	0.220
2014	115	21	94	158.2	82	0.370
2013	50	16	34	174.3	68	0.260
2012	171	42	129	177.6	75	0.380



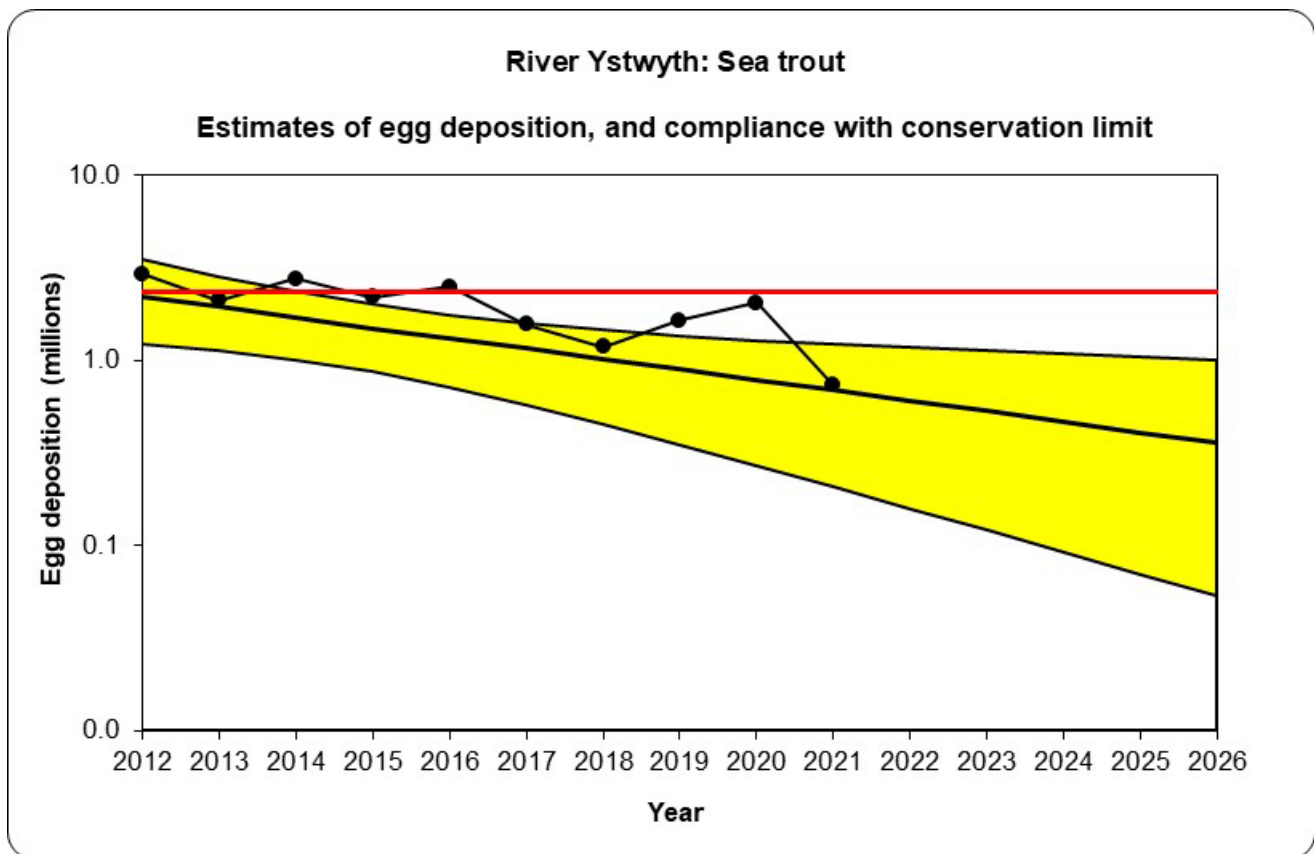
## Stock status

### Conservation of Sea Trout

In contrast to salmon, no established methods of setting Conservation Limits or similar have been available for sea trout. In the absence of such analysis, NRW and the Environment Agency have, for several years, routinely applied a fishery-based assessment to the principal sea trout rivers. This method – used previously in this report - utilises time-series of angling catch per unit effort (CPUE) data ('catch per day') to examine sea trout performance on a river-by-river basis.

