



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

## Introduction

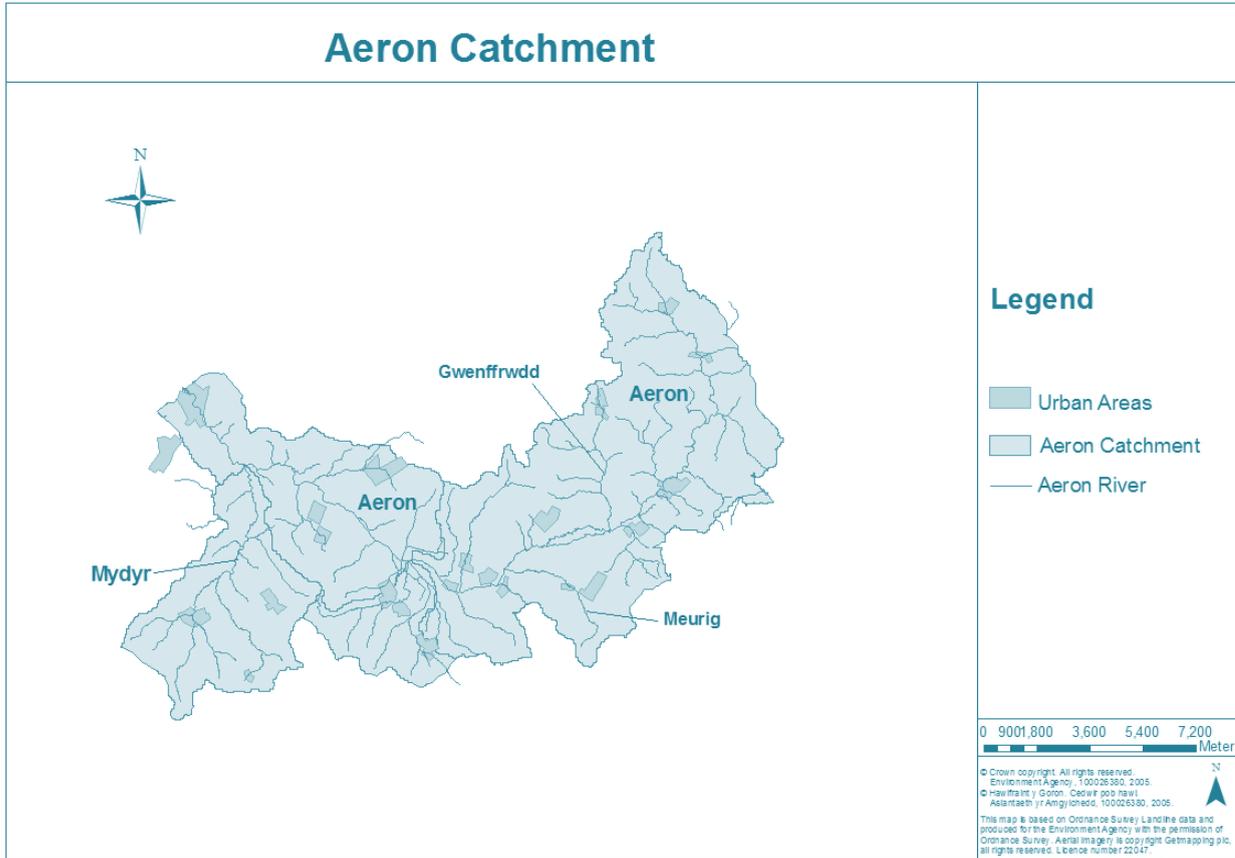
This report describes the status of the salmon and sea trout populations in the Aeron catchment. Bringing together data from rod catches, stock assessments and juvenile monitoring, it will describe the factors limiting the populations and set out the challenges faced in the catchment.

