Juvenile Salmonid Summary
Dee Catchment

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

Juvenile Salmonid Monitoring Programme

In 2018 the temporal (annual) programme consists of 13 sites on the Dee. 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.

Key Points

Juvenile salmon densities across Wales in 2018 have been mixed. Most sites on the Dee have been consistent with the historic data for salmon fry and parr, however a few stand out. In 2018 no salmon fry or parr were recorded on the Meloch. This has never happened historically, although densities have fluctuated greatly year on year. The Morwynion had no salmon present (which has occurred many times in the past), and this is not unusual as the site is high up the catchment, and the habitat is more suited to trout. The Abbey Brook and Ceiriog salmon fry densities are low compared to the historic data. The Hirnant has continued to improve for both salmon fry and parr, and the densities are excellent.

Work at the Chester trap has highlighted that the grilse run on the Dee has declined. This gives some explanation to the lower densities on Abbey Brook and the Ceiriog. Multi sea winter (MSW) salmon would spawn in the Bala area, whereas grilse would spawn on the lower catchment.

Trout fry densities across most of the catchment continued to be good in 2018, with the Merddwr, Ceidiog, and Mynach having excellent results. The Morwynion saw a significant decline in trout fry and was below the historic average. The site is quite small, so it may have been affected by the hot weather at the beginning of the summer. The Ceirw was poor for trout fry, however it always has been historically. The habitat is more salmon biased. Sea trout rod catch was relatively low in 2017 compared to the results since 2010, so the good trout fry densities were unexpected. Trout parr densities were also good across the catchment, with the Ceidiog having its best results on record. This links directly to the excellent trout fry densities in 2017.

The Clywedog, Alyn, & Worthenbury Brook are reported separately as they are not classed as major spawning rivers.

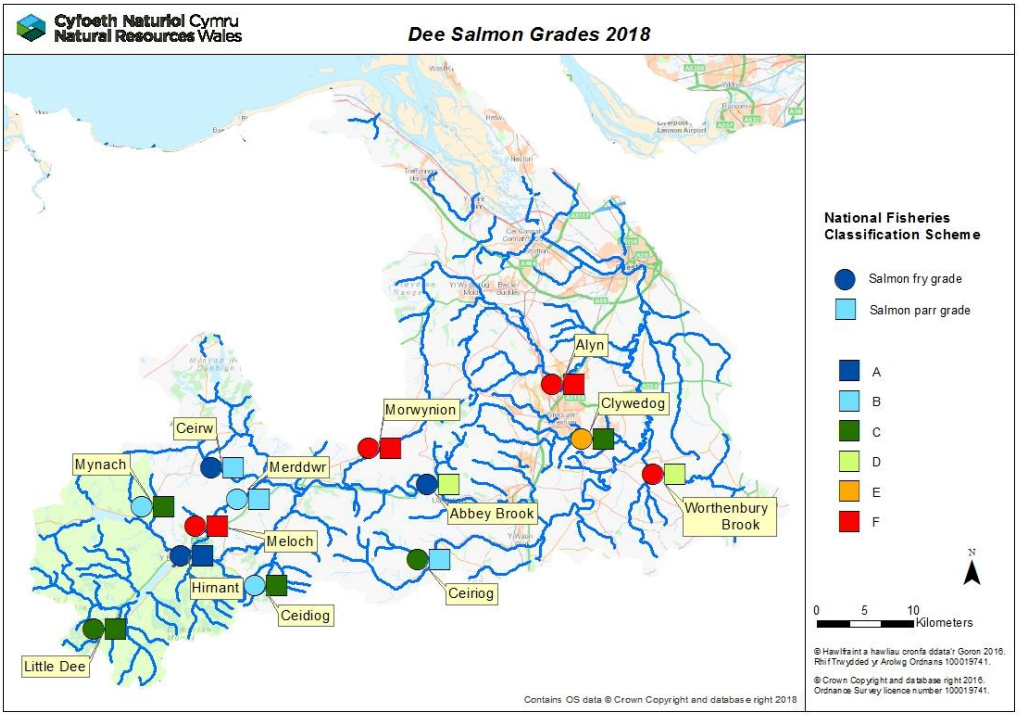
Salmon fry densities on the Clywedog were below the historic average in 2018, and the density was classed as poor. Salmon parr densities improved compared to 2017, and this relates to the excellent salmon fry densities in 2017. Trout fry densities were poor compared to the historic average. Trout parr densities improved, and this again relates to the good fry results in 2017.

