

This report summarises the findings of the 2018 juvenile salmonid monitoring on the Dwyfor 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 1 site on the Dwyfor. 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.

Spatial surveys were also carried out on the Dwyfor in 2018 which included an additional 15 sites. Spatial monitoring identifies changes in the distribution of fish and provides a basic level of surveillance monitoring over the widest practical area.

Key Points

The tributary upstream of Plas y Pennant dried out during the summer so this was classified as fishless for both salmon and trout.

Juvenile salmon densities across Wales in 2018 have been mixed. The Dwyfor results are also very variable for salmon fry. Sites such as Tyddyn Gethin, Rhwngddwryd, and the top site of the Dwyfach have only had sporadic low densities of salmon fry over the years, so the lack of fry this year is not of concern. The Afon Pant Glas is quite small so the lack of salmon is not surprising. The lower Dwyfach and Ceunant y Ddol have always had salmon fry at a reasonable density, however none were recorded in 2018. The Afon Ystradllyn had low salmon fry densities compared to the historic average. New sites were carried out on the Afon Cwm yr Haf and Blaen y Cae. Salmon densities are relatively low, but we have no historic data to compare against. The Afon Cwm Llefrith and Dwyfor temporal site were consistent with the historic data. The only improving site was at the top of the main Dwyfor, which recorded its highest density on record. Historically only low densities or no salmon have been caught at this site. In 2018 the density was classed as good.

Salmon parr densities are generally consistent with the historic data sets. The Afon Ystradllyn however was fishless for salmon parr in 2018, and this has never happened before. The Afon Cwm Llefrith is consistent with the historic data, which is positive as salmon parr densities are excellent.

As you can see from the map, trout fry densities are far more straight forward with most sites being classed as good or excellent. The only site that does not follow the trend is the lower Dwyfach, however densities have always been low at this site. Trout fry densities have improved significantly at the Dwyfor temporal site, Rhwngddwryd, Ystradllyn, Cwm Llefrith, and Ceunant y Ddol. All these tributaries had their best trout fry results on record. All other sites were consistent with the historic data.

Trout parr densities were generally consistent with the historic data set. A few rivers saw improvements such as the top of the Dwyfach, Ystradllyn, Cwmllefrith, and Ceunant y Ddol. The new sites on the Dwyfach (Pant Glas, Cwm yr Haf, and Blaen y Cae) all had excellent trout parr densities.

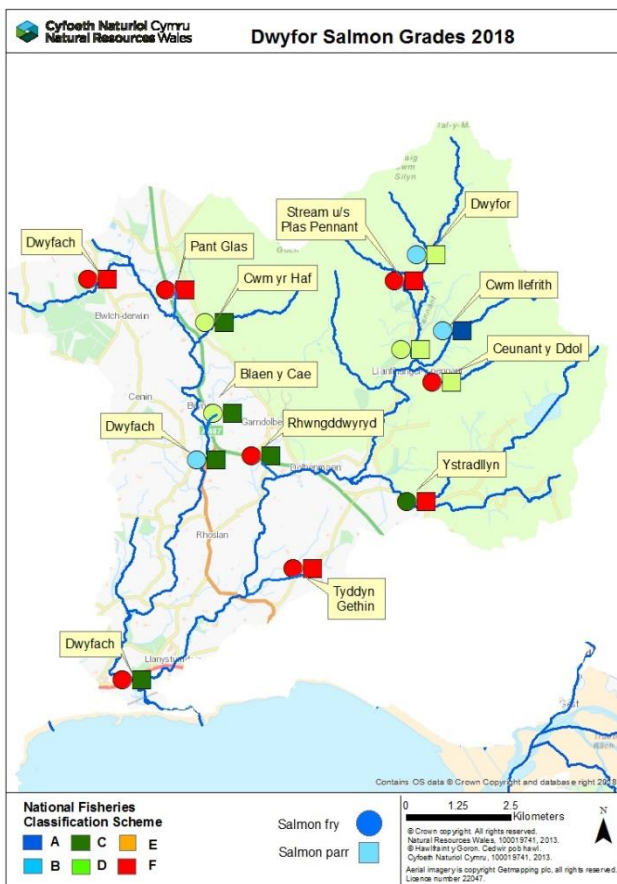
Salmon rod catch has declined on the Dwyfor and this can be seen in the juvenile results. Sea trout rod catch has fluctuated greatly year on year. 2017 rod catch was a poor year, so the results are unexpected.

