Know Your River – River Taf Salmon and Sea Trout Catchment Summary

Introduction

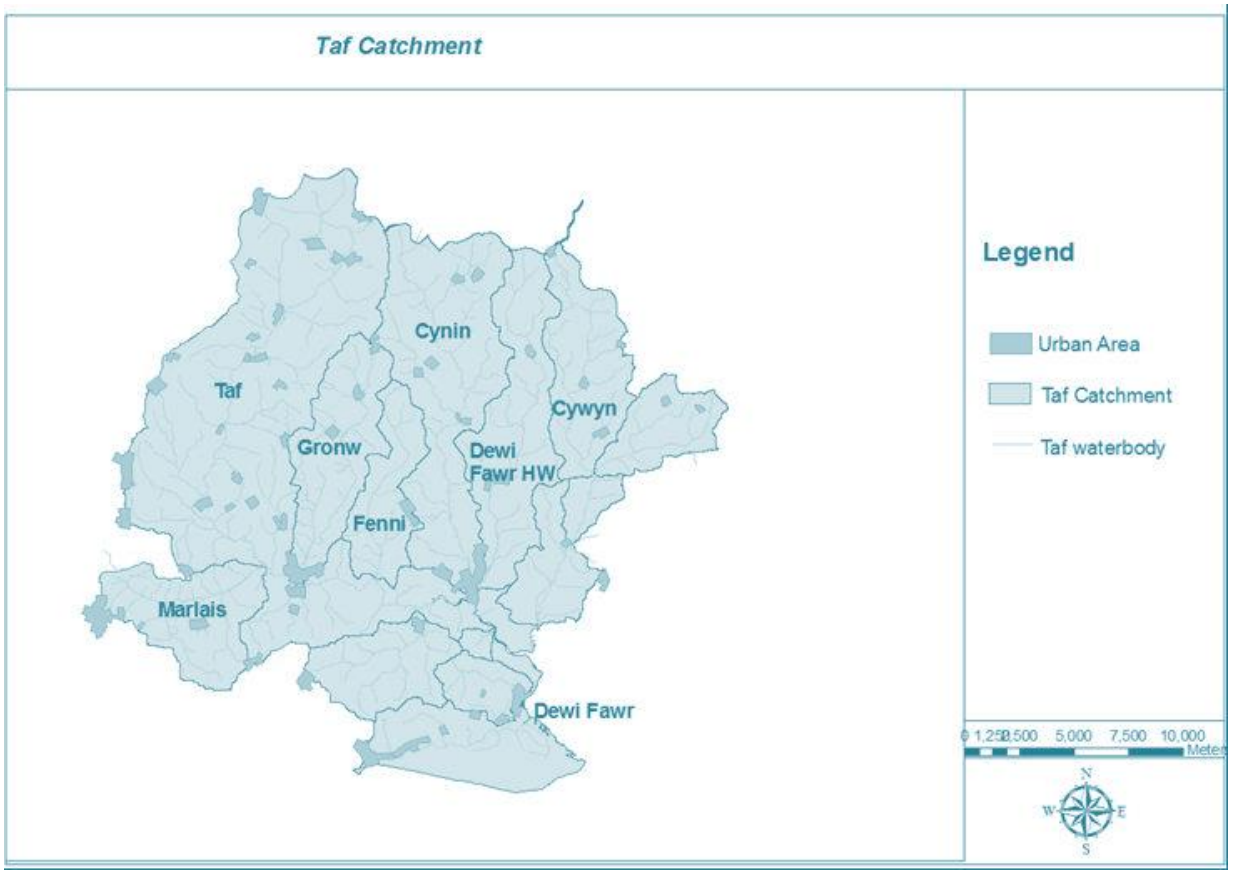
This report describes the status of the salmon and sea trout populations in the Taf catchment. Bringing together data from rod catches, stock assessments and juvenile monitoring, it will describe the factors limiting the populations and set out the challenges faced in the catchment.

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 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 our principal salmon rivers for the Salmon Action Plans, Habitats Directive condition assessments in selected SAC rivers, and the international ICES salmon status. In addition the majority of fish species in all our rivers are reported for the Water Framework Directive (WFD). This report contributes towards these commitments and provides an informative and useful summary of stock status and remedial work planned, for our customers, specifically anglers, fishery and land owners; as well as our partners.

River Taf



The River

The River Taf rises at an altitude of 200m above sea level, and flows down a steep valley for the first 15 km. The river than meanders within a relatively flat valley, through Whitland to St. Clears where it becomes tidal. Eventually the Taf joins the Tywi and Gwendraeth estuaries to form the Three Rivers estuary, before flowing into Carmarthen Bay.

Land use within the catchment is dominated by farming. Sheep and cattle rearing predominate in the upland areas, giving way largely to dairy farming in the middle and lower reaches. Crops are grown in small isolated areas around the catchment; one of the most important is potatoes, which are grown principally around Laugharne.

