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Wales**

# Know Your River – River Afan Salmon and Sea Trout Catchment Summary

## Introduction

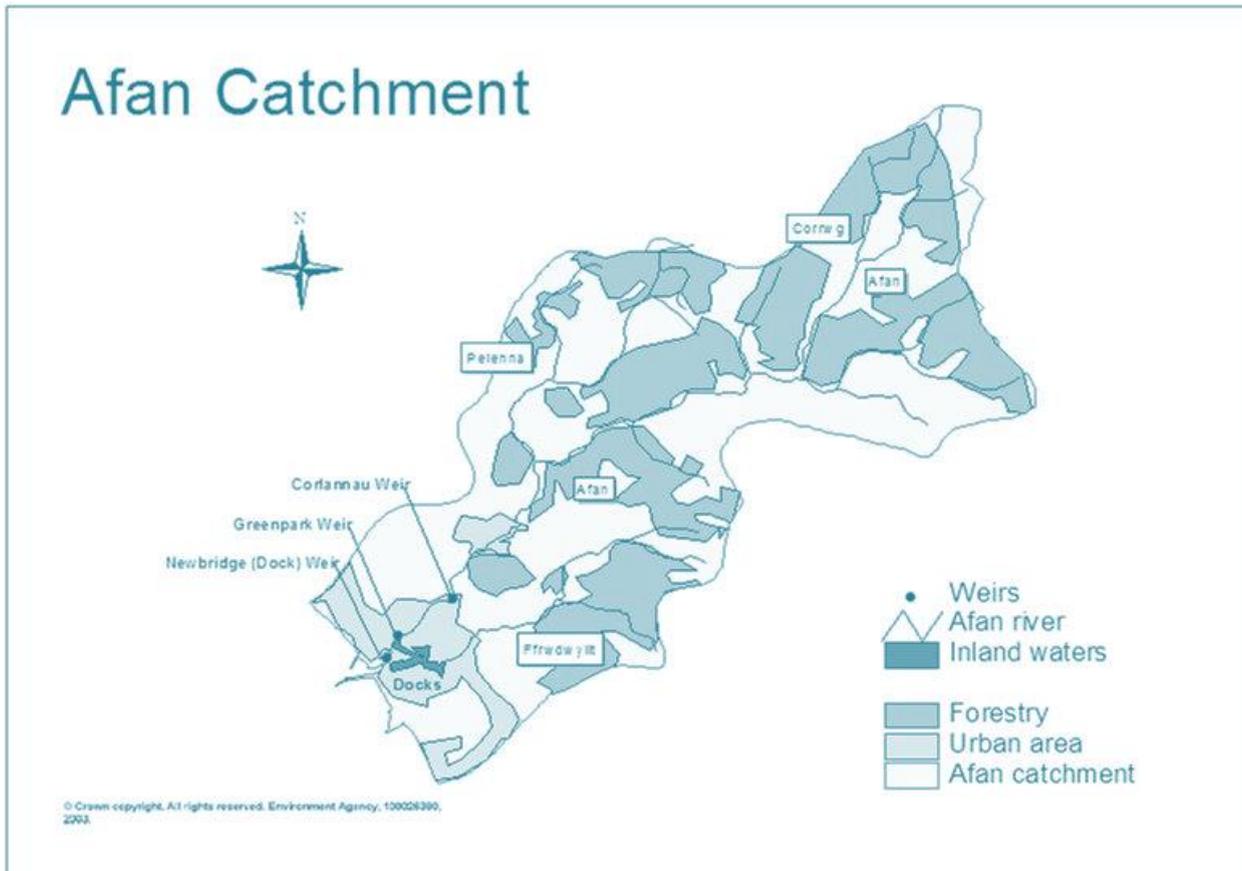
This report describes the status of the salmon and sea trout populations in the Afan catchments. Bringing together data from rod catches, stock assessments and juvenile monitoring, it will describe the factors limiting the populations and set out the challenges faced in the catchment.

