



Salmon stock performance in Wales 2017

1. Introduction

- This report examines salmon stock performance on the 23 principal salmon rivers in Wales for 2017 (including the border rivers Severn, Wye and Dee) based on compliance with Conservation Limits. 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>

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 (2017) and projected in 5 years time (2022) for the 23 principal salmon rivers in Wales.

| River | % Rod released: | | | | | | Current compliance | | Trend | |
|-------------|-----------------|-------|-------|-------|-------|-------|--------------------|------------------|-----------|-----|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2017 | 2022 | | |
| Severn | 74.3 | 68.6 | 78.7 | 72.4 | 77.8 | 76.6 | Prob not at risk | Prob not at risk | Uncertain | ++ |
| Wye | 100.0 | 100.0 | 100.0 | 99.6 | 100.0 | 98.5 | Prob at risk | Prob not at risk | Uncertain | ++ |
| Usk | 68.1 | 70.5 | 77.4 | 83.0 | 81.8 | 90.1 | Prob not at risk | Prob not at risk | Uncertain | ++ |
| Taff & Ely | 97.6 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | At risk | Prob at risk | Uncertain | + |
| Ogmore | 58.1 | 62.5 | 96.4 | 100.0 | 95.2 | 94.4 | At risk | At risk | Uncertain | -- |
| Tawe | 36.9 | 35.6 | 55.6 | 76.9 | 76.1 | 84.0 | At risk | At risk | Uncertain | --- |
| Tywi | 39.5 | 51.7 | 58.3 | 60.4 | 59.0 | 70.8 | Prob at risk | Prob at risk | Uncertain | - |
| Taf | 30.0 | 30.0 | 69.0 | 69.2 | 50.0 | 53.7 | Prob at risk | Prob at risk | Uncertain | -- |
| E&W Cleddau | 47.4 | 71.8 | 56.8 | 64.3 | 80.0 | 64.4 | At risk | At risk | Uncertain | -- |
| Nevern | 36.4 | 60.6 | 96.8 | 85.0 | 75.0 | 85.7 | Prob at risk | Prob at risk | Uncertain | ++ |
| Teifi | 46.9 | 58.8 | 72.1 | 62.1 | 66.1 | 71.6 | Prob at risk | Prob at risk | Uncertain | -- |
| Rheidol | 31.8 | 72.7 | 100.0 | 88.9 | 100.0 | 100.0 | At risk | At risk | Down | --- |
| Dyfi | 34.8 | 52.3 | 72.0 | 71.8 | 72.9 | 64.2 | At risk | Prob at risk | Uncertain | -- |
| Dysinni* | 75.0 | 80.0 | 100.0 | 75.0 | 80.0 | 100.0 | Prob at risk | Prob at risk | Uncertain | + |
| Mawddach | 60.7 | 44.4 | 71.8 | 65.9 | 68.4 | 84.7 | Prob at risk | Prob at risk | Uncertain | - |
| Dwyrhyd* | 0.0 | 25.0 | 75.0 | 50.0 | 0.0 | 66.7 | Prob at risk | Prob at risk | Uncertain | - |
| Glaslyn | 73.1 | 53.2 | 66.7 | 81.5 | 78.6 | 87.5 | Prob at risk | Prob at risk | Uncertain | -- |
| Dwyfawr* | 20.0 | 66.7 | 55.6 | 25.0 | 77.8 | 0.0 | At risk | At risk | Uncertain | -- |
| Seiont | 34.5 | 37.5 | 100.0 | 50.0 | 33.3 | 33.3 | At risk | At risk | Uncertain | --- |
| Ogwen | 34.6 | 22.9 | 53.8 | 52.9 | 46.7 | 64.9 | Prob at risk | Prob at risk | Uncertain | - |
| Conwy | 53.9 | 57.7 | 45.2 | 66.2 | 70.8 | 84.0 | Prob at risk | Prob at risk | Uncertain | - |
| Clwyd | 73.7 | 80.0 | 71.4 | 100.0 | 83.3 | 90.0 | At risk | At risk | Uncertain | --- |
| Dee | 74.4 | 81.2 | 87.6 | 86.3 | 86.3 | 90.6 | At risk | 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 2017