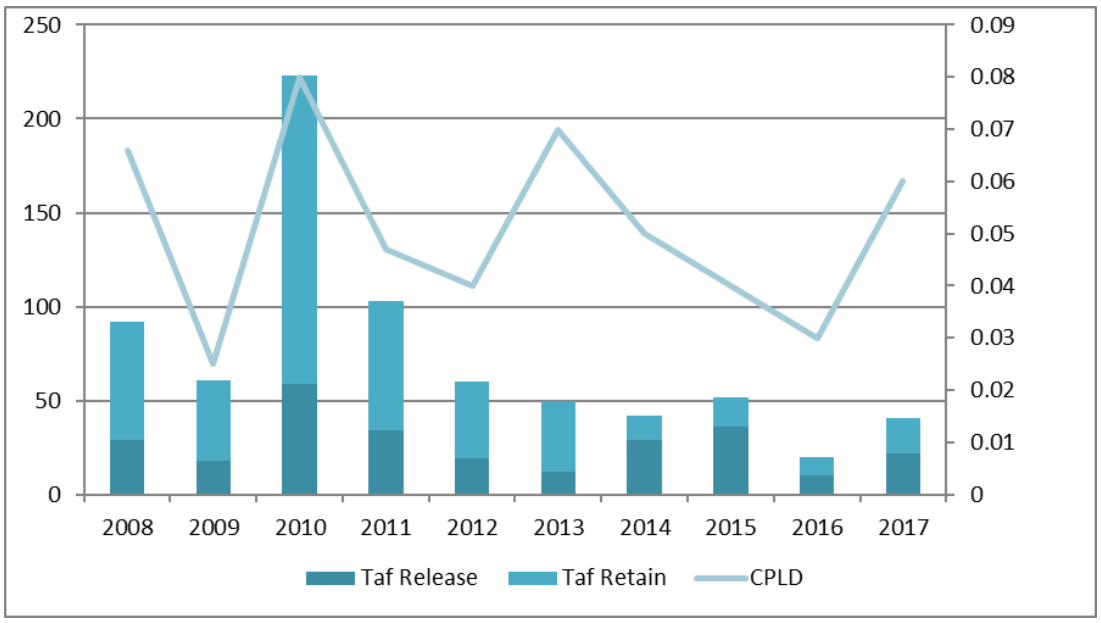
The Taf catchment supports a locally important salmon and sea trout (sewin) fishery, which includes one of only three remaining coracle fisheries in the UK. Sea trout are the predominant salmonid, with a reasonable number of salmon also present.

Rod Catches

The following graphs show the total declared rod catches, including numbers released or killed for salmon and sea trout on the Taf. The catch per licence day (CPLD) has also been included to show the ratio of fish caught per licences sold.

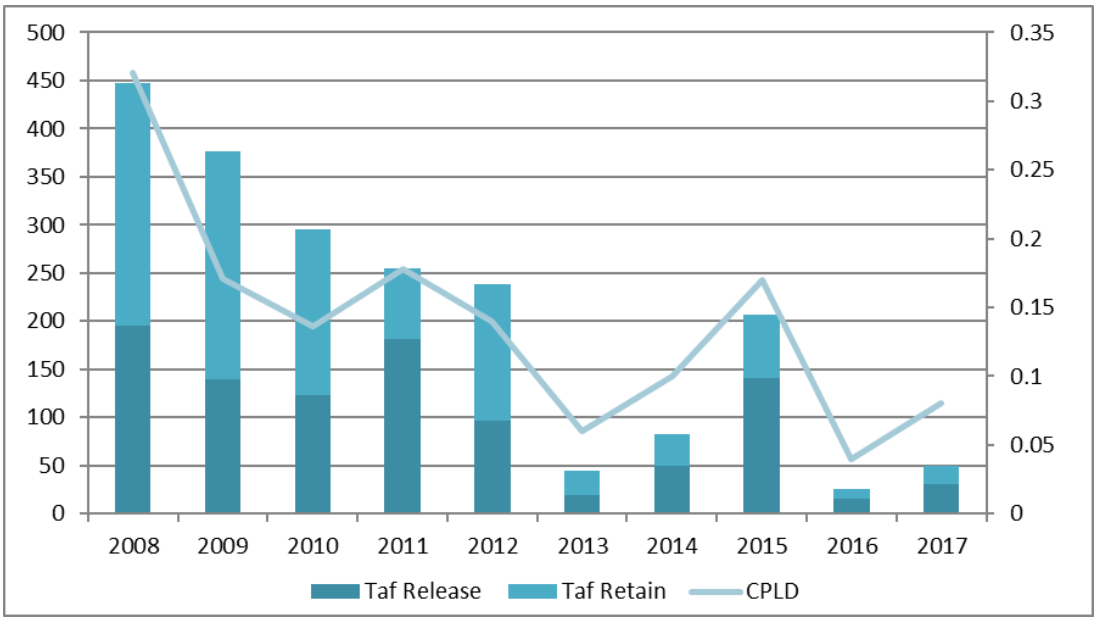
Declared salmon rod catches are variable over the period, with the highest catches reported in 2010 and 2011. The average proportion of the salmon catch returned alive for the period is 41.8%. The release rate in 2017 was 53.7% which is well below the Wales average of 86%. The CPLD trend follows the total catch trend closely apart from in 2013 whereby, the CPLD has increased and the total catch has decreased which, is expected to be due to few days being fished per licence.