Recently an alternative stock-based assessment method has been developed by NRW and is applied here. This utilises angling catch data to derive run and egg deposition estimates for sea trout in much the same way that similar data sets are used in Conservation Limit compliance procedures for salmon assessment.

Further details on this method are given in the recent Technical Case supporting net and rod fishery byelaw proposals on all rivers in Wales and the cross-border rivers Wye and Dee (see: [Technical case for fishing controls to protect salmon and sea trout](#)).



Are enough sea trout eggs being deposited to conserve stocks in the catchment?

The red line represents the number of eggs required to be deposited to sustain a healthy sea trout stock. The black trend line and its confidence limits (the yellow band) is fitted to the most recent ten-year series of egg deposition estimates (2012-2021).

- Current number of eggs being deposited puts stocks **at risk**
- In five years' time the predicted status of salmon stocks will be **at risk**
- Based on current data, and the projection of the graph, the stocks of sea trout on the Ystwyth will continue to **decline (downward trend)**

## Juvenile Salmonid Monitoring Programme

In 2022 the temporal (annual) programme consisted of four sites on the Ystwyth. This includes one site on the Paith and three five minute fry surveys on the main Ystwyth. The temporal data is used to look at trends in juvenile salmon and trout densities giving an indication of how successful spawning has been across the whole catchment.

