

Note for the Usk Local Fisheries Group Meeting – November 2019

Rod and net catches of Usk salmon and stock status in 2019

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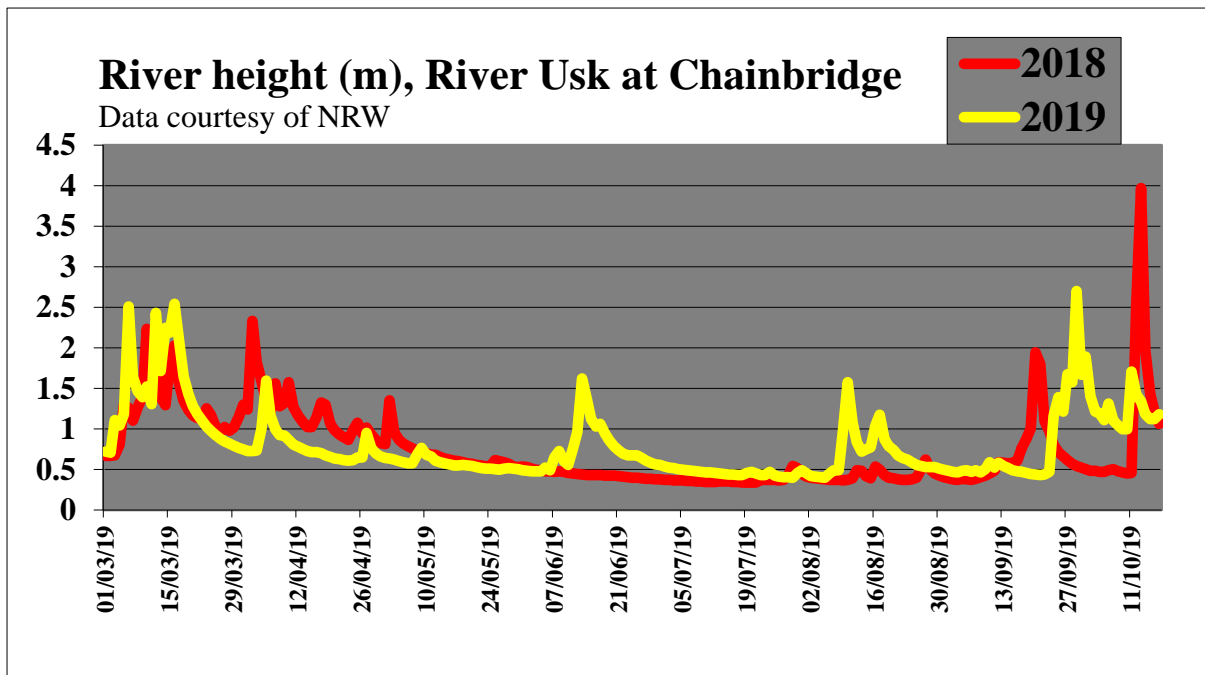
Summary:

- River conditions in the fishing season were often good for adult salmon migration and angling in 2019.
- Based on catches at index rod fisheries, the declared catch for 2019 is predicted to be between 200 and 300 and probably about 250, better than 2018 but another of the worst on record. As in recent years, most salmon rod-caught salmon were released at the index fisheries.
- The Environment Agency closed or introduced mandatory catch & release of salmon for Severn Estuary fisheries in England for a year by emergency byelaws. At NRW's fishery in Wales the 8 netsmen, like Usk anglers, were asked to release their catch in 2019 voluntarily.
- Stock status, based on catches, will be 'Probably at Risk' with a substantial shortfall in egg deposition as in 2018.
- This concern is reinforced by poor levels of juvenile salmon in recent years especially following the failure of spawning in 2015.



14 August 2019: A salmon, ~12lbs, from a lower Usk fishery, beginning to colour and carrying freshwater lice, *Argulus sp.*

1.1 **River conditions:** In contrast to 2018, conditions were often good for salmon migration and angling.



In summary:

March: It was the wettest March for some years and flows were generally high.

April: Substantial spate early with a smaller spate at the end of the month.