River Taf Declared Salmon Rod Catch



Rod catches of sea trout also show considerable variation over the period and reported catches of sea trout exceed those of salmon in nearly all years. The release rate for sea trout in 2017 was 62%, which is below the Wales average figure of 77%. The CPLD for sea trout has been variable over the last 10 years but this follows the trend of the total catch.

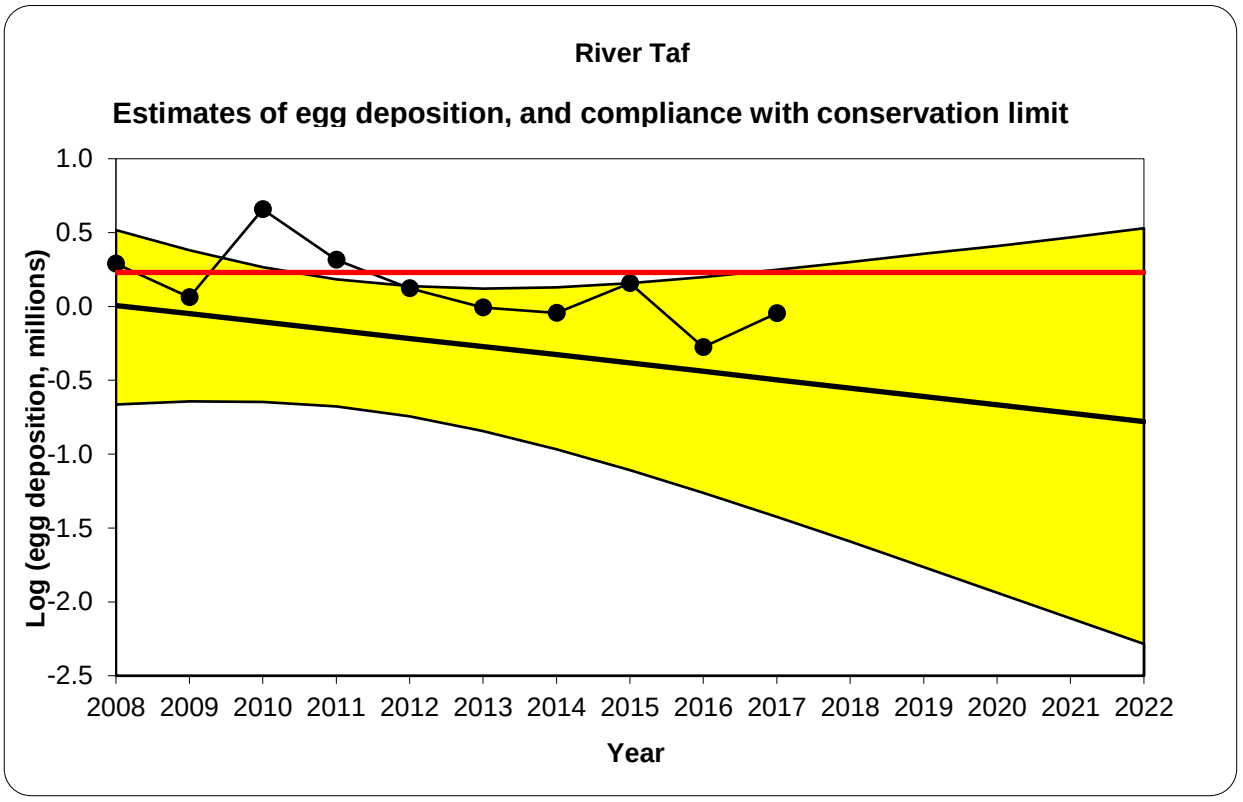
River Taf Declared Sea Trout Catch



Stock Status

Conservation of Salmon
Salmon stock status is assessed through the use of 'Conservation Limits' which provide an objective reference point against which to assess the status of salmon stocks in individual rivers. 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. This is why, 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 CL 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.

The conservation limit for the Taf is set at 1.7 million eggs, represented by the red line on the graph. The current number of eggs being deposited is just above the Conservation Limit, and the Taf is **probably at risk**. In 5 years time, the predicted status of the Taf salmon stock will be **probably at risk**. Based on current and future trends, the Taf salmon stock will continue to decline **(uncertain**).