Salmon and Trout Classifications

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

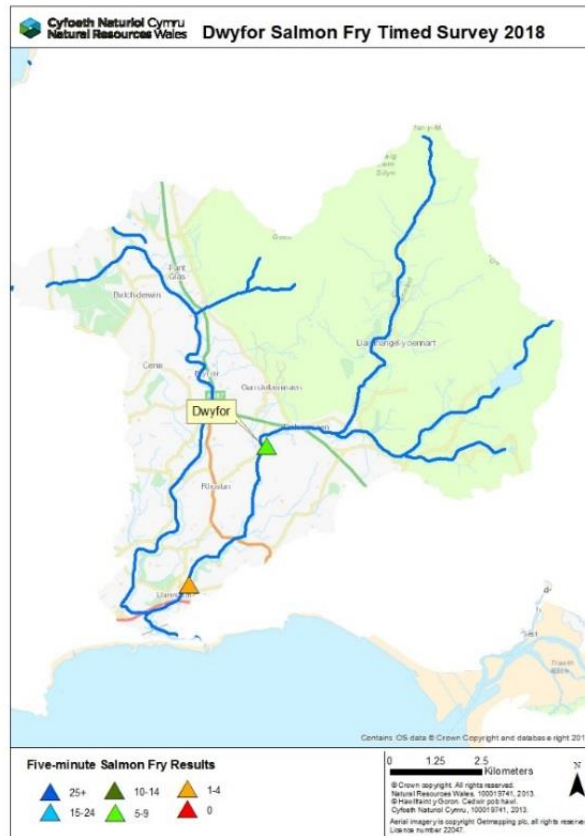
The symbols display the National Fish Classification Scheme (NFCS) grades which have been developed to evaluate and compare the results of fish population surveys in a consistent manner. The NFCS ranks survey data by comparing fish abundance at the survey sites with sites across Wales and England where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



Five-minute fry surveys

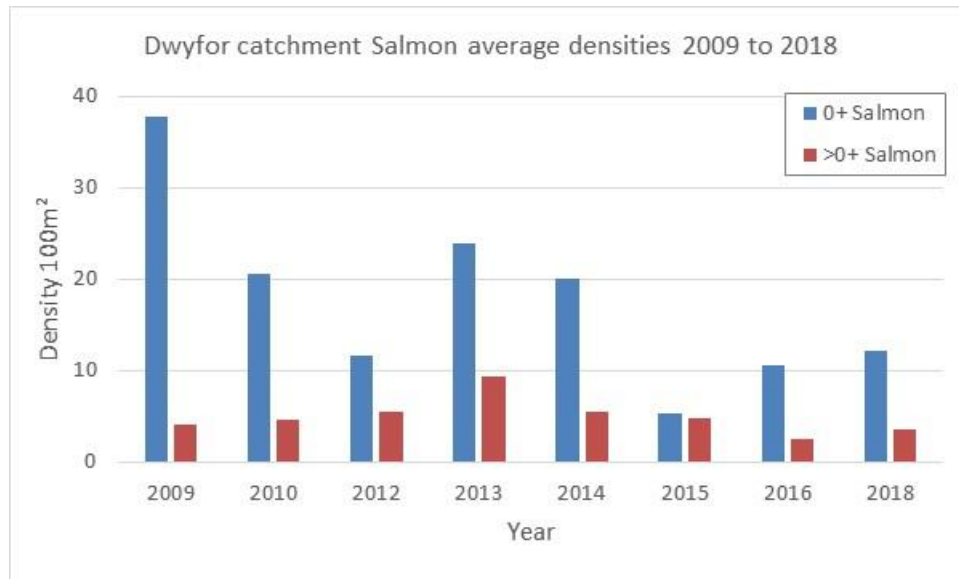
Two five-minute fry survey was carried out on the main river. The results are based on how many salmon fry were caught during the five-minute survey. The classification scheme is based on historic data from North Wales.



