

Know Your River – Tawe Salmon and Sea Trout Catchment Summary

Introduction

This report describes the status of the salmon and sea trout populations in the Tawe catchments. 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.

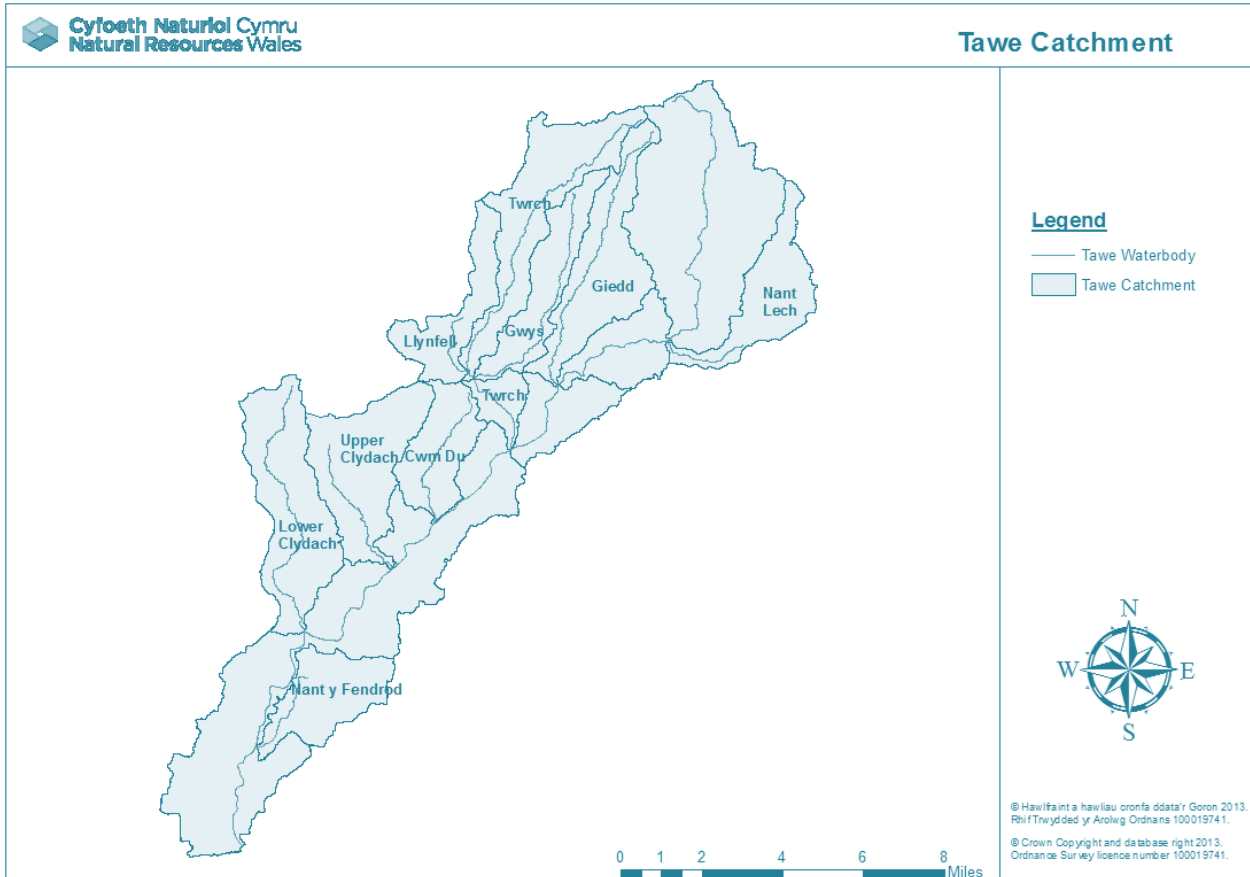
Action tables set out habitat improvements to restore freshwater productivity of salmon and sea trout populations. These tables also include some work which will be carried out by our partner organisations, not just Natural Resources Wales (NRW).