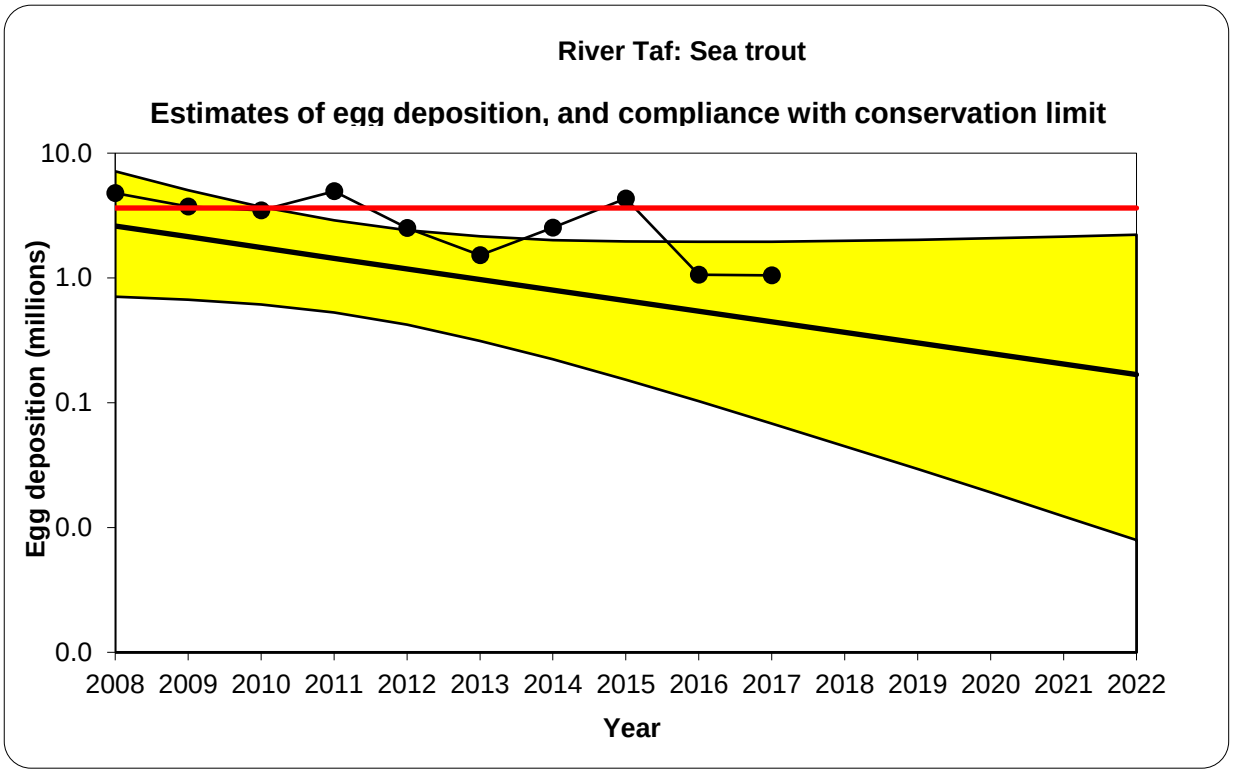


Conservation of Sea Trout

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: https://cdn.naturalresources.wales/media/684367/technical-case-structure-final.pdf?mode=pad&rnd=131654078130000000).



Are enough sea trout eggs being deposited to conserve sea trout 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 10-year series of egg deposition estimates (2008-2017).