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.

## River Afan



Rising at 500m above OD, the River Afan has a catchment area of 115km<sup>2</sup>, and flows 26 km into Swansea Bay at Port Talbot. The majority of the Afan catchment is used for coniferous forestry, with some rearing of sheep and cattle on the high ground in the headwaters. The mid and upper reaches of the catchment are affected by a legacy of coal mining, reflected by abandoned mine sites and associated discharges of acidified, iron rich water. The Afan valley also has a history of metal smelting.

The quality of salmon and sea trout fisheries in the Afan has dramatically improved in recent years, following virtual elimination of the fishery in the early 19<sup>th</sup> century. Improvements have been brought about by a number of factors, including the alleviation of several man-made obstructions to fish migration, restocking, and improvements to water quality throughout much of the catchment.

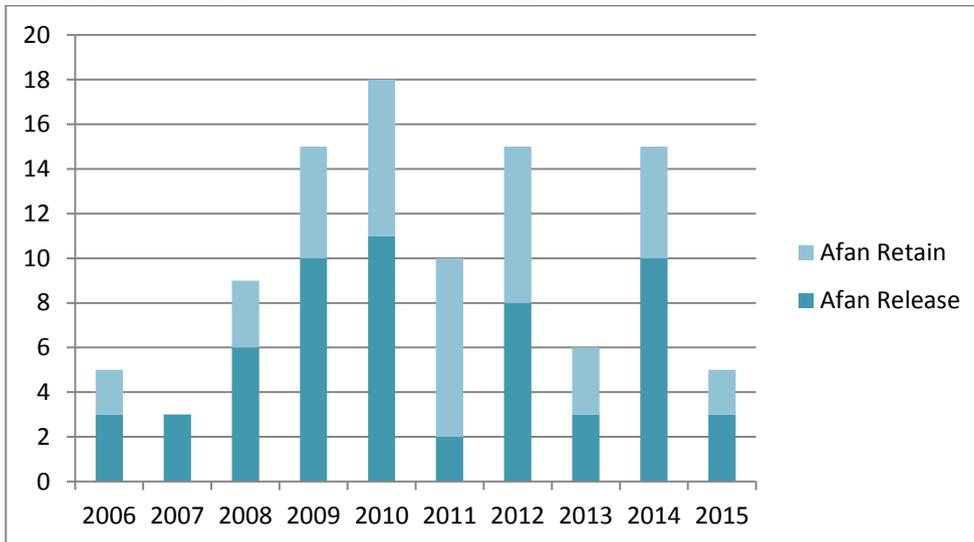
The Afan now supports a locally important salmon and sea trout (sewin) fishery. Sea trout are the principal salmonid, with a limited number of salmon also present.

### Rod Catches

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

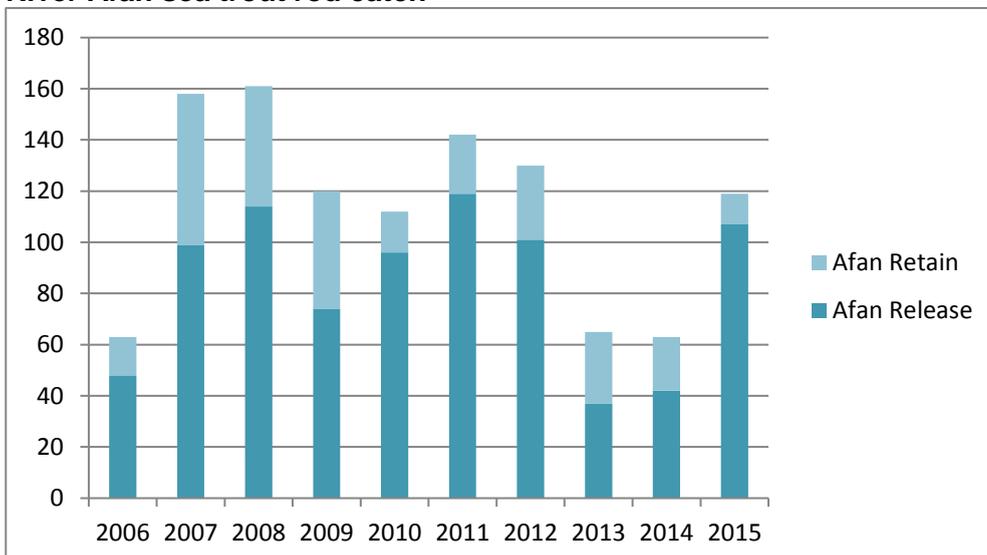
Declared salmon rod catches are variable over the period, with the highest catches recorded in 2009, 2010, 2012 and 2014. The average proportion of the salmon catch returned alive for the period shown is 55%. The release rate in 2015 was 60% which is the same as the Wales average of 60%.

