

Note for the Usk Local Fisheries Group

Rod catches of Usk salmon and stock status in 2021

Guy Mawle (guy.mawle@gmail.com), 8 November 2021

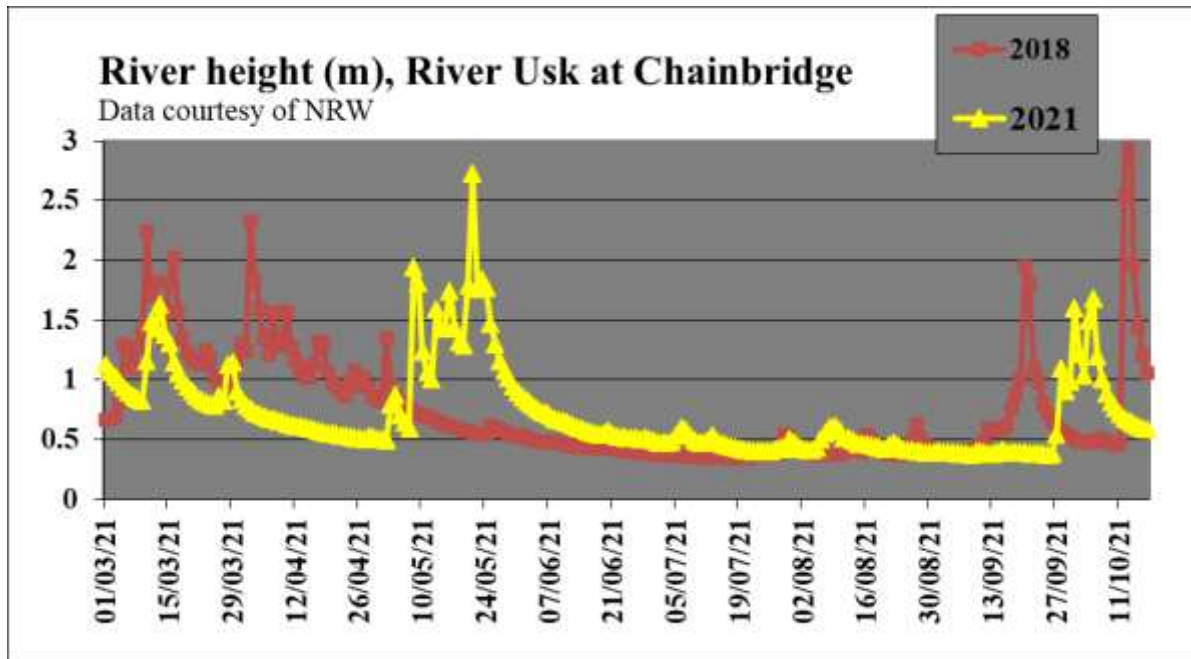
Summary:

- High flows in late spring and early autumn that offered good opportunities for salmon migration and angling. Otherwise, flows were low limiting angling to tidal reaches.
- Rod catches were very poor in 2021, possibly the worst on record. The declared rod catch for the Usk, when available from catch returns next April, is predicted to be between 124 and 170 salmon, best estimate 146.
- Catches peaked in June and October.
- The average weight of salmon in 2021 was relatively high at 10.5lbs reflecting a particularly poor run of grilse.
- Adult stock status for Usk salmon will drop from 'Probably at Risk' to 'At Risk'.
- Concern continues about the sustained low abundance of juvenile salmon. Climate and now low adult abundance offer partial explanations but there appear to be other unexplained problems within the river.



A 35 inch salmon, ~16lbs, caught on fly 11 June. The average weight of salmon was higher in 2021.

1.1 **River conditions:** As in 2018, there were no large spates in the summer. In contrast, late spring and early autumn were wet offering good conditions at times for salmon migration and angling.



In summary:

March: Overall flows were about average, less extreme than in recent years.

April/May: Flows dropped steadily during April to be followed by an exceptionally wet May which should have encouraged salmon migration. The river was mostly unfishable until the last week when angling conditions were good.

June to August: Early June continued to offer good angling conditions but flows thereafter dropped fairly steadily, with occasional small rises. The second half of July was hot. Average daily water temperatures at Trostrey weir exceeded 18 °C from the 14th to 29th, peaking at over 23°C. The Usk Fishing Association advised fisheries to close until temperatures dropped.