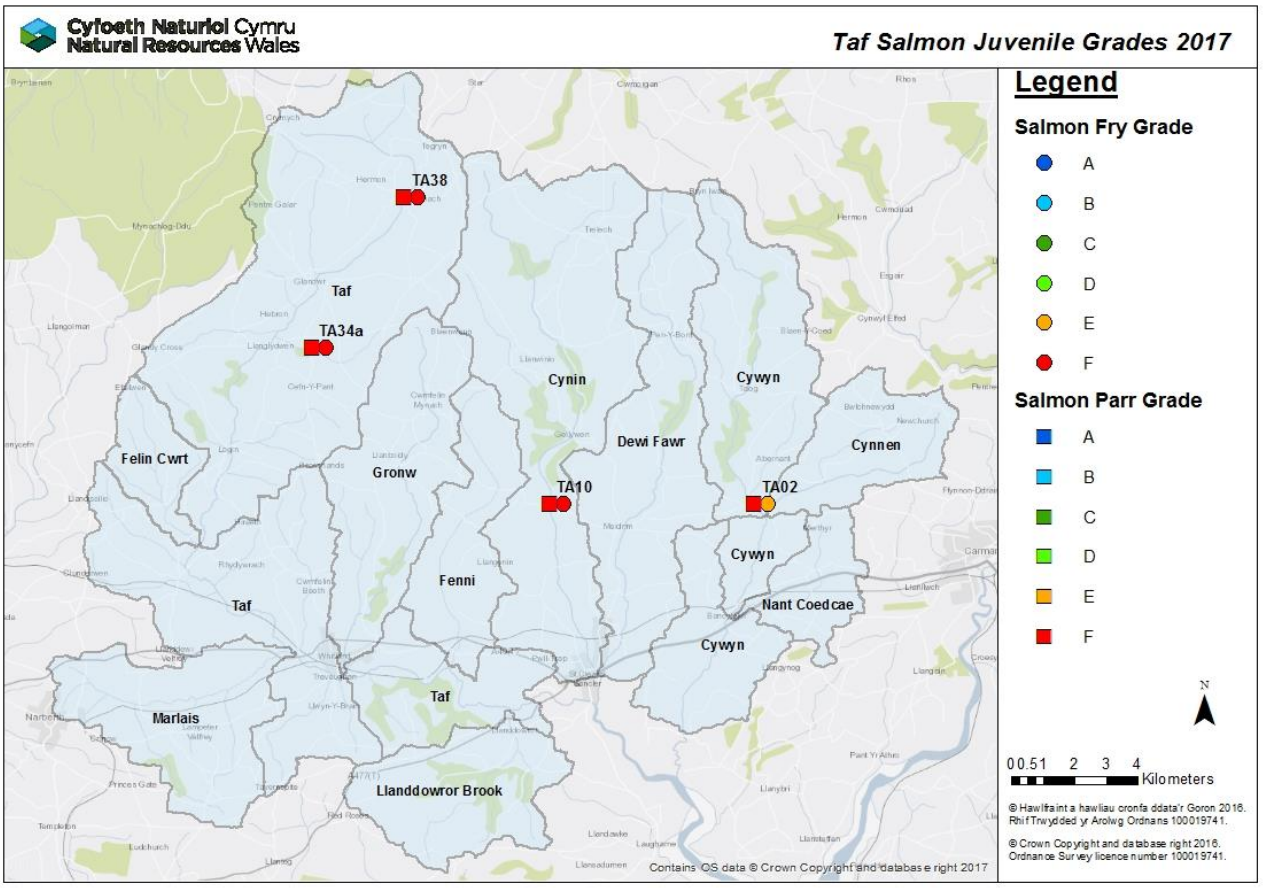
- Current number of eggs being deposited puts stocks **at risk**
- In 5 years' time the predicted status of salmon stocks will be **at risk**
- Based on current data, and the projection of the graph, sea trout stocks will continue to **decline** on the Taf **(uncertain).**