#### River Afan 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 catches are in 2006 & 2014. The average proportion of sea trout catch returned alive for the period shown is 73%. The release rate in 2015 was 90% which is above the average figure for Wales of 72%.

#### River Afan sea trout rod catch



## Stock Status

### Conservation of Salmon

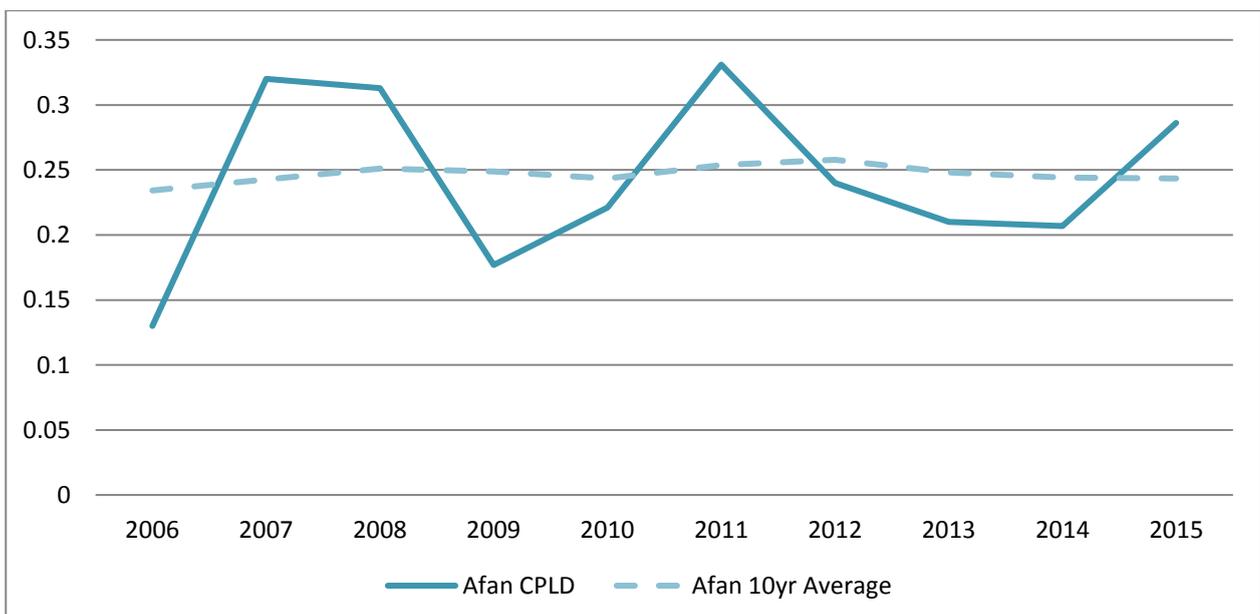
Salmon stock status is assessed through the use of 'Conservation Limits' which provide an objective reference point against which to assess the status of salmon stocks in individual rivers. The numbers of salmon a river can produce (and consequently the catches that the stocks support) are a function 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.

