Risks and benefits of stocking Atlantic salmon and potential alternatives

marinescotland

Benefits of stocking

- Feel good factor (for some)
- Ranched smolts (ten-fold lower survival than wild)
- Use of unstocked areas devoid of wild salmon if appropriate broodstock are used- River Conon is a good example

marinescotland

Risks of stocking

- Fry: numerous weedy runts that cannot survive the winter
- Attract predators
- Mess up local adaptation
- Introgression of mal-adapted genes to bring the wild population down (can occur due to hatchery rearing or inappropriate broodstock)
- Ranched fish cause introgression in non-target rivers

marinescotland

Essential good practice

- the hatchery facility is registered;
- Wild broodstock are used;
- broodstock normally represents no more than 2% of estimated adult returners for the associated assessed area, as reported in Marine Scotland's latest assessment;
- there is an appropriate mating scheme to ensure good genetic diversity among the progeny;
- introductions are of local origin wild Atlantic salmon from the same river and in the case of large rivers, from the same sub-catchment;
- introductions are within the native range of wild Atlantic salmon, as defined by Scottish Natural Heritage (SNH) ;
- introductions are of ova and/or unfed fry;
- an appropriate monitoring plan is put in place to measure the outcomes of the stocking operation.

marinescotland

Current Marine Scotland position

- **In advance of 2020 season, a review and potential consultation on changes to the current licensing process which permits wild Atlantic salmon introductions will be completed.**

marinescotland

Alternative 1. Movement of wild fry

Possible benefits:

- Spreads local clusters of fry from near nests to increase survival

Risks:

- Handling delicate early life stages
- Need a very good understanding of local population dynamics to be effective

marinescotland

Alternative 2. Nutrient enrichment

Possible benefits:

- Increase the carrying capacity of the river and allow greater survival and smolt production (possibly)

Risks:

- Negative consequences of changing the ecosystem, eg excessive algal production
- Change the population dynamics to produce fast-growing small smolts that survive poorly at sea

marinescotland