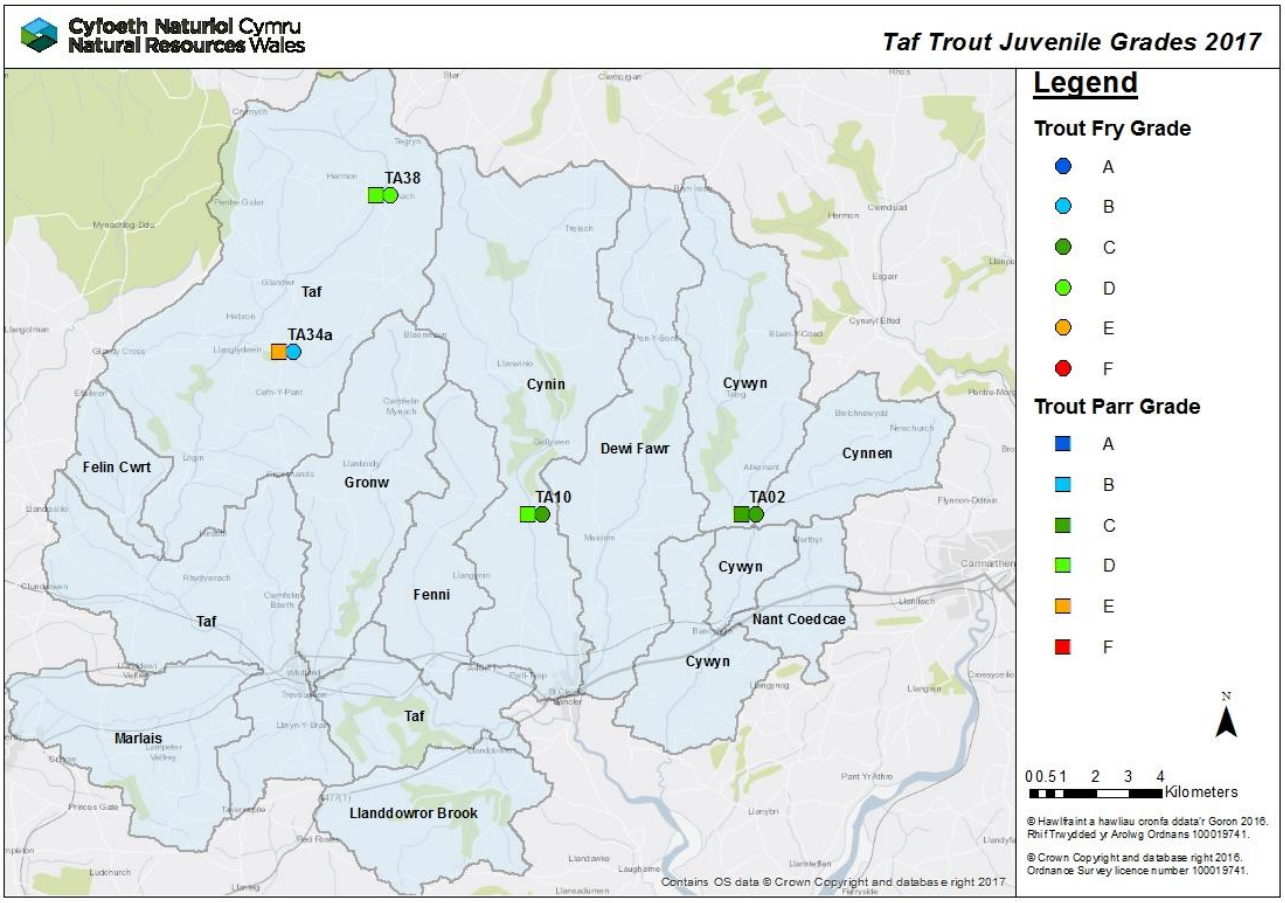
Juvenile Monitoring

The following maps show results of the 2017 juvenile salmonid populations gathered from electro fishing surveys. They display the National Fish Classification (NFC) grades which have been developed to evaluate and compare the results of fish population surveys in a consistent manner. The NFC ranks survey data by comparing fish abundance at the survey sites with sites nationally 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 NFC.

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

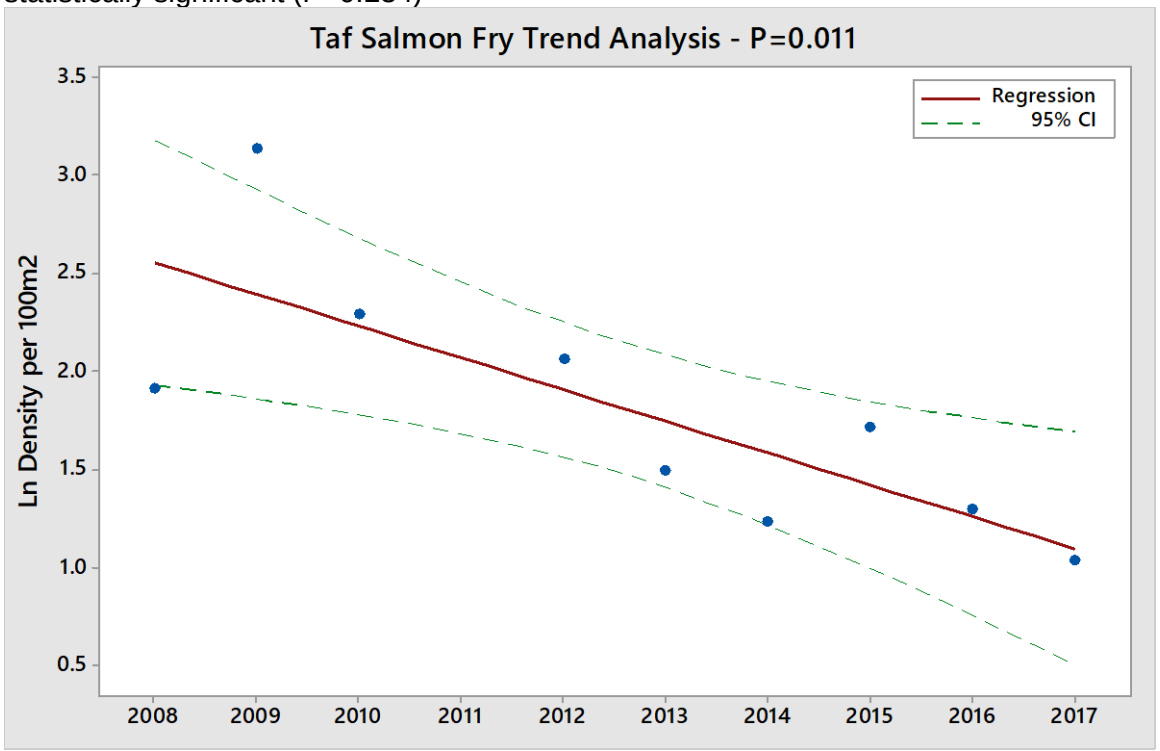
.

