Good for Salmon – and the Community

The 2019 Fish of the Year – the Atlantic salmon – is returning to German rivers! A team of German and Norwegian researchers has visited angling clubs, associations and foundations that have been supporting the reintroduction of salmon on a voluntary basis. We spoke to Sophia Kochalski about the lessons learned from these investigations.

Dr. Kochalski, you were engaged as a scientist at IGB for three years, and you are one of the authors of the study on voluntary hatcheries. Why did you devote your study to the reintroduction of salmon?
Being a migratory fish, the salmon is especially fascinating. Salmon are born in rivers, but migrate to the sea as juveniles. In order to spawn, i.e. reproduce, salmon must return to their river of origin, which may mean them having to swim upstream for hundreds of miles. A major feat. Salmon disappeared completely from German rivers in the last century. Thanks to the efforts of voluntary groups (mainly anglers) and the support of government organisations, the fish species has returned in a few places. In other countries, too, wild stocks have diminished. For this reason, European salmon are classed as "vulnerable" on the Red List.

How are salmon being reintroduced to Germany?
Salmon stocking functions as follows: every autumn, adult fish are taken from the river, their eggs are carefully harvested, and the adult fish are then released into the river. Salmon fry hatch out of eggs in a hatchery. Once the fry are large enough to stand a good chance of survival in the wild, they are released into different parts of the river in spring and summer. It can generally be said that healthy fish stocks can only exist in healthy waters, which is why attempts have been made to improve spawning grounds or to remove migration barriers as part of stocking projects.


Photo: private

"Stocking projects for one particular fish species may benefit other species and the entire ecosystem. In all three countries, the groups operating the hatcheries also support other vulnerable species. It also gives rise to cooperative alliances and networks that would not have evolved otherwise."
SOPHIA KOCHALSKI

Your study also involved visiting stocking projects in Norway and Wales, countries where such programmes are not without controversy. Why is that?
The major difference compared to Germany is that some other European countries still have natural populations of salmon. Recent discoveries indicate that fish adapt to the conditions in the hatchery to a certain extent. In hatcheries, they are fed and have no predators. The fear is that hatchery fish find it harder to cope with the natural conditions in the river, and pass on this deficit to their offspring. This is why salmon fry are released into the river as early as possible.

And why is it that angling clubs, of all things, are involved in reintroduction programmes?
The desire to fish for salmon in the future plays only a subordinate role. Many anglers are strongly attached to "their" rivers. They are often the first to notice when water quality deteriorates or when something new turns up in the river that does not belong there. Preserving the species is the greatest incentive for those involved in reintroduction projects. This is why volunteers actually enjoy the hard work in the hatcheries, it gives them great satisfaction.

You can therefore say that salmon stocking not only makes sense, but is also meaningful?
Exactly that. And what is more – as we soon came to realise during our visits to hatcheries – the social aspect has a motivating effect on the voluntary work. They are engaging in something meaningful together with like-minded people, often with multiple generations working side by side. All those involved can share or add to their knowledge.

What do you consider to be the key finding of your study?
Stocking projects for one particular fish species may benefit other species and the entire ecosystem. In all three countries, the groups operating the hatcheries also support other vulnerable species. It also gives rise to cooperative alliances and networks that would not have evolved otherwise. Good cooperation fosters cohesion. This is useful for future environmental measures. The salmon projects also increase people's knowledge of fish and rivers, and raise public awareness of these topics. For example, anglers invite school

In a Norwegian hatchery: anglers check every day if the salmon fry are doing well. | Photo: Hannah Harrison

classes to come and help them on the river or in the hatchery. The benefit to society as a whole goes far beyond the reintroduction of salmon.

The interview was conducted by Katharina Bunk.

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Harrison, H. L. et al. (2018). „Nature's little helpers": a benefits approach to voluntary cultivation of hatchery fish to support wild Atlantic salmon (Salmo salar) populations in Norway, Wales and Germany. Fisheries Research, 204, 348-360. doi:10.1016/j.fishres.2018.02.022.

More Fish Facts: Aquarium Dwellers in Native Streams

At IGB, Juliane Lukas, Gregor Kalinkat and David Bierbach have been exploring how, and why, fish from the tropics are able to colonise brooks and rivers at our latitude. The scientists have written a book together with Michael Kempkes and other scholars. In "Tropische Neozoen in heimischen Fließgewässern" (Tropical Neozoa in Domestic Streams), the researchers explain why it is that South American guppies, Central American convict cichlids, Malaysian