

Salmon stock performance in Wales 2018

1. Introduction

- This report examines salmon stock performance on the 23 principal salmon rivers in Wales for 2018 (including the border rivers Severn, Wye and Dee) based on compliance with Conservation Limits. Provisional results for each of these rivers are given in Table 1 and Figs 1 and 2.
- Under Ministerial Direction, each of these 23 rivers (alongside 40 rivers in England - excluding the above border rivers) (i) have produced Salmon Action Plans; (ii) assess and report on compliance with Conservation Limits annually and (iii) utilise the latter in reviewing Net Limitation Orders and byelaws.
- This report fulfils the second of these requirements and informs the third; i.e. it serves to assess the conservation status of individual river stocks and helps to ensure that Natural Resources Wales has appropriate fisheries management measures in place. The latter principally take the form of voluntary or mandatory controls on exploitation by net and rod fisheries as guided by the Decision Structure (Appendix I).
- A more comprehensive annual report on the status of salmon stocks and fisheries in England and Wales - including compliance with Conservation Limits – has been produced jointly by Cefas, the Environment Agency and Natural Resources Wales; see:

<https://www.gov.uk/government/publications/assessment-of-salmon-stocks-and-fisheries-in-england-and-wales-in-2017>

<https://www.gov.uk/government/publications/assessment-of-salmon-stocks-and-fisheries-in-england-and-wales-background-report-2017>

Note these assessments were published in 2017, the 2018 assessments will be published in late May.

This is also a requirement under Ministerial Direction which, aside from informing domestic fisheries management, fulfils reporting obligations to ICES (the International Council for the Exploration of the Sea) and NASCO (North Atlantic Salmon Conservation Organisation) for the purposes of North Atlantic scale assessment of salmon stock status. This is used to help regulate international fisheries in Greenland and the Faroes, and for the provision of wider management advice, including to UK governments.

2. Conservation Limits and compliance assessment

- Conservation Limits (CLs) are based on estimates of the salmon producing capacity of individual catchments. They are expressed in terms of egg numbers and are set to help ensure that adequate numbers of fish go on to spawn.
- Compliance assessment involves (i) producing estimates (from rod catches or more direct methods e.g. use of traps or fish counters) of the numbers of salmon returning each year and their likely egg contribution and (ii) undertaking formal statistical assessment of compliance status against the CL. The latter procedure is designed to achieve the 'management objective': that stocks meet or exceed their CL four years out of five, in the long-term.
- Compliance assessment is carried out on a rolling ten-year series of egg deposition estimates (ending with the latest year) and examines the linear trend in egg numbers (projected forward five years in time) as well as the likelihood that a river stock is statistically passing or failing its management objective in any one year.
- River stocks which are statistically passing or failing their management objective (i.e. there is a greater than 95% chance they are in one of these categories) are classed as 'not at risk' or 'at risk', respectively. River stocks in an intermediate position are classed as either 'probably not at risk' or 'probably at risk' depending on whether the likelihood of them passing their management objective is greater or less than 50%, respectively.
- In terms of the Decision Structure (Appendix I), it is the 'at risk' status projected 5-years beyond the current year which is the most important performance measure, as well as the upward or downward trend in egg numbers. These statistics, along with compliance status in the current year and angling catch-and-release levels, are summarised in Table 1, with risk status in the current year and projected status in 5-years time shown in Figs 1 and 2.

Table 1 Catch and release statistics, latest 10-year trends in egg numbers, and CL compliance status in the current year (2018) and projected in 5 years time (2023) for the 23 principal salmon rivers in Wales.