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 of our principal salmon rivers for the Salmon Action Plans and condition assessments under the Habitats Directive in SAC rivers; all fish species in all of our rivers are reported for the Water Framework Directive (WFD). This report will fulfil these commitments and provide 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.

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River Tawe



The Tawe rises in the Black Mountains above Llyn y Fan, at 590m above sea level and drains a catchment of 272km². The river flows from the source in a south-westerly direction for 48km to discharge into Swansea Bay at Swansea. The main tributaries join the Tawe on the western bank, the Giedd at Ystradgynlais, the Twrch at Ystalyfera, the Upper Clydach at Pontadawe and the Lower Clydach at Clydach.

Urban development in the catchment is concentrated toward the south, with the City of Swansea occupying a position at the mouth of the Tawe and extending inland approximately 9 km. Development extends some 27 km upstream as far as Ystradgynlais. Historically the lower Tawe valley has accommodated much industrial activity, particularly related to metal refining. Coal mining, which also used to be extensive in the middle catchment, has declined significantly in recent years, though waste tips and mine water discharges are still apparent. Private opencast mines and mineral extraction still operate in parts of the catchment. The remainder of the catchment is essentially agricultural. The upland areas provide rough pasture for sheep grazing and the lower areas are used for mixed beef, dairy and sheep farming.

The Tawe is a river that is recovering from an industrial heritage of heavy pollution. The improving nature of the fishery reflects this, and the river now supports a locally important salmon and sea trout (sewin) rod fishery.

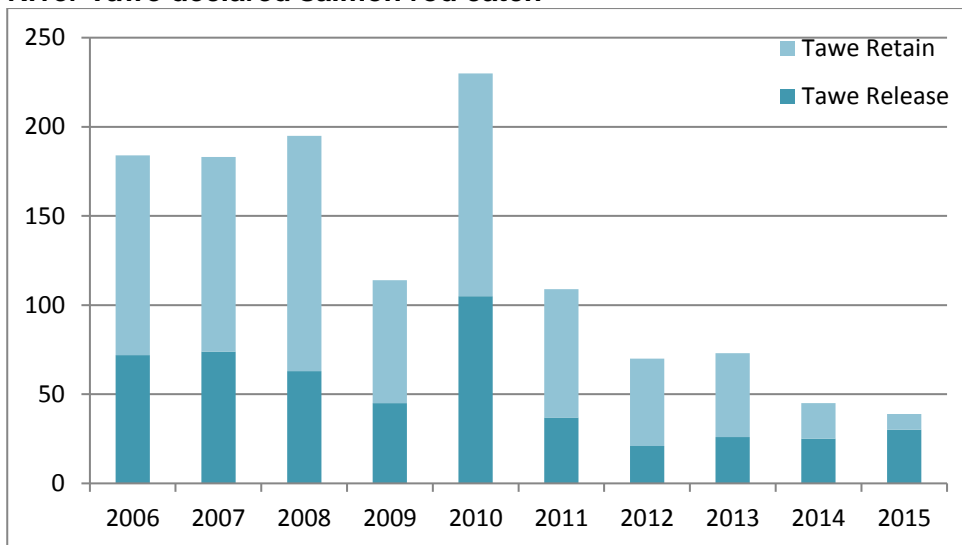


Rod catches

The following graphs show the total declared rod catches, including numbers released or killed for salmon and salmon and sea trout on the Tawe.

