Cyfoeth Naturiol Cymru
Natural Resources Wales

Know Your River – Severn
Salmon & Sea Trout Catchment Summary

Introduction

This report describes the status of the salmon and trout populations in the Severn 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 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.

For cross border rivers (Wales/England) Natural Resources Wales is the regulator for all waters in Wales and the Environment Agency for all waters in England. Any regulatory controls on fishing can only be undertaken by the appropriate regulator. However, there is an overarching principal agreement for an integrated catchment outcome (same controls within a catchment) for the regulation and management of migratory salmonids. In practice, the Environment Agency takes the lead for the regulation and management of migratory salmonids for the River Severn and of all watercourses draining or flowing, directly or indirectly, into it.

Catchment

The River Severn rises on the slopes of Plynlimon in the Cambrian Mountain range of Mid Wales. At around 220 miles, it is the longest river in the UK and has the largest water flow of any river in England and Wales. From its source, the Severn flows in a north easterly direction to start with, through the towns of Llanidloes and Welshpool. Crossing the border into England, it takes on a more southerly course and loses its upland character, flowing more leisurely through Shropshire, Worcestershire and Gloucestershire before becoming the Severn Estuary below Gloucester.

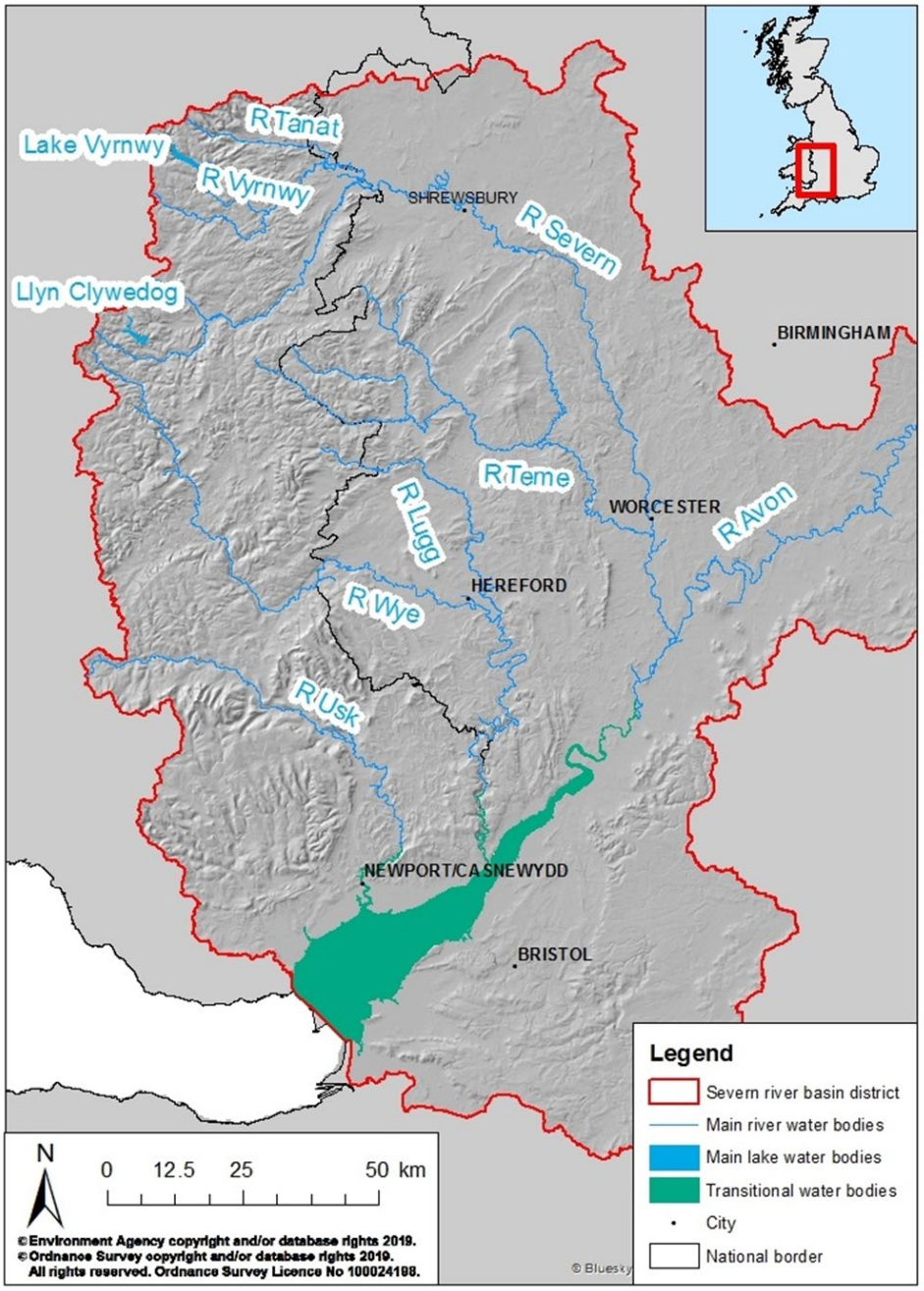
The Severn catchment is perhaps best known for its coarse fishing though (particularly for barbel and chub in the middle reaches), it does however support a small but significant salmon fishery and similar to that of the River Wye it is regarded for its large multi sea winter salmon.

