Juvenile Salmonid Summary
Mawddach Catchment

This report summarises the findings of the 2017 juvenile salmonid monitoring on the Mawddach catchment. A more detailed assessment of the stocks will be available in 2018 when the Know Your Rivers reports are published.

Juvenile Salmonid Monitoring Programme

In 2017 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, and provides long term time-series data from our principal fisheries. During 2017 the spatial programme for the Mawddach also needed to be delivered. This programme is completed every six years, and surveys an additional 22 sites. The spatial programme is used to determine the distribution of species, and to provide a basic level of surveillance monitoring over the widest practical area.

Key Points

The monitoring season was hindered in 2017 by wet weather. This led to the three temporal sites on the Eden, Wnion & Mawddach not being completed, as they were un-fishable. Two of the spatial sites were also un-fishable and these were on the Cwm Mynach and upper Wnion.

Having not completed the temporal sites in 2017 it is difficult to make an overall judgement as to how salmon fry are performing on the Mawddach catchment, however there appears to be a decline from the spatial surveys. These were last carried out in 2010. The sites on the Henddol, Gwynant, & Wen have never had salmon present, though they are accessible. The Melau, Harnog, & Ty Cerrig have always had low levels of salmon fry present, so the total absence in 2017 is disappointing. The Eiddon, Crawcwellt, & Aber were also down considerably compared to historic data. The only tributaries that remained consistent were the Aran and Clywedog. We also carried out several five-minute fry surveys on the main rivers and these were consistent compared to the historic data. Salmon parr densites were also down at most of the spatial sites across the Mawddach. The only tributary that did not follow the trend was the Aran which had excellent salmon parr densites.

Salmon rod catch is lower than the historic average on the Mawddach currently. From the early 1990's the average rod catch has remained around 120 salmon per season. Between 2013 and 2015 the average has been about 40 salmon per season, this has improved to 57 in the 2016 season. This decline in rod catch highlights the lower numbers of salmon entering the Mawddach, linking directly to the poor juvenile densities recorded from our surveys in 2017.

Trout fry densities were much improved compared to the previous spatial surveys in 2010. Several sites across the catchment had their highest densities on record (Eiddon, Melau, Harnog, Wen, Aber), while all other sites remained consistent with the historic data. Trout parr have also generally improved across the catchment and we would expect this to improve further in the coming years due to the excellent fry densities.

Salmon and Trout Classifications

The following maps show the results of the routine juvenile salmonid population surveys from 2017 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

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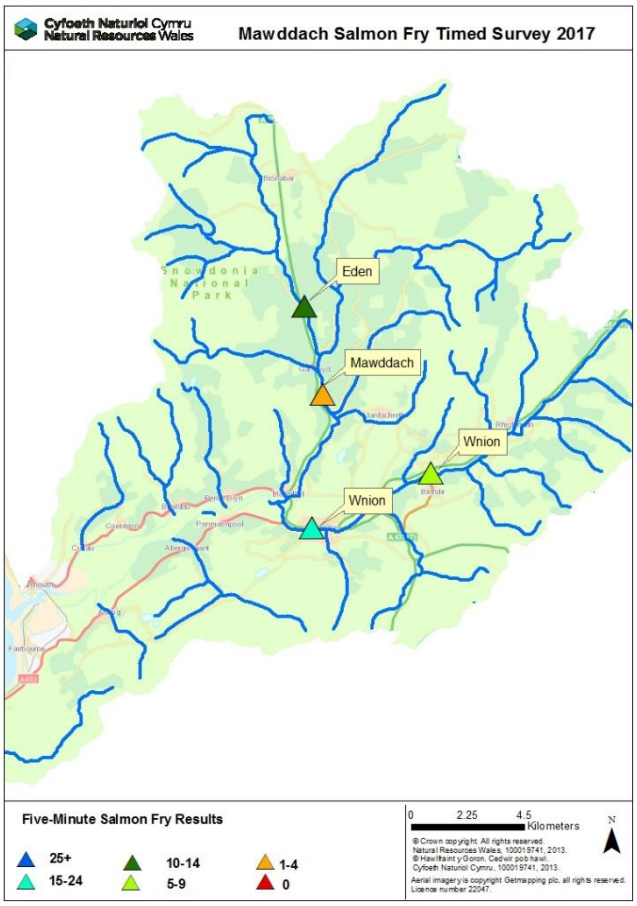
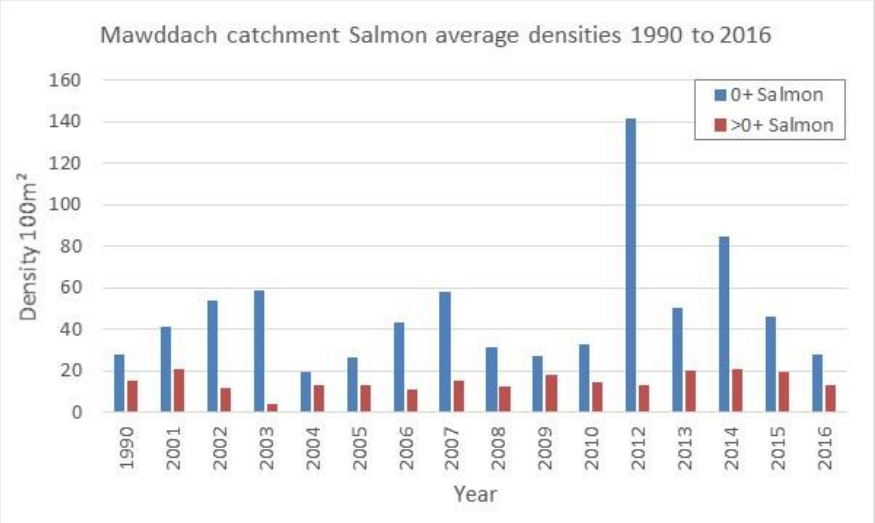


