Know Your River – Rheidol
Salmon & Sea Trout Catchment Summary

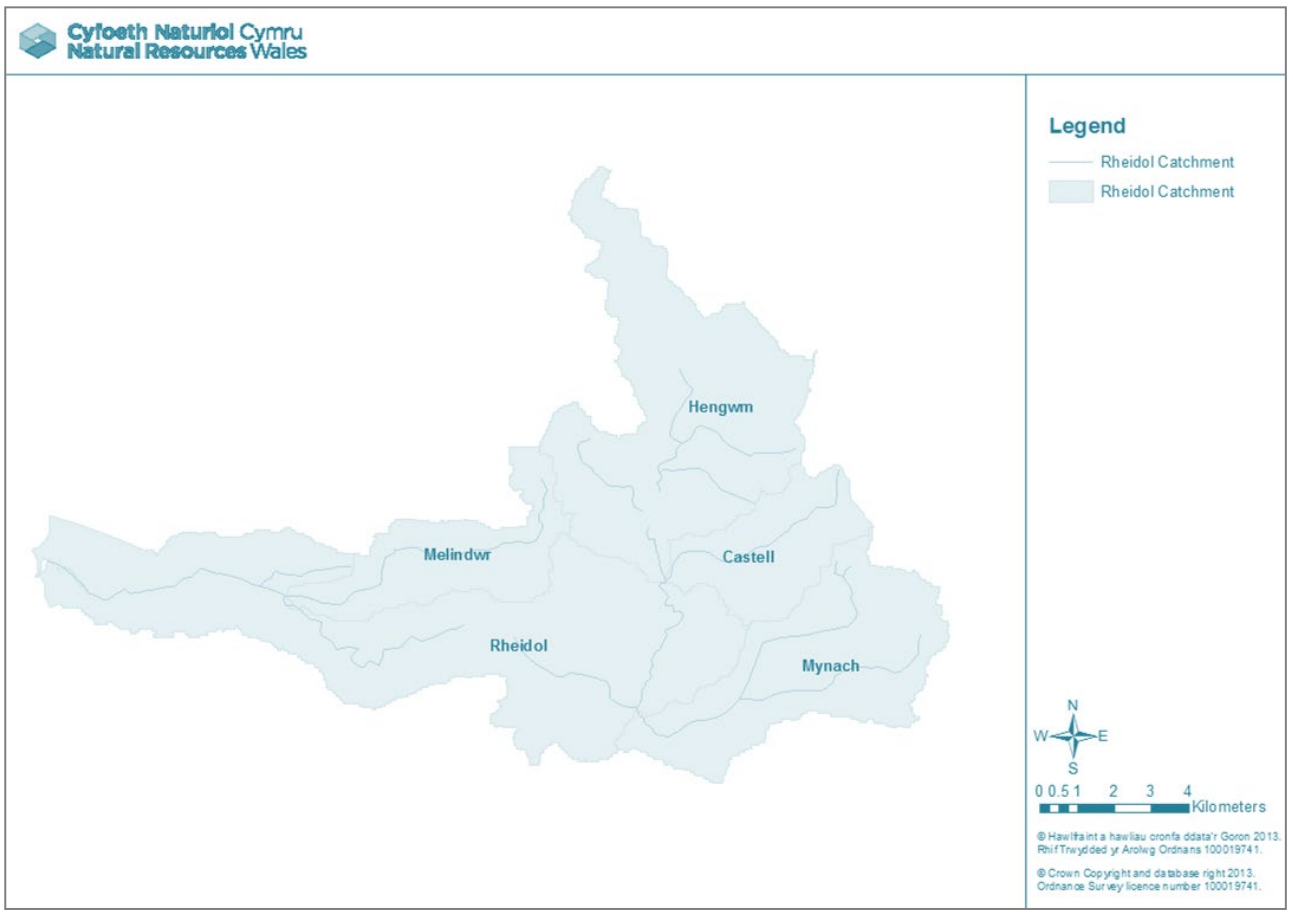
Introduction

This report describes the status of the salmon and sea trout populations in the Rheidol 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 River Rheidol rises from an altitude of 640m in the Cambrian Mountains. From here, the river descends via a series of mountain lakes and reservoirs, then continues through steep sided rocky valleys shaded with tracts of coniferous forest. Finally, the river meanders through glacial gravels, deciduous woodlands and low-lying pastures of the floodplain before reaching the sea. The river flows in a southerly direction to Devils' Bridge and then west to Aberystwyth, where it reaches the sea. The Rheidol is regulated as part of the Rheidol Hydro Electric Scheme. The river drains a catchment area of 187 km2. The principal tributaries are the Mynach on the south side of the catchment and the Melindwr on the north side.