In the case of the Afan, a conservation limit has been set simply to give an idea of potential productivity. The low reported rod catches of salmon for the Afan mean that it is not possible to obtain an accurate estimation of egg deposition for the river, due to the potential errors involved. Assessment of compliance against the conservation limit has therefore not been attempted.

### 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.

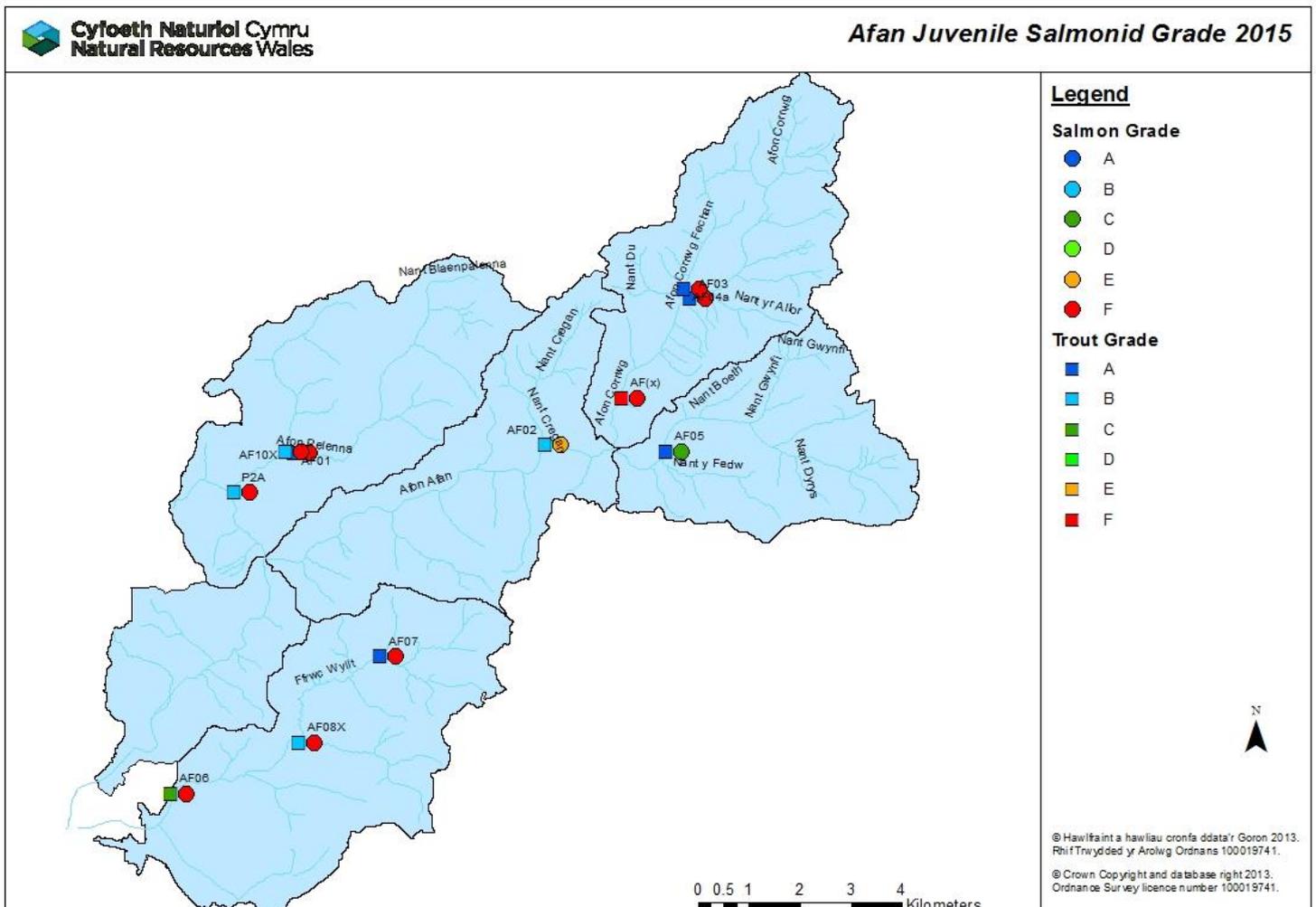
Catch Per License Day (CPLD) is the average number of fish caught for each day fished on the river and as such accounts for the variability in the amount of fishing effort between years. These statistics can be a better guide than simply looking at the total catch. The CPLD figures for the Afan for the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