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, and 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 Aeron



### The River

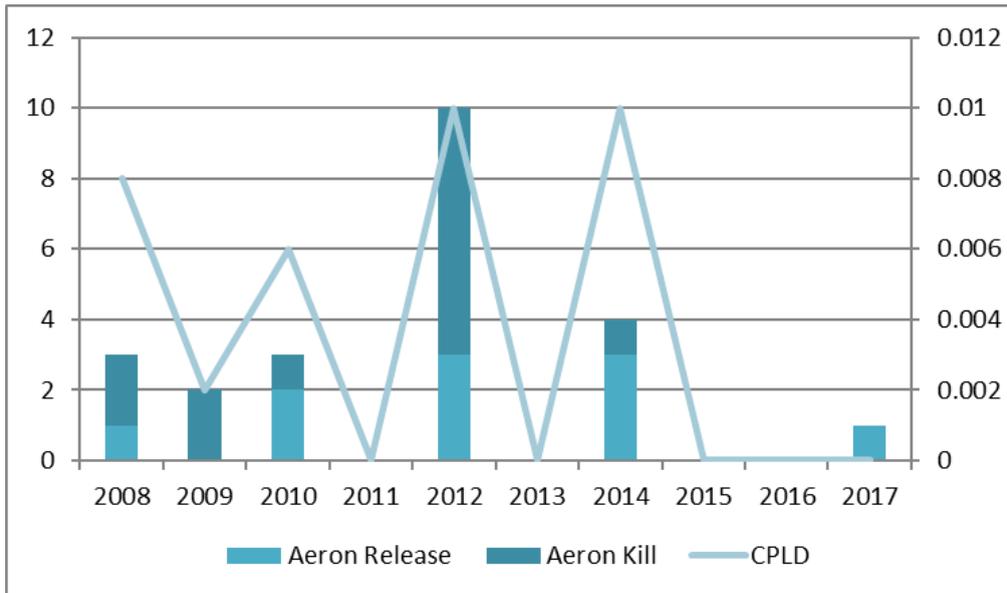
The River Aeron rises from its source in Llyn Eiddwen in the Mynydd Bach hills and then flows in a westerly direction to Cardigan Bay. The catchment area is predominantly rural in nature, with the main centres of population concentrated around Felinfach and Aberaeron. The Aeron supports a locally important 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 Aeron. The catch per licence day (CPLD) has also been included to show the ratio of fish caught per licences sold.

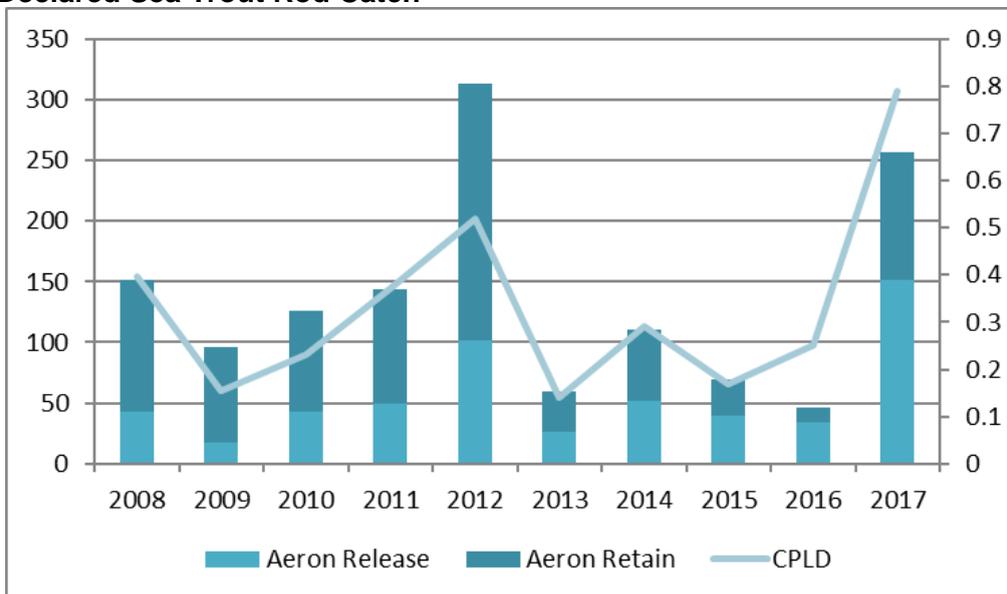
Declared salmon rod catches are variable over the 10-year period, with no salmon reported in 2011, 2013, 2015 & 2016. The highest catches were recorded in 2012 and 2014. The average proportion of salmon catch returned alive for the period shown is 37%. The CPLD for salmon has been variable over the last 10 years but this follows the trend of the total catch.