### Salmon and Trout Classifications

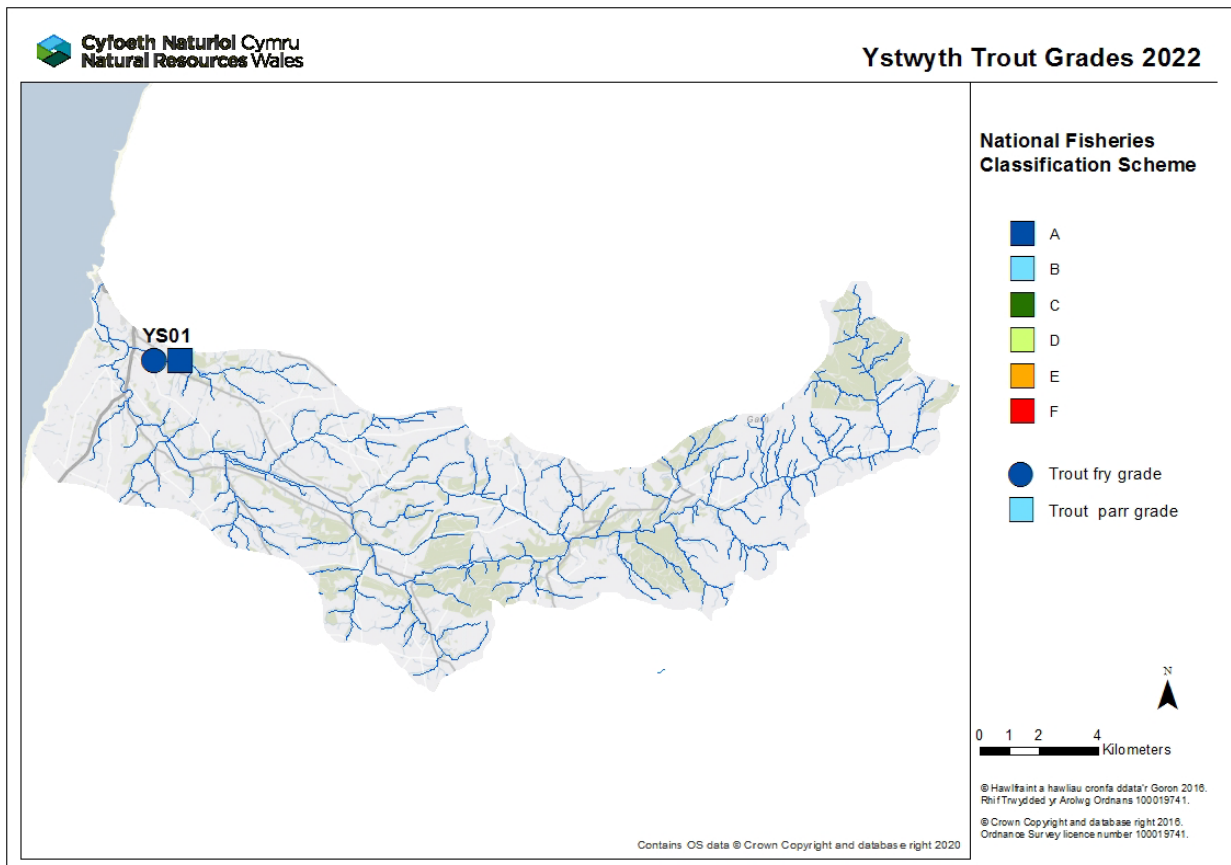
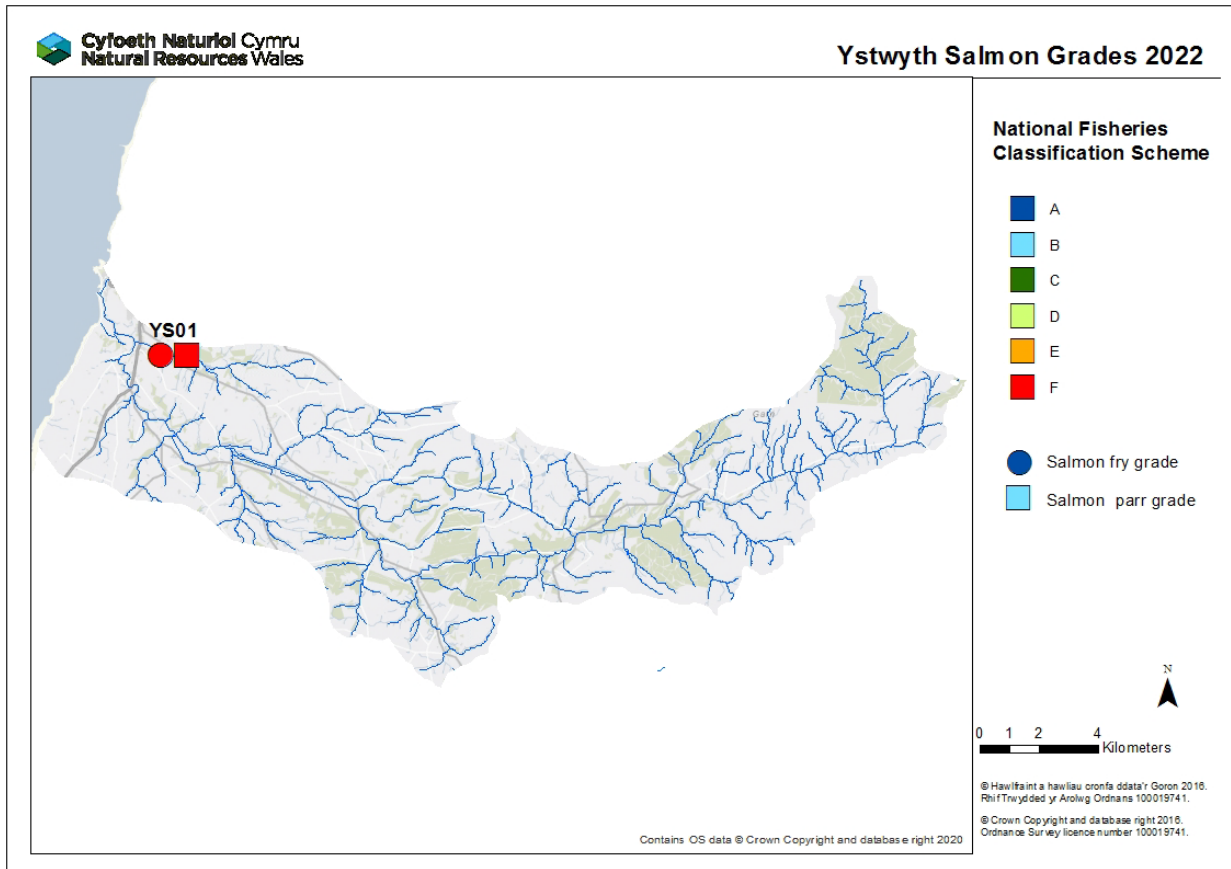
The tables/maps below show the results of the routine juvenile salmonid population surveys on the Ystwyth in 2022. The Paith has only had a few salmon recorded in the past.

