



Know Your River – Gwendraeths Salmon and Sea Trout Catchment Summary

Introduction

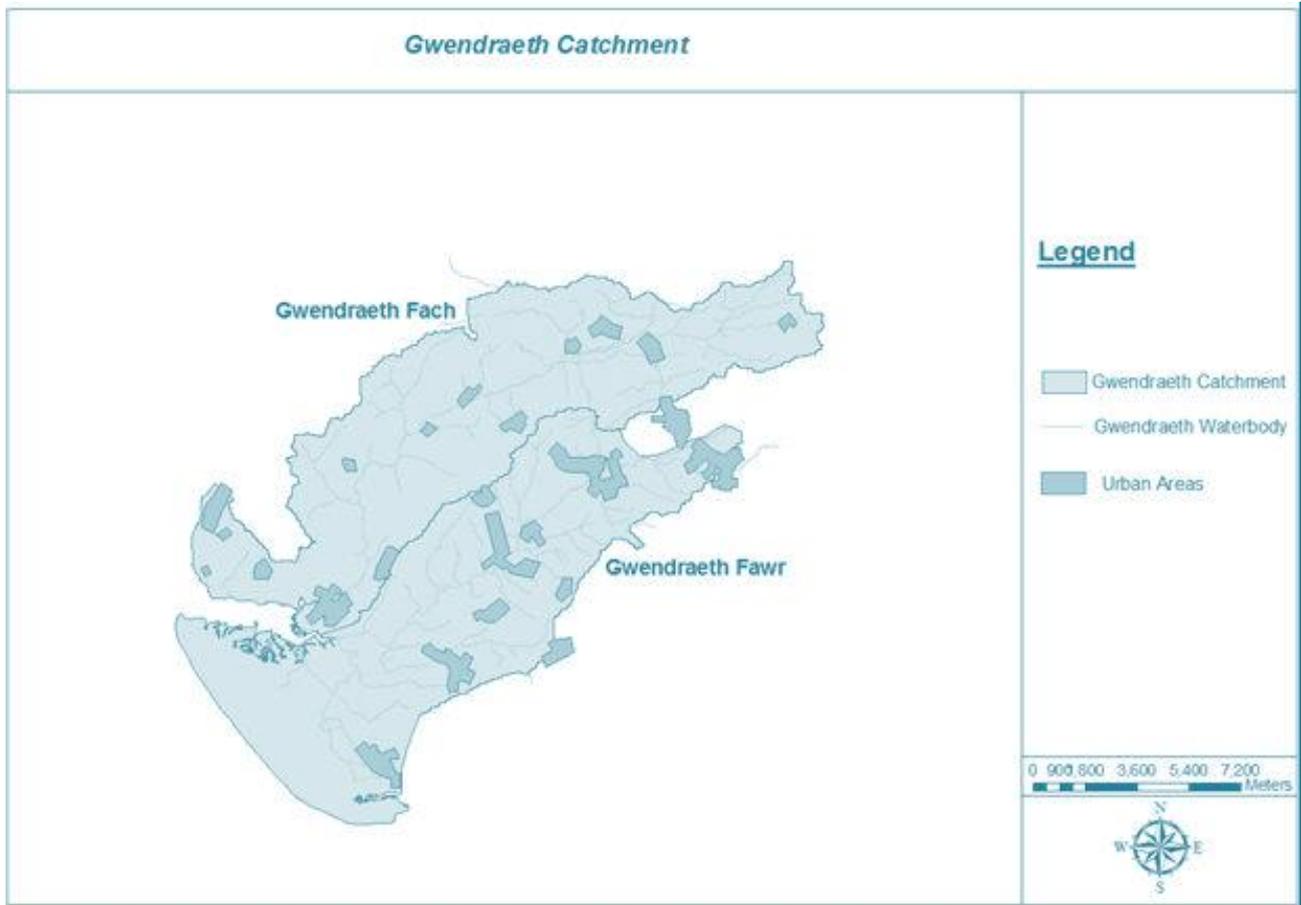
This report describes the status of the salmon and sea trout populations in the Gwendraeth catchments. Bringing together data from rod catches, stock assessments and juvenile monitoring, it will describe the factors limiting the populations and set out the challenges faced in the catchment.