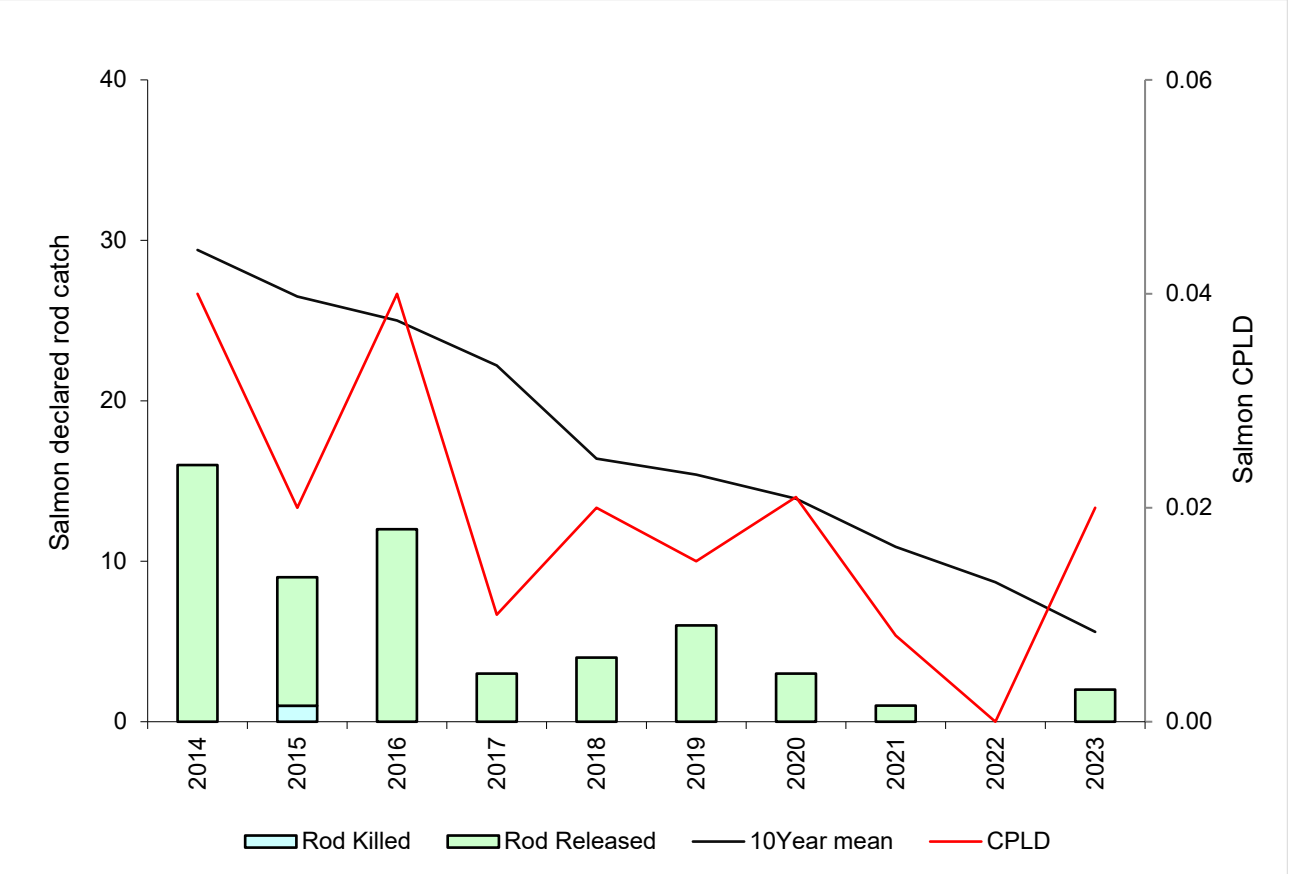
The Rheidol catchment supports a locally important salmon and sea trout (sewin) fishery. Sea trout are the principal salmonid, however an important population of salmon are also present.

Rod Catches

The following tables/graphs show the total declared rod catches of salmon and sea trout on the Rheidol and Catch Per License Day. CPLD is an estimate of the average catch per fishing day on a catchment.