#### River Aeron Declared Salmon Rod Catch



Declared rod catch for sea trout are also variable over the 10-year period but reported sea trout catches exceed those of salmon in all years. The lowest recorded catches are in 2013 and 2016. The average proportion of sea trout catch returned alive for the period shown is 37.6%. The release rate in 2017 was 59% which is below the average figure for Wales of 77%. This needs to improve to conserve fish stocks. Like salmon, the CPLD trend is similar to that of the total catch except for 2016 where the CPLD has increased and the total catch has decreased, this could be due to few days being fished per licence.

#### River Aeron 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.

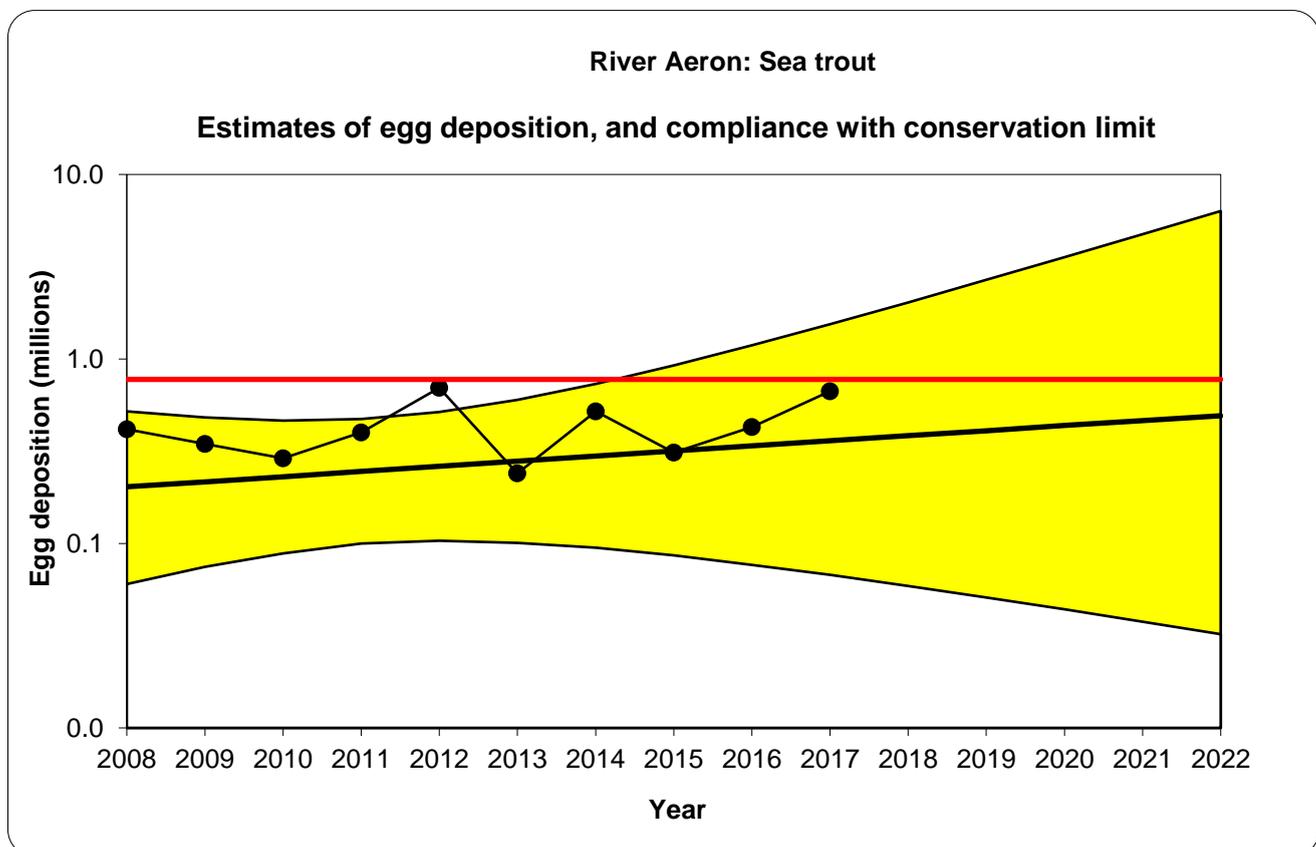
In the case of the Aeron, the low reported rod catches of salmon mean that it is not possible to obtain an accurate estimation of egg deposition for the river, due to the potential errors involved. Assessment of compliance against the conservation limit has therefore not been attempted.