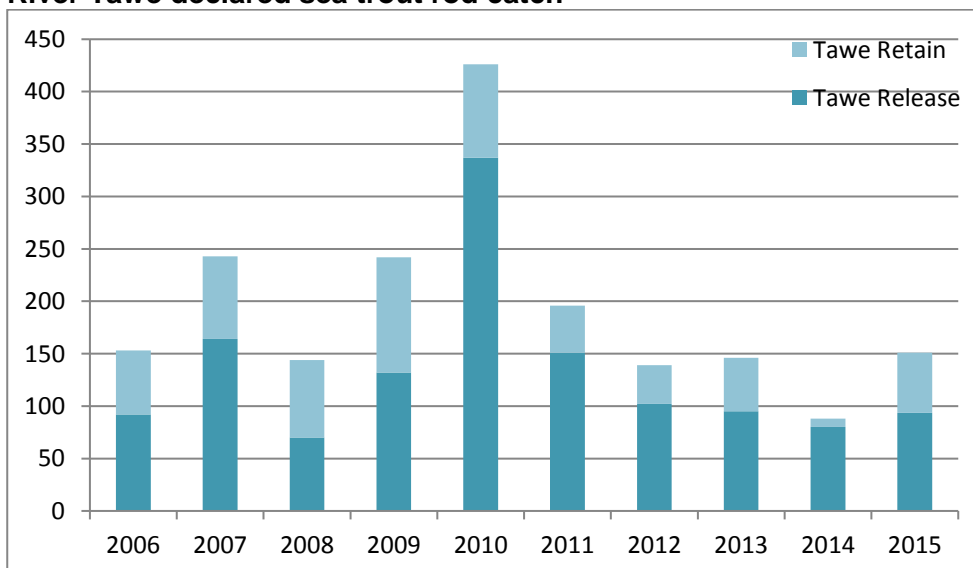
Declared salmon rod catches are variable over the period, with the lowest catch reported in 2015. The average proportion of the salmon catch returned alive is 43%. The release rate in 2015 was 77% which is above the Wales average of 60.5%.

River Tawe declared salmon rod catch



Declared rod catches for sea trout are also variable over the period, however reported catches exceed those of salmon in all years. The lowest recorded catch is 2014. The average proportion of sea trout catch returned alive for the period shown is 68%. The release rate in 2015 was 62% which is below the average figure for Wales of 72%.