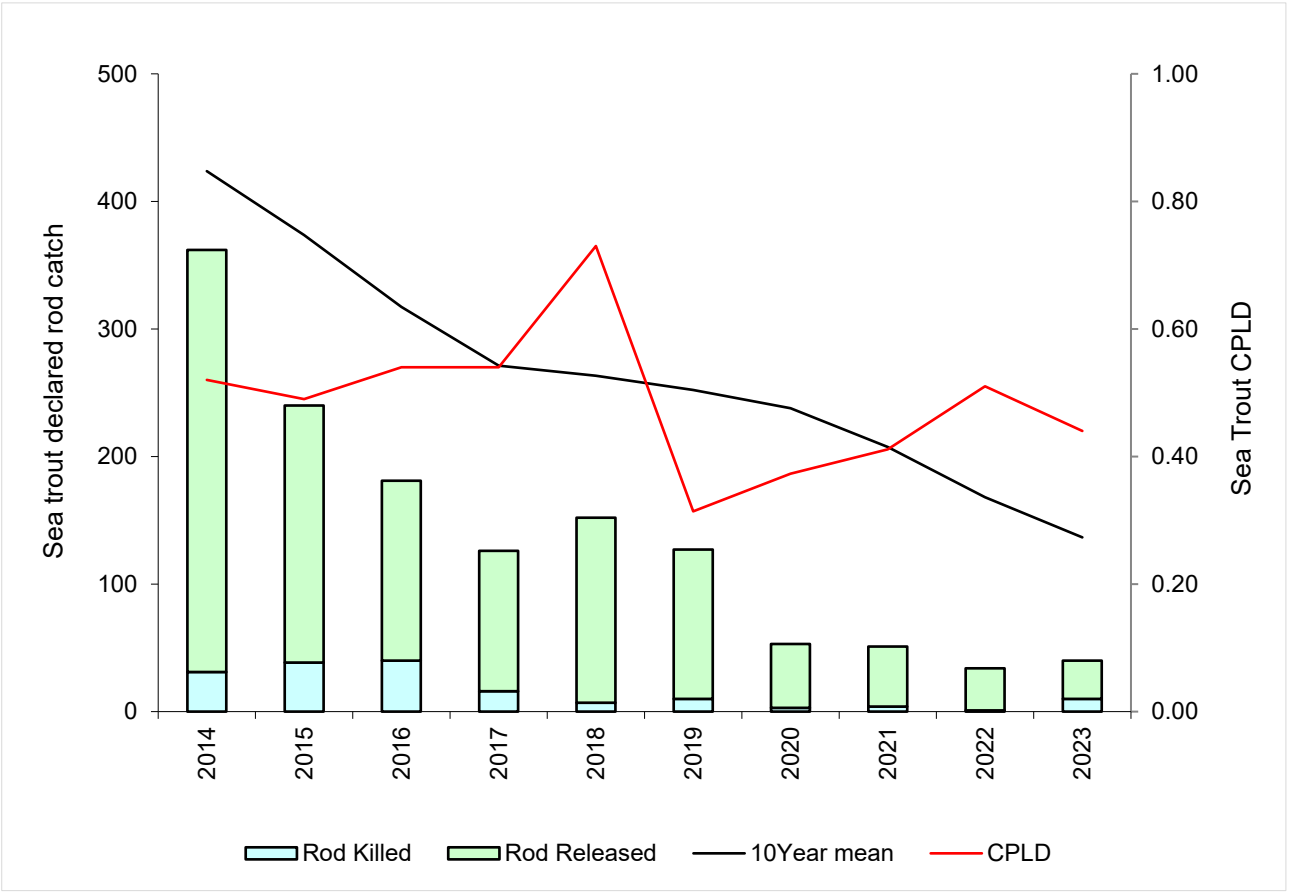
Salmon Rod Catch

Year	Caught	Rod Killed	Rod Released	10 Year mean	Percentage released	Catch per license day
2023	2	0	2	5.6	100	0.020
2022	0	0	0	8.7	-	0.000
2021	1	0	1	10.9	100	0.008
2020	3	0	3	13.9	100	0.021
2019	6	0	6	15.4	100	0.015
2018	4	0	4	16.4	100	0.020
2017	3	0	3	22.2	100	0.010
2016	12	0	12	25	100	0.040
2015	9	1	8	26.5	89	0.020
2014	16	0	16	29.4	100	0.040



Sea Trout Rod Catch

Year	Caught	Rod Killed	Rod Released	10 Year mean	Percentage released	Catch per license day
2023	40	10	30	136.6	75	0.440
2022	34	1	33	168.1	97	0.510
2021	51	4	47	207.5	92	0.411
2020	53	3	50	237.8	94	0.373
2019	127	10	117	252.2	92	0.314
2018	152	7	145	263.3	95	0.730
2017	126	16	110	271.2	87	0.540
2016	181	40	141	317.3	78	0.540
2015	240	38	202	373.6	84	0.490
2014	362	31	331	423.7	91	0.520