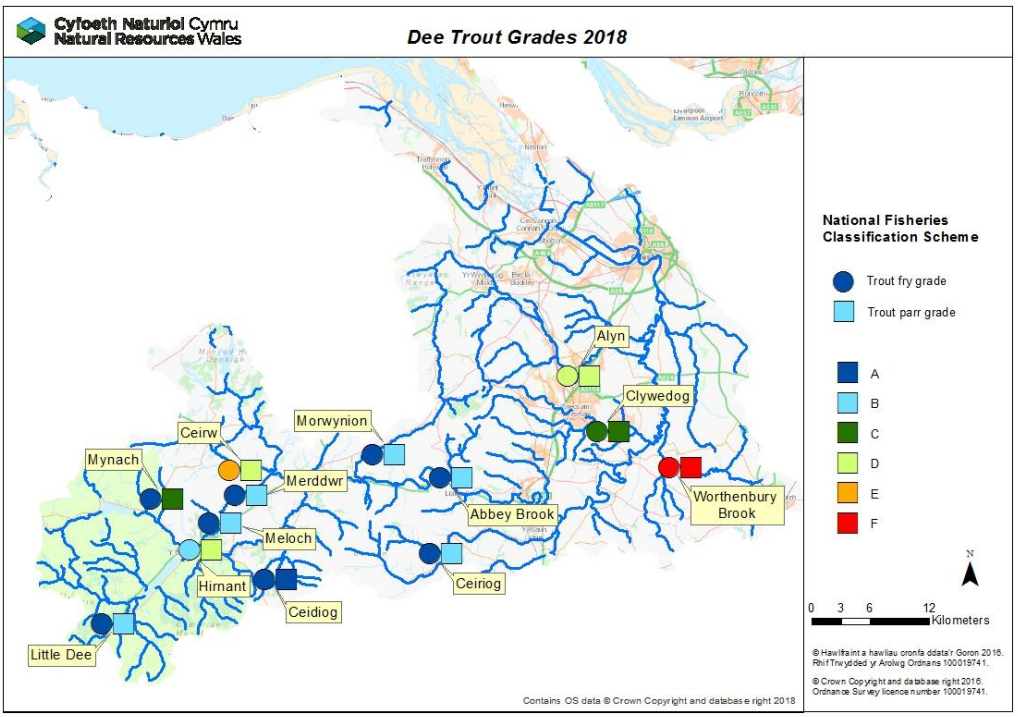
Salmon and trout densities were once again poor on the Alyn, with no salmon caught. This follows the historic trend; however, we would have hoped to see some improvement. Works have been completed on several sewage treatment works to improve water quality, and the construction of easements on weirs across the catchment should have led to increased numbers of migratory species throughout the waterbody.

Worthenbury brook was also exceptionally poor. This also follows the historic trend, however there has also been a change in the species composition. Less bullheads are now caught at this site and this would indicate that the water quality is deteriorating. An investigation is currently being carried out on this catchment.

Salmon and Trout Classifications

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





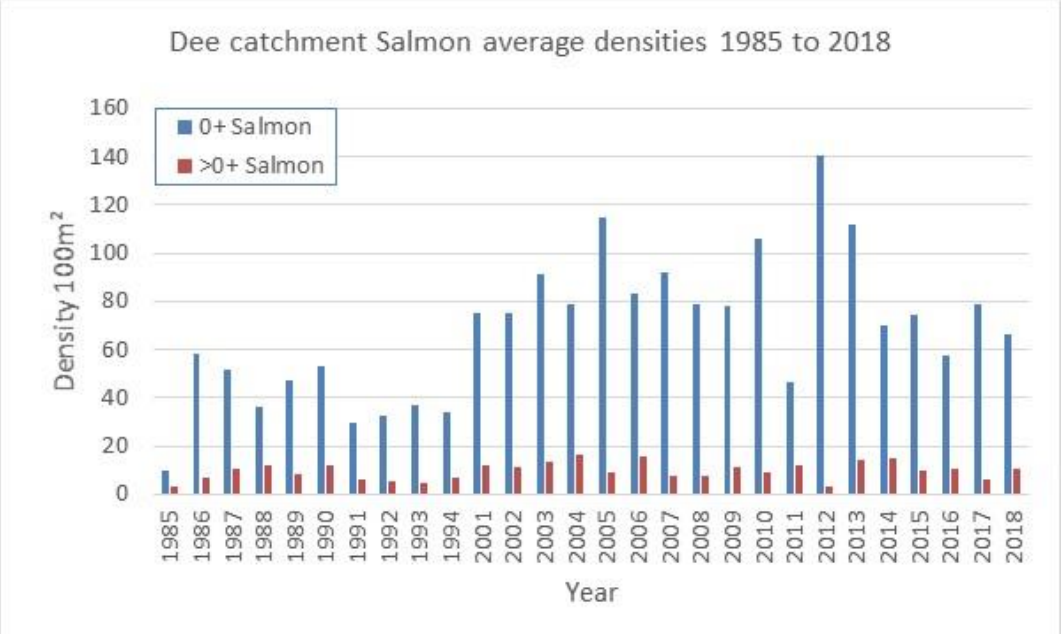
Grade	Descriptor	Interpretation
A	Excellent	In the top 20% for a fishery of this type
B	Good	In the top 40% for a fishery of this type
C	Fair	In the middle 20% for a fishery of this type
D	Fair	In the bottom 40% for a fishery of this type
E	Poor	In the bottom 20% for a fishery of this type
F	Fishless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

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.