River	% Rod released:							Current compliance	Projected compliance	Trend	
	2012	2013	2014	2015	2016	2017	2018	2018	2023		
Severn	74.3	68.6	78.7	72.4	77.8	76.6	78.9	Prob at risk	Prob at risk	Uncertain	+
Wye	100.0	100.0	100.0	99.6	100.0	98.5	100.0	Prob at risk	Prob at risk	Uncertain	++
Usk	68.1	70.5	77.4	83.0	81.8	90.1	96.9	Prob at risk	Prob at risk	Uncertain	-
Taff & Ely	97.6	100.0	100.0	100.0	100.0	100.0	100.0	At risk	At risk	Uncertain	--
Ogmore	58.1	62.5	96.4	100.0	95.2	94.4	100.0	At risk	At risk	Down	---
Tawe	36.9	35.6	55.6	76.9	76.1	84.0	70.6	At risk	At risk	Down	---
Tywi	39.5	51.7	58.3	60.4	59.0	70.8	69.8	Prob at risk	Prob at risk	Uncertain	-
Taf	30.0	30.0	69.0	69.2	50.0	53.7	78.3	At risk	Prob at risk	Uncertain	--
E&W Cleddau	47.4	71.8	56.8	64.3	80.0	64.4	62.5	At risk	At risk	Uncertain	--
NeVERN	36.4	60.6	96.8	85.0	75.0	85.7	100.0	Prob at risk	Prob at risk	Uncertain	+
Teifi	46.9	58.8	72.1	62.1	66.1	71.6	85.1	At risk	At risk	Down	---
Rheidol	31.8	72.7	100.0	88.9	100.0	100.0	100.0	At risk	At risk	Uncertain	--
Dyfi	34.8	52.3	72.0	71.8	72.9	64.2	69.8	At risk	Prob at risk	Uncertain	-
Dysinni*	75.0	80.0	100.0	75.0	80.0	100.0	100.0	Prob at risk	Prob at risk	Uncertain	+
Mawddach	60.7	44.4	71.8	65.9	68.4	84.7	79.3	Prob at risk	Prob at risk	Uncertain	-
Dwyrhyd*	0.0	25.0	75.0	50.0	0.0	66.7	100.0	Prob at risk	Prob at risk	Uncertain	+
Glaslyn	73.1	53.2	66.7	81.5	78.6	87.5	50.0	Prob at risk	Prob at risk	Uncertain	--
Dwyfawr*	20.0	66.7	55.6	25.0	77.8	0.0	100.0	At risk	Prob at risk	Uncertain	--
Seiont	34.5	37.5	100.0	50.0	33.3	33.3	100.0	At risk	At risk	Down	---
Ogwen	34.6	22.9	53.8	52.9	46.7	64.9	63.0	Prob at risk	Prob at risk	Uncertain	-
Conwy	53.9	57.7	45.2	66.2	70.8	84.0	91.3	Prob at risk	Prob at risk	Uncertain	-
Clwyd	73.7	80.0	71.4	100.0	83.3	90.0	80.0	At risk	At risk	Down	---
Dee	74.4	81.2	87.6	86.3	86.3	90.6	94.2	At risk	Prob at risk	Uncertain	-

Trend:	
p<0.05	---
p<0.10	---
0.10<=p<0.30	--
0.30<=p<0.50	-
0.70=>p>0.50	+
0.90=>p>0.70	++
p>0.90	+++
p>0.95	+++

