

Note for the Usk Local Fisheries Group Meeting – November 2018

Rod and net catches of Usk salmon and stock status in 2018

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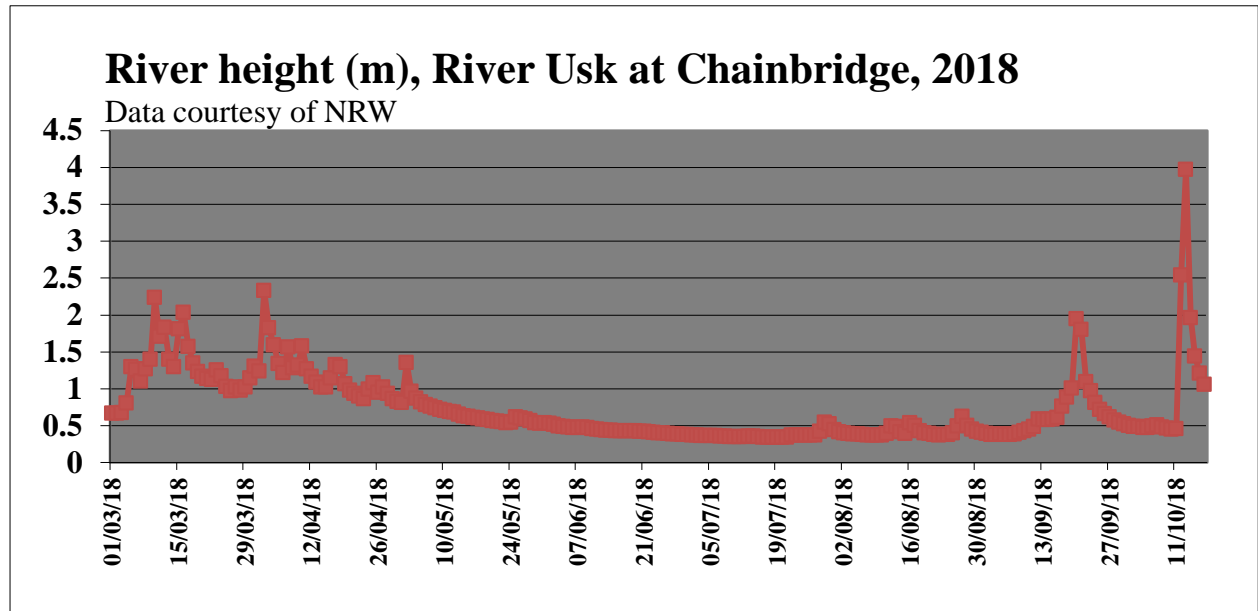
Summary:

- River conditions in the fishing season were extreme: flows were high early and late with drought conditions through much of the summer.
- Based on catches at index rod fisheries, the declared catch for 2018 is predicted to be between 146 and 212 and probably about 160, one of the worst on record. For the first time, all rod-caught salmon were released at the index fisheries.
- The provisional catch for the Severn Estuary fisheries was 104, all killed, of which a large proportion are likely to have been Usk salmon.
- Despite a major spate in late September the grilse run was poor as in recent years.
- Stock status, based on catches, is now 'Probably at Risk' with a substantial shortfall in egg deposition.
- This concern is reinforced by poor levels of juvenile salmon in recent years especially following the failure of spawning in 2015.



30 April 2018: a salmon is returned by an Isca AC angler

1.1 **River conditions:** Flows in the River Usk during the 2018 were unusually extreme, both high and low. Flows in March and April were persistently high; the river was generally over a metre on the Chainbridge gauge until early May. From then until mid-September, the river only exceeded 0.5m on a few days and was below 0.4m for most of July and part of August. There were two large spates, to over 2 metres in late September, and to over 4 metres, with extensive flooding, on the 13 October after which the river only became fishable again on 17 October, the last day of the season.



1.2 From the 22 July until 11 August, flows at Chainbridge were supported by a release by Welsh Water of 80 MI/d from Usk Reservoir for abstraction at Prioress Mill in Usk, increasing the flow at the gauge by about 20 percent and raising the level by about two to three centimetres. This can be seen by the rise in the river when the release reached the lower river at Upper Llangybi Fishery on 22 July.