Stock status

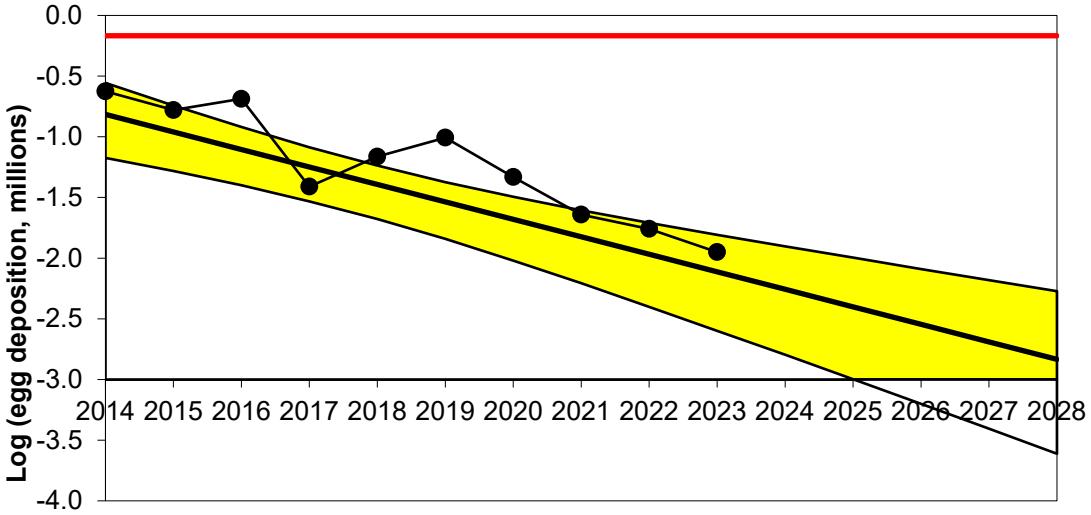
Conservation of Salmon

Salmon stock status is assessed using 'Conservation Limits' which provide an objective reference point against which to assess the status of salmon stocks in individual rivers.

This is calculated by applying assumed angling exploitation rates to catch data to derive run estimates; adopting standard sex ratios and weight-fecundity relationships to generate egg deposition figures. The numbers of salmon a river can produce (and consequently the catches that the stocks support) are a function of the quality and quantity of accessible spawning and rearing area. Therefore, in general, big rivers have larger catches and have correspondingly bigger total spawning requirements than small rivers. Thus, for any given rivers there should be an optimum level of stock which the conservation limit seeks to protect. The conservation limit represents the number of eggs that must be deposited each year within a given catchment to conserve salmon stocks in the future.

River Rheidol

Estimates of egg deposition, and compliance with conservation limit



Are enough salmon 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 salmon 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 (2014-2023).

- 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 salmon on the Rheidol will continue to **decline (downward trend)**

Conservation of Sea Trout

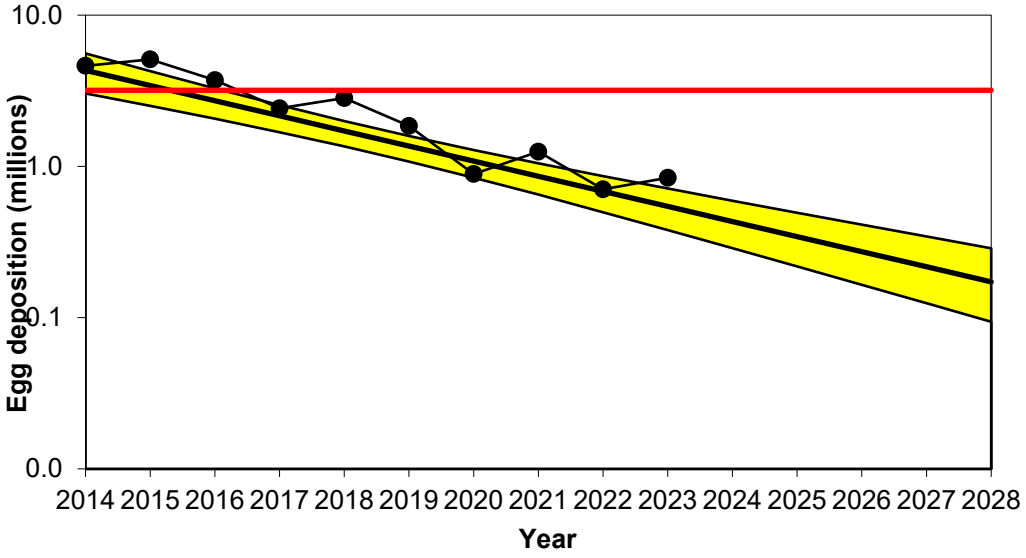
In contrast to salmon, no established methods of setting Conservation Limits or similar have been available for sea trout. In the absence of such analysis, NRW and the Environment Agency have, for several years, routinely applied a fishery-based assessment to the principal sea trout rivers. This method – 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).

River Rheidol: Sea trout

Estimates of egg deposition, and compliance with conservation limit



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 (2014-2023).

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

Juvenile Salmonid Monitoring Programme

In 2024 the temporal (annual) programme consisted of five sites on the Rheidol. This includes one site on the Melindwr and four five minute fry surveys on the main Rheidol. 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.