The Severn Estuary fishery is a unique environment because of its very large tidal range and the size of the estuary. This has resulted in development of specific techniques for the capture of salmon and subtle adaptations of more familiar netting and trapping techniques. The estuary is a mixed stock fishery, exploiting stocks from the three principal salmon rivers that drain to the estuary (Severn, Wye and Usk). This fishery was once the largest commercial salmon fishery in the UK in the mid 19th century and produced significant commercial catches up until the 1990's. With the current decline in the fishery these activities are no longer regarded for commercial purposes, but have continued to be practiced for the potential historical and cultural value and are now principally considered as a heritage fishery.

The lower to middle Severn reaches are principally public rod fisheries run by clubs, and salmon angling makes up only a small proportion of the total angling effort. The majority of angling is targeted

at coarse fish, for which it is highly regarded. This means salmon angling effort is sporadic, concentrated at known areas (particularly around the navigation weirs) and practiced by a few dedicated fishermen.

Large areas of the Severn catchment above the impounded navigation sections, particularly the upper reaches, Vyrnwy and Teme sub-catchments comprise high quality salmonid fishery habitats. Monitoring shows that most of the main stem rivers and tributaries support juvenile salmon stocks and these are regarded as the primary natal spawning areas.

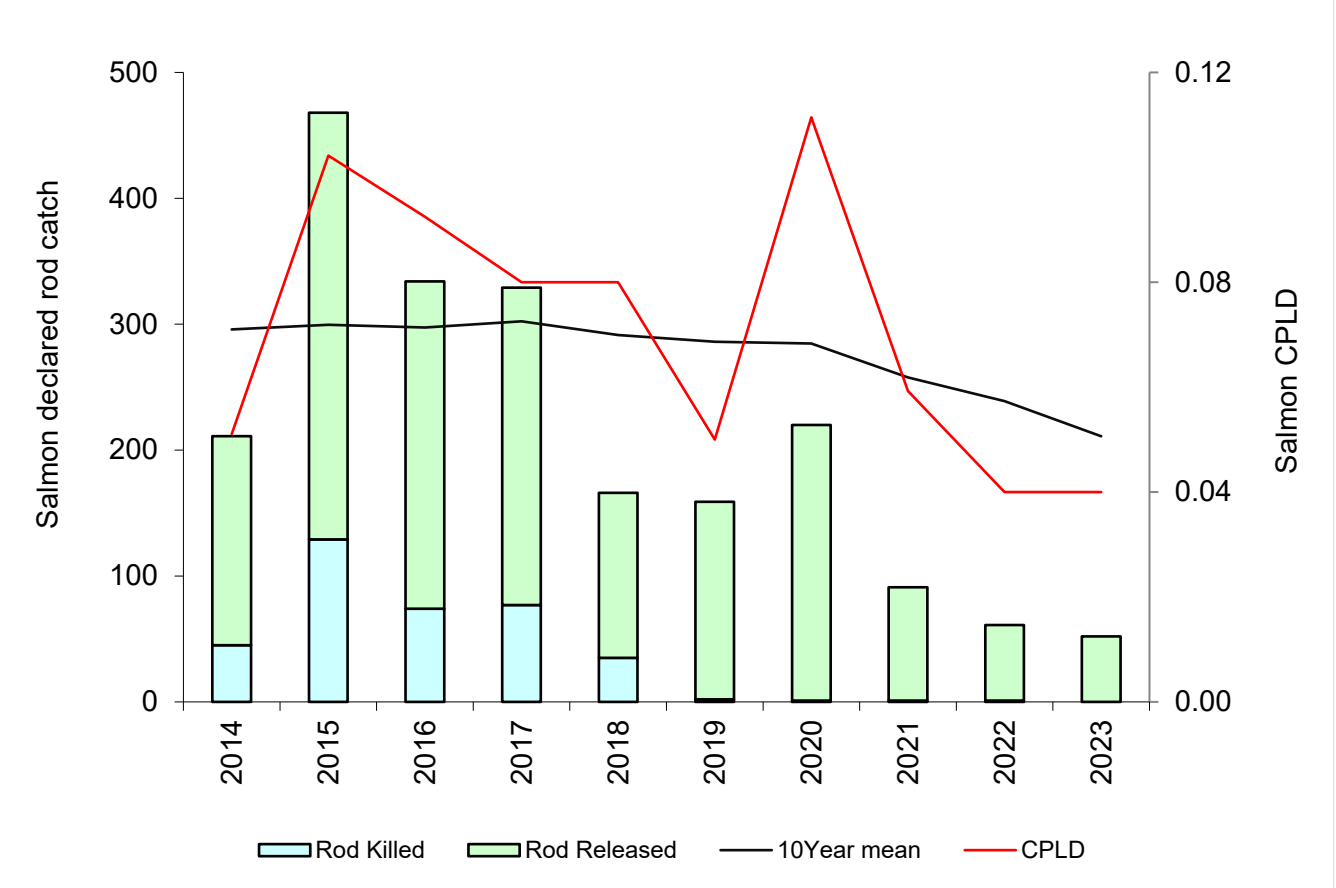


Rod catches

The following graph show the total declared rod catch for salmon on the Severn and Catch Per Licence Day. CPLD is an estimate of the average catch per fishing day on a catchment. Sea Trout are infrequently caught on the Severn (ten-year average – fifteen sea trout annually), and historically data has been unreliable. We have therefore not included this data within the document.

Salmon rod catch

Year	Caught	Rod Killed	Rod Released	10 Year mean	Percentage released	Catch per license day
2023	52	0	52	211.0	100	0.04
2022	61	1	60	239.0	98	0.04
2021	91	1	90	258.0	99	0.06
2020	220	1	219	284.7	100	0.13
2019	159	2	157	286.1	99	0.05
2018	166	35	131	291.4	79	0.08
2017	329	77	252	302.3	77	0.08
2016	334	74	260	297.4	78	0.09
2015	468	129	339	299.6	72	0.10
2014	211	45	166	295.8	79	0.05