The symbols display the National Fish Classification Scheme (NFCS) grades which have been developed to evaluate and compare the results of fish population surveys in a consistent manner. The NFCS ranks survey data by comparing fish abundance at the survey sites with sites across Wales and England where juvenile salmonids are present. Sites are classified into categories A to F, depending on densities of juvenile salmonids at the site.

Grade	Descriptor	Interpretation
<b>A</b>	Excellent	In the top 20% for a fishery of this type
<b>B</b>	Good	In the top 40% for a fishery of this type
<b>C</b>	Fair	In the middle 20% for a fishery of this type
<b>D</b>	Fair	In the bottom 40% for a fishery of this type
<b>E</b>	Poor	In the bottom 20% for a fishery of this type
<b>F</b>	Fishless	No fish of this type present

Catchment	Site code	Year	Salmon fry grade	Salmon parr grade	Trout fry grade	Trout parr grade
Paith	YS01	2022	<b>F</b>	<b>F</b>	<b>A</b>	<b>A</b>

## Maps of Juvenile Salmon/Trout Results

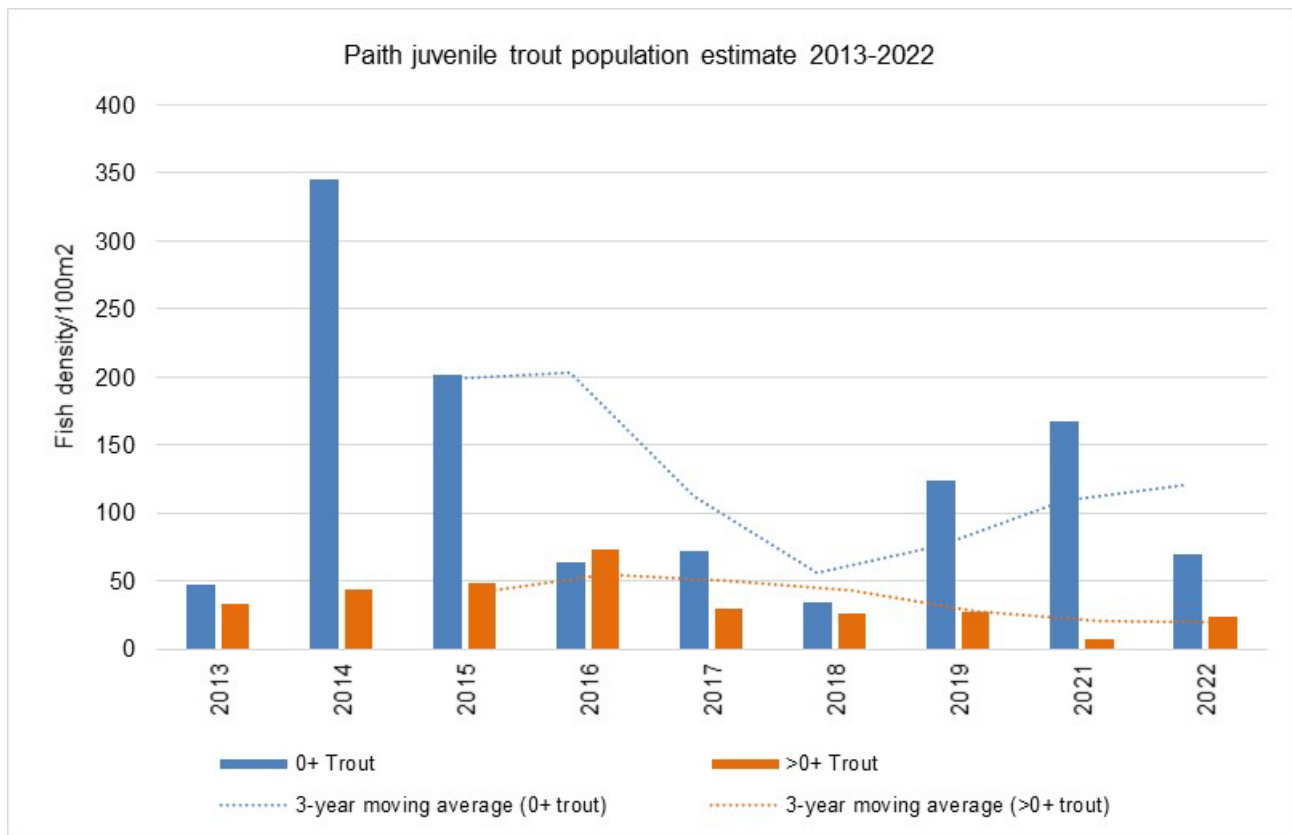


## Catchment Population Trends

The tables/graphs below shows the average trout densities from the temporal site (Paith) on the Ystwyth catchment since 2013. NB – salmon are not included as numbers have historically been very low, no surveys were carried out in 2020 due to covid restrictions. NA stands for not applicable.