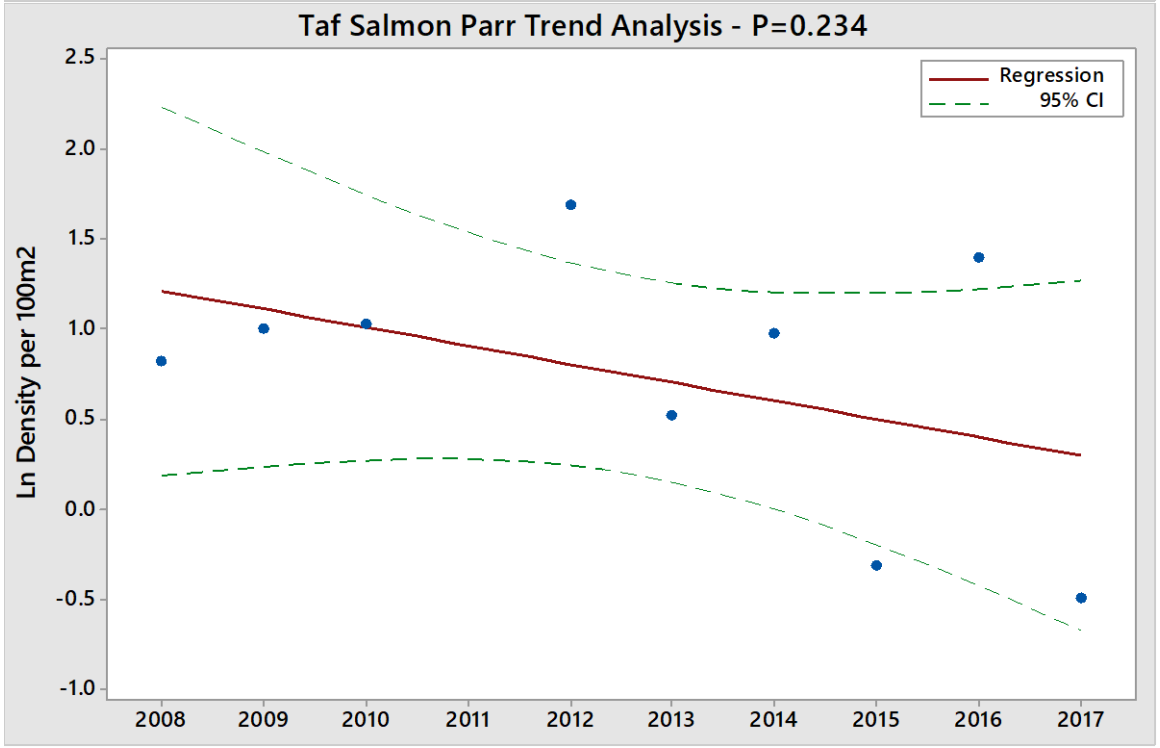



Cyfoeth Naturiol Cymru
Natural Resources Wales
Taf Trout Juvenile Grades 2017
Legend
Trout Fry Grade
A
B
C
D
E
F
Trout Parr Grade
A
B
C
D
E
F
N
0 0.5 1 2 3 4
Kilometers
© Hawlfraint a hawliau cronfa ddata'r Goron 2016. Rhif Trwydded yr Arolwg Ordnans 100019741.
© Crown Copyright and database right 2016. Ordnance Survey licence number 100019741.
Contains OS data © Crown Copyright and database right 2017
TA38
TA34a
TA10
TA02
Taf
Cynin
Cywyn
Dewi Fawr
Cynnen
Felin Cwrt
Gronw
Fenni
Nant Coedcae
Marlais
Llanddowror Brook