Stock status

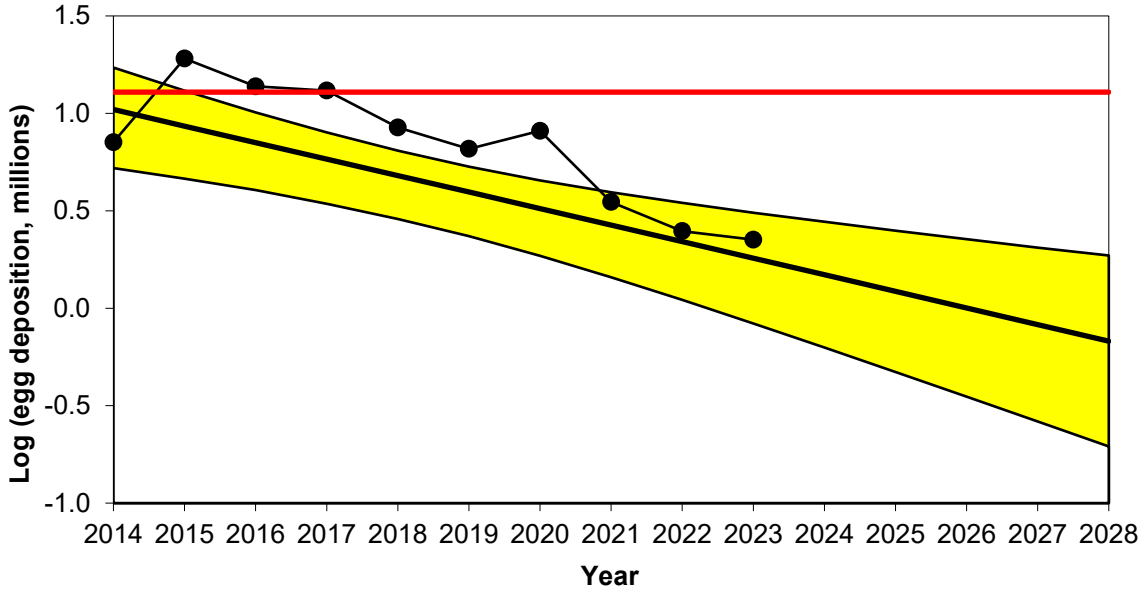
Conservation of Salmon

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 in order to conserve salmon stocks in the future.

River Severn

Estimates of egg deposition, and compliance with conservation limit



Are enough salmon eggs being deposited to conserve salmon 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 Severn will continue to **decline (down trend)**

Conservation of Sea Trout
Sea Trout are infrequently caught on the Severn, and historically data has been unreliable. We have therefore not included the graph within the document.

Juvenile Salmonid Monitoring Programme

In 2024 the temporal (annual) programme consisted of seventeen sites on the Severn. The temporal data is used to look at trends in juvenile salmon and trout densities giving an indication of spawning across the whole catchment. **NB** – the site on the Camlad was moved around 100m upstream in 2024, due to the historic site becoming too deep and overgrown to survey effectively and safely.

Salmon and Trout Classifications
The maps/graphs on the following page show the results of the routine juvenile salmonid population surveys from 2024 on the Severn.

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. The following table shows the values and classification of NFCS.

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
Banwy	1096	2024	D	E	D	E
Bechan	1063	2024	F	E	E	D
Cain	8830	2024	C	E	E	D
Camlad	62148	2024	E	F	F	D
Carno	1054	2024	B	D	E	D
Clywedog	1037	2024	D	E	D	D
Dulas	62103	2024	E	B	D	D
Gam	1103	2024	D	C	E	D
Mule	1069	2024	D	D	F	D
Rhiew	1078	2024	A	D	F	D
Rhiew	1442	2024	B	C	E	F
Severn	1024	2024	C	B	C	D
Tanat	1111	2024	C	F	C	C
Tanat	8583	2024	B	D	F	F
Teme	1313	2024	D	F	E	D
Twrch	1438	2024	B	C	D	D
Vyrnwy	56225	2024	A	C	E	E