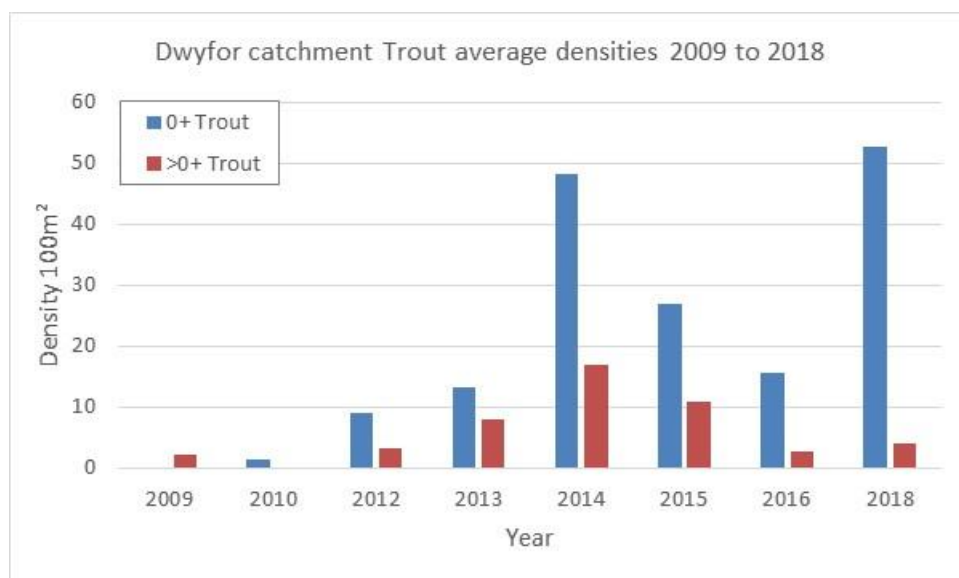
Catchment Population Trends

The graphs below show a simple comparison of average salmon and trout densities for the temporal site on the Dwyfor catchment. This is based upon one site which has only been sampled since 2009. Prior to this, the annual site was on a small tributary that was not representative of the Dwyfor catchment.

Salmon fry and parr densities have fluctuated year on year but the overall picture is declining. This follows the trend for salmon rod catch on the Dwyfor.



Brown trout fry and parr densities on the Dwyfor catchment have historically followed the trends of the rod catch. 2018 does not follow this trend as the rod catch was quite poor compared to the ten year mean (2018 – 195, 10 year mean – 395), however trout fry densities were excellent. Trout parr densities were poor at the temporal site, however the spatial surveys showed that many tributaries were performing excellently.



The following table shows a simple comparison of the temporal average density of juvenile salmon and trout from 2018, and compares this against the 2016 average density (survey not complete in 2017), and the 5-year average (2011 – 2015).

	0+ Salmon	>0+ Salmon	0+ Trout	>0+ Trout
2018 average density	12.1	3.6	52.7	4.0
2016 average density	10.6	2.4	15.5	2.7
Percentage difference to 2016	15%	50%	240%	44%
5-yr average (2011-15)	15.2	6.3	24.3	9.7
Percentage difference to 5-yr average	-20%	-43%	117%	-59%

The variation in salmon fry density is minimal, densities at this site seem reasonably consistent, though quite low. Salmon parr density is down compared to the five-year average. As stated earlier the trout fry densities on the Dwyfor catchment are excellent this year. Trout parr densities are down at this site compared to the five year average, but have been excellent on many of the Dwyfor tributaries.