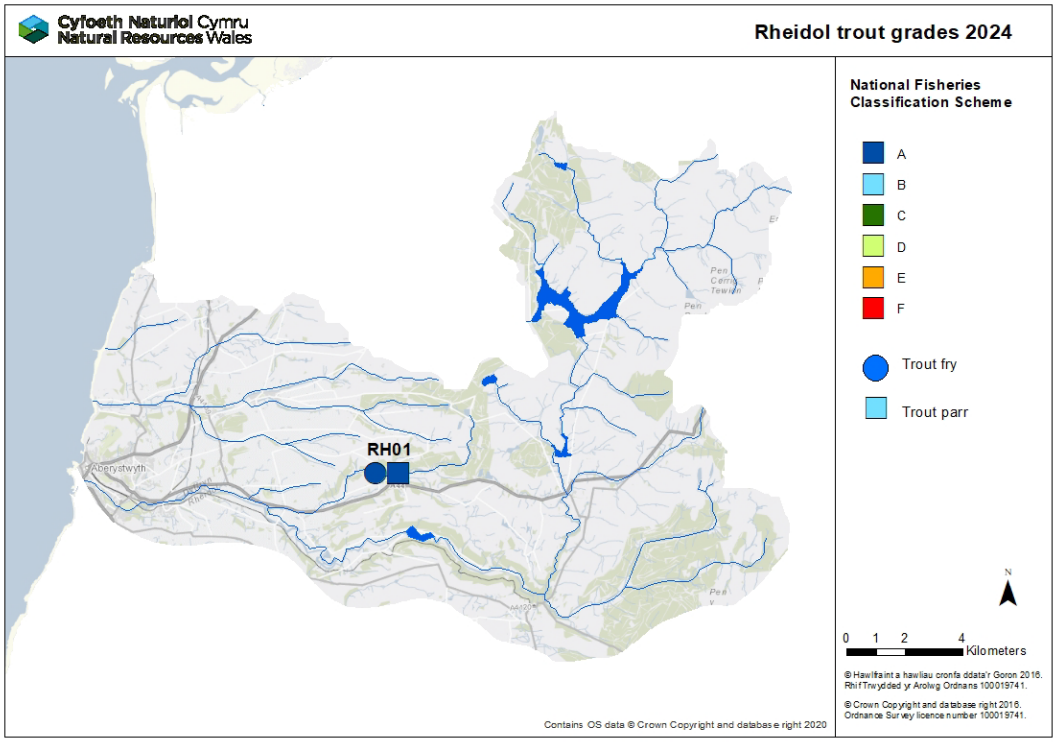
Salmon and Trout Classifications

The tables/maps below show the results of the routine juvenile salmonid population surveys on the Rheidol in 2024. Minimal numbers of salmon have historically been caught on the Melindwr.

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

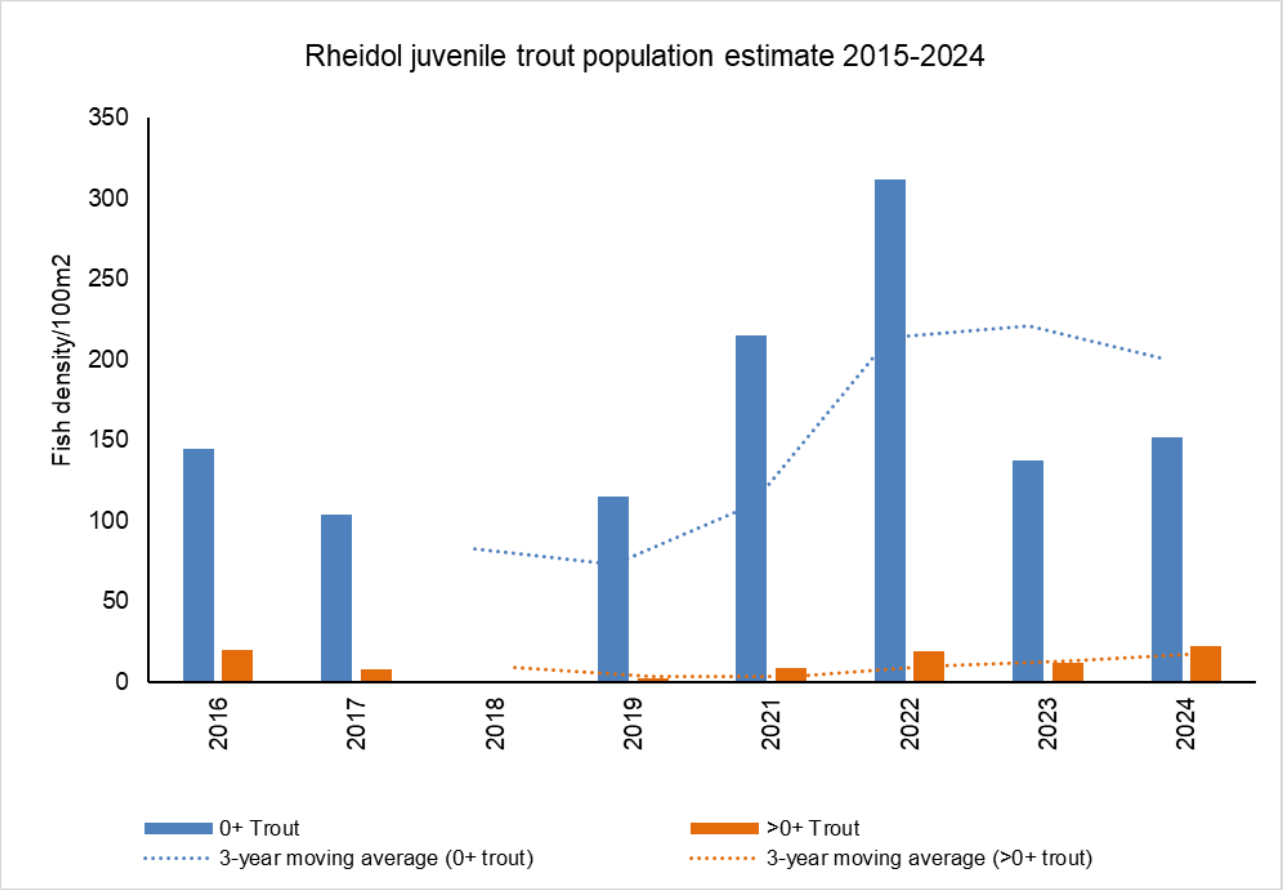
Catchment	Site code	Year	Salmon fry grade	Salmon parr grade	Trout fry grade	Trout parr grade
Melindwr	RH01A	2024	**F**	**F**	**A**	**A**