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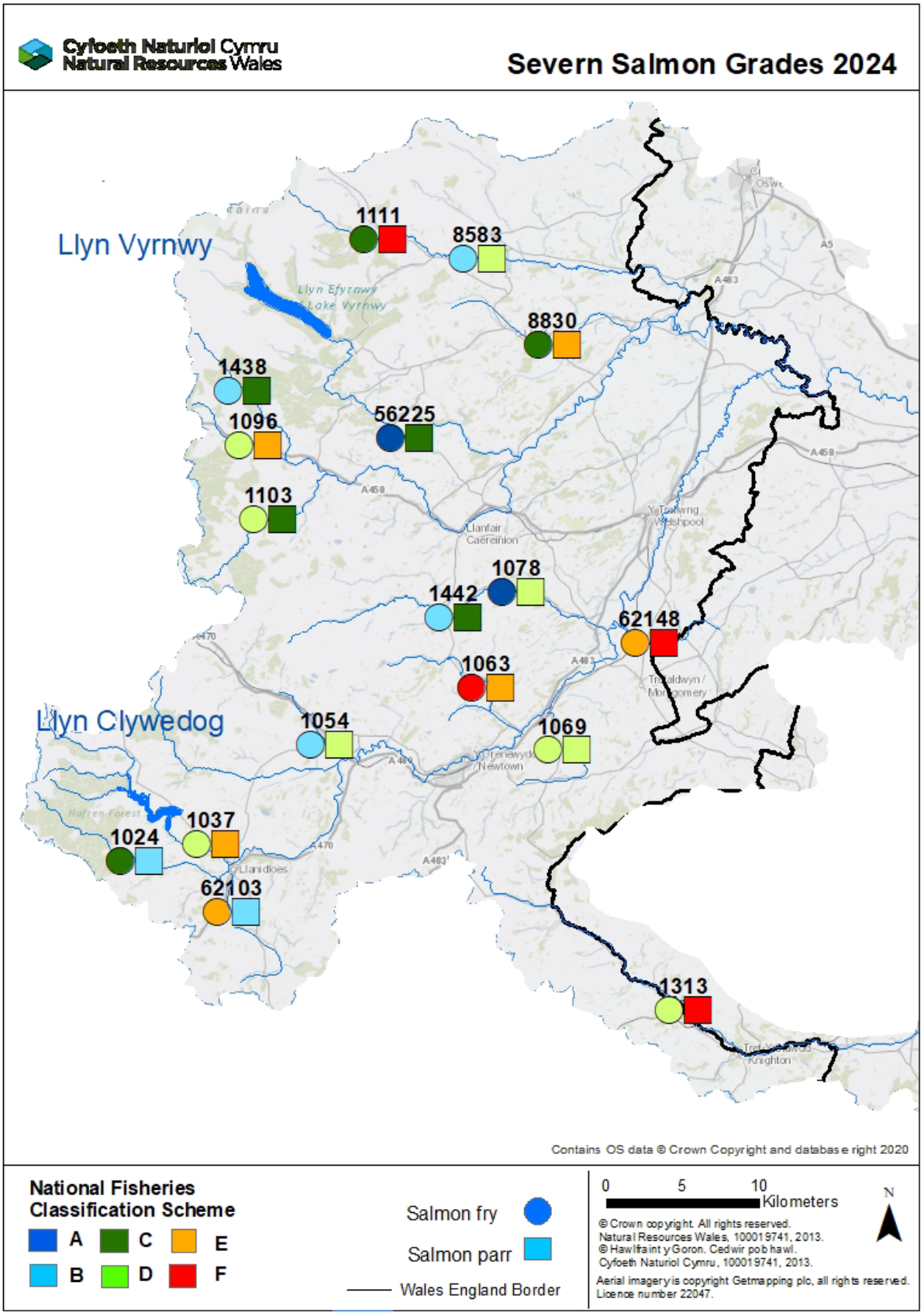