River Tawe declared sea trout rod catch

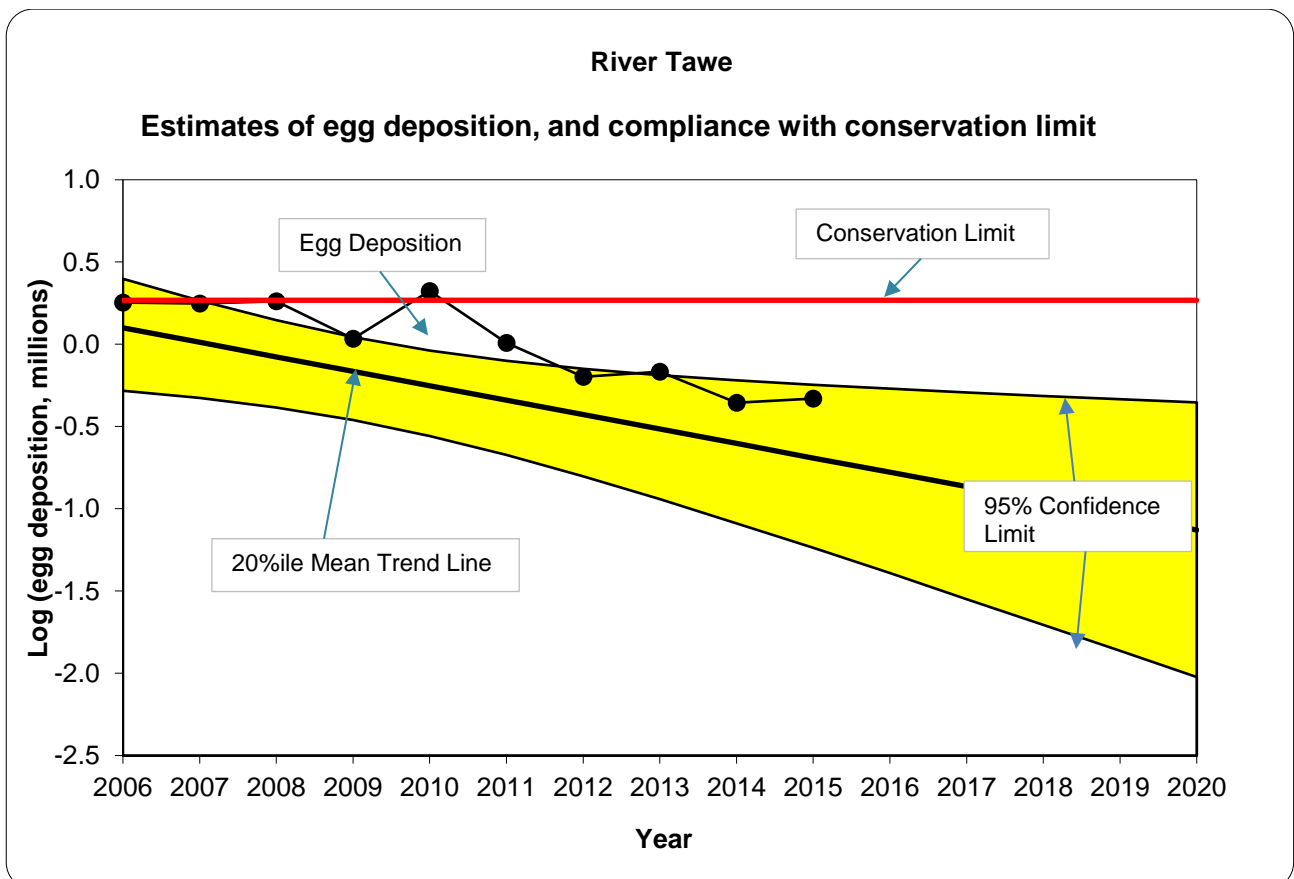


Stock Status

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.

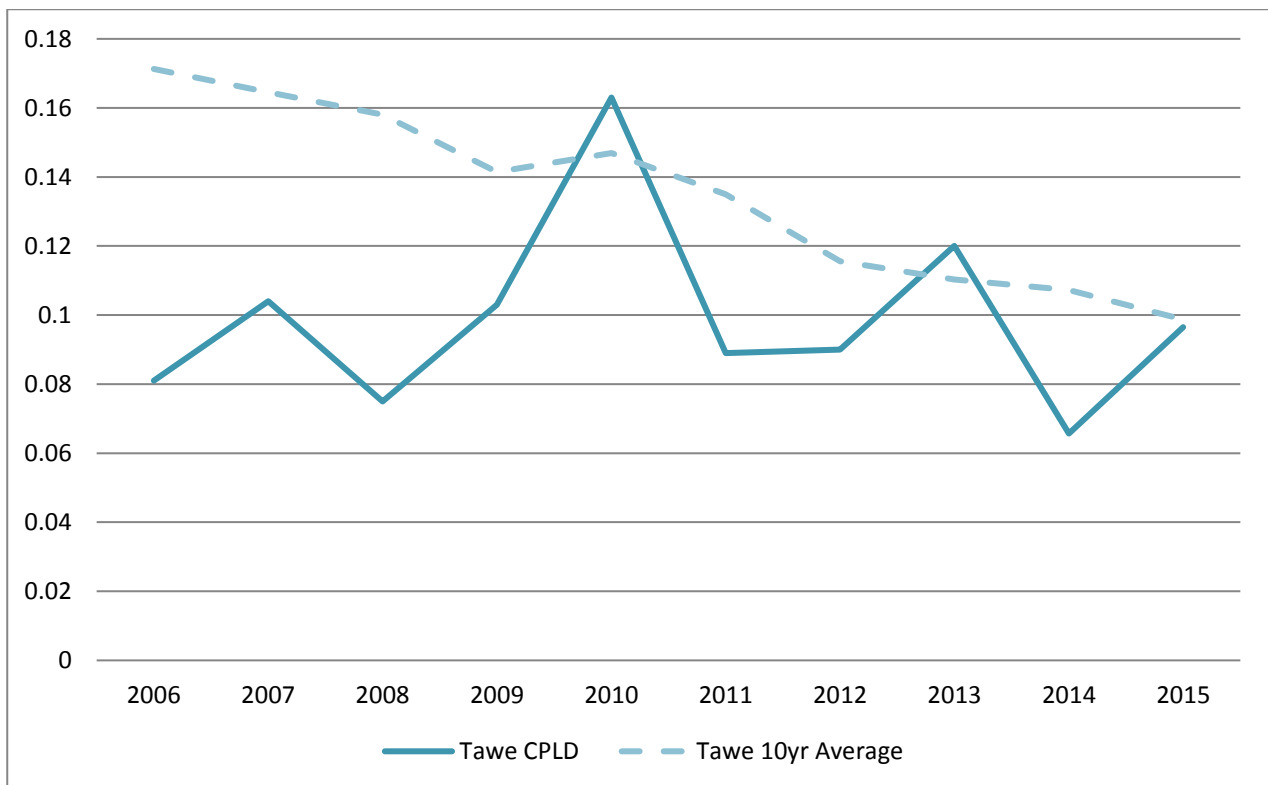
The conservation limit for the Tawe is set at 1.8 million eggs, represented by the red line on the graph. The current number of eggs being deposited is below the Conservation Limit which puts the Tawe salmon stock '**At Risk**'. In 5 years time, the predicted status of the Tawe salmon stock will be '**At Risk**'. Based on current and future trends, the Tawe salmon stock will continue to **decline**.