## Juvenile Monitoring

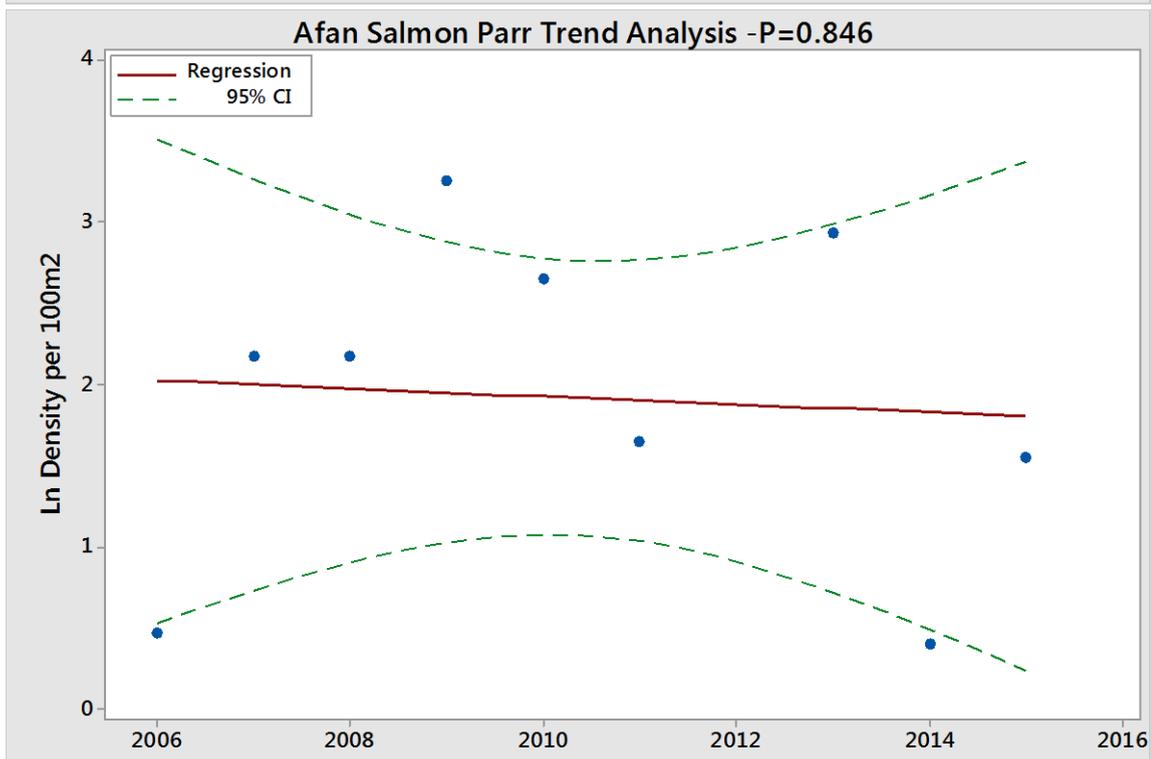
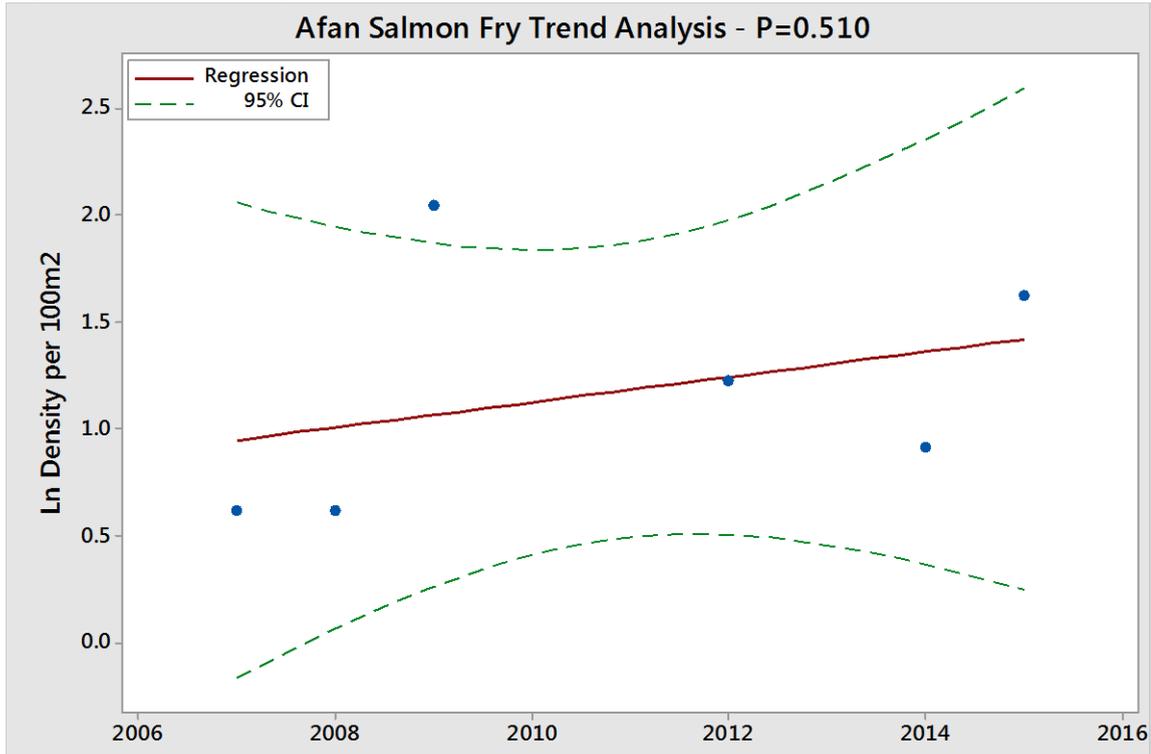
The following maps show results of the 2015 juvenile salmonid populations gathered from electrofishing surveys. They display the National Fish Classification (NFC) grades which have been developed to evaluate and compare the results of fish population surveys in a consistent manner. The NFC ranks survey 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
<b>A</b>	Excellent	In the top 20% for a fishery of this type
<b>B</b>	Good	In the top 40% for a fishery of this type
<b>C</b>	Fair	In the middle 20% for a fishery of this type
<b>D</b>	Fair	In the bottom 40% for a fishery of this type
<b>E</b>	Poor	In the bottom 20% for a fishery of this type
<b>F</b>	Fishless	No fish of this type present