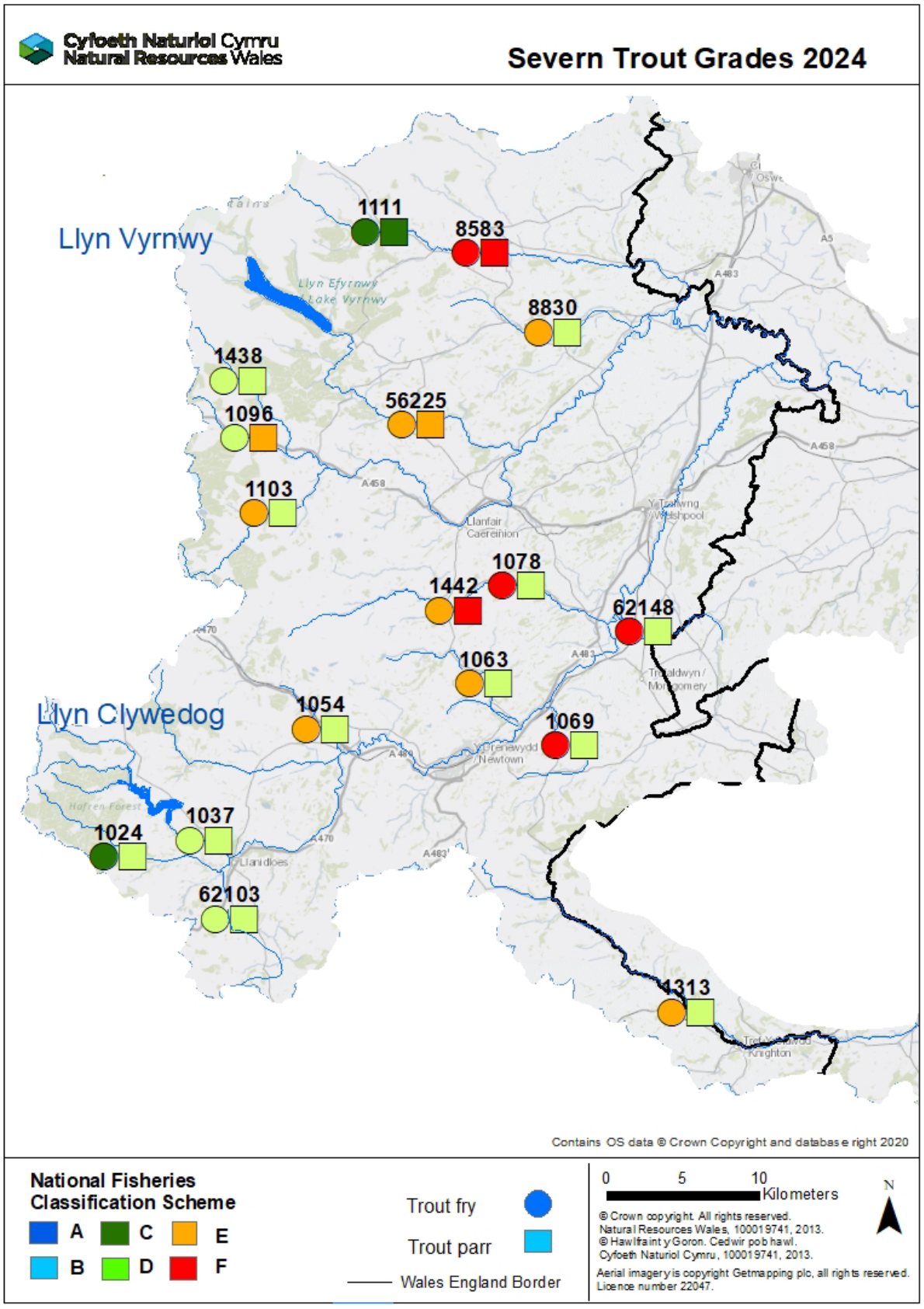
Map of Juvenile Salmon Results



