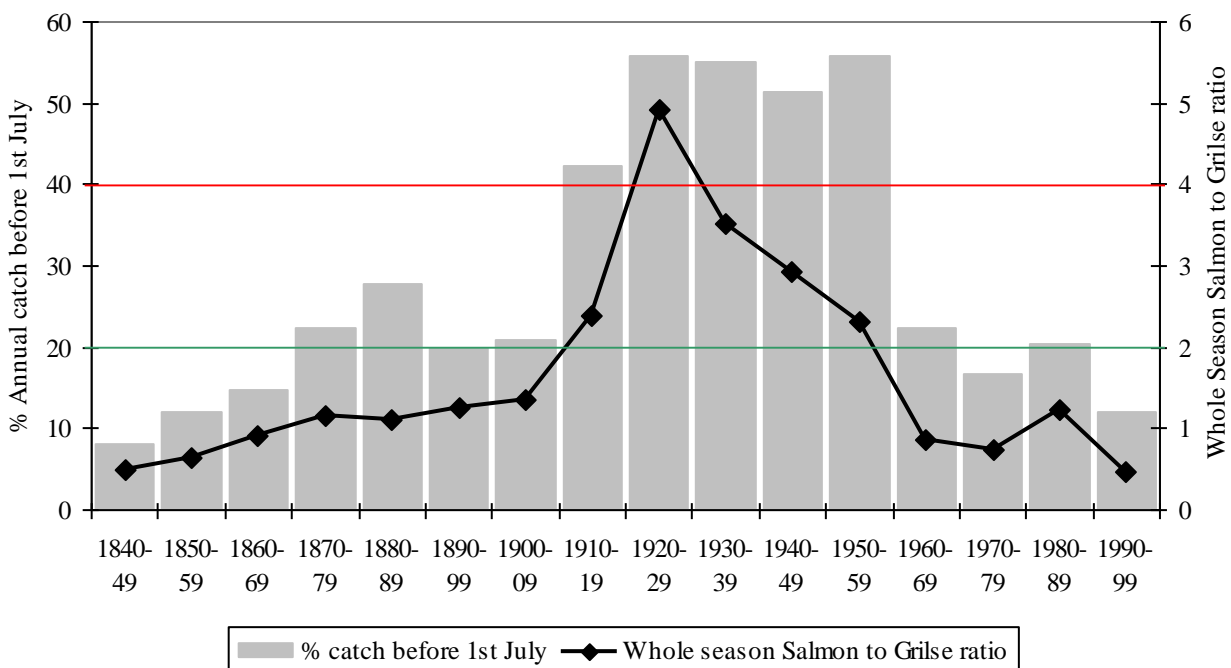




Was there a previous period when Spring Salmon dominated before the 1910s-1950s phase?