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 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.

Gwendaeths



The River

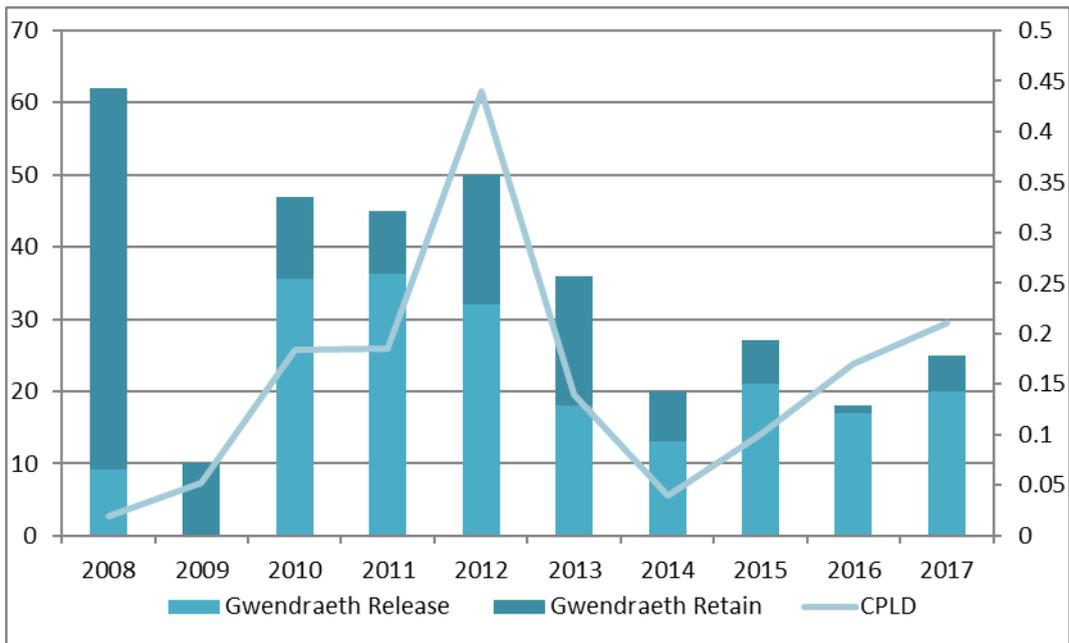
The Gwendraeth Fach and Fawr support a small sea trout (sewin) fishery. Sea trout are the principal salmonid. The most recent reported rod-catch figures (2017) were 25 sea trout and 3 salmon.

Rod Catches

The following graph shows the total declared rod catches, including numbers released or killed for sea trout on the Gwendraeth Fawr. The catch per licence day (CPLD) has also been included to show the ratio of fish caught per licences sold. In 2017 just 3 salmon were caught and 2 released, due to the small numbers involved no graph for salmon has been presented.

Declared sea trout rod catches are variable over the 10-year period. The average proportion of the trout catch returned alive for the period shown is 58.6%. The release rate in 2017 was 80% which, is above the Wales average of 77%. The CPLD trend for the last 10-years has been variable with, CPLD not following the trend for total catch in the years 2008, 2016 and 2017. During 2008 the CPLD has decreased while the total catch has increased which, will likely be as a result of a rise in the number of days spent fishing and fewer fish being caught per day. Whereas, during 2016 and 2017 the CPLD has increased and the total catch has decreased which, could be due to few days being fished per licence.