Map of Juvenile Trout Results

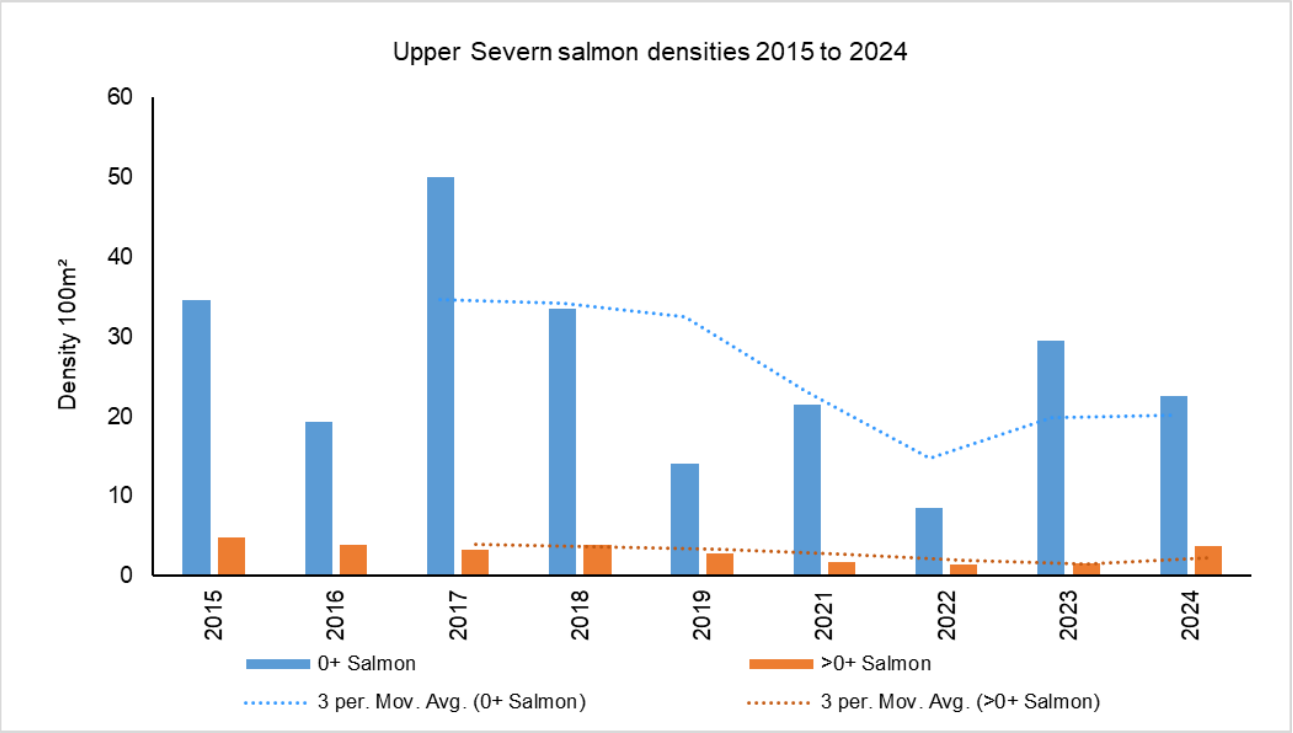


Catchment Population Trends

The table/graphs below show a simple comparison of average salmon and trout densities across the upper Severn catchment since 2015 (fish per 100m^2). The data shown here are only from sites in the current temporal monitoring programme but does not include the Teme. The programme is relatively new and has only been completed in full in 2018, 2022, 2023 and 2024; other years' averages are