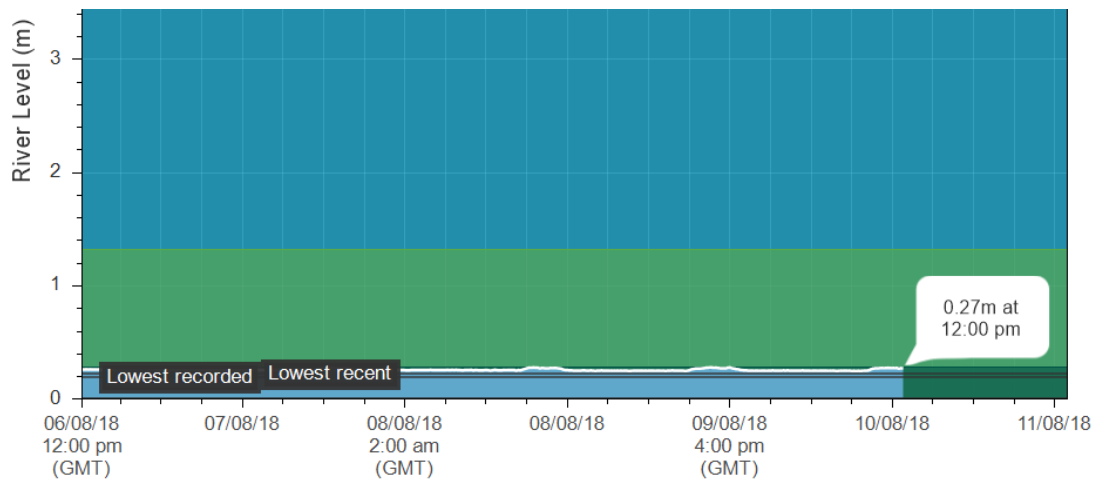


21 July



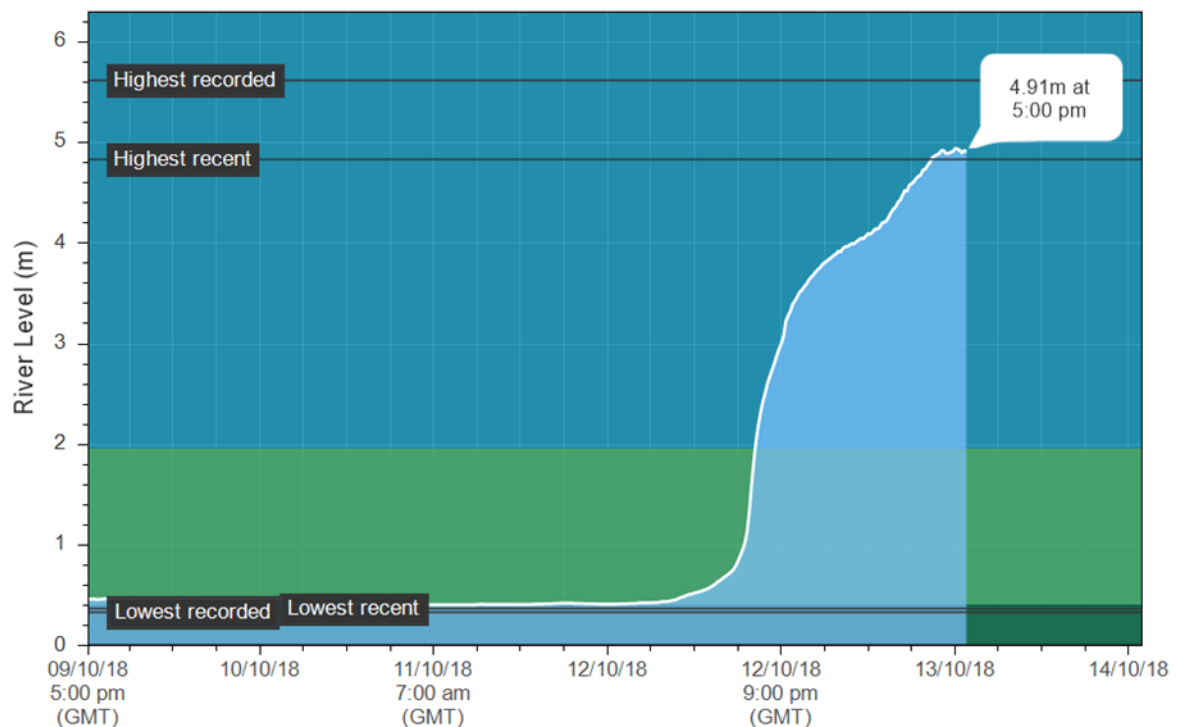
22 July

The impact of the release is also apparent from the pattern of flows at the Usk Town gauge, immediately downstream of Prioress Mill. The level rose for a few hours each weekday when abstraction, equivalent to released water ceased during the high tariff period for electricity:



1.3 This three-week release was made for water supply rather than environmental purposes. It was too small to have encouraged salmon migration into or up the river. Nonetheless, it is likely to have helped sustain fish and other life in the main river during the period of low flows and high temperatures. NRW recorded an average temperature of almost 21 degrees Centigrade on 21 July at Trostrey. Even so, Chris Brain was told of more than one moribund salmon seen upstream of Usk town during the hot weather and several dead salmon were found in the tidal reaches. Many fisheries ceased fishing during much of July and early August when temperatures were highest. For example, Isca AC closed its fisheries from 7 July to 15 August.

1.4 The flood in October was one of the biggest on record, notable not only for its height but that it came directly from a low flow. The Chainbridge gauge recorded a rise from about 0.4m to 4.9m within 24 hours:



2. Rod catch of Usk salmon

2.1 **Seasonal totals:** Catches were provided for 'Index fisheries' in the middle and lower reaches, i.e. Upper Llangybi; Lower Llangybi (from David Addams-Williams); three Merthyr Tydfil AA fisheries (from Gary Davies); Monkswood (from Helen Harrison); Llanover (from Ross Murray) and from Isca AC's four fisheries (from Jason Conlon). Together these totalled only 104 salmon in 2018.

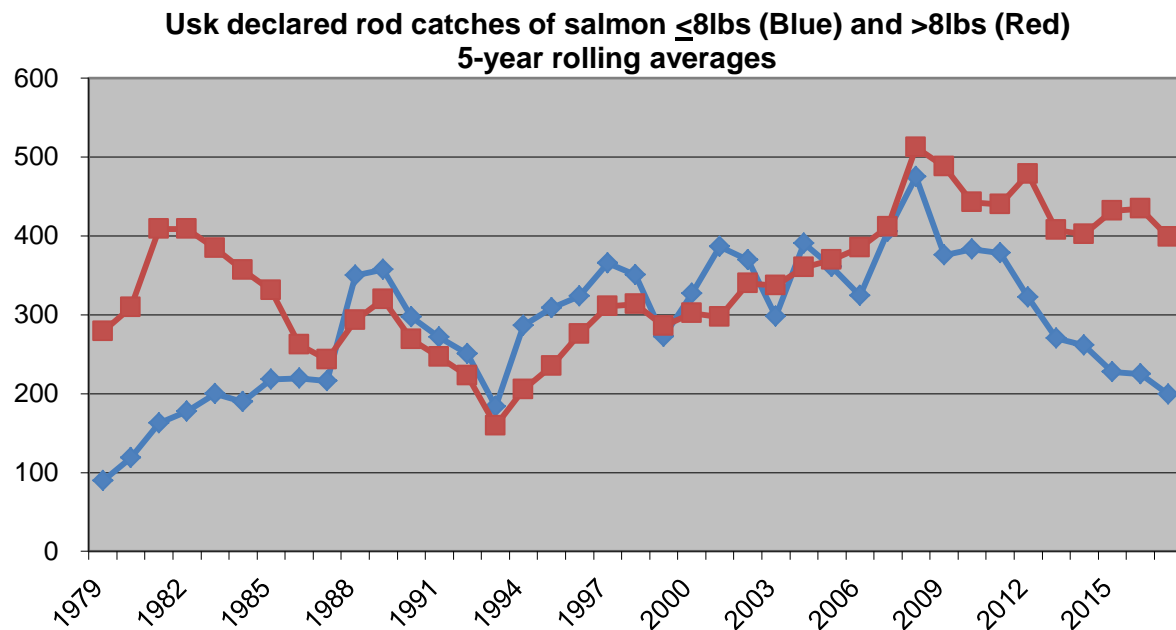
2.2 Salmon licence holders are required to make individual catch returns to NRW and the Environment Agency by the end of December. Not all do, but these 'declared' catches are used by NRW, with some adjustment, to assess stock status. Since 2008, the catch recorded at the Index fisheries has, on average, been two-thirds (65 percent) of the catch declared by anglers to NRW, ranging from 49 to 71 percent. The catch at the Index fisheries in 2018 can therefore be used to estimate the catch that will be declared to NRW and reported next spring. It is predicted to be between 146 and 212 and with a best estimate of 160:

	Salmon catch Index fisheries	Declared Usk catch	Proportion of Usk catch
2008	826	1156	71%
2009	314	491	64%
2010	410	580	71%
2011	346	707	49%
2012	603	1014	59%
2013	369	543	68%
2014	241	421	57%
2015	386	559	69%
2016	493	709	70%
2017	459	756	61%
2018	104	Predicted: 160 (Range: 146-212)	Average 65% (49% to 71%)

2.3 The predicted declared rod catch of 160 salmon is amongst the lowest on record, since 1871. The previous lowest were 155 in 1984 and 160 in 1976, years of extreme drought. The catch in 2003, a more recent drought year, was 303.

2.4 **The size of salmon caught:** The 55 salmon caught at Upper Llangybi, Lower Llangybi, the Merthyr Tydfil AA fisheries, and Monkswood had an average weight of just under 10lbs.

The declared catch of larger salmon, mainly multi-sea-winter fish, stopped declining in the 1990s and has roughly doubled since. While the average catch of small salmon up to 8lbs, mainly grilse, also rose, it has declined sharply in the last decade.



Data from NRW, Environment Agency, National Rivers Authority and Welsh Water Authority

2.5 The catch of small salmon was especially low in 2018 despite the large spate in late September which provided good opportunities for the migration of grilse. Of the 89 salmon caught at Upper Llangybi, Lower Llangybi, the Merthyr Tydfil AA fisheries, Monkswood and the Isca AC fisheries, a third (33%) were 8lbs or less.

2.6 **Catch & release rates:** Natural Resources Wales (NRW) made a plea in a press release on 15 June 2018 to anglers in Wales to return every salmon: ‘...it’s vital that we give every fish the chance to swim upstream to spawn and boost the next generation.’ For the first time, all of the salmon caught at the Index fisheries were released. It seems likely that the proportion released by all Usk anglers will be even higher than the 90 percent declared for 2017.

3.0 Net catch of Usk salmon

3.1 The catch for licensed net and fixed engines in the Severn Estuary declared to the licensing authorities was 103 salmon, provisionally. In England, 99 were caught (Chris Bainger, Environment Agency, pers.comm.) and 4 in Wales (Peter Gough, NRW, pers. comm.). At least one more was apparently caught in Wales (as shown on the web site: www.blackrocklavenets.co.uk/, reproduced below), giving a total of 104 salmon killed.



3.2 The Severn Estuary fisheries exploit mixed stocks. Tagging and genetic studies indicate that, on average, about 40 percent of the catch would be Usk salmon but, though unlikely, the entire catch of 104 salmon could potentially have been returning to the Usk. Given a rod catch of only 160 salmon with almost universal release, it is likely that several times more Usk salmon were killed by the Estuary fisheries in 2018 than by angling.

3.3 Although the English fisheries are regulated by the Environment Agency, the regulations have to be endorsed by NRW because both the Usk and Wye have salmon as a feature of their status as Special Area of Conservation under the EU Habitats Directive. NRW regulates the Blackrock lave net fishery in Wales through its ownership of the fishery. New regulations are being drafted for the English part of the Estuary but neither agency has yet indicated that it will stop the intentional killing of Usk (or Wye) salmon in the Severn Estuary from 2019, as proposed for the rod fisheries and other net fisheries in both countries where stocks are depleted.

4.0 Stock status

4.1 An early prediction for the declared rod catch of 157 (range: 130-200), and the weights of the sample of 55 salmon, described in 2.4, were sent to NRW in early November. Paul Greest and Ian Davidson used these to make have made a provisional assessment of expected egg deposition this year and stock status.