Gwendraeths declared sea trout rod catch



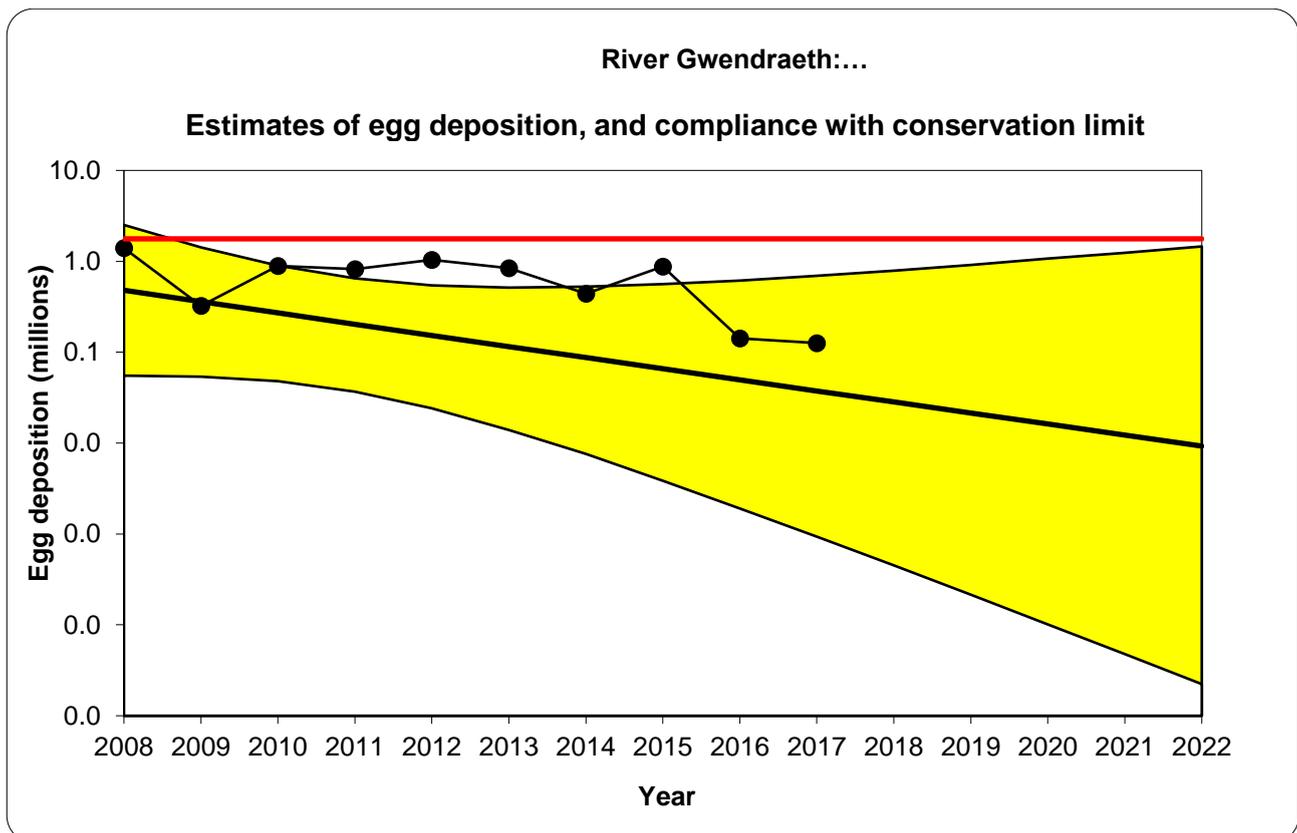
Conservation of Sea Trout

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 salmon sea trout in the catchment?