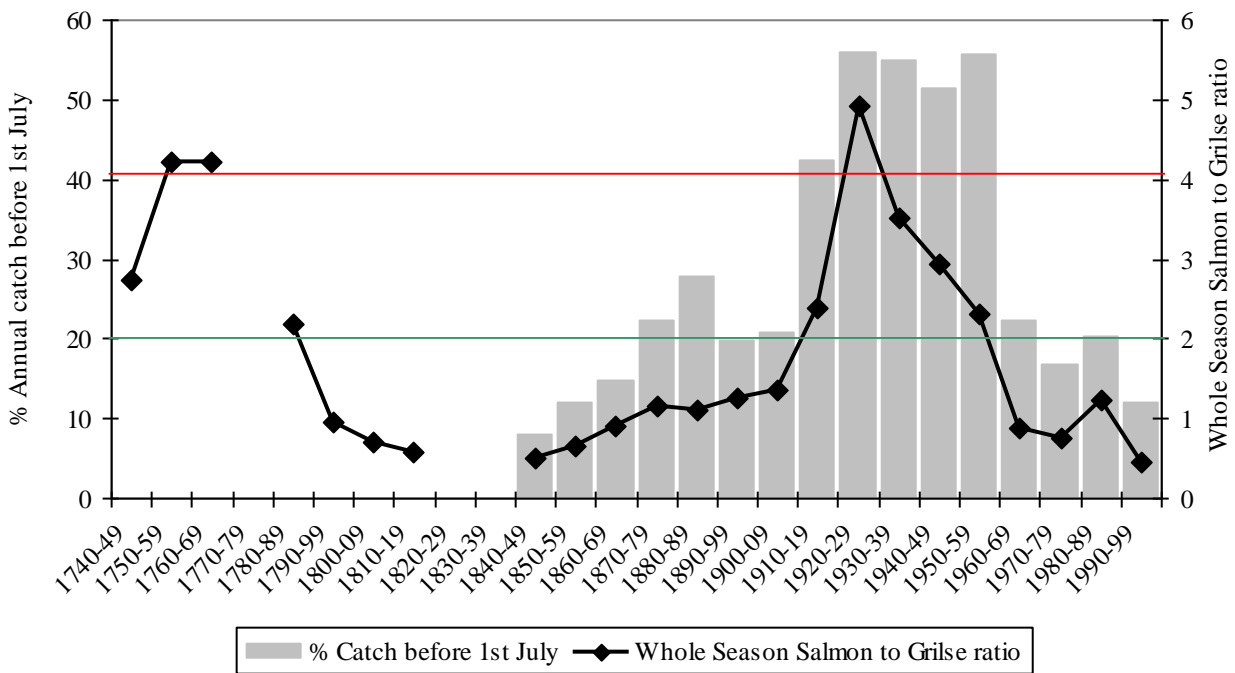
1. The problem with answering this question is that the available catch records for the river do not cover a particularly long period. The very oldest rod fishery records go back to the 1850's but most only to the 1880s and 1890s. Many netting station records of the old Berwick Salmon Fisheries Company (BSFC) go back to 1840, but only one set of surviving records goes back any further. The annual catches of the Sandstell netting station (the first on the south bank inside the estuary) from 1736 to 1818 (with gaps) were published in the History of the Berwickshire Naturalists' Club in 1831.
2. Combining the catches of the different BSFC netting stations together allows gaps in the records of individual stations to be filled. So long as the analyses made are only of percentages and proportions and not of actual numbers, the fact that records are from different numbers of stations in different years does not matter. For this analysis therefore, the netting stations in the estuary, from the sea to the Whiteadder have been combined. The definition of Grilse and Salmon is the traditional netsmen's one: Grilse below 8lbs, Salmon above, which for the period of the netting season (ends 14th September) is not a bad guide. Almost no Grilse are recorded in these records before the June of each season, as netsmen also use the shape of the fish to distinguish Salmon from Grilse.
3. The graph below shows the proportions of the annual catches of these netting stations that were taken before the 1st July, from 1840 to 1997, when serious netting before the end of June ended (gray columns). There is only one period when more than 40% (red line) of the annual catch was taken before this date, which was from the 1910s to the 1950s: This is the well-known phase when Tweed rod catches were mainly of Spring Salmon.



The black line shows the ratio of Salmon to Grilse caught over the whole season in each decade, i.e. how many Salmon per one Grilse there were in the annual totals. The green line shows where this ratio is more than two Salmon per Grilse and it can be seen that this coincides with the period when more than 40% of the annual catch was being taken before the 1st of July.



- From this it can be argued that when annual catch totals show more than two Salmon per Grilse for the whole season, it is a sign that most fish are being caught in the earlier part of the season, i.e. there is a Spring Salmon dominated phase. This is not surprising, as when Spring Salmon numbers are high, Autumn Grilse numbers are low.
- If the one set of netting records, Sandstell, that go back before 1840 are added to this analysis, it can be seen that there was a period in the 18th century (c. 1740-1780) when Salmon also outnumbered Grilse in the annual catch totals (Sandstell records, pre-1840 have only annual totals of Salmon and Grilse, not monthly totals as the post-1840 records have)



Note: Data is from Sandstell only before 1840 and for all estuary netting stations combined after. As it is proportions that are being considered, not quantities, this does not affect the picture.

- If these two peaks of Salmon dominance over Grilse (mid-18th century and early/mid-20th century) have the same cause, then it shows that there have been two phases on the Tweed when Spring Salmon dominated. The alternative would be that the 18th century dominance was due to Autumn Salmon dominating Autumn Grilse – this cannot be ruled out as yet, though if some references were found stating at what time of year most fish were caught in this 18th century period it would confirm or refute it. There is one statement made in the 1831 article that gives the early Sandstell catch records that could mean this – it reports that in 1745 only 52 fish having been caught before the 13th of April that year, the fishermen “deserted” the station. This suggests that they thought the best part of the season was over by that time and nothing much was to be expected later – however, an alternative explanation is that severe floods had so damaged the station that they did not think it worth the effort to fish it.
- Whatever the details of the shifts between Salmon and Grilse dominance, the fact that they occur and change the character of the Tweed’s Salmon population dramatically is clear. It is thought that large scale climatic changes in the North Atlantic lie behind these shifts, as the zones of water temperature that Salmon prefer to feed in move north or south, lengthening or shortening their migrations and changing their food abundance. There is also now some evidence that fish from different rivers go to different parts of the sea, which could also relate to this pattern.