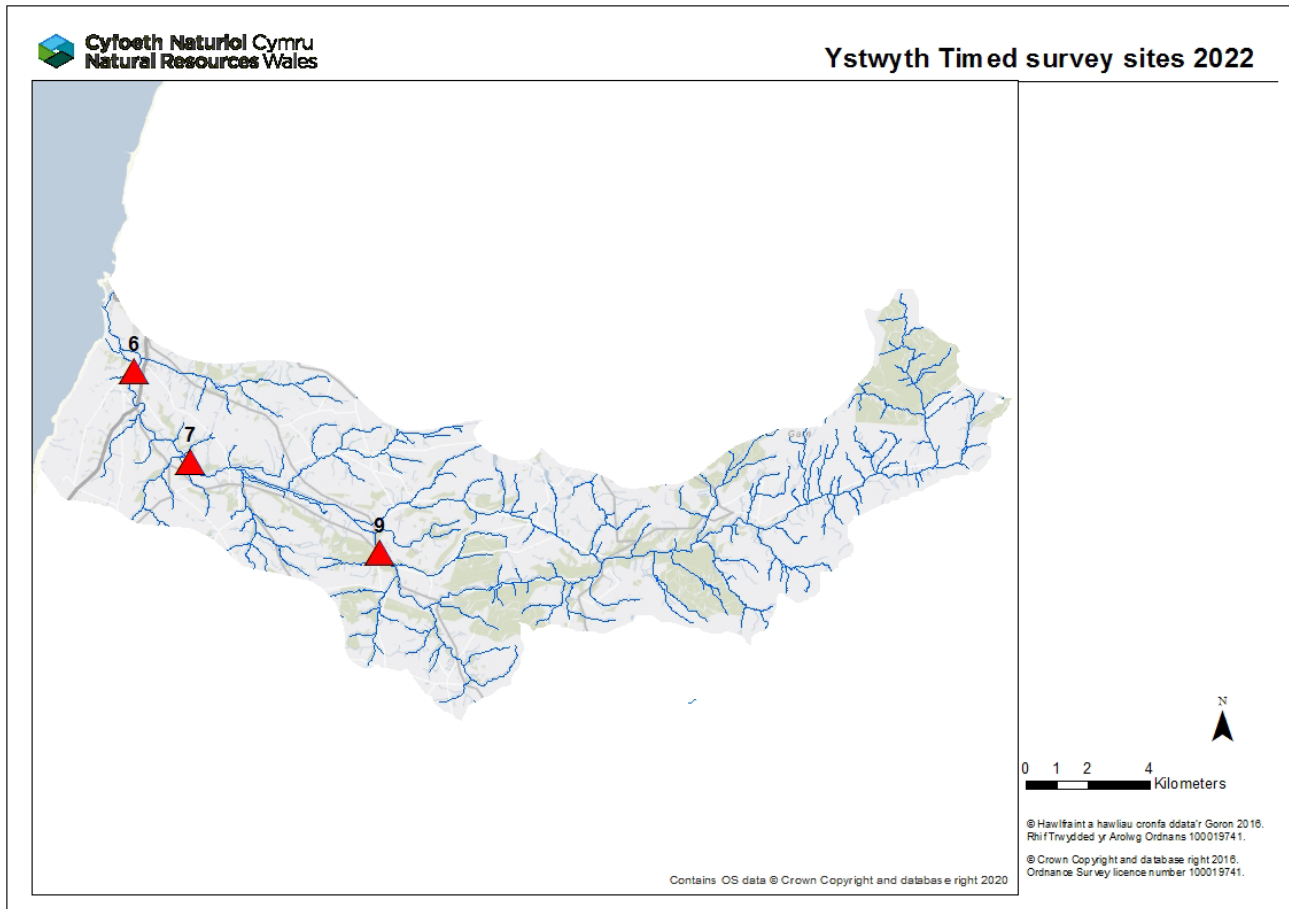
### Trout population trend

Year	0+ Trout	3-year average (0+ trout)	>0+ Trout	3-year average (>0+ trout)
2022	69.6	120.4	23.5	19.4
2021	167.9	108.5	7.7	20.2
2019	123.6	76.4	26.9	27.3
2018	33.9	56.3	26.0	42.7
2017	71.6	112.2	29.1	50.4
2016	63.4	203.3	73.1	55.2
2015	201.4	198.0	48.8	41.8
2014	345.0	NA	43.6	NA
2013	47.5	NA	32.9	NA



## Five Minute Fry Temporal Timed Surveys 2022

The map below shows where the five minute fry surveys are carried out on the Ystwyth catchment.