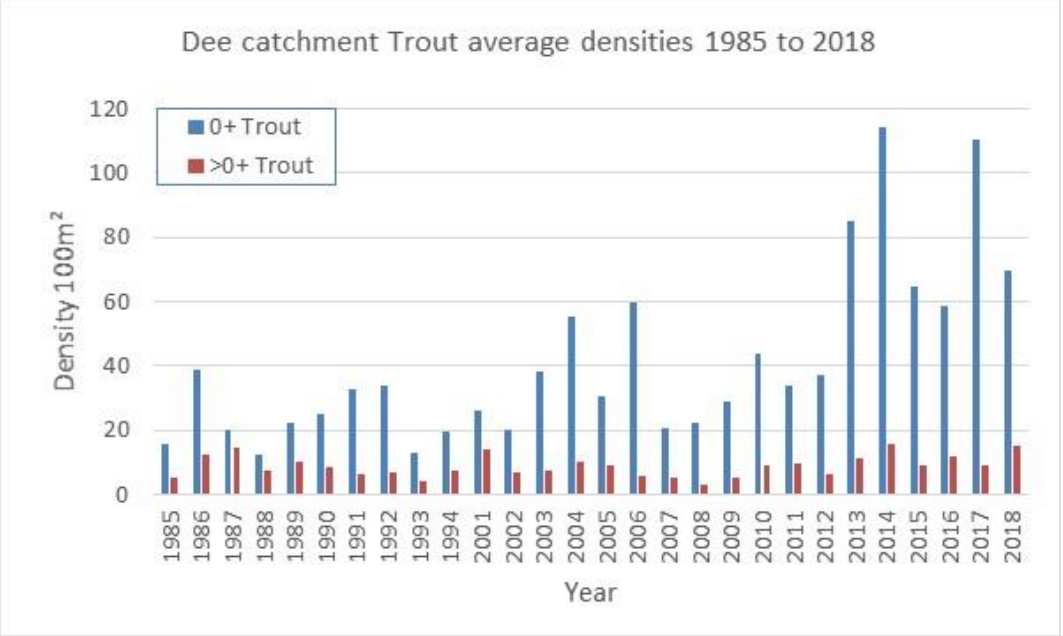
Catchment Population Trends

The graphs below show a simple comparison of average salmon and trout densities across the Dee 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 every year, and no surveys were done from 1995 to 2000. The Alyn, Clywedog and Worthenbury are not included in this analysis.

The salmon fry densities across the Dee catchment have declined slightly compared to 2017 and are slightly below the historic trend. The lack of salmon fry on the Meloch will have impacted the overall average. Salmon parr densities are consistent with the historic average.



Brown trout fry densities were good in 2017, however the below average densities on the Morwynion will no doubt have brought down the overall average.



The following table shows a simple comparison of the catchment average density of juvenile salmon and trout from 2018, and compares this to 2017 and a 5-year average. NB – The five year average has been set from 2011 to 2015 as 2016 was an exceptionally poor year.

	0+ Salmon	>0+ Salmon	0+ Trout	>0+ Trout
2018 average density	66.0	10.4	69.5	15.2
2017 average density	78.4	6.0	110.5	9.0
Percentage difference to 2017	**-16%**	**72%**	**-37%**	**69%**
5-yr average (2011-15)	88.7	10.8	67.0	10.4
Percentage difference to 5-yr average	**-26%**	**-4%**	**4%**	**46%**

Salmon fry densities have declined compared to 2017, and the five-year average. Rod catch in 2017 was its highest for salmon since 2012, so we would have expected an increase in salmon fry in 2018 (average salmon rod catch per season since 2013 – 335, 2017 – 416). The improved salmon parr densities relate to the higher salmon fry densities in 2017.

Trout fry densities have declined compared to 2017 but are consistent with the five-year average. Sea trout rod catch declined in 2017, so the lower trout fry densities were expected. The average rod catch since 2010 was 526 sea trout per season, and only 325 were caught in 2017.

Trout parr densities have improved against 2017, and the five-year average. This relates to the excellent trout fry densities in 2017.