May: Small spate at the beginning of the month. Dwr Cymru/Welsh Water was requested not to abstract on this spate to help salmon smolt and adult migration: it did not feel able to comply. The river was quite low for the rest of that month. From the 17th, flows were supplemented by a 50MI/d release from Usk reservoir to support the abstraction to Llandegfedd in preparation for the shutdown at the old Prioress Mill pumping station in September.

June: Flows remained fairly low at the beginning of June but rose in the third week providing good conditions for migration and fishing.

July: Hot and dry with low flows.

August: Flows rose mid-month with good migration and fishing conditions before dropping late in the month.

September/ October: dry until mid-September after which flows remained high after exceptional rainfall. It was the wettest start to October for some years with flows higher even than in 2012.

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 140, an increase from 2018 but still much lower than any of the previous ten years.

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 81 percent. The catch at the Index fisheries in 2019 can therefore be used to estimate the catch that will be declared to NRW and reported next spring. For 2019, it is predicted to be between 170 and 285. In dry years, such as 2018, the index fisheries tend to provide a large proportion of the catch, being mostly in the lower half of the river. Due to the persistent high flows at the backend of the 2019 season, it is likely that the index fisheries will provide a lower than average percentage of the total catch, so the declared catch is expected to be about 250 salmon.

	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	105	129	81%
2018	140	Predicted: 250 Range: 170-285	Average 65% (49% to 81%)

2.3 The predicted declared rod catch of 250 salmon is amongst the lowest on record, since 1871. The years in which catches were lower (2018, 1984, 1976, 1901) were all drought years with the possible exception of 1901 for which no data are available. As apparent from the description of river conditions, 2019 was very far from a drought year. The poor catches are therefore likely to be primarily an indicator of the paucity of salmon though there may be other factors. For example, the increased preference for fly fishing by many Usk anglers may have contributed through reduced fishing effort and effectiveness in the high water at the back end.

2.4 **The size of salmon caught:** The 92 salmon caught at Upper Llangybi, Lower Llangybi, the Merthyr Tydfil AA fisheries, and Monkswood had an average weight of 9.4lbs, a little smaller than in 2018, with 39% being 8lbs or less.

2.5 **Run-timing:** Although there were good running conditions in the second half of the season, there seemed to be few fresh salmon, even grilse, caught after August.

2.6 **Catch & release rates:** No data were available for one of the index fisheries but at the others only 2 of the 126 salmon caught were not released, i.e. 1.6 percent. The proportion released declared to NRW on catch returns by all Usk anglers for 2019 may be similar to that declared for 2018, i.e. 97 percent.

2.7 **Freshwater lice:** Many of the salmon and other salmonids caught in August in the lower river were infested with the freshwater louse, *Argulus sp.* causing significant damage in some cases though no mortalities were reported.



October 17: The pelvic fin of a 6lb grilse showing damage believed to be caused by *Argulus* though the lice were no longer present. Other fins were also affected.

3.0 Net catch of Usk salmon

3.1 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. There was no catch by licensed net and fixed engines in the Severn Estuary in England in 2019 as the Environment Agency introduced emergency byelaws to protect stocks. The Wye & Usk Foundation and NRW had advised the Agency that salmon, designated features of the Usk and Wye Special Areas of Conservation (SACs), were now in unfavourable condition in both rivers. Consequently, the estuary fisheries, in combination

with other factors notably the rod fisheries, could not be assumed to have no impact on the status of salmon in these rivers. After a downward revision of the status of the Severn’s salmon stock as well, the Agency made emergency byelaws closing the estuary fisheries in England though still allowing the lave netsmen to fish catch and release, like anglers. The emergency byelaws are in force for a year. Future management measures for the fisheries have not been publicised.

3.2 NRW, awaiting a decision from Welsh Government on its own byelaws for other Welsh fisheries, allowed the eight lave netsmen to fish in its own fishery at Blackrock. Consistent with fisheries elsewhere in Wales in 2019, the netsmen were asked to release salmon caught. Judging from the netsmen’s website (www.blackrocklavenets.co.uk/), they were not willing to release their catch; at least three salmon were caught and killed. NRW is yet to confirm whether it will require the release of salmon, with minimum harm, at their Blackrock fishery from 2020 to provide consistency with anglers and other lave netsmen in the Estuary.