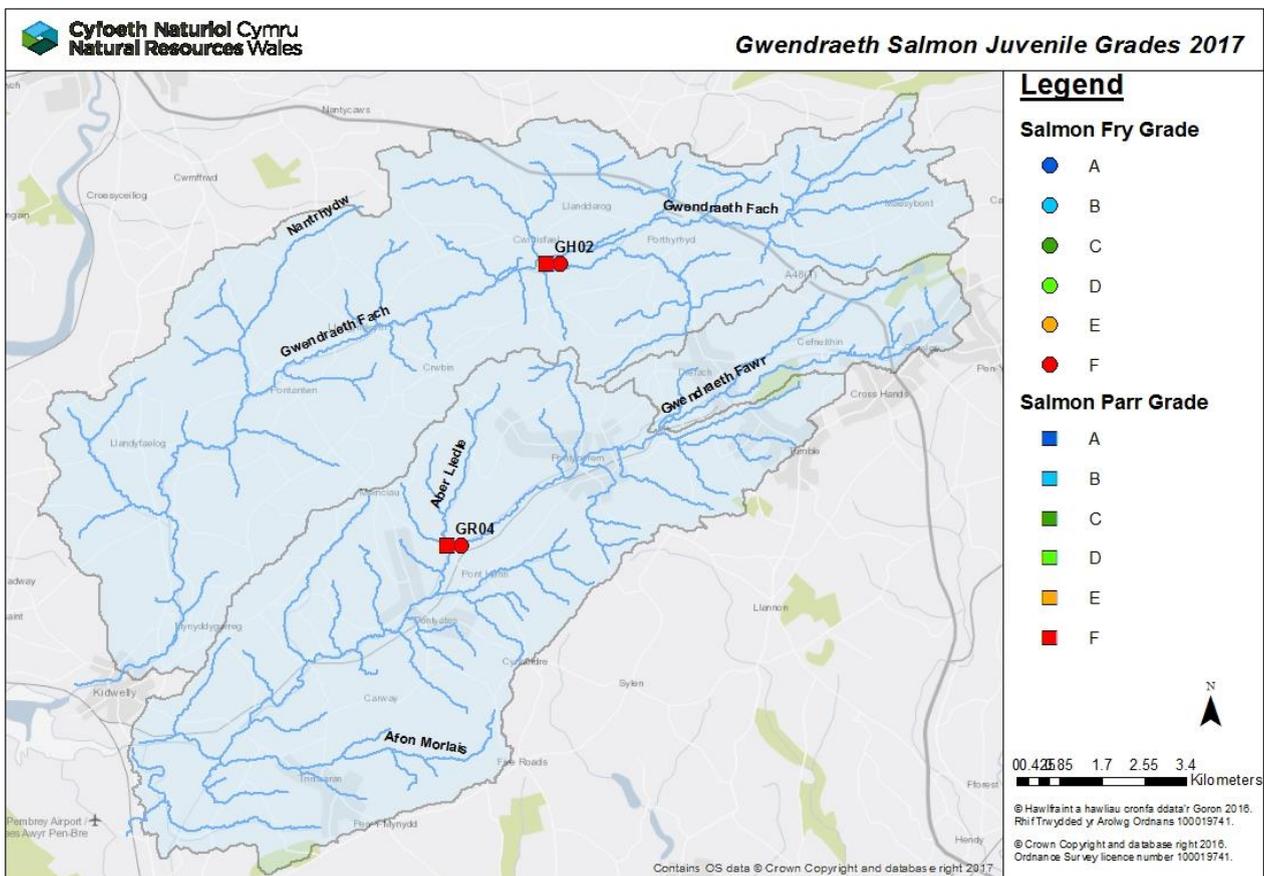
The red line represents the number of eggs required to be deposited to sustain a healthy sea trout stock. The black trend line and its confidence limits (the yellow band) is fitted to the most recent 10-year series of egg deposition estimates (2008-2017).