Conservation of Sea Trout

Our approach to assessing sea trout stock performance is still under development. It is based on catch trends in the last three years compared with those in the previous ten. The assessment gives an early warning about potential problems and assists with considering whether any further management actions are required. It provides an indication of changes in fishery performance, though this is not always a reflection of stock performance.

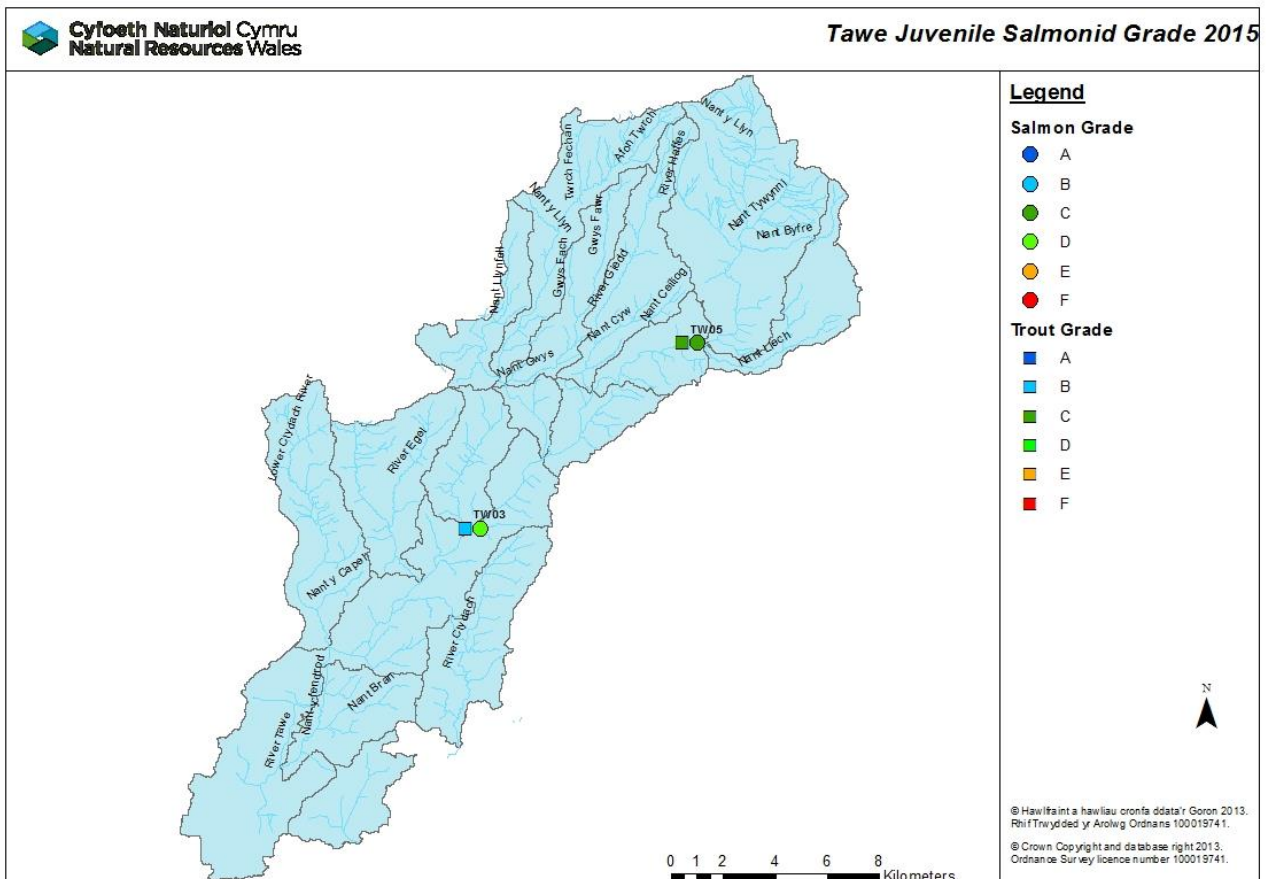
Catch Per Licence Day (CPLD) is the average number of fish caught for each day fished on the river and as such accounts for the variability in the amount of fishing effort between years. These statistics can be a better guide than simply looking at the total catch. The CPLD figures for the Tawe for the period 2006 to 2015 are shown below. Catch per Licence Day on the Tawe is declining, but has improved in recent years. The Tawe sea trout fishery is currently classified as **'Probably at Risk'**.