based on fewer than sixteen surveys (fifteen 2017 & 2021, fourteen 2016, thirteen 2015, twelve 2019) . NB – covid restrictions cancelled all surveys in 2020. NA stands for not applicable.

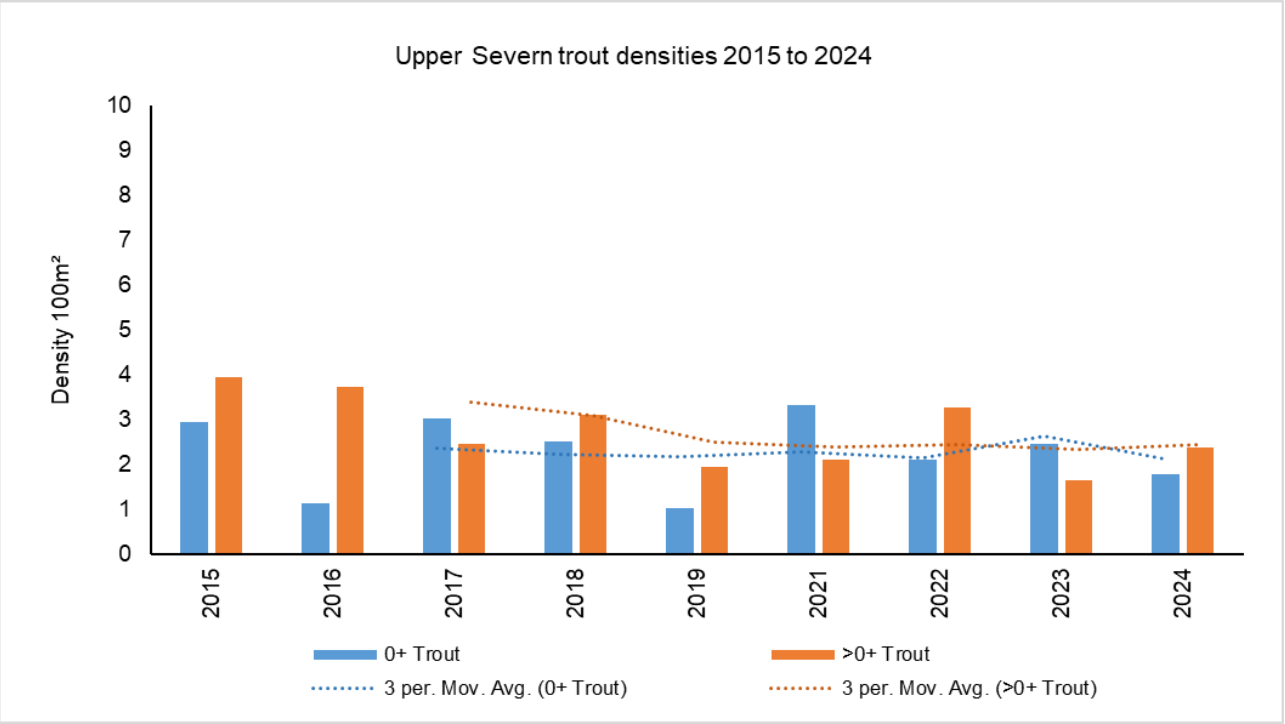
Salmon population trend - Note: Geometric mean has been used to better represent 'normal' densities. One or two high values were making more recent mean values (average) look better than the true picture of low densities. The true picture is now better illustrated.

