

This report summarises the findings of the 2018 juvenile salmonid monitoring on the Mawddach 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 3 sites on the Mawddach. 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.

Several spatial sites were not completed in 2017, so they were surveyed in 2018. Spatial monitoring identifies changes in the distribution of fish and provides a basic level of surveillance monitoring over the widest practical area.

Key Points

Juvenile salmon densities across Wales in 2018 have been mixed. Salmon fry densities were excellent this year on the Wnion and Mawddach. The Mawddach had its best result for salmon fry on record. We would have hoped for the same positive results on the Eden, however it remained consistent with the historic data. The Eden water temperatures were extremely high in 2018 due to the hot summer. The lack of tree cover, and dark substrate on this catchment will have exacerbated these conditions. Salmonids may have searched for cooler conditions. Salmon parr densities were good across the catchment in 2018, however densities had declined on the Eden. The Mawddach had its best result for salmon parr on record.

Trout fry densities were excellent on the Wnion, and the results were the best on record. The Mawddach was only classed as 'fair' for trout fry, however this is the best result on record. The Eden had its worst results for trout fry on record. This may have been due to the water temperature, discussed previously. Trout parr densities on the Wnion were the best on record. The Mawddach and Eden were consistent with the historic data.

The Mawddach catchment is renowned for having low conductivities which affect our fishing efficiency. The water temperatures were high and river levels were low in 2018. This will have increased the fishing efficiency; however, the densities were so good that there is no doubt that spawning was more successful than in previous years.

The spatial site on the upper Wnion had its poorest results for salmon fry and parr on record, however densities of salmon fry were still high enough for the site to be classed as good for salmon fry. Trout fry and parr densities were excellent, and the best results on record for this site.

New spatial sites were fished on the upper Eden and Crawcwellt North. The upper Eden is very narrow and shallow, and no salmon were caught due to this. Trout numbers were good, which you would expect from the habitat. The upper Eden was good for salmon but only fair for trout. The habitat at this site was biased towards salmon. Results are positive.

Another new site was also fished on the Cwm Mynach. No salmon fry were caught at this site. Salmon parr densities however at the site were excellent, highlighting that salmon have spawned successfully on the tributary in the past. Spawning in lowland tributaries is often dominated by grilse (one sea winter fish), and it has been noted across the UK that there has been a decline in the grilse run. Salmon may not have spawned on this tributary in the

winter of 2017. Trout fry densities on the tributary were good. Trout parr densities were only fair, and this is due to the habitat availability at the site.

Salmon and Trout Classifications

The maps below show the results of the routine juvenile salmonid population surveys from 2018 on the Mawddach.

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.

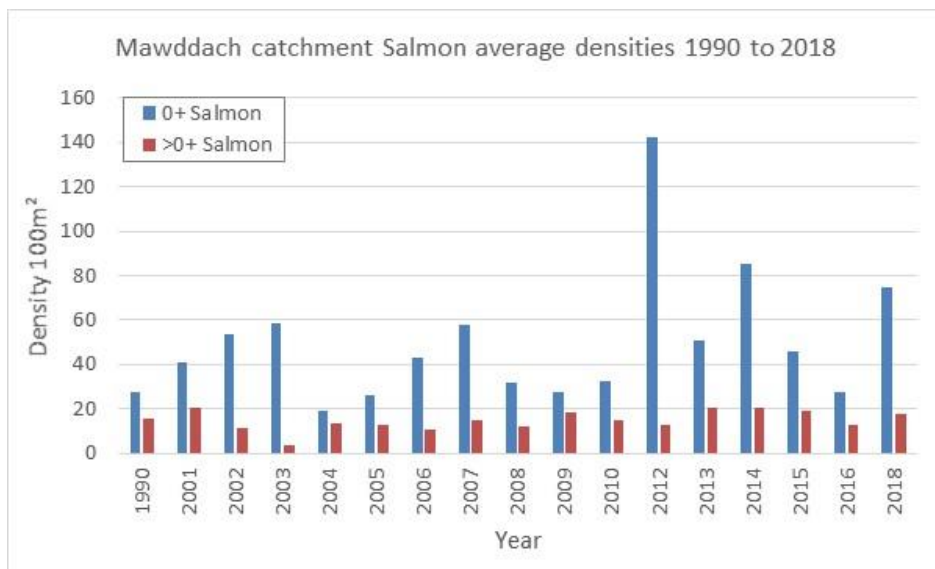
Grade	Descriptor	Interpretation
A	Excellent	In the top 20% for a fishery of this type
B	Good	In the top 40% for a fishery of this type
C	Fair	In the middle 20% for a fishery of this type
D	Fair	In the bottom 40% for a fishery of this type
E	Poor	In the bottom 20% for a fishery of this type
F	Fishless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