Juvenile Monitoring

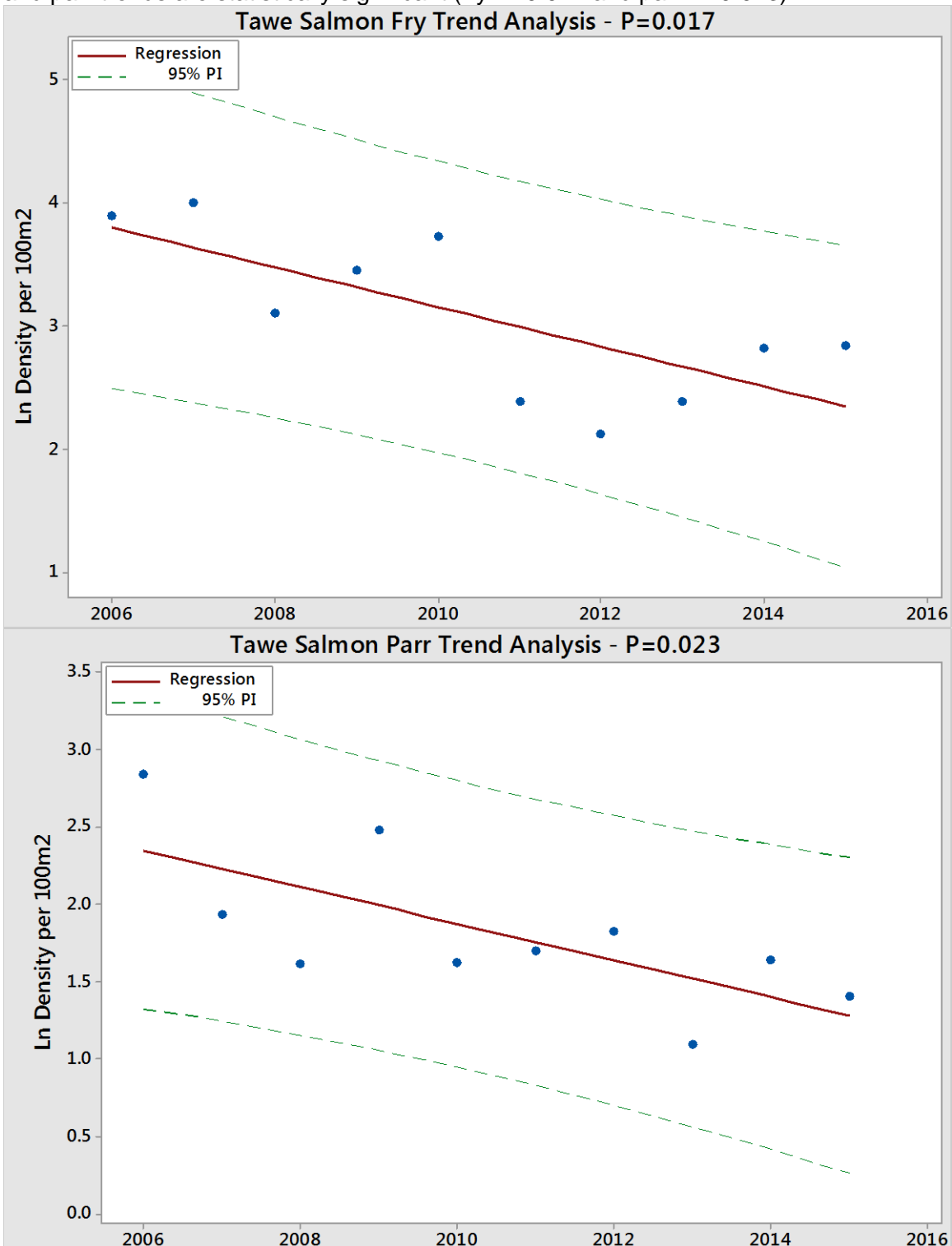
The following maps show results of the 2015 juvenile salmonid populations gathered from electro fishing surveys. They display the National Fish Classification (NFC) grades which have been developed to evaluate and compare the results of fish population surveys in a consistent manner. The NFC ranks survey 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