September: Water temperatures were high again at the beginning of September, above 18°C, the level at which NRW advises that salmon may not survive catch and release. Flows remained low until the river rose on 27th.

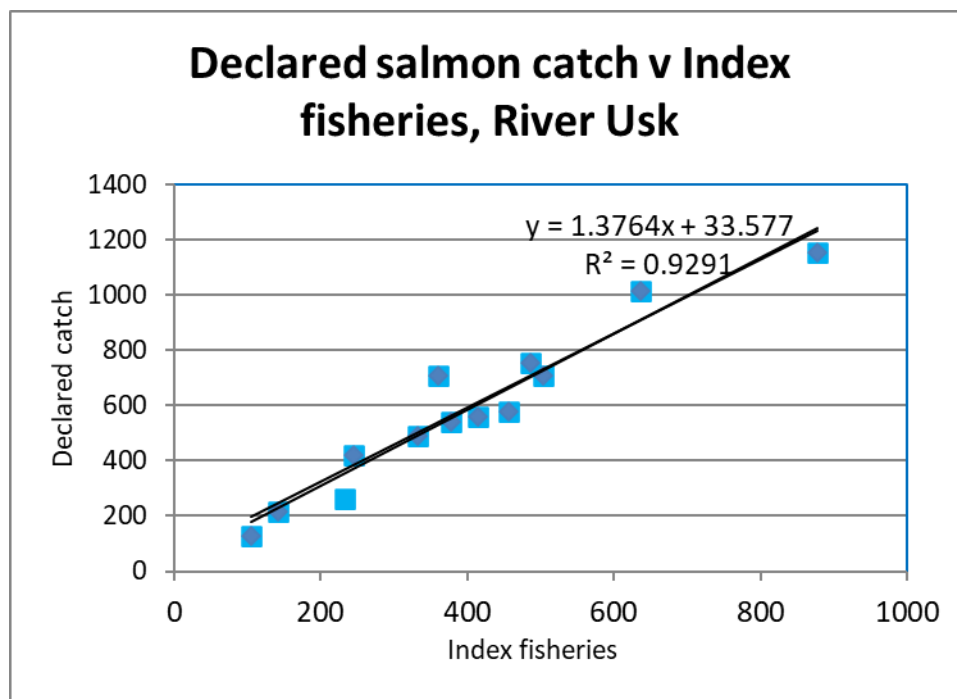
October: As in late spring, conditions for migration and then angling were good until the season closed on 17th.

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); Monkwood (from Helen Harrison); Llanover (from Ross Murray); the Usk Town Water (Chris Brain) and Isca AC's three fisheries (from Andrew Beattie). Together these totalled 109,

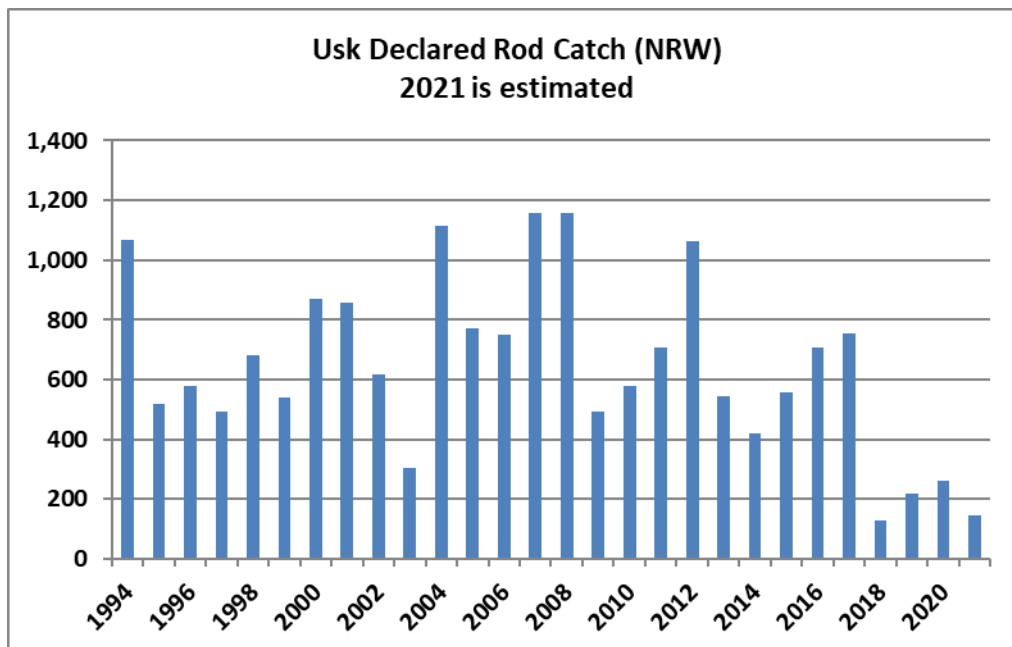
less than half the 2020 total of 232, and only slightly above the 105 for 2018, when the Usk recorded its lowest ever rod catch.

