

This report summarises the findings of the 2018 juvenile salmonid monitoring on the Clwyd catchment. A more detailed assessment of the stocks will be available in 2019 when the Know Your Rivers reports are published.

### **Juvenile Salmonid Monitoring Programme**

In 2018 the temporal (annual) programme consists of 5 sites on the Clwyd. The temporal data is used to look at trends in juvenile salmon and trout densities giving an indication of how successful spawning has been across the whole catchment.

Due to the exceptionally poor results across Wales in 2016 additional funding was supplied to investigate the issue further. Sites within the Clwyd spatial programme (6 yearly programme) that have historically had good numbers of salmon were re-surveyed, and several historic sites. This meant an additional 24 sites were planned in 2018.

### **Key Points**

Juvenile salmon densities across Wales in 2018 have been mixed. The Clwyd was once again poor for salmon fry and parr. On the Clwyd sub-catchment salmon fry were only recorded at 1 site, and densities were poor. Salmon parr were also only recorded at 1 site, and densities were low. Only 2 of the 15 sites had salmon present. The Elwy sub-catchment was slightly better with 9 of the 14 sites containing salmon fry. The salmon fry densities on the temporal sites were much improved compared to recent years and are in-line with the historic average. Most of the spatial sites were below the historic salmon fry densities. Salmon parr were only caught at 2 of the 14 Elwy sites (Aled, Elwy 5min fry).

Trout fry densities generally declined across the catchment compared to 2017, although several sites still have excellent densities. The only site that stands out is the Cledwen which has continued to improve for trout fry. Salmon fry densities have declined at this site since 1997, but trout fry densities have continued to improve. Sea trout rod catch in 2017 was better than 2016, so the decline in trout fry across most of the catchment is unexpected. Trout parr densities have remained consistent across the catchment in 2018.

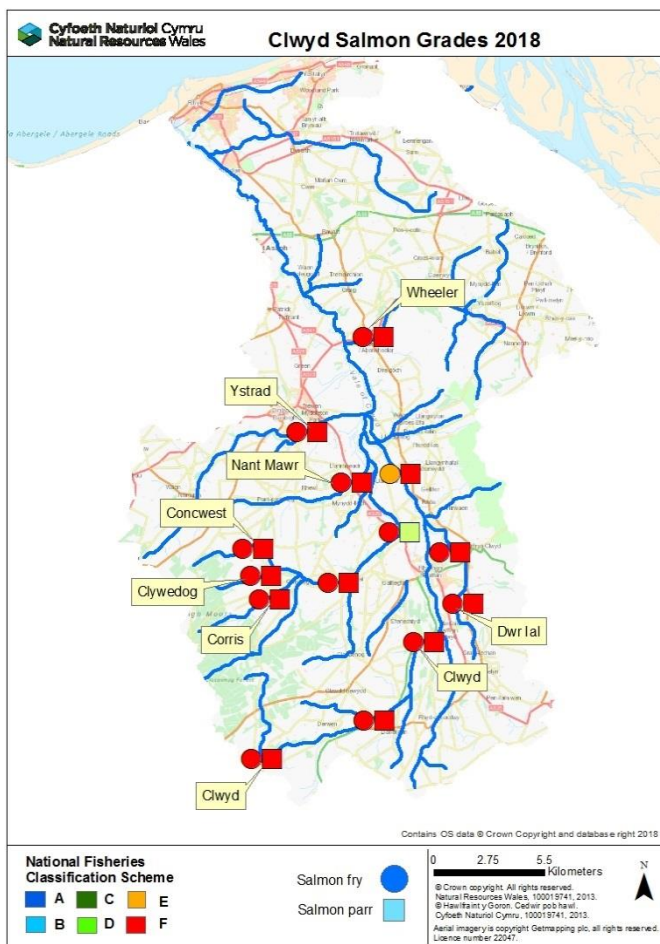
### **Salmon and Trout Classifications**

The following maps show the results of the routine juvenile salmonid population surveys from 2018 on the Clwyd.