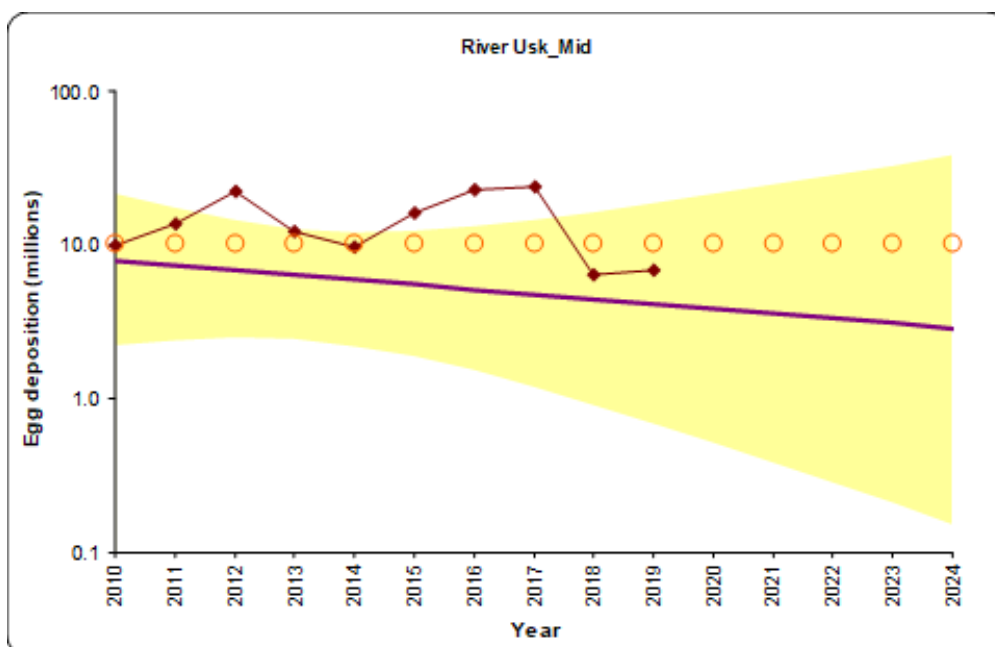
4.0 Adult stock status

4.1 An early prediction for the declared rod catch of 250 (range: 200-300), and the weights of the sample of 92 salmon, described in 2.4, were sent to NRW in early November. Paul Greest and Ian Davidson used these to make have made a preliminary assessment of expected egg deposition this year and stock status.

Egg deposition in 2019:

- Lower estimate: 5.4 million (if the declared 2019 rod catch is 200)
- Mid-estimate: 6.8 million (if the declared 2019 rod catch is 250)
- Upper estimate: 8.1 million (if the declared 2019 rod catch is 300).

These have been used in conjunction with previous estimates of egg deposition, as shown for the 2019 Mid-estimate below, to assess stock status this year and projected to 2024.



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 2018 (Cefas/EA/NRW, 2019) indicated that the Usk salmon stock was 'Probably at Risk' of failing its management objective both in 2018 and projected ahead for five years. The preliminary assessment for 2019 indicates the same conclusion regardless of which estimate of the declared rod catch is used. Using the mid-estimate of 250, and assuming each hen salmon produces 5000 eggs, there will be a shortfall this year of a couple of thousand spawning salmon from the Management Target. When NRW makes its annual report on salmon stocks to the Welsh Minister next April, after analysing catch returns from licence holders, the Usk will almost certainly be deemed '**Probably at Risk**' both for 2019 and projected to 2024.

4.3 The 2019 catches and assessments continue to reflect the widespread failure of spawning in the Usk catchment in 2015 amongst other factors, notably poor survival at sea. That failure will have affected the abundance, this year, of two-sea-winter salmon that smolted after one year (S1s). Its biggest impact may have been on grilse (one sea-winter salmon) that migrated to seas as two-year-old smolts (S2s) in 2018. Most Usk salmon are thought to migrate as S2s though more could now migrate earlier due to low juvenile densities and warm winter. The low abundance of juvenile salmon noted in extensive electrofishing surveys by NRW and the Wye & Usk Foundation since 2015 is expected to contribute to depleted runs of adult salmon in 2020 and beyond.

Original 19 November 2019, updated with flow data 8 December 2019

Acknowledgements

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Reference:

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