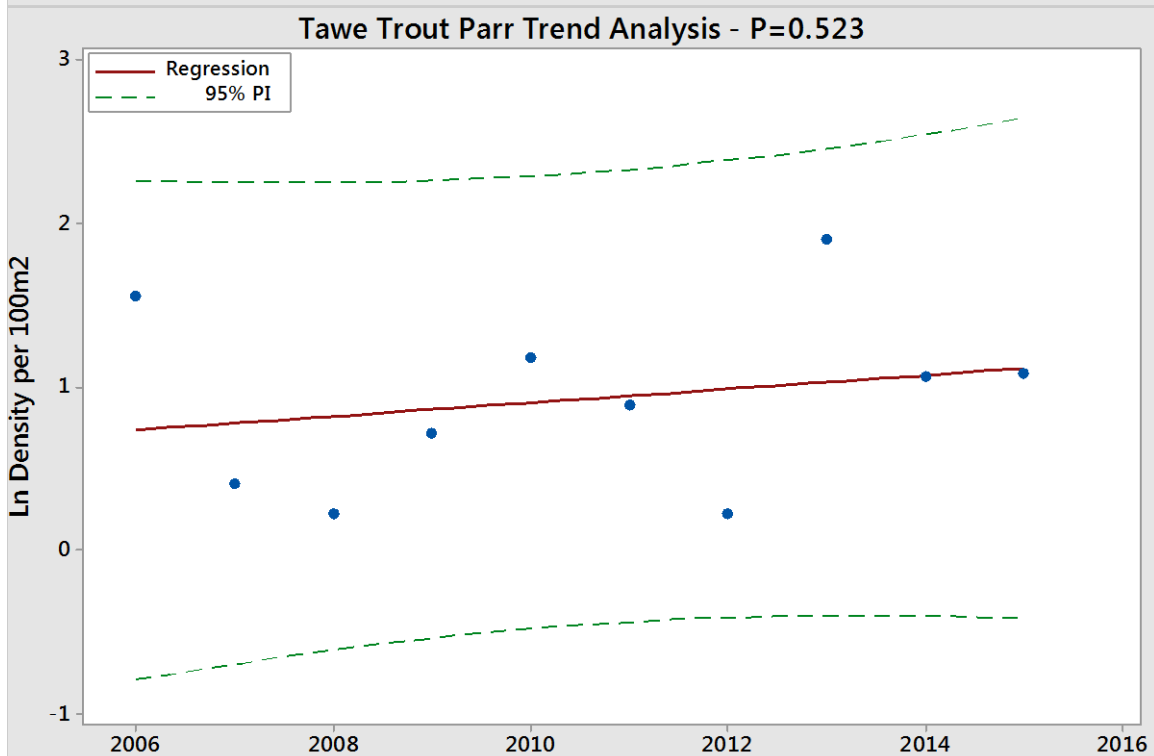
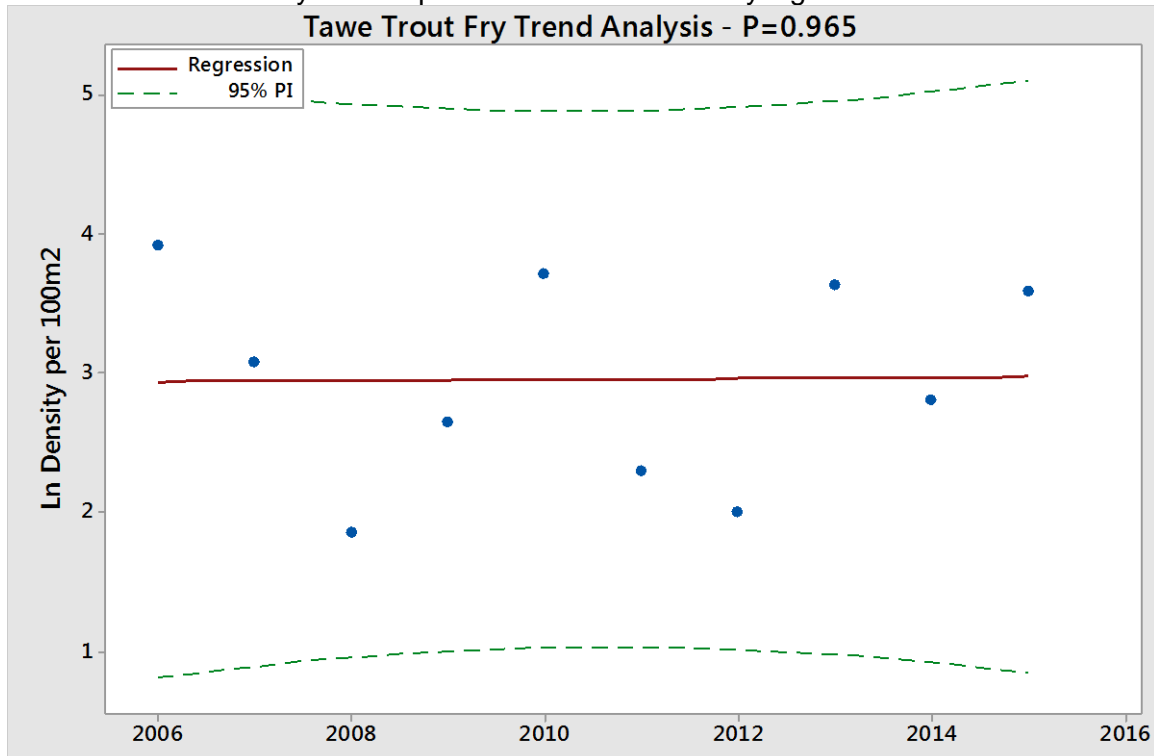


Juvenile Trend Analysis

On the Tawe catchment there are two sites that are surveyed annually to assess juvenile fish numbers. Numbers of juvenile salmon appear to be on a downward for both fry and parr. Both fry and parr trends are statistically significant (fry $P=0.017$ and parr $P=0.023$).



Unlike the juvenile salmon data the trout data shows a slight upward trend in both fry and parr. However neither the fry nor the parr trends are statistically significant



Fisheries Mitigation Plan

Site	Mitigation action	Benefits	Lead	Partner(s)	Timescales for delivery
Tawe	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.	<ul style="list-style-type: none"> 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