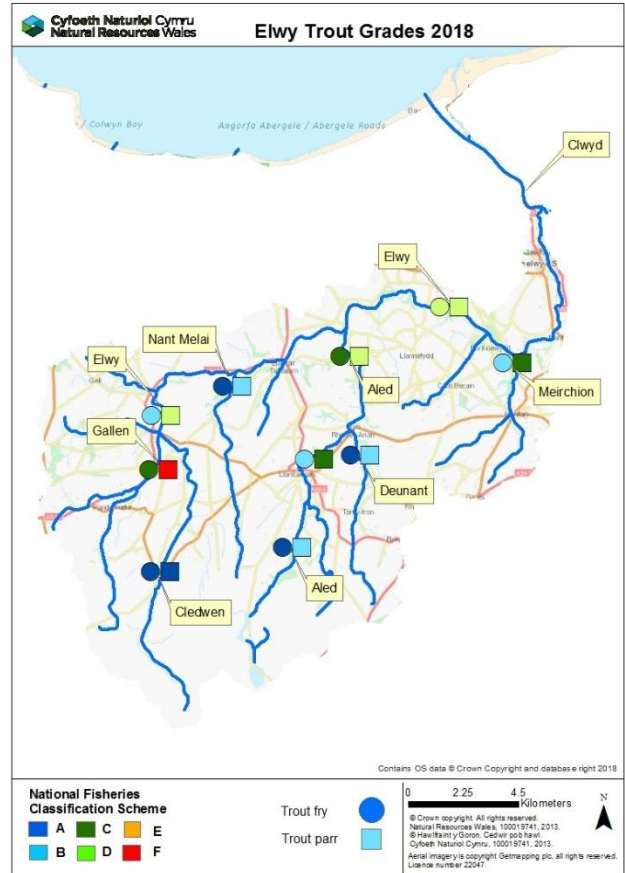
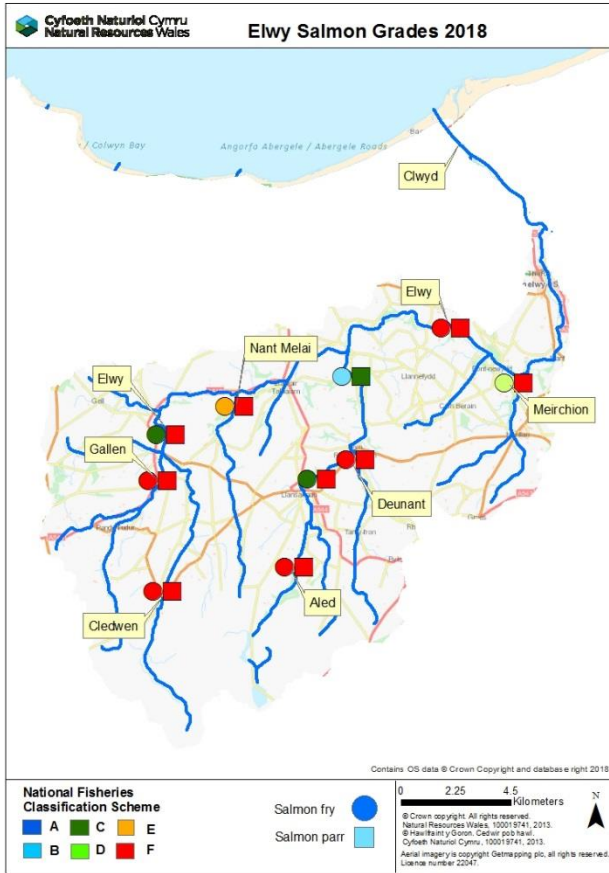
The symbols display the National Fish Classification Scheme (NFCS) grades which have been developed to evaluate and compare the results of fish population surveys in a consistent manner. The NFCS ranks survey data by comparing fish abundance at the survey sites with sites across Wales and England where 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 NFCS.

| 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                 |



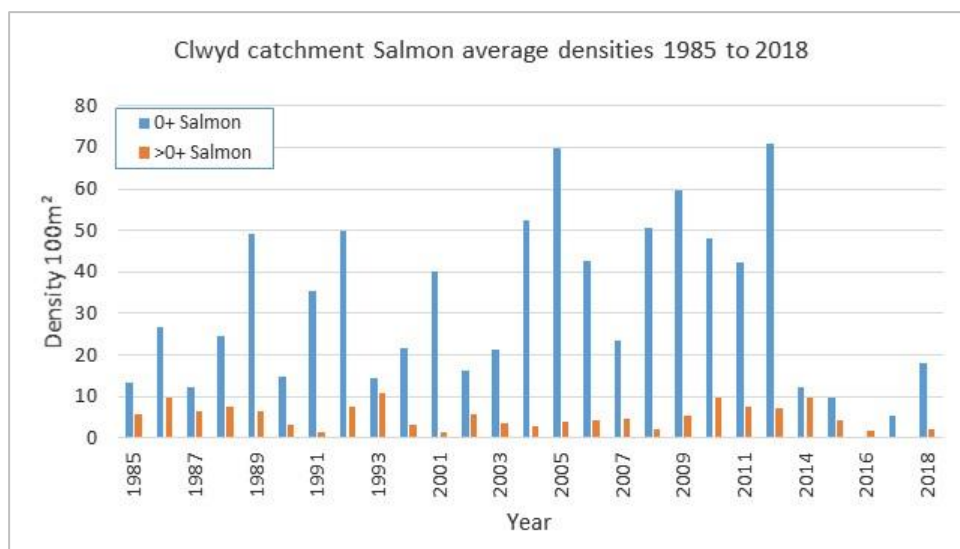
# Juvenile Salmonid Summary Clwyd Catchment