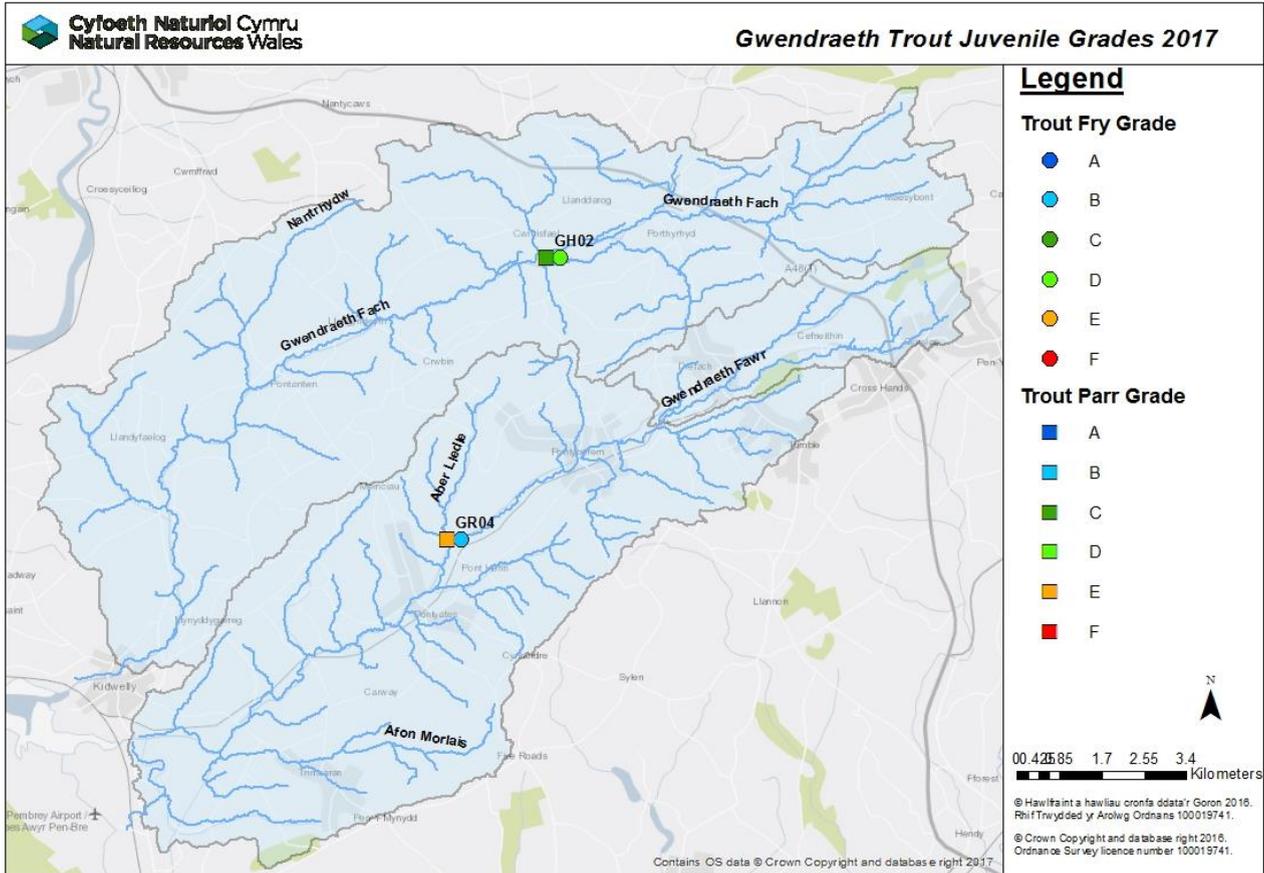
- Current number of eggs being deposited puts stocks **at risk**
- In 5 years' time the predicted status of salmon stocks will be **at risk**
- Based on current data, and the projection of the graph, sea trout stocks will continue to **decline** on the Gwendraeths (**uncertain**).

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.