Catchment Population Trends

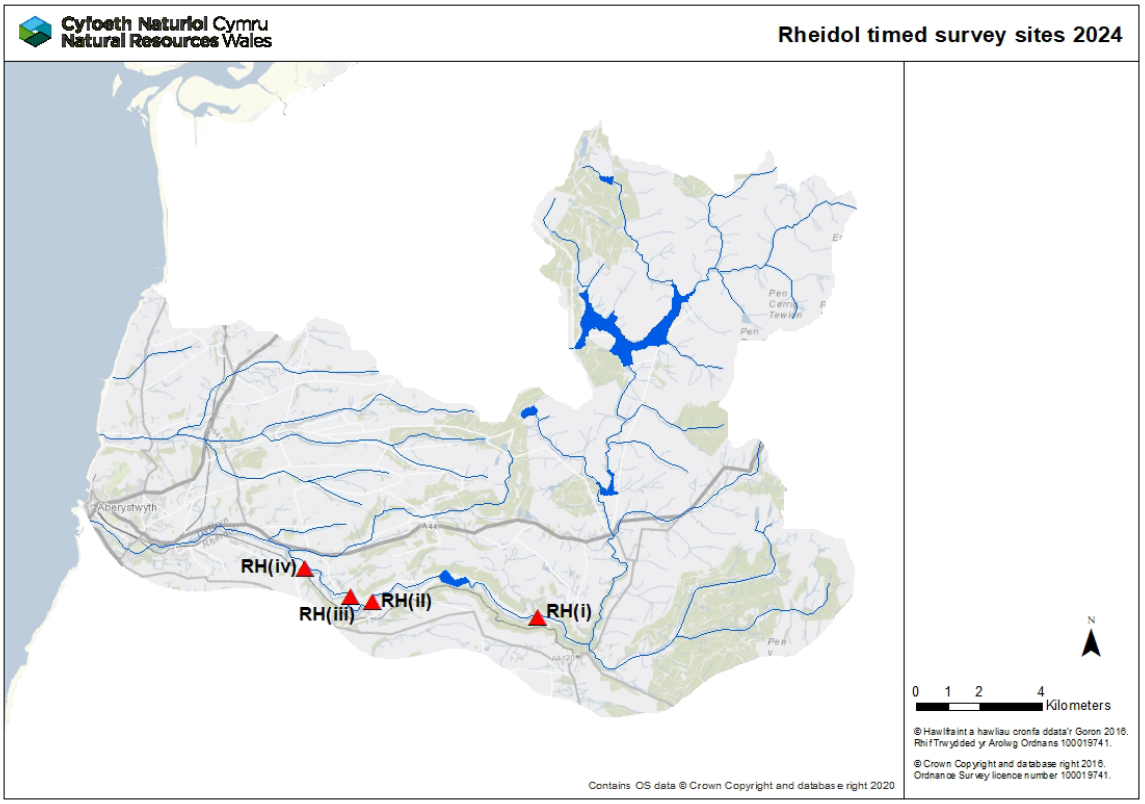
The table below shows the average trout density for the temporal site on the Rheidol catchment (Melindwr) since 2015. Salmon numbers are not shown as they are rarely caught at this site. NB – zero fish were caught in 2018 as the river had dried out, no surveys were carried out in 2020 due to covid restrictions.

Year	0+ Trout	3-year average (0+ trout)	>0+ Trout	3-year average (>0+ trout)
2024	151.8	200.4	22.4	17.9
2023	137.7	221.5	12.2	13.3
2022	311.7	214.0	18.9	10.0
2021	215.1	110.1	8.8	3.7
2019	115.2	73.1	2.2	3.4
2018	0.0	83.0	0.0	9.3
2017	104.0	186.3	8.0	12.7
2016	145.0	NA	20.0	NA
2015	309.9	NA	10.0	NA