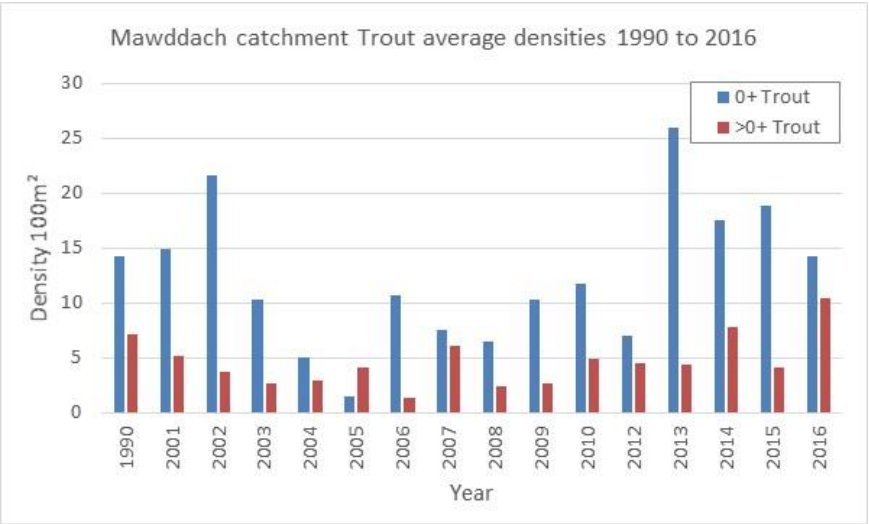
Catchment Population Trends

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 sites were not done every year, and no surveys were done from 1991 to 2000 and 2011. Historic catch efficiency data allows the semi quantitative figures to be comparable with quantitative data. Only temporal sites from the Eden and Wnion are used in the graphs below.

We have not been able to update these graphs in 2017 as the temporal sites were not completed due to high flows. Salmon fry and parr densities have varied since 1990. The densities in 2016 are low compared to the historic data however the declines are not as severe as what has been seen in some parts of Wales. The decline since 2014 does not correlate with salmon rod catch as this has remained consistent.



We have not been able to update these graphs in 2017 as the temporal sites were not completed due to high flows. Brown trout fry densities on the Mawddach have improved since 1990. The brown trout parr densities have also improved. Sea trout rod catch has however declined since 1990. Effort has also declined massively.



Once again, as we did not complete the temporal sites in 2017 we have been unable to update the table below.

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

	0+ Salmon	>0+ Salmon	0+ Trout	>0+ Trout
2016 average density	9.68	7.65	7.78	6.50
2015 average density	19.10	13.16	10.25	1.86
Percentage difference to 2015	-49%	-42%	-24%	250%
5-yr average	46.00	15.06	11.20	3.50
Percentage difference to 5yr average	-79%	-49%	-30%	86%

Salmon fry densities are poor compared to the historic data. Decline in salmon fry appears worse on the Wnion & Mawddach than the Eden. The decline in salmon parr follows the trend of the fry. Salmon rod catch on the Mawddach has gone from 107 in 2012 to 44 salmon in 2015, this is a 59% decline.

The trout fry densities have also declined, though not as sharply as salmon. Trout parr numbers appear to be improving. Sea trout rod catch has declined from 858 in 2011 to 341 in 2015, this is a decline of 60%.

Further investigations

Additional redd monitoring is being carried out to highlight where salmon/sea trout have spawned this winter. Juvenile surveys in these areas will then provide evidence regarding survival.