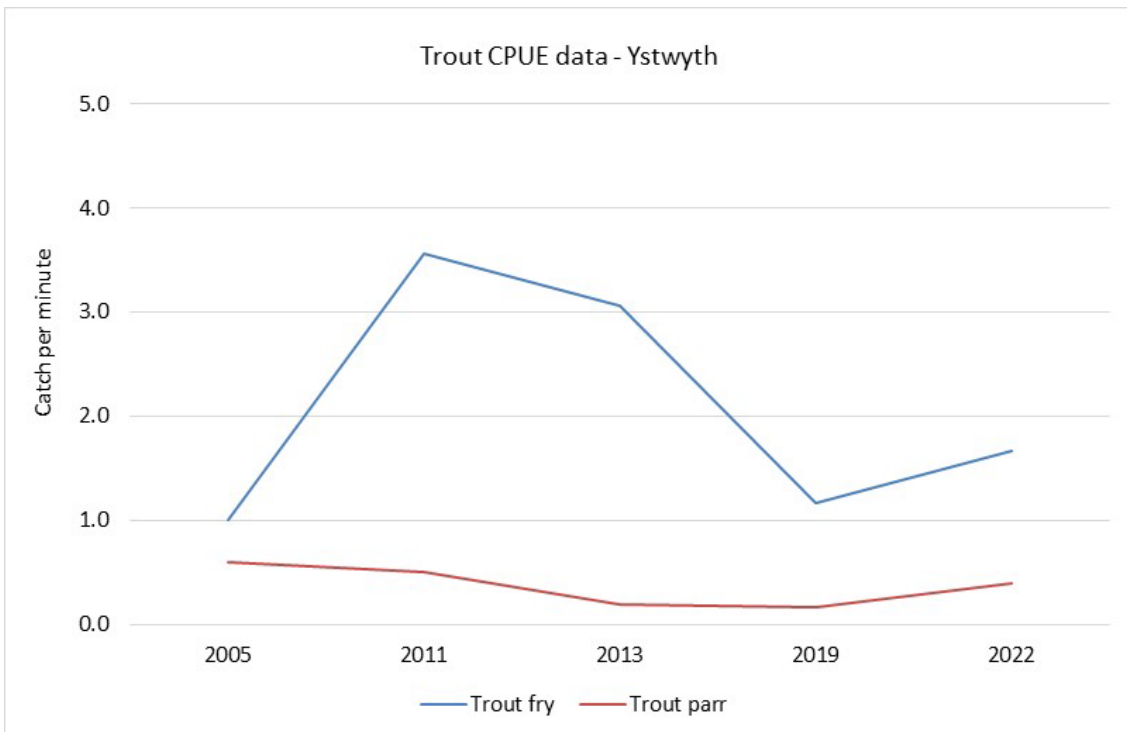
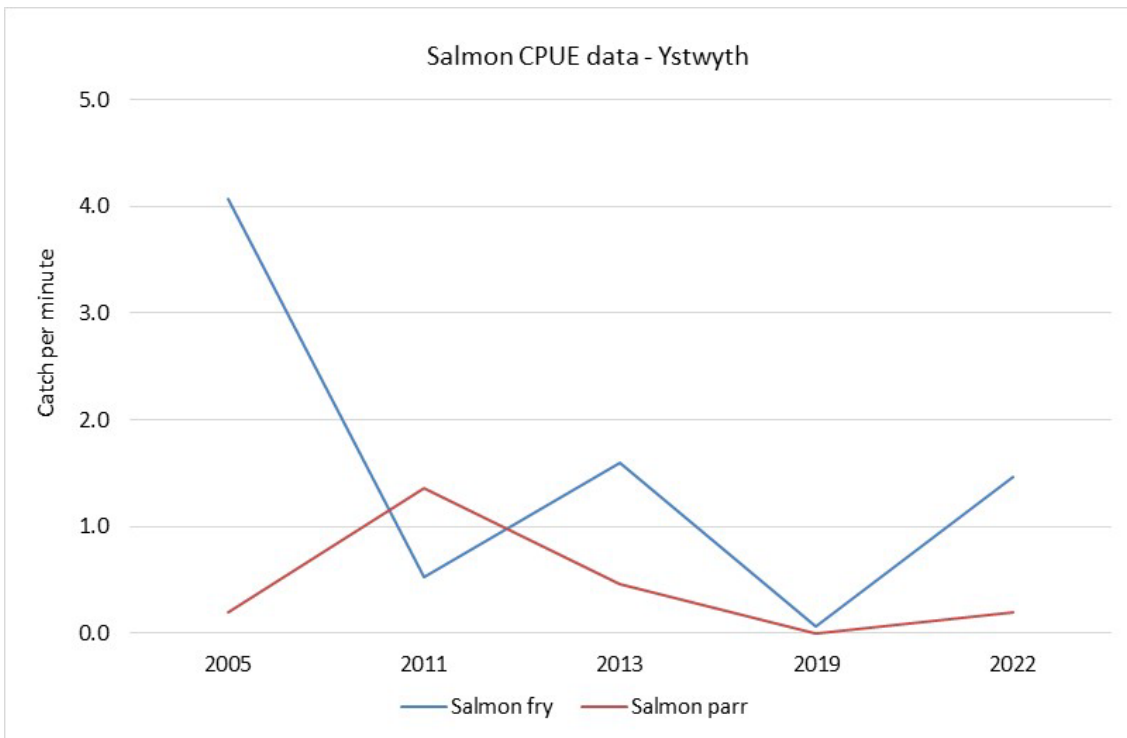