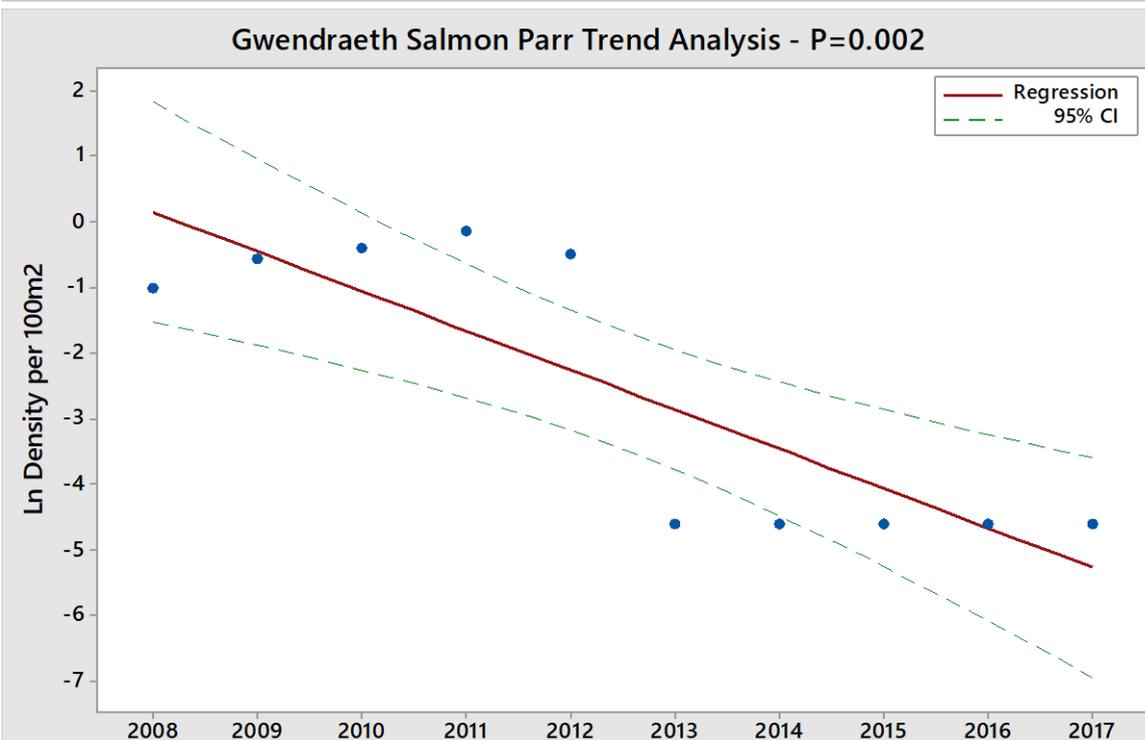
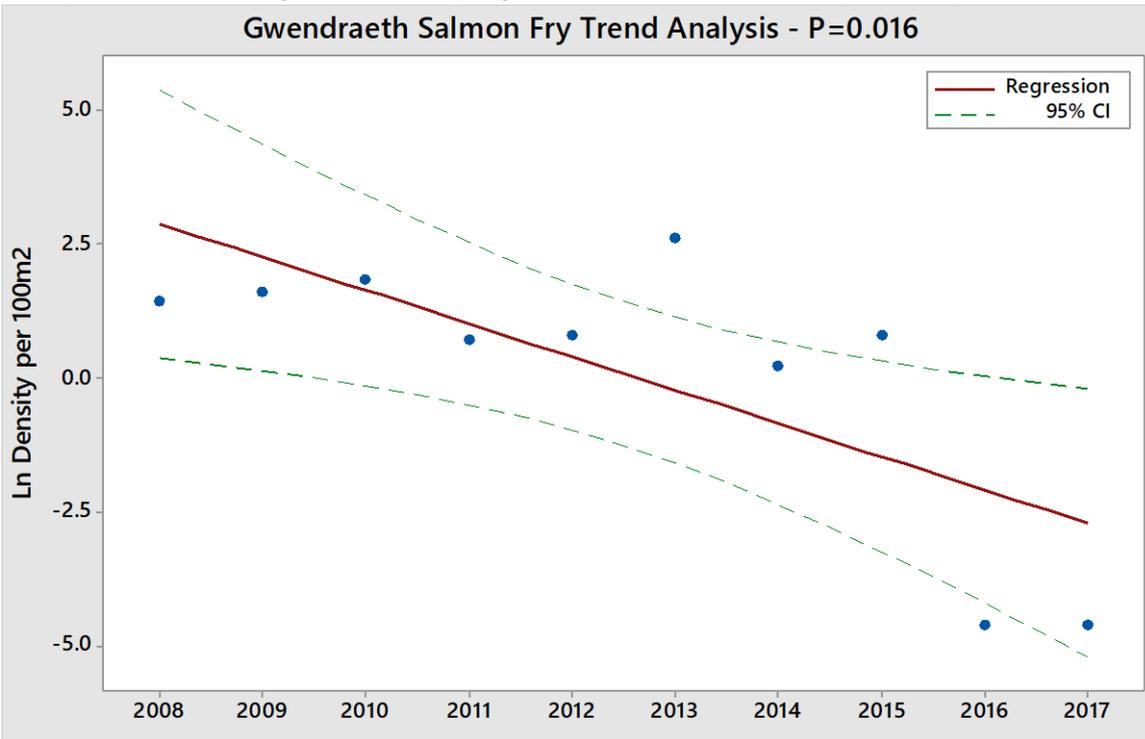
GRADE	Descriptor	Interpretation
A	Excellent	In the top 20% for a fishery of this type
B	Good	In the top 40% for a fishery of this type
C	Fair	In the middle 20% for a fishery of this type
D	Fair	In the bottom 40% for a fishery of this type
E	Poor	In the bottom 20% for a fishery of this type
F	Fishless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