* Mean rod catch <20

Fig 1 Main salmon rivers in Wales: Risk status 2018

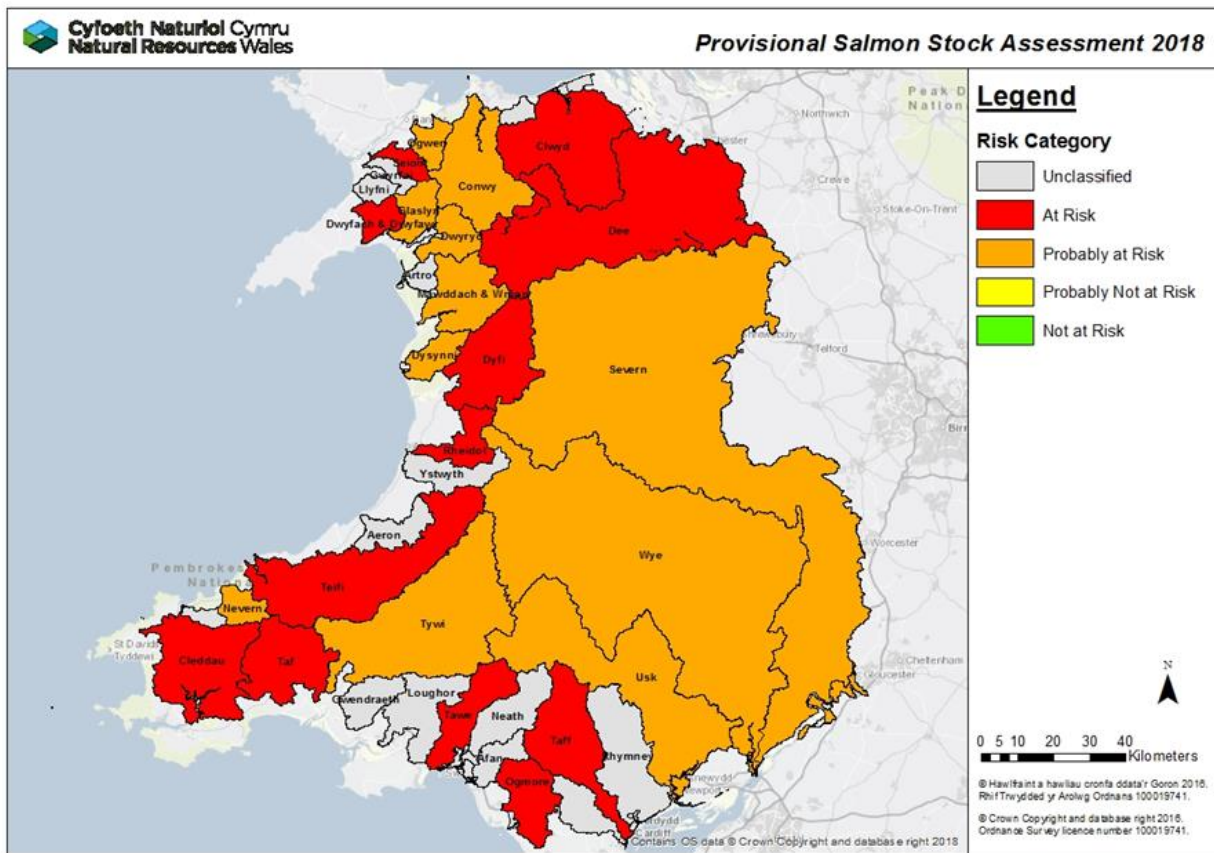
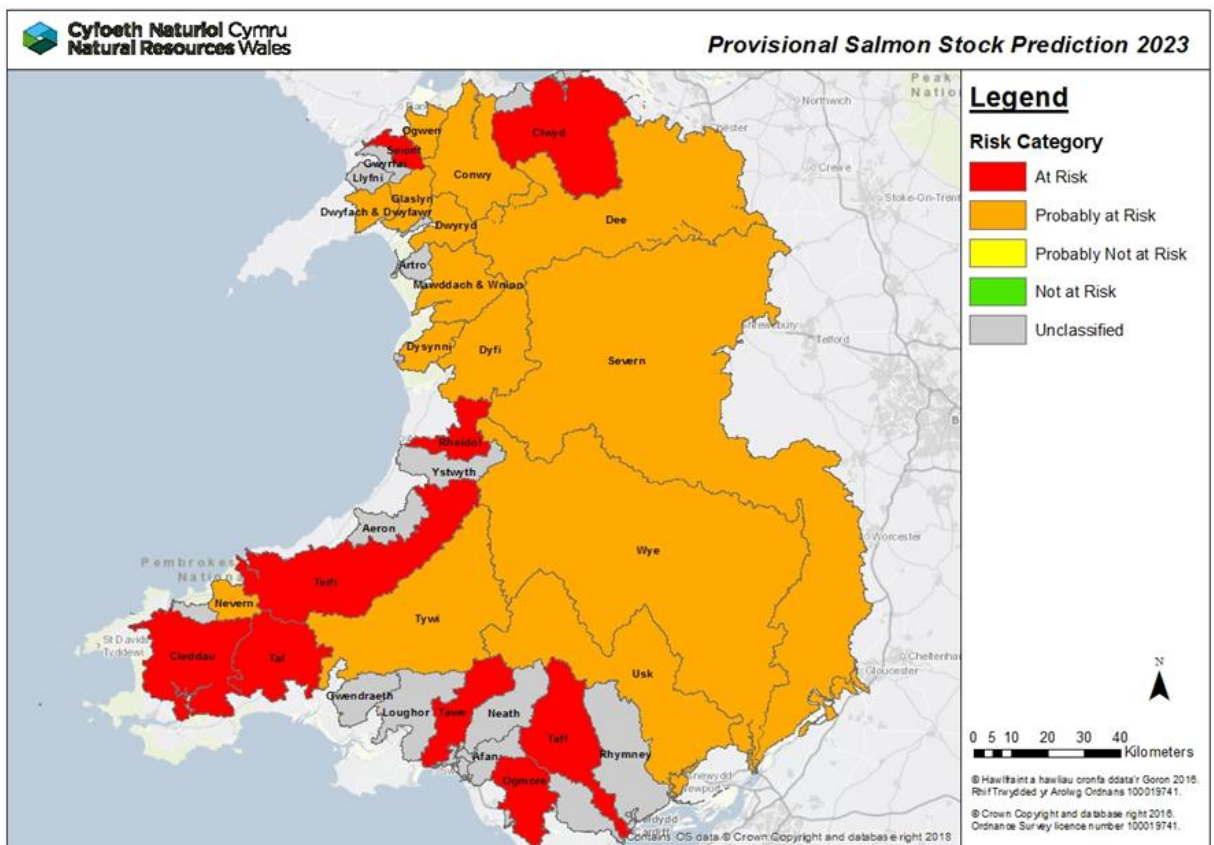


Fig 2 Main salmon rivers in Wales: Projected risk status 2023



3. Management response

- In line with the Decision Structure, steps should be taken to significantly reduce or even eliminate net and rod fishery exploitation (i.e. the numbers of fish killed) on those rivers projected to be “at risk” or “probably at risk” in 5 years time (i.e. 2023 in the current assessment). Where possible (principally on rod fisheries), voluntary measures to control exploitation should be promoted in the first instance before considering mandatory action. Timely intervention to protect stocks is particularly important on the SAC rivers for Atlantic salmon (namely: Wye, Usk, Teifi, Mawddach, Gwyrfai and Dee).
- For rivers which have been in the “not at risk” category for 5 consecutive years, consideration should be given to relaxing fishing controls - including on net fisheries, where these exist.
- Recovering rivers should be considered as “at risk” unless assessment information is available and indicates otherwise. C&R levels of 100% should be implemented at the same time as working on the necessary environmental improvements.
- Water Framework Directive (WFD) Good Ecological Status (GES) assessments for salmon (where available) for catchment water bodies should be considered alongside CL compliance results and other sources of evidence as part of the management decision making process.

Appendix I: Developing fishing controls for salmon fisheries in England & Wales (“The Decision Structure”)