### Conservation of Sea Trout

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>).



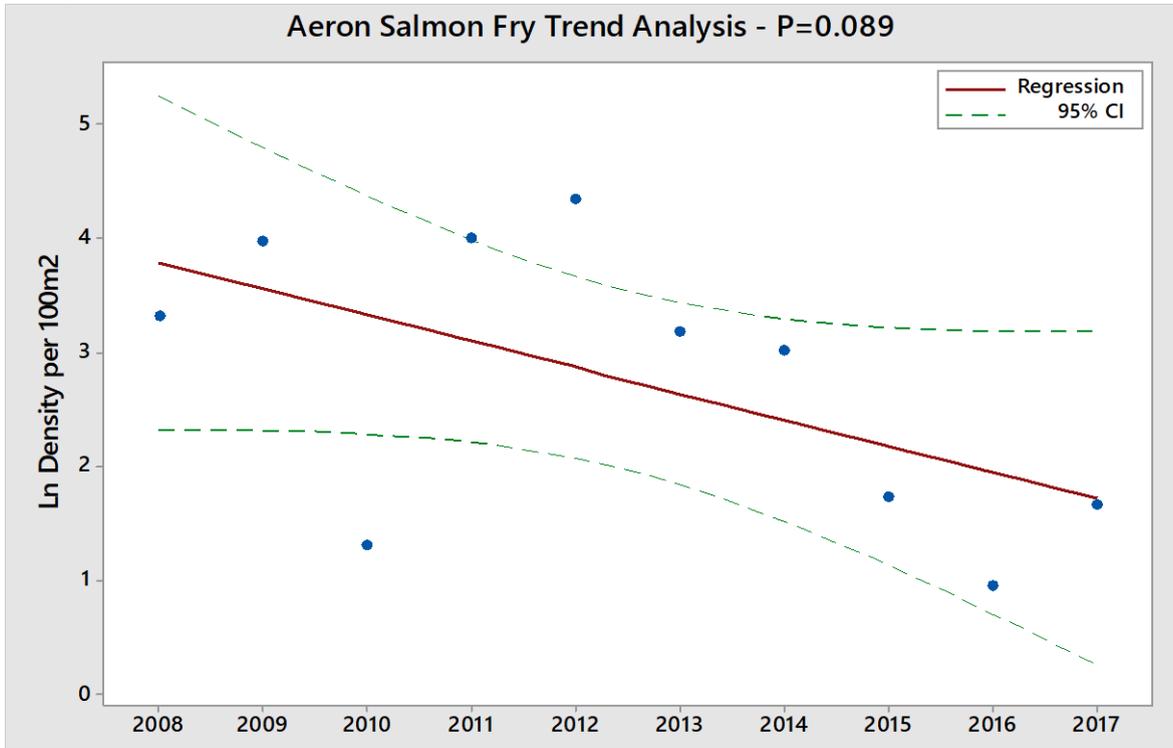
Are enough sea trout eggs being deposited to conserve sea trout stocks in the catchment?

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).