Five Minute Fry Temporal Timed Surveys 2024

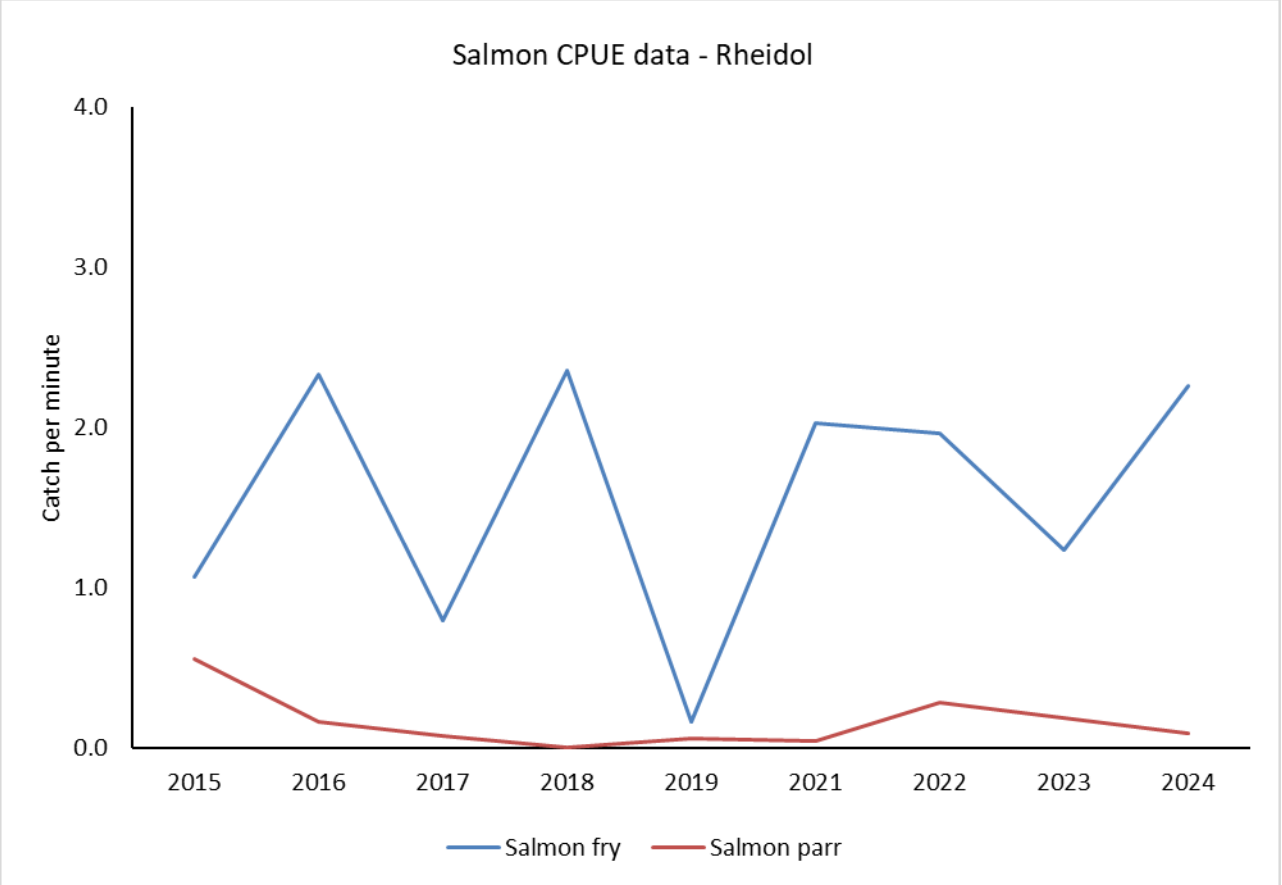
The map below shows where the five minute fry surveys are carried out on the Rheidol catchment.