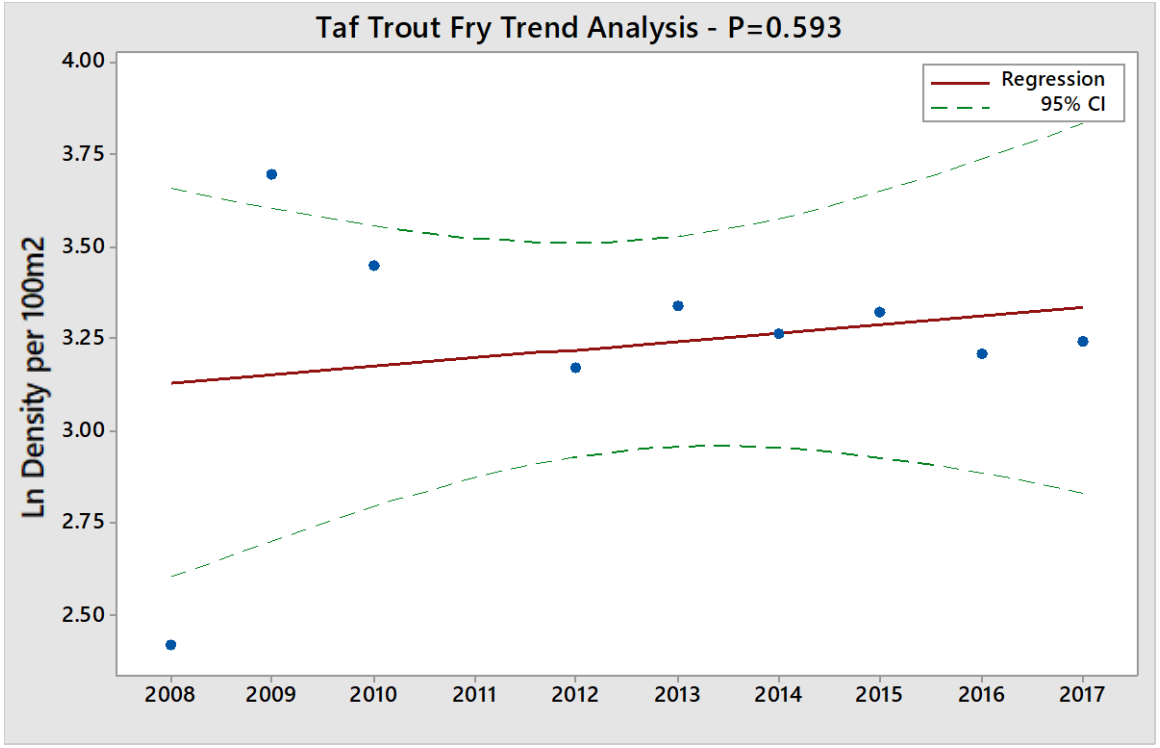
Juvenile Trend Analysis

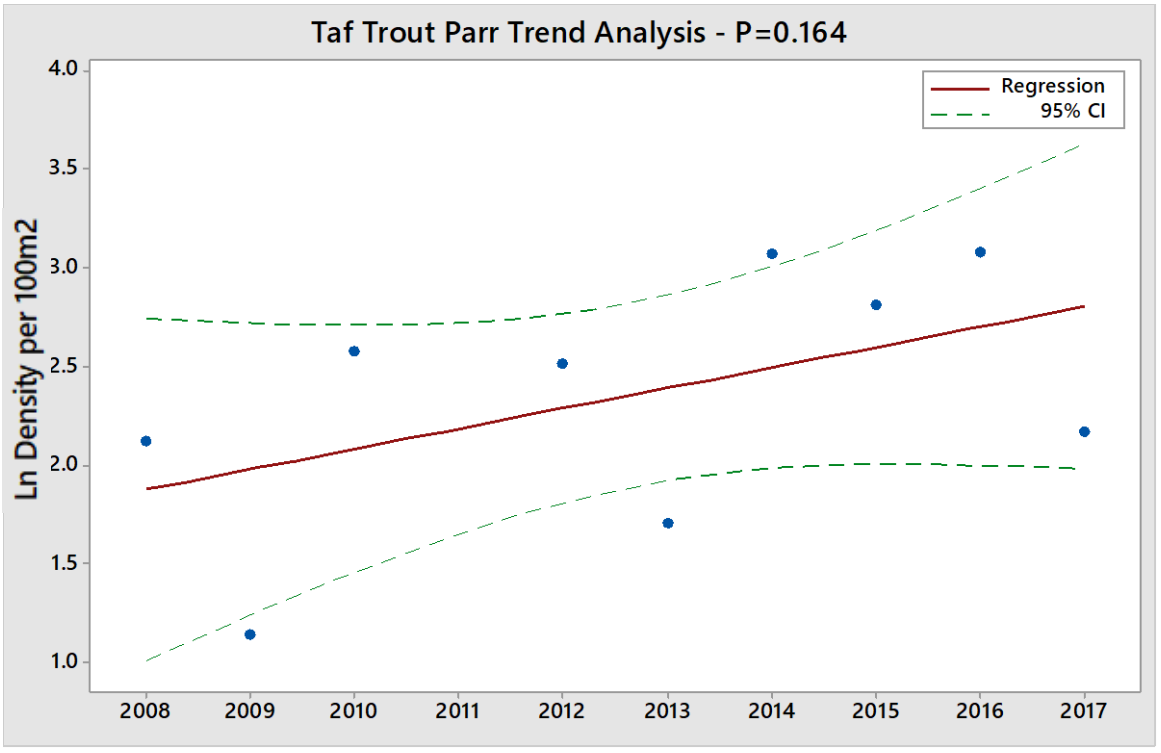
Juvenile salmon data shows two downward trends for fry and parr. Fry data shows a downward trend which is statistically significant (P=0.011) but the downward trend seen in the parr data is not statistically significant (P=0.234)





The trend in juvenile trout numbers are very similar for both fry and parr. Both show an upward trend, but neither are statistically significant.





Know Your River – River Taf Salmon and Sea Trout Catchment Summary

Fisheries Mitigation Plan

Site	Planned action	Benefits	Lead	Partner(s)	Timescales for delivery
Taf	**Habitat improvements:** We will investigate where there is opportunity to improve habitat for fish through improving access over barriers, restoration of riparian and instream habitat, including control of invasive species	More natural river system, reduced siltation, increased flow diversity, improved spawning gravels and juvenile habitat. Improved fish numbers.	NRW		Ongoing
	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	NRW	NRW Wildlife trusts Local Authorities Landowners DCWW	Ongoing
	Enforcement: Action to reduce illegal activity on information provided and investigations.	Reduce illegal activity, more fish remain in the system.	NRW	Stakeholders SW Wales Police	Ongoing