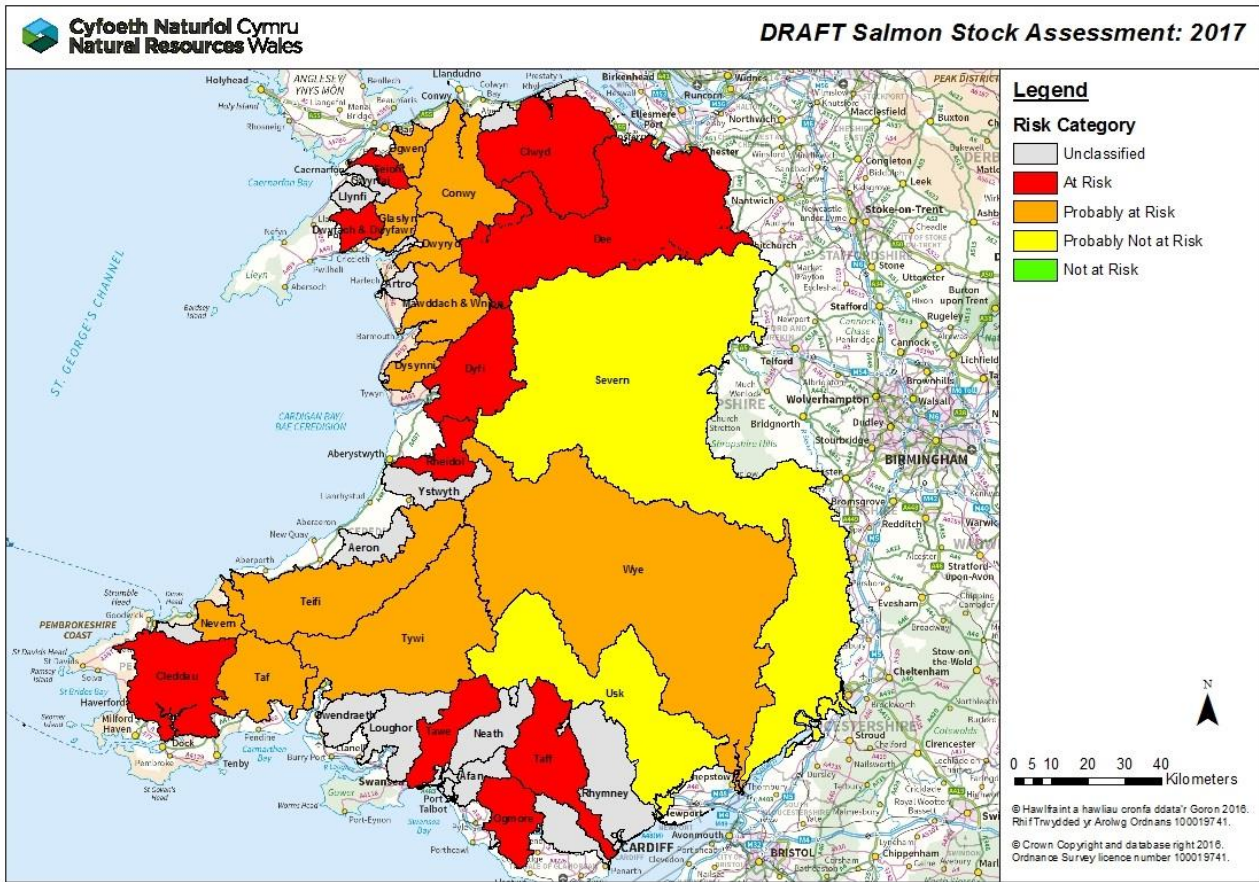
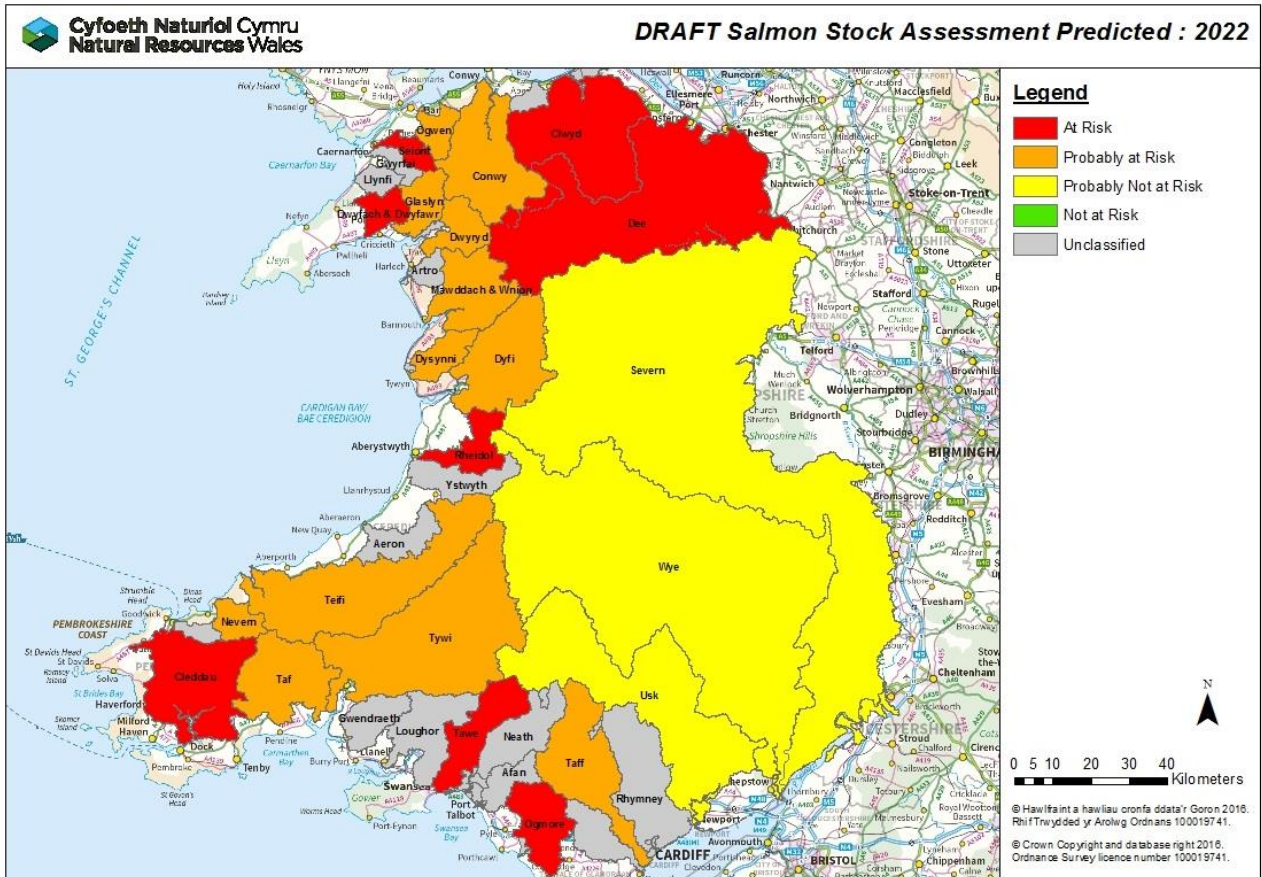


Fig 2 Main salmon rivers in Wales: Projected risk status 2022



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” in 5 years time (i.e. 2022 in the current assessment), or “probably at risk with a downward trend”. 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. Voluntary C&R levels of 100% should be encouraged at the same time as working on the necessary environmental improvements. If these rivers have the potential to develop rod fisheries with average catches of >20 salmon, then mandatory measures may need to be considered.
- 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”)

