DON DISTRICT
SALMON FISHERY BOARD

River Don: Hatchery Factsheet

Introduction

The conservation of Atlantic salmon is crucial to the River Don fishery and wider rural Donside economy. This requires that the Don District Salmon Fishery Board and River Don Trust must do everything in their power to increase the number of returning adult fish and to maximise the production and fitness of smolts going out to sea. A hatchery is viewed by some as a solution to the declining rod catch.

The decline in returning adult salmon has clear implications for the economics of the fishery. Should anglers decide against fishing the Don, this would be a financial concern for everyone who has a stake in the fishery. While there are lots of strong opinions about enhancement hatcheries, the Board and Trust must rely on hard evidence in decision making. Based on what we know, we do not believe that a hatchery is the right tool for boosting the rod catch. The evidence indicates that over time, rather than boosting the rod fishery, an enhancement hatchery would have an adverse effect on wild fish populations.

There is no hard evidence which points to a successful enhancement hatchery operation in the UK, indeed, the body of evidence today means stocking practices are increasingly and widely challenged.

Marine Scotland Wild Atlantic Salmon Stocking Policy was published in May 2019. It states that any proposed stocking exercise will be assessed on its individual merits. There will be a presumption against enhancement stocking.

What roles do hatcheries play in fisheries management?

Stocking has been widely used to restore, supplement and/or conserve salmon populations. Stocking with the aim to reintroduce a population, where juvenile densities are below sustainable numbers, or where natural spawning is not possible, is generally considered a viable option.

- There are examples of such apparent successes from the USA Pacific salmon populations, the River Ranga in Iceland and also closer to home, such as the River Tyne in England and the Rivers Carron and Conon in Scotland.

DON DISTRICT
SALMON FISHERY BOARD

Perceived Successes and Reality

- Stocking in the River Ranga is necessary because there is a complete lack of suitable habitat for all life-stages. Without stocking of smolts there would simply not be a population; moreover, in recent years concerns have arisen over a lack of multi sea winter fish returning, suggesting there may be long-term issues with selection processes in the hatchery programme.

- Stocking in the River Tyne in the 1980s helped to kick-start the recovery of the Atlantic salmon stock, but non-stocked sea trout showed the same level of recovery. Evidence shows that natural recovery was shown to be the numerically dominant process. The contribution made by stocking occurred in the early stages of recovery when water quality improvements were inconsistent.

- Stocking on the River Conon is necessary because barriers to migration prevent adults from reaching spawning grounds.

- On the River Carron, the recovery of the fishery was attributed to the stocking programme. However, national catch data showed the same dip and recovery as the Carron. This casts serious doubt over the assertion that the hatchery programme was the main reason for the recovery. Again, stocking may have provided an initial boost to the population, but its long-term positive effects are overstated.

- In the Welsh River Taff, it was concluded that: "Salmon became extinct on the River Taff during the industrial revolution and stocking played a part in its recovery along with some other previously industrialised rivers. A study has now revealed that, after stocking provided that initial boost to restore the population, more salmon would be produced if fish were left in the river to spawn rather than taken for hatchery rearing." (source https://naturalresources.wales/about-us/news-and-events/news/new-approach-to-protecting-wild-salmon/?lang=en)

The Case Against

- There is a growing body of evidence that suggests the long-term effects on wild Atlantic salmon populations are likely to be adverse.

DON DISTRICT
SALMON FISHERY BOARD

- The number of smolts produced in a hatchery is often much higher owing to a complete lack of competition for resources and space, absence of predators and an unlimited food supply. This produces more but 'lame' fish that have not been subjected to selective pressures that would normally 'weed out' weak from strong individuals over consecutive generations. Consequently, over time their survival at sea is much lower compared to wild smolts that have been exposed to strong selective pressures whereby only the strongest and best adapted smolts survive.

- There are very few examples where rod catches are positively influenced by stocking. For 42 rivers in England and Wales, some rivers showed a positive relationship with stocking whereas others showed equally strong negative relationships. Overall, no evidence was found that stocking efforts boosted rod catches. For example, after 20 years of stocking in the River Tyne, a mere 2% of rod caught fish come from the hatchery (with only 0.03% of stocked fish returning to the river).

- Similarly, numbers for the River Spey suggest that only 0-1.8% of rod catch for a given year can be traced back to hatchery. In other words, the net gain is marginal, but comes at a substantial cost in both a biological/genetic and a monetary sense.

Summary

In summary, the impact of stocking on Atlantic salmon populations may serve as kick-start to a decimated natural population or provide the numbers necessary in those rivers that are incapable of sustaining a natural population (e.g. Ranga). However the long-term effects are very likely to result in a less well adapted population by altering the selection processes that determine survival at sea and lead to a reduction in reproductive success and thus a decline in Atlantic salmon populations compared to a system where fish spawn naturally.

If you would like more information on this factsheet, or if you wish to discuss it contents, please contact the River Director, Dr Lorraine Hawkins, at Lorraine@riverdon.org or call 013398 80411.