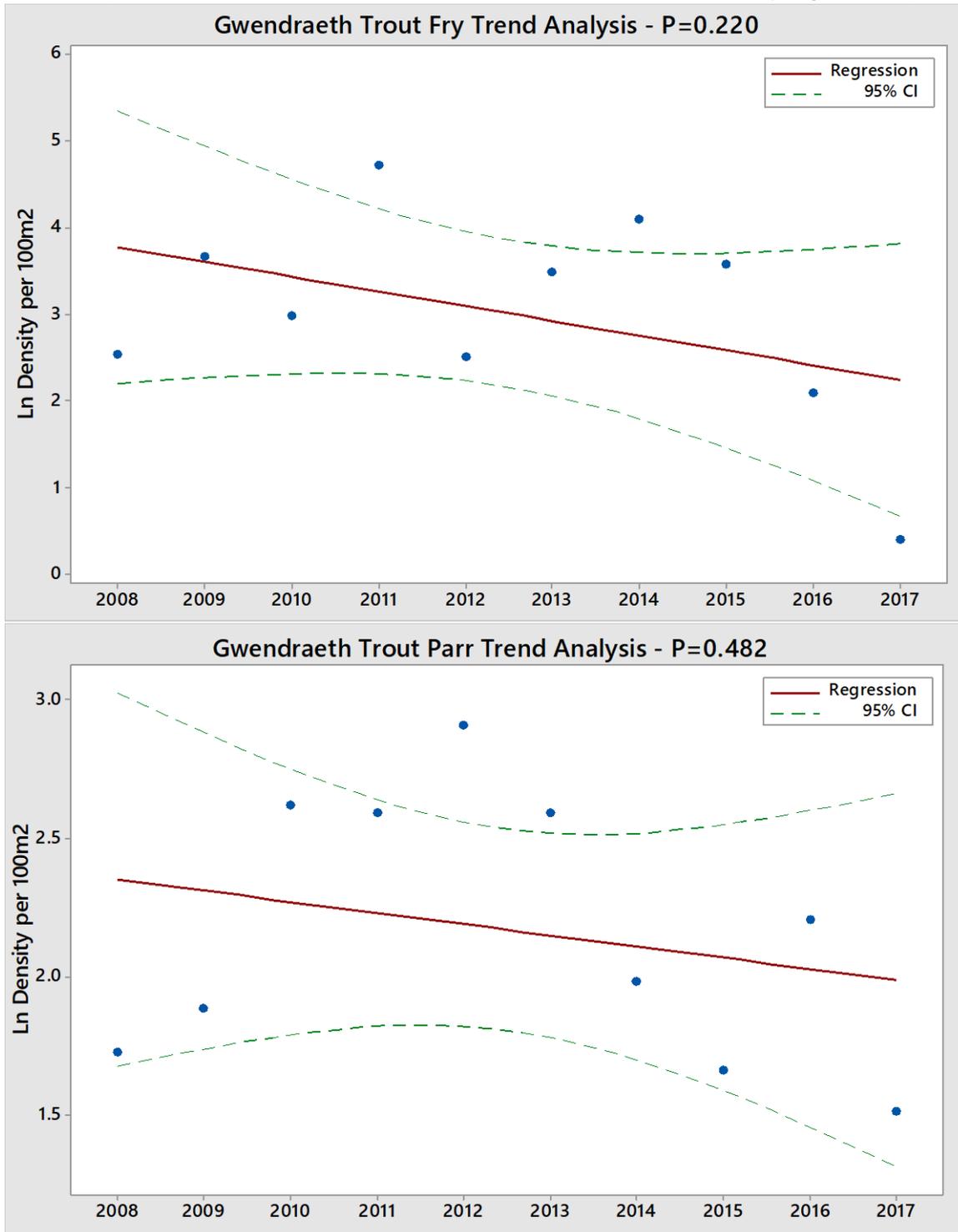


Juvenile Trend Analysis

Juvenile salmon data shows a downward trend for fry which is statistically significant ($P=0.016$), with parr also showing a statistically significant downward trend ($P=0.002$).



Numbers of juvenile trout show high variation in densities. Fry data shows a downward trend with a slight increase in 2014 but then a decrease through to 2017 but this is not statistically significant ($P=0.220$). Parr show a downward trend, but this is also not statistically significant ($P=0.482$).



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Fisheries Mitigation Plan

Site	Planned action	Benefits	Lead	Partner(s)	Timescales for delivery
Gwendraeths	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