2.2 Salmon licence holders are required to make individual catch returns to NRW by the end of December. Not all do, but these 'declared' catches are used by NRW, with some adjustment, to assess stock status. There is a strong correlation between the catches at Index fisheries and the declared catch.

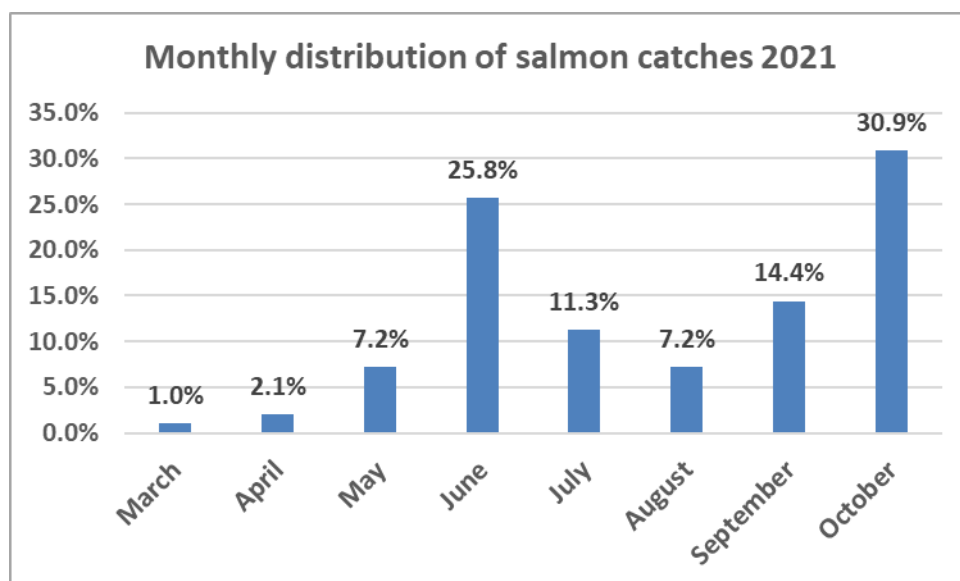


	Salmon catch Index fisheries	Declared Usk catch	Proportion of Usk catch
2008	877	1156	76%
2009	332	491	68%
2010	456	580	79%
2011	360	707	51%
2012	636	1014	63%
2013	377	543	69%
2014	245	421	58%
2015	414	559	74%
2016	503	709	71%
2017	486	756	64%
2018	105	129	81%
2019	141	216	69%
2020	232	263	88%
2021	109	Predicted: 146 Range: 124-170	5-year average to 2020: 75% Range: 64% to 88%

2.3 Over the last five years, the catch recorded at the Index fisheries has, on average, been 75 percent of the catch declared by anglers to NRW, ranging from 64 to 88 percent. The catch at the Index fisheries in 2021 can therefore be used to estimate the catch that will be declared to NRW this winter and reported next year. For the 2021 season, it is predicted to be about 146, between 124 and 170. This will be the second lowest, next to 2018, or possibly even the lowest on record since 1871. The last four years' catches have all been low, though 2020 was reduced by low fishing effort due to Covid restrictions. In general, fishing effort was also low in 2021 but this probably reflected low catches.



2.4 **Distribution of catch through the season:** Over half the catch was taken in two months, June, and the seventeen days of the season in October.