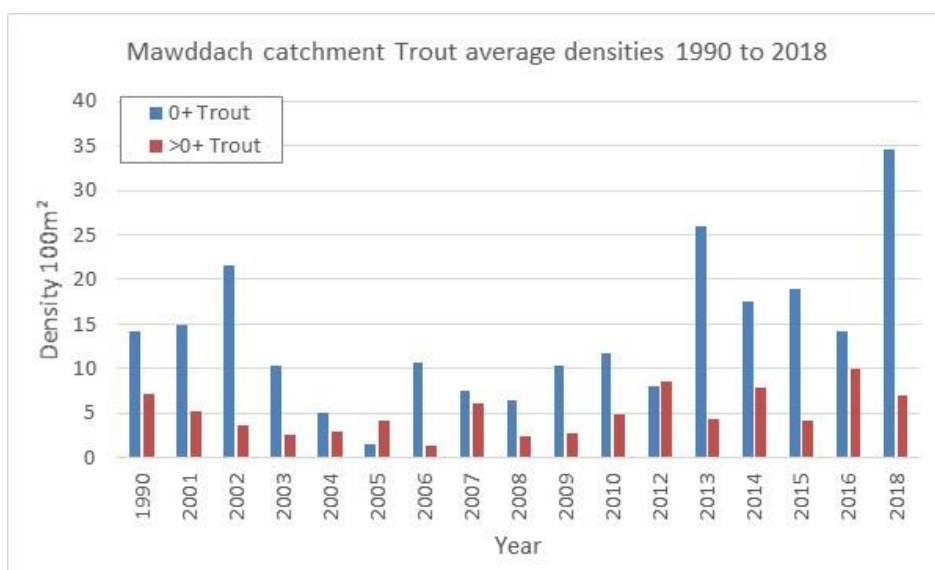
Catchment Population Trends

The graphs below show a simple comparison of average salmon and trout densities on the Mawddach catchment since surveying began in 1990. NB – the data shown here is from Quantitative and Semi Quantitative surveys, the site was not done every year, and no surveys were done from 1991 to 2000, 2011, and 2017. Historic catch efficiency data allows the semi quantitative figures to be comparable with quantitative data. Data from the Mawddach site is not included due historic low catch efficiency.

Salmon fry and parr densities have varied since 1990. The densities for salmon fry are good in 2018. This is mainly due to the excellent results on the Wnion. Salmon parr have remained consistent.



Brown trout fry densities on the Mawddach have improved since 1990 and are excellent in 2018. Brown 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 to 2016 and the 5-year average.

	0+ Salmon	>0+ Salmon	0+ Trout	>0+ Trout
2018 average density	74.6	17.5	34.6	7.0
2016 average density	27.8	12.8	14.2	10.1
Percentage difference to 2016	168%	36%	144%	-31%
5-yr average (2011-15)	80.9	18.3	17.6	6.2
Percentage difference to 5-yr average	-8%	-4%	97%	12%

Salmon fry and parr densities are much improved compared to 2016 and are nearly equal to the 5-year average. This is excellent news and is linked to the increase in rod catch during 2017(44 salmon 2015 – 59 salmon 2017), and the improved catch and release rate (66% released 2015 – 85% released 2017).

The trout fry density is much improved against 2016 and the 5-year average. Trout parr densities are fluctuating around a similar figure year on year, and this will be due to available habitat at the sites we fish. Sea trout rod catch has declined from 858 in 2011 to 377 in 2017, however effort has also declined dramatically. Looking at the catch per unit effort between 2011 and 2017 this has remained relatively stable, insinuating that the stocks are stable. The improvement in juvenile trout densities is therefore very positive.

Catch and release rates have remained consistent at about 80% for sea trout since 2008.