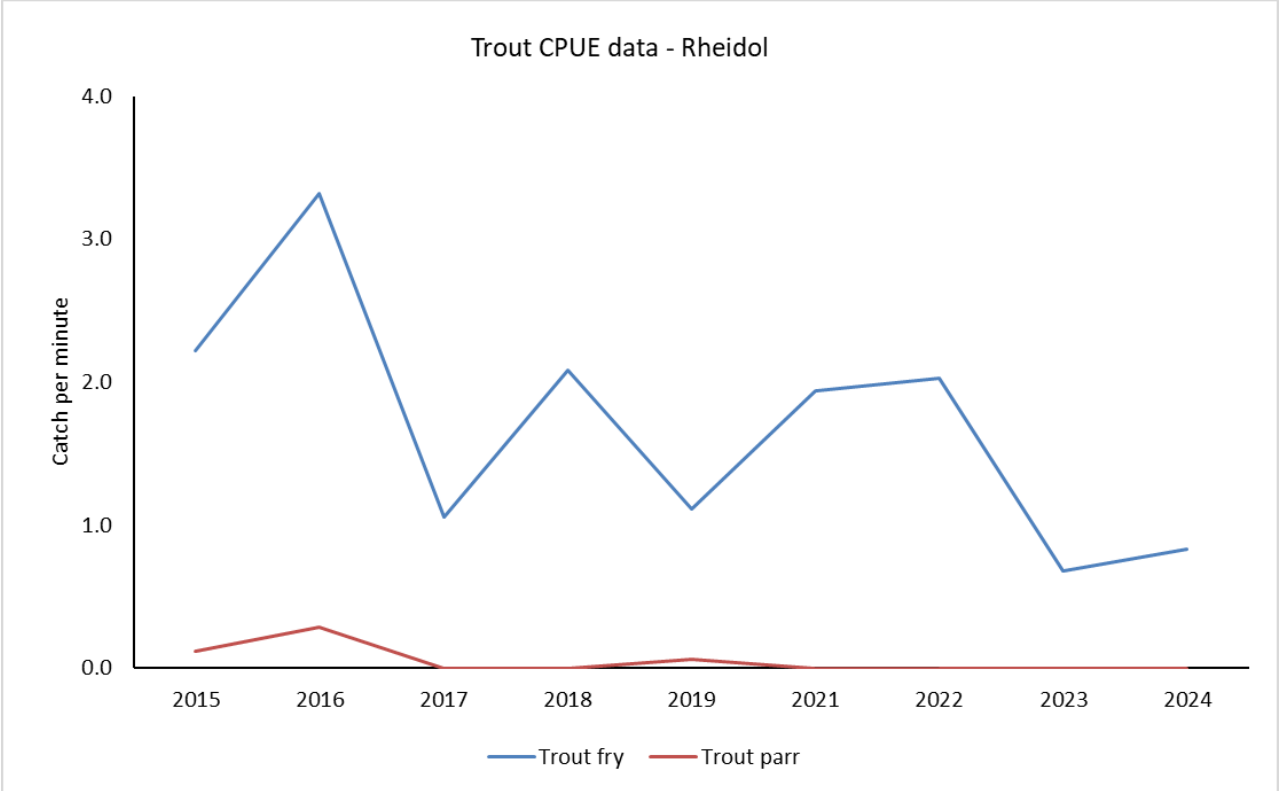


These surveys are carried out on riffles with the prime target being salmon fry. Fishing is timed for five minutes. The sites are generally on main river and would be too large for a normal survey. The graphs below show the average (Geometric mean) numbers caught per minute across the catchment. Figures 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 conistent. CPUE stands for Catch Per Unit Effort.

Rheidol catch per minute data - Note: Geometric mean has been used to better represent 'normal' densities. One or two high values were making more recent mean values (average) look better than the true picture of low densities. The true picture is now better illustrated.

Year	Salmon fry	Salmon parr	Trout fry	Trout parr
2024	2.3	0.1	0.8	0.0
2023	1.2	0.2	0.7	0.0
2022	2.0	0.3	2.0	0.0
2021	2.0	0.0	1.9	0.0
2019	0.2	0.1	1.1	0.1
2018	2.4	0.0	2.1	0.0
2017	0.8	0.1	1.1	0.0
2016	2.3	0.2	3.3	0.3
2015	1.1	0.6	2.2	0.1


Salmon CPUE data - Rheidol
Catch per minute
4.0
3.0
2.0
1.0
0.0
2015
2016
2017
2018
2019
2021
2022
2023
2024
Salmon fry
Salmon parr


Trout CPUE data - Rheidol
Catch per minute
4.0
3.0
2.0
1.0
0.0
2015
2016
2017
2018
2019
2021
2022
2023
2024
Trout fry
Trout parr

Rheidol Fisheries Action Table

Planned actions	Benefits	Lead	Partner(s)	Timescale for delivery
Strategic Allocated Fund (SAF): 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.	More natural river system, increased connectivity, reduced siltation, increased flow diversity, improved spawning gravels and juvenile habitat. In combination, measures should increase spawning success and juvenile production.	NRW	AC WWRT	2022-25
Water Framework Directive: 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. Investigation into Llechwedd Mawr waterbody failure.	NRW	NRW/EA WWRT Wildlife Trusts Local authorities Landowners DCWW	On-going
Enforcement: Action to reduce illegal activity on information provided and investigations. Active enforcement team patrolling river banks.	Reduce illegal activity, more fish remain in the system.	NRW	Angler Stakeholder Groups Angling Trust Voluntary Bailiff Service Dyfed-Powys Police	On-going

Planned actions	Benefits	Lead	Partner(s)	Timescale for delivery
Sustainable Fisheries Projects: 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	Improved access to and engagement with recreational angling for individual and community health and wellbeing. Improved facilities for existing anglers and fishing clubs. Engagement, where possible, with citizen science relating to fish habitat and/or WQ. Delivery of 'Reconnecting People & Place' – Mid Wales AS theme.	NRW	Angling Clubs Ceredigion Local Fisheries Group	On-going
Fish passage, Cwm Rheidol: Investigation into potential measures to improve upstream and downstream fish migration at Cwm Rheidol dam. This includes the provision of guidance from fisheries interests outlining conditions for most beneficial times for allowing dam overtopping during smolt migration period.	Measures should improve the passage of juvenile salmonids back to sea and increase access for adults to spawning habitat.	Statkraft	NRW WWRT Aberystwyth Angling Association	On-going