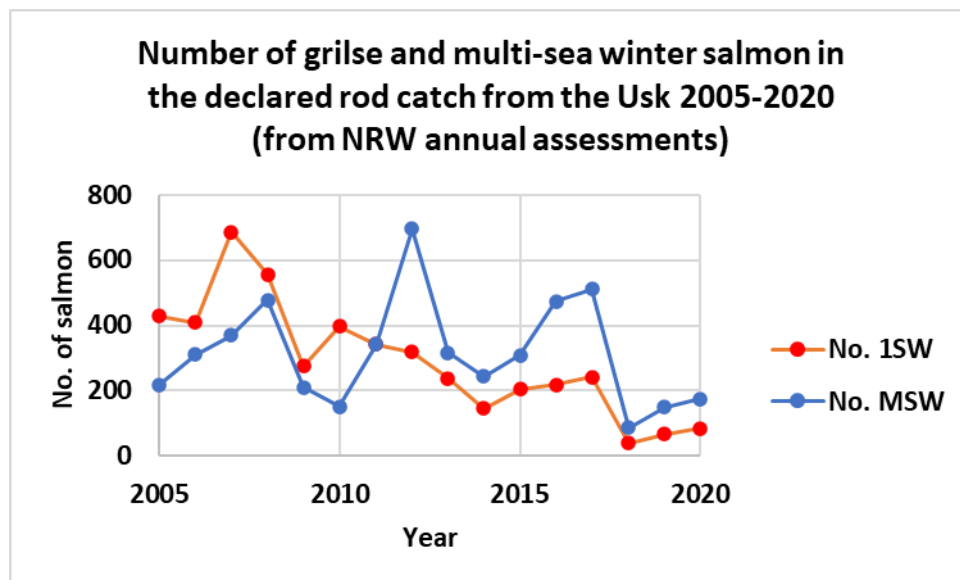




Left: 15lbs on the 27 March (*Photo: Mike Bolt*): the first salmon off the river in 2021 fell to Chad MacDonald fishing a Snaelda on Isca AC's tidal water at Newbridge-on-Usk. Isca anglers caught salmon in every month of the season though June was most productive

2.5 **Hitting it right:** Despite the low overall catch, some anglers still caught two or more salmon in a day. One, fishing club water with fly, landed three in quick succession from a single pool in October.

2.6 **The size of salmon caught:** The 99 salmon caught at Upper Llangybi, Lower Llangybi, the Isca AC fisheries, the Merthyr Tydfil AA fisheries, Monkwood and Usk Town had an average weight of 10.5 lbs. This was substantially greater than the last three years: 9.0lbs in 2020, 9.3lbs in 2019, and 9.7lbs in 2018. The increase reflected the reduced proportion of smaller salmon, mainly grilse, in the catch this year. Grilse, which spend one winter at sea, dominated the declared rod catch in the early part of this century, but the number reported has been falling fairly steadily since 2007. In contrast, the catch of multi-sea-winter salmon has shown no clear trend in the last quarter century, though catches have been low from 2018.



2.10 **Run-timing:** As last year, there seemed to be few fresh salmon, even grilse, caught after August. Presumably most salmon destined for the Usk now arrive in the Severn Estuary in late spring and summer, even if they may not enter the river immediately.

3.0 Adult stock status

3.1 The level and trend in estimated egg deposition over the last ten years is used by NRW to assess the current and future status of the salmon stock. For 2020, NRW assessed the Usk as 'Probably at Risk' of failing its management objective with a similar assessment predicted for 2025. For more detail see page 69 in:

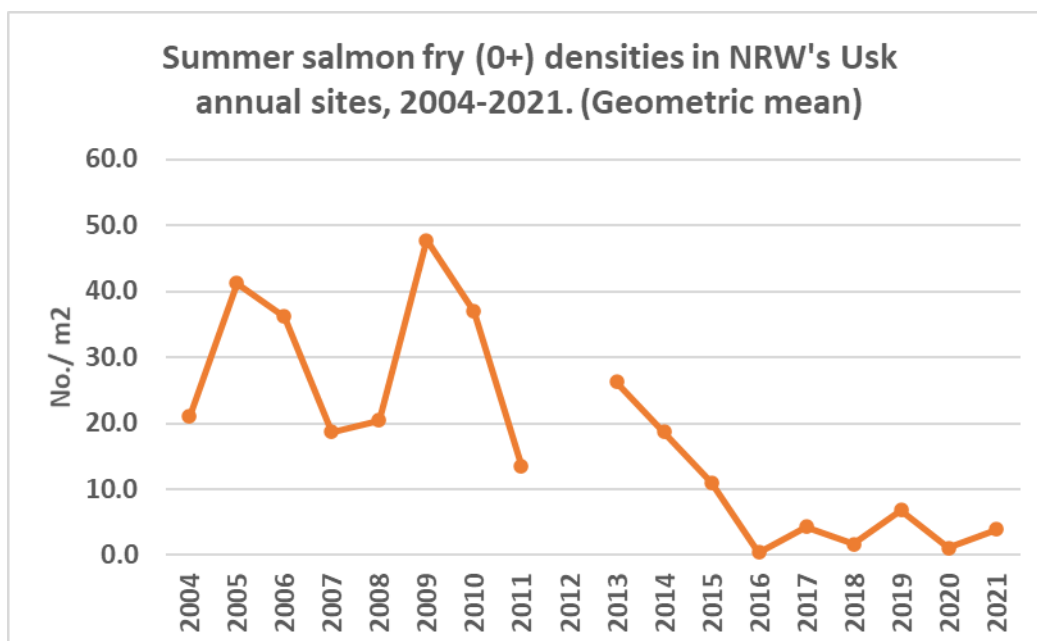
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1019223/SalmonReport-2020-summary.pdf

NRW has used the predicted rod catch in 2021 (from 2.2 above) and the weights of salmon caught at index fisheries to make an initial assessment of the stock. Given the downward trend in recent years, these suggest that the Usk salmon stock will be classed as 'At Risk' in both 2021 and 2026, even if the catch is as high as 170.

5.0 Juvenile stock status

5.1 NRW has 13 electrofishing sites on the catchment upstream of Crickhowell that it usually surveys annually in the summer. These sites were selected to be important nursery areas for salmon. All are on the lower part of tributaries except one that is on the very top of the main river. This is not to suggest that the tributaries produce all the juvenile salmon in the Usk. The tributary sites were selected because of the sampling method used. The main river is, or should be, an important nursery area as well.

5.2 These annual surveys show that for the last five years, densities have been persistently low in these sites, having collapsed to a tenth of those before 2011.



Data from NRW, except 2020 when, due to Covid, the sites were fished by the Wye & Usk Foundation. No survey in 2012. Data for 2021 are draft.

5.3 The decline reflects, with a year or two's delay, the decline in the grilse run, as indicated by the rod catch. However, judging by the rod catch of multi-sea-winter fish there was no overall shortage of adult salmon in 2016 or 2017 that would explain lack of salmon fry in 2017 and 2018. That will be due to conditions in the river, rather than at sea, and requires explanation. The desperately poor runs of salmon in 2018 and 2019 could account for low juvenile numbers in 2019 and 2020 but that does not mean that there weren't other factors affecting abundance. The floods in early 2020, and all the soil and other material they brought with them, are a likely candidate.



16 February 2020: the highest flood in recent decades at Usk Town Bridge. February 2020 had the highest rainfall in Wales on record. What damage did the high flows, and the material they carried, do to juvenile salmon abundance?

5.4 NRW commissioned analysis¹ of juvenile salmon abundance in major Welsh rivers from 2001 to 2017. This identified that both extreme temperature or flows could deplete fry abundance. 2016 was a clear case. There were exceptionally high temperatures at spawning time and low temperatures when fry emerged, also high floods before and during the time when fry emerged from the gravel. All were linked to low numbers of fry in the summer. However, neither extreme temperatures nor flows seem to account for low salmon fry abundance in 2017 or 2018. Further analysis using data local to the Usk is needed.

5.5 Sustained low abundance of salmon fry for the last six years at these survey sites does not bode well for future runs of adult salmon. However, other factors affect adult abundance including survival to smolt; conditions for smolt migration, good in 2021; and survival at sea, better for salmon that returned in 2020.

¹ Stephen D. Gregory, Victoria E. Bewes, Andrew J.H. Davey, Dylan E. Roberts, Peter Gough, Ian C. Davidson. 2020. Environmental conditions modify density-dependent salmonid recruitment: Insights into the 2016 recruitment crash in Wales. *Freshwater biology* 2020 v.65 no.12 pp. 2135-2153: <https://onlinelibrary.wiley.com/doi/10.1111/fwb.13609>

Acknowledgements

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