Year	0+ Salmon	3-year average (0+ salmon)	>0+ Salmon	3-year average (>0+ salmon)
2024	22.6	20.2	3.8	2.3
2023	29.5	19.9	1.5	1.6
2022	8.5	14.7	1.5	2.0
2021	21.5	23.0	1.7	2.8
2019	14.1	32.5	2.8	3.3
2018	33.4	34.2	3.9	3.7
2017	49.9	34.6	3.3	4.0
2016	19.4	NA	3.9	NA
2015	34.5	NA	4.9	NA



Trout population trend - 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	0+ Trout	3-year average (0+ Trout)	>0+ Trout	3-year average (>0+ Trout)
2024	1.8	2.4	2.4	2.4
2023	2.5	2.6	1.6	2.3
2022	2.1	2.2	3.3	2.4
2021	3.3	2.3	2.1	2.4
2019	1.0	2.2	1.9	2.5
2018	2.5	2.2	3.1	3.1
2017	3.0	2.4	2.5	3.4
2016	1.1	NA	3.7	NA
2015	2.9	NA	4.0	NA



Fisheries action table

Planned actions	Benefits	Lead	Partner(s)	Timescale for delivery
Llandinam gravels feasibility study: re-meandering	Planning / feasibility modelling for a more natural river system; reduced siltation, increased flow diversity, improved spawning gravels and juvenile habitat. Improved fish numbers.	NRW	Montgomeryshire WT	On-going
CaSTCo Teme catchment demo project: Catchment Systems Thinking Cooperative (CaSTCo) NRW is engaging as a partner in this project and disseminating information to Welsh stakeholders, including the Upper Severn Local Fisheries Group.	The overall aim is development of a catchment monitoring plan and volunteer engagement programme in the Teme catchment, focussing on river water quality, and testing different citizen science methodologies.	Severn Trent Severn Rivers Trust	NRW EA Natural England Shropshire WT	2022-2025
Strategic Allocated Fund (SAF): Partnership with Afonydd Cymru and Severn 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. 1. Installation of fish easement at Cledan Bridge. 2. Installation of a minimum 2337 meters of riparian fencing in Cledan and Gam catchments.	NRW	AC SRT	2022-25

Planned actions	Benefits	Lead	Partner(s)	Timescale for delivery
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.	NRW/EA	NRW/EA SRT Shropshire Wildlife Trusts Local authorities Landowners Severn Trent Water (SvTW) United Utilities	On-going
Enforcement: Action to reduce illegal activity on information provided and investigations. Active combined enforcement team patrolling on border catchments	Reduce illegal activity, more fish remain in the system.	NRW/EA	Angler Stakeholder Groups Angling Trust Voluntary Bailiff Service West Mercia Police North Wales Police Dyfed-Powys Police	On-going
Sustainable Fisheries Projects: Reinvestment of rod licence fees to improve fish habitat and access to angling. E.g. loan of citizen science WQ 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 Upper Severn Local Fisheries Group	On-going