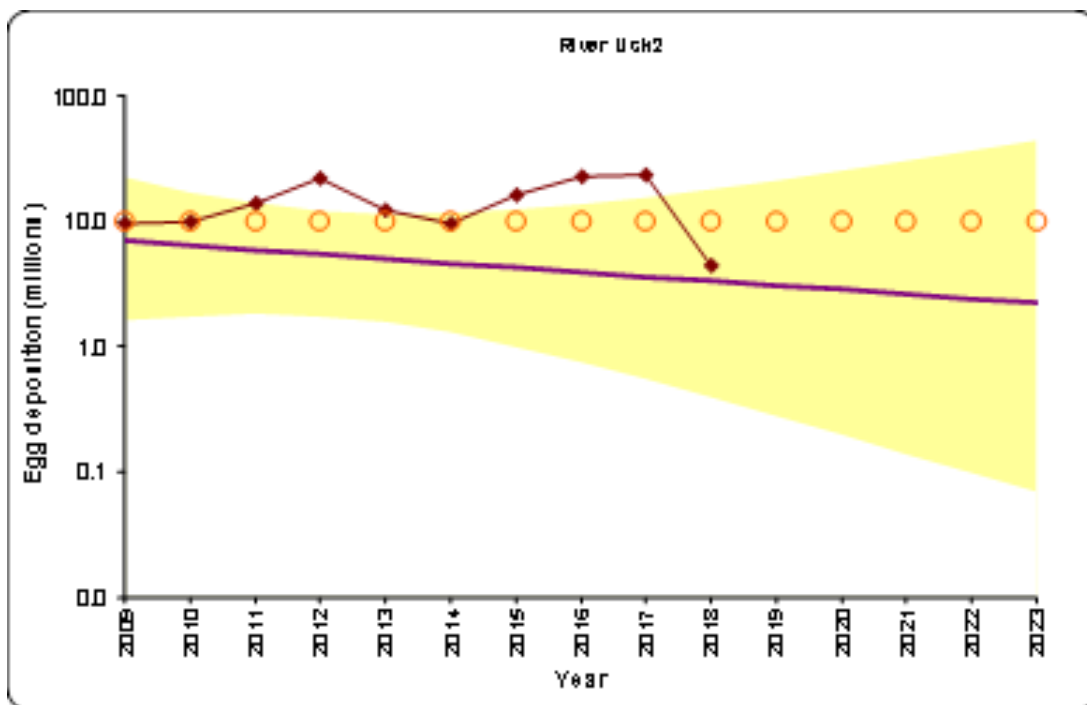
Egg deposition in 2018:

Lower estimate: 3.7 million (if the declared 2018 rod catch is 130)

Mid-estimate: 4.5 million (if the declared 2018 rod catch is 157)

Upper estimate: 5.7 million (if the declared 2018 rod catch is 200).

These have been used in conjunction with previous estimates of egg deposition, as shown for the 2018 Mid-estimate below, to assess stock status this year and projected to 2023. Note that the scale for egg deposition is logarithmic. The black squares indicate egg deposition in each year. The objective is for the stock to exceed the Conservation Limit (red circles) 80 percent of the time on average, i.e. for the line to be higher than the red circles. The yellow bands indicate the uncertainty about the position of the line.



4.2 The Annual Assessment of Salmon Stocks and Fisheries for 2017 (Cefas/EA/NRW, 2018) indicated that the Usk salmon stock was 'Probably Not at Risk' of failing its management objective and in the best condition of any river in Wales.

This provisional assessment for 2018 is much worse. Even with the Upper estimate for a declared rod catch of 200, there would be a substantial shortfall, below the Conservation Limit, of about four and a half million eggs. If each hen salmon were to produce about 5000 eggs, there would be a shortfall of a couple of thousand spawning salmon. The shortfall from the Management Target of 15

million eggs is double this. When NRW does its annual assessment next March, the Usk salmon stock will almost certainly be deemed **'Probably at Risk'** both for 2018 and 2023.

4.3 The 2018 catches and assessments are beginning to reflect the widespread failure of spawning in the Usk catchment in 2015. That failure will have had some impact on grilse (one sea-winter) runs this year due to a depleted number of one-year-old smolts (S1s) migrating to sea in 2017. The biggest impact is expected through depleted runs of adult salmon in 2019 and 2020.

20 November 2018

Acknowledgements

Thanks to all who contributed information for this note, especially those who provided catch data for their fisheries so promptly; to Ian Davidson and Paul Greest (NRW) for their help with the provisional stock assessment; and to NRW staff in general for the data on flow and water temperature.

Reference:

Cefas/EA/NRW (2018): <https://www.gov.uk/government/publications/assessment-of-salmon-stocks-and-fisheries-in-england-and-wales-in-2017>