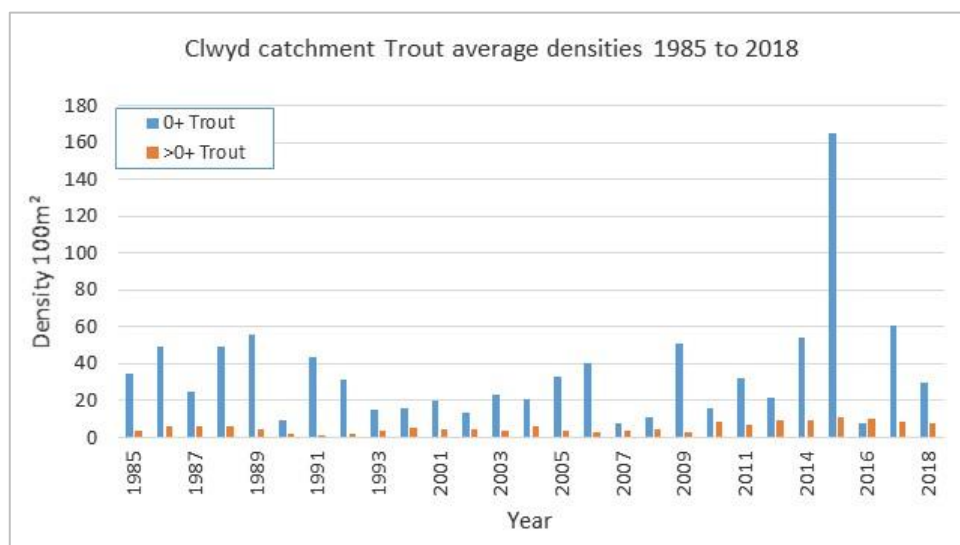
### Catchment Population Trends

The graphs below show a simple comparison of average salmon and trout densities across the temporal sites on the Clwyd catchment since surveying began in 1985. NB – the data shown here are from Quantitative and Semi Quantitative surveys, not every site in the programme was done annually, and no surveys were done from 1994 to 1996, 1998 to 2000, and 2012. Historic catch efficiency data allows semi quantitative results to be comparable with quantitative.

Salmon fry and parr densities have fluctuated since monitoring began but there appeared to be an improving trend up until 2013. From 2014 onwards there has been a decline that is in-line with the rod catch. The improvement in 2018 follows rod catch trends.



Brown trout fry and parr densities on the Clwyd catchment have remained consistent over the years up until 2015, when there were exceptionally high densities of trout fry. This improvement was followed by one of the lowest trout fry densities on record in 2016, believed to be due to weather conditions. Results for trout fry in 2018 are consistent with the historic average. Trout parr densities have remained consistent.



The following table shows a simple comparison of the catchment average density of juvenile salmon and trout from 2018, and compares this against 2017, and the 5-year average. NB - The five year average has been set from 2010 to 2014 as 2016 was a poor year for both species, and 2015 was an exceptionally good year for trout fry.

|  | 0+ Salmon   | >0+ Salmon  | 0+ Trout    | >0+ Trout   |
|--|-------------|-------------|-------------|-------------|
| 2018 average density                         | 18.1        | 2.0         | 29.8        | 7.5         |
| 2017 average density                         | 5.3         | 0.0         | 60.4        | 8.4         |
| <b>Percentage difference to 2017</b>         | <b>244%</b> | <b>+</b>    | <b>-51%</b> | <b>-10%</b> |
| 5-yr average (2010-14)                       | 43.4        | 8.5         | 31.1        | 8.4         |
| <b>Percentage difference to 5-yr average</b> | <b>-58%</b> | <b>-76%</b> | <b>-4%</b>  | <b>-11%</b> |

Having had poor salmon fry results since 2014 it is positive to see the improvement above, although compared to the five-year average the densities are still low. The improvement directly reflects the rod catch which has improved from about 12 salmon per season between 2014 and 2017, to 30 salmon in 2017. However, the 10-year average rod catch between 2003 and 2012 was 100 salmon per season. Poor salmon parr densities relate directly to the low salmon fry densities since 2016.

Trout fry density declined compared to 2017, however it is consistent with the historic average. We would have expected an improvement in 2018 as the rod catch in 2017 had increased compared to 2016 (Rod catch 2016 – 777, 2017 – 1063). The decline is unexpected as the winter of 2017/18 was quite settled, and very cold, which should have benefitted fry survival/fitness. Trout parr densities are consistent with 2017 and the historic average.