These surveys are carried out on riffles with the prime target being salmon fry. Fishing is timed for five minutes. The sites are generally on main river and would be too large for a normal survey. The graphs below show the average numbers caught per minute across the catchment. Figures are expressed as catch per minute as some surveys were historically carried out for ten minutes rather than five. Looking at catch per minute makes the analysis consistent. CPUE stands for Catch Per Unit Effort. Data has been included back to 2005 as a limited number of surveys have been carried out.

### Ystwyth catch per minute data

Year	Salmon fry	Salmon parr	Trout fry	Trout parr
2022	1.5	0.2	1.7	0.4
2019	0.1	0.0	1.2	0.2
2013	1.6	0.5	3.1	0.2
2011	0.5	1.4	3.6	0.5
2005	4.1	0.2	1.0	0.6

## Graphs of Salmon and Trout CPUE on the Ystwyth





## Ystwyth Fisheries Action Table

Planned actions	Benefits	Lead	Partner(s)	Timescale for delivery
<b>Fisheries Habitat Restoration Plan - Ystwyth</b>	<p>Investigation in partnership with Afonydd Cymru and West Wales Rivers Trust, to determine all current constraints to salmon habitat within the catchments.</p> <p>The report produced is now the basis for funding bids and delivery of projects by NRW/AC/WWRT.</p>	NRW	AC WWRT	Completed 2020/21
<b>Strategic Allocated Fund (SAF):</b> Partnership with Afonydd Cymru and West Wales Rivers Trust delivering projects to remove barriers to fish migration and improve habitat at sites identified for improvement in Fisheries Habitat Restoration Plans.	<p>More natural river system, increased connectivity, reduced siltation, increased flow diversity, improved spawning gravels and juvenile habitat.</p> <p>In combination, measures should increase spawning success and juvenile production.</p>	NRW	AC WWRT	2022-24
<b>Water Framework Directive:</b> We will continue to work to ensure no deterioration, monitor the status of the environment and investigate the causes of failures. Together with our partners we will look to put in place measures that protect and improve the status of the water environment	Waterbodies protected and improved WFD waterbodies achieving Good Status/Potential AMP strategies to improve water company intakes protecting migratory species such as eel.	NRW	NRW/EA WWRT Wildlife Trusts Local authorities Landowners DCWW	On-going

<p><b>Enforcement:</b> Action to reduce illegal activity on information provided and investigations. Active enforcement team patrolling river banks.</p>	<p>Reduce illegal activity, more fish remain in the system.</p>	<p>NRW</p>	<p>Angler Stakeholder Groups Angling Trust Voluntary Bailiff Service Dyfed-Powys Police</p>	<p>On-going</p>
<p><b>Sustainable Fisheries Projects:</b> Reinvestment of rod licence fees to improve fish habitat and access to angling.  E.g. installation of disabled angling platforms, gate/stile replacement, vegetation clearance for access</p>	<p>Improved access to and engagement with recreational angling for individual and community health and wellbeing.</p> <p>Improved facilities for existing anglers and fishing clubs.</p> <p>Engagement, where possible, with citizen science relating to fish habitat and/or WQ.</p> <p>Delivery of 'Reconnecting People &amp; Place' – Mid Wales AS theme.</p>	<p>NRW</p>	<p>Angling Clubs Ceredigion Local Fisheries Group</p>	<p>2022/23 Ongoing</p>