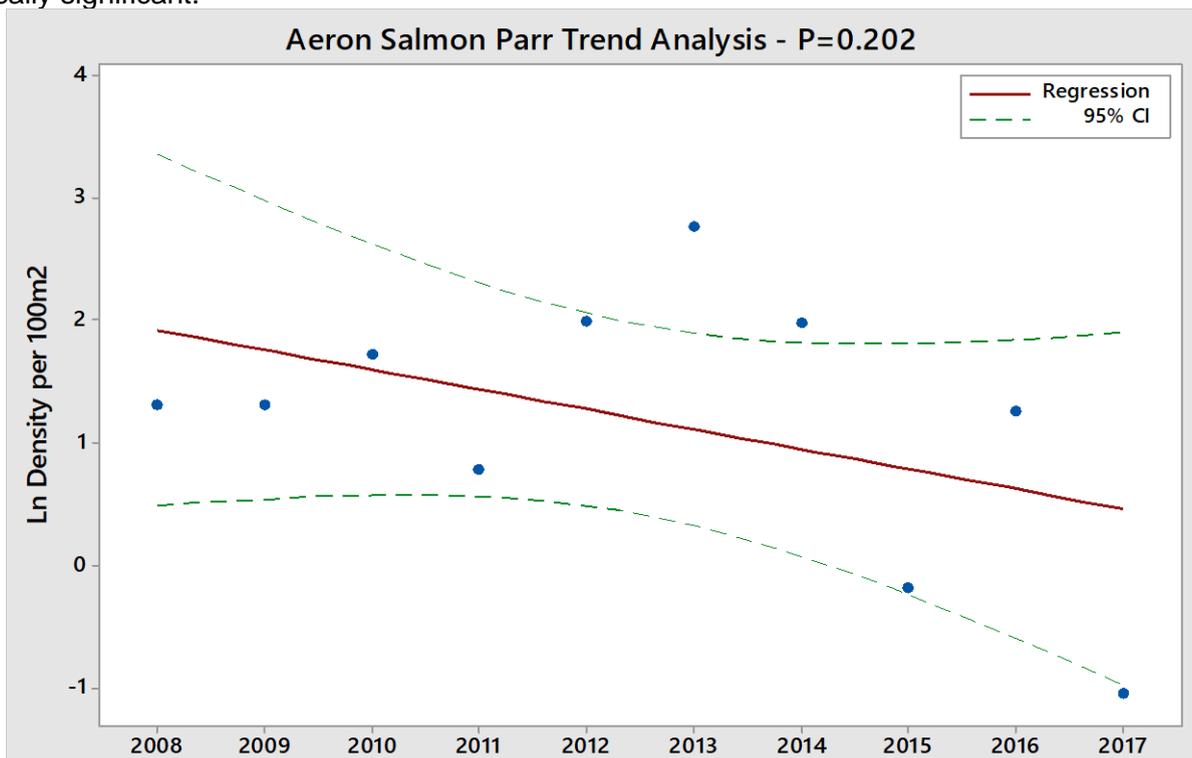
- Current number of eggs being deposited puts stocks **probably at risk**
- In 5 years' time the predicted status of salmon stocks will be **probably at risk**
- Based on current data, and the projection of the graph, sea trout stocks will continue to improve on the Aeron (**uncertain**).

### Juvenile Trend Analysis

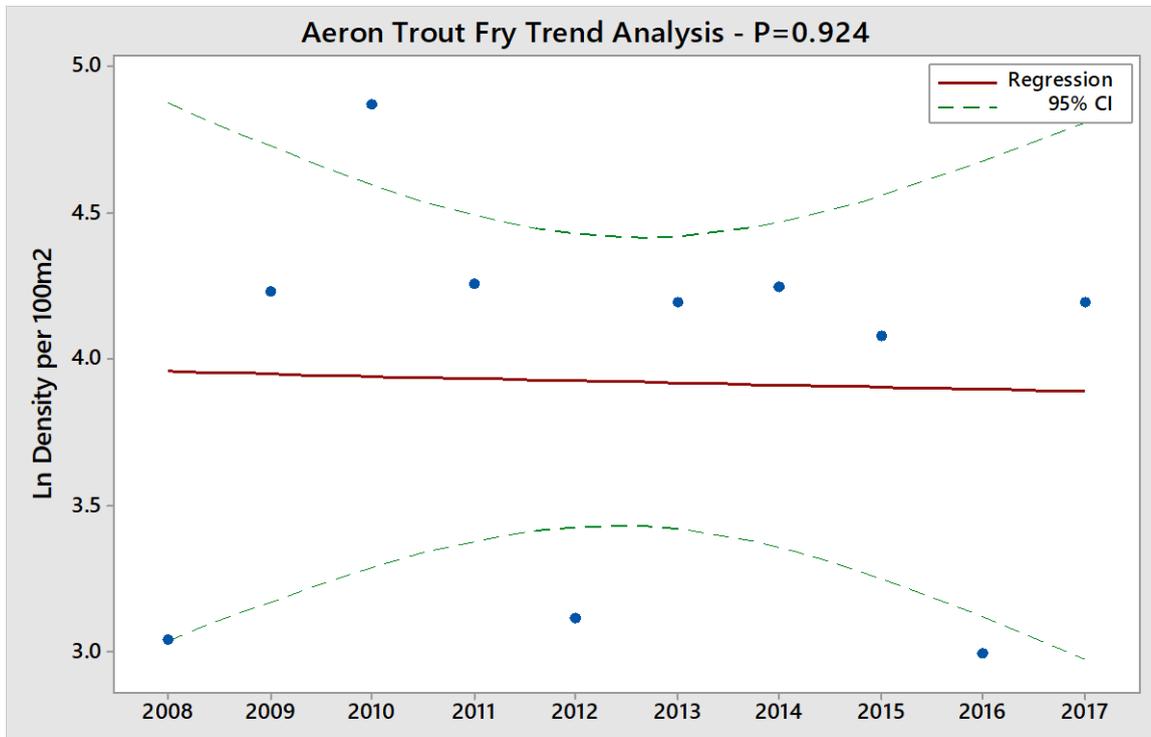
Juvenile salmon numbers recorded at 2 annual monitoring sites in the River Aeron have shown a downward trend over the last 10 years for both fry and parr, although neither trend is statistically significant. However, there is a lot of variation in numbers in the last 10 years, 2016 was particularly bad for salmon fry across the whole of Wales.