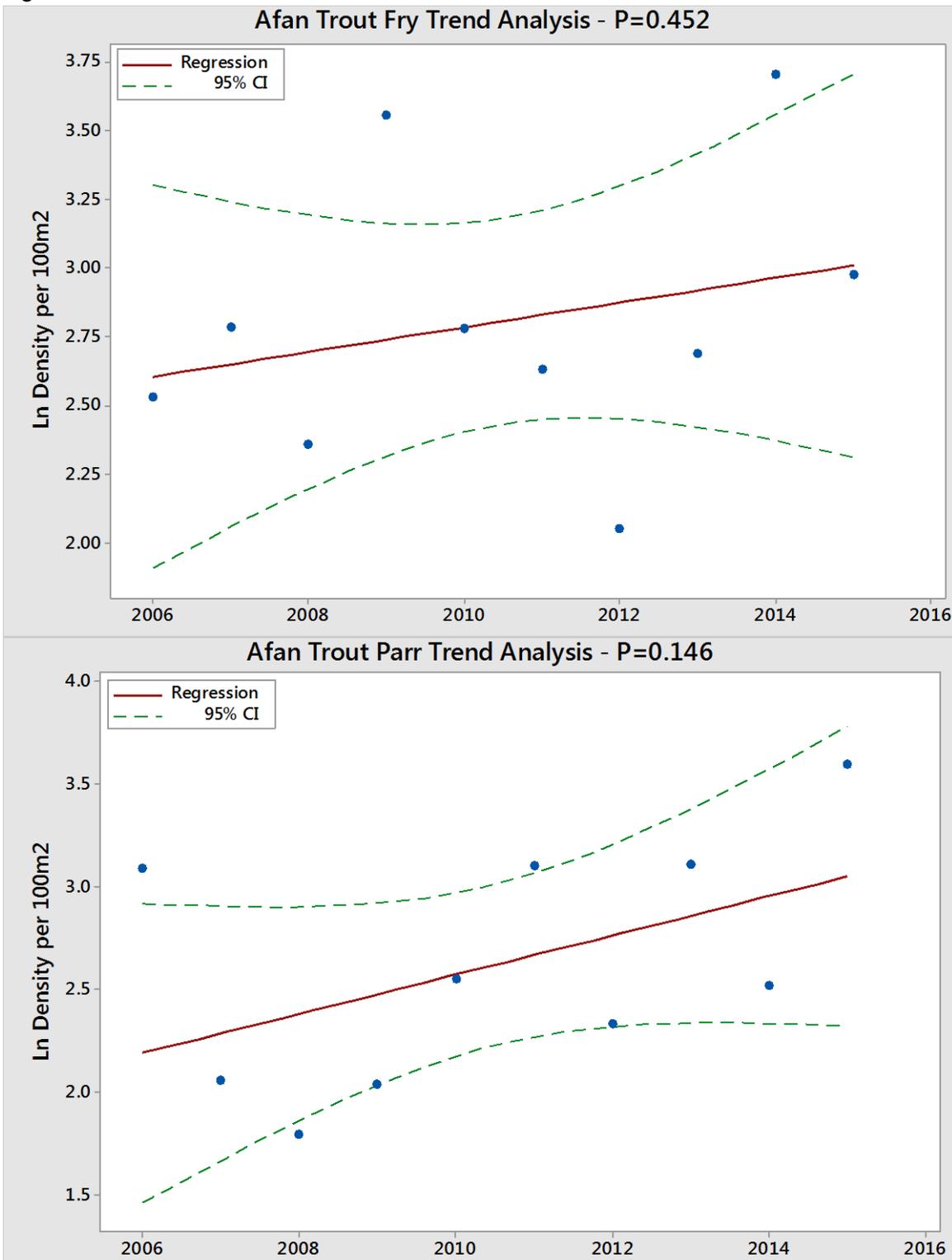


### Juvenile Trend Analysis

Juvenile salmon have shown high levels of variation in the last 5 years but there is no apparent significant trend for fry or parr.



Juvenile trout numbers recorded at the two annual monitoring sites in the River Afan have shown a slight upward trend over the last 10 years. However neither of these trends are statistically significant.



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## Fisheries Mitigation Plan

Site	Mitigation action	Benefits	Lead	Partner(s)	Timescales for delivery
Afan	<b>Habitat improvements:</b> 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
	<b>Water Framework Directive:</b> 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"> <li>Waterbodies protected and improved</li> <li>WFD waterbodies achieving Good Status/Potential</li> </ul>	NRW	NRW Wildlife trusts Local Authorities Landowners DCWW	Ongoing
	<b>Enforcement:</b> 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