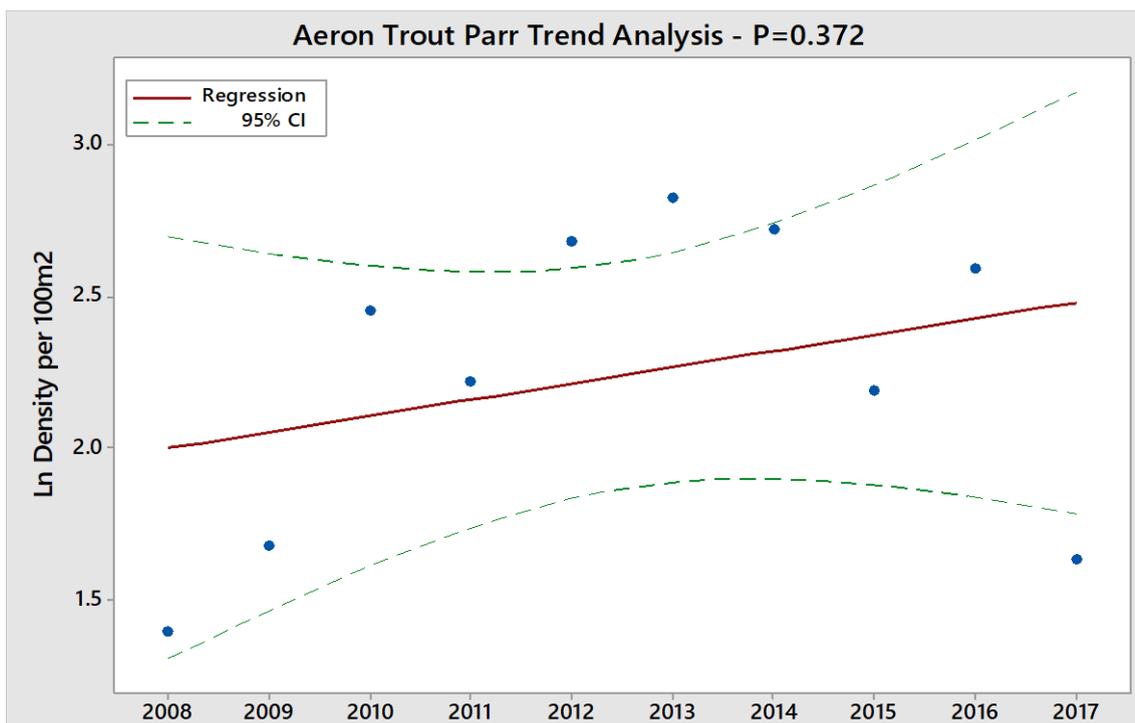
The poor juvenile numbers in 2016 will have resulted in lower parr numbers in 2017 which is shown in the Parr trend analysis. The high amounts of variation account for the high P values and trends that are not statistically significant.



The numbers of juvenile trout recorded at 2 annual monitoring sites on the Aeron are more variable but show a very slight downward trend for trout fry with an upward trend for parr. However, neither of these trends are statistically significant. Like the salmon fry there were also poor trout fry numbers in 2016 seen across Wales. This was believed to have been linked to the warmer winter temperatures in 2015.



The poor fry numbers in 2016 have resulted in lower parr numbers in 2017, despite this there is still an upward trend for trout parr numbers. There is also high variation in the density which accounts for the high P value. Like the trout fry figures this trend is not statistically significant.

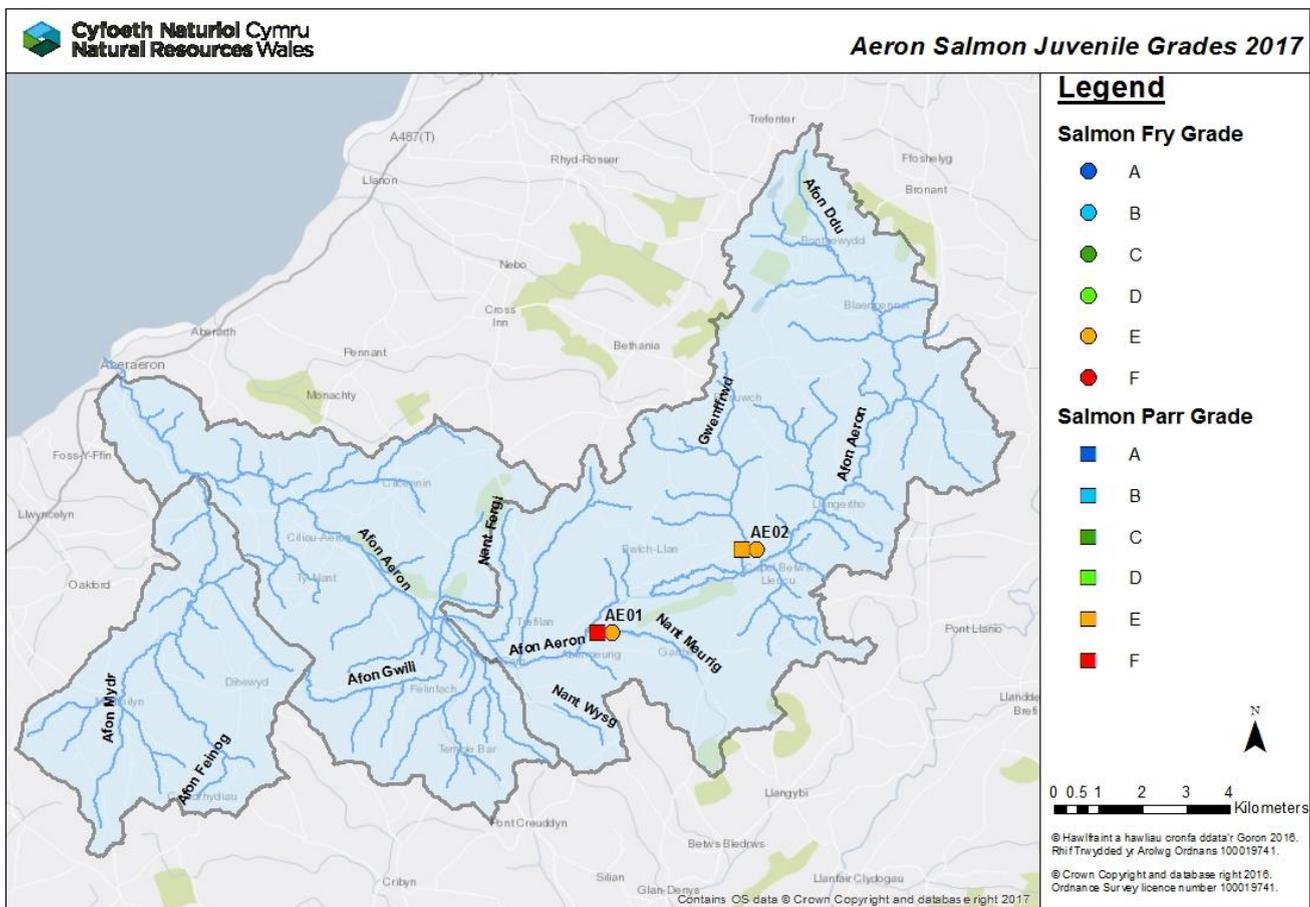


### Juvenile Monitoring

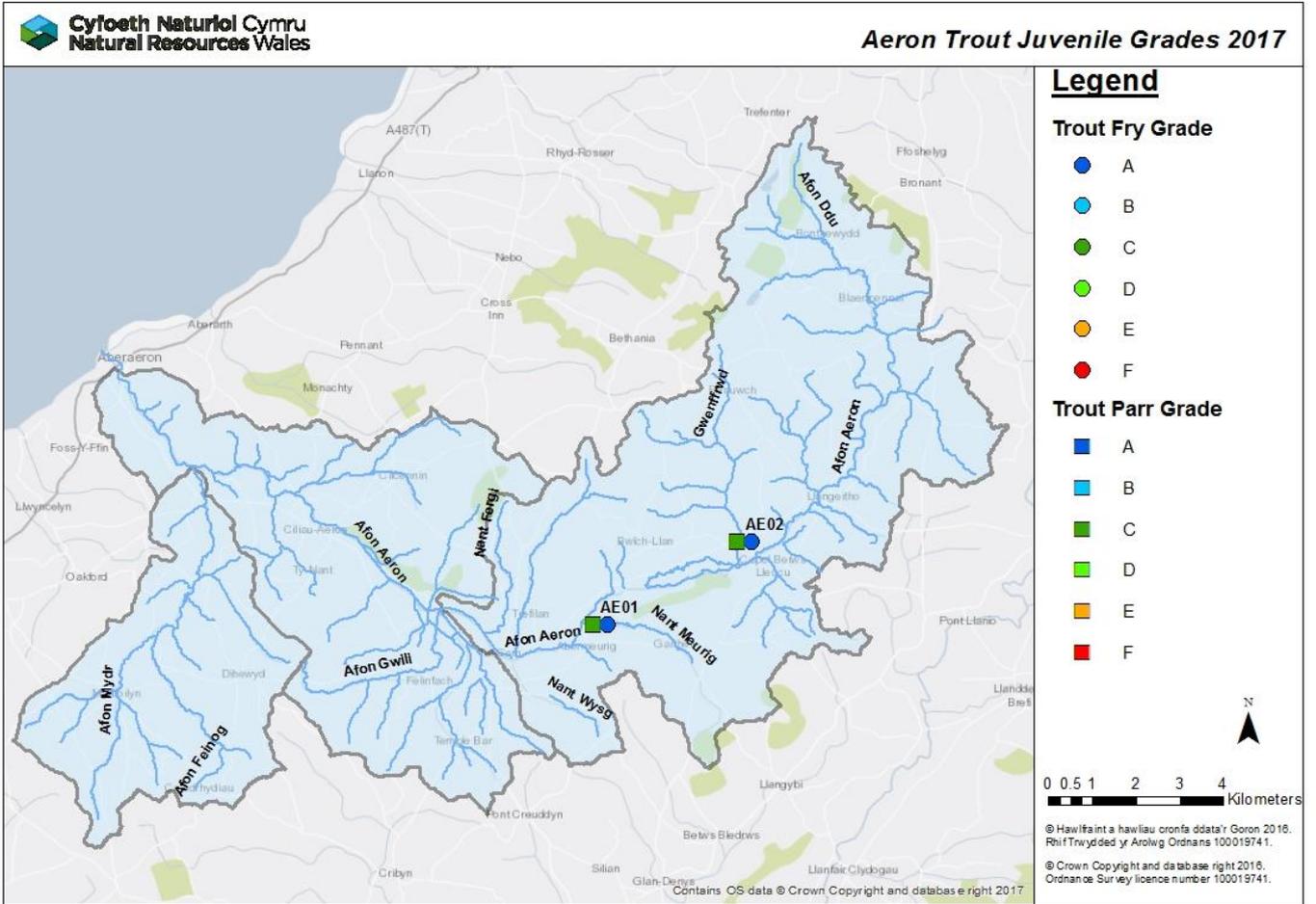
The following maps show results of the 2017 juvenile salmonid populations gathered from electro fishing surveys. They display the National Fish Classification (NFC) grades which have been developed to evaluate and compare the results of fish population surveys in a consistent manner. The NFC ranks survey 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
<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 salmon grades for the Aeron are generally quite poor, with grades of E & F. The salmon fry numbers have shown an improvement since the poor 2016 results but are still below average. The low salmon fry numbers in 2016 have been reflected in the poor salmon parr numbers in 2017.



However juvenile trout grades range from A to C. As with salmon fry, trout fry numbers were poor in 2016 and parr numbers were poor in 2017. Trout fry numbers have increased in 2017 and are similar to that of the 5-year average. While trout fry numbers have been lower than average they have still met a 'C' grade in FCS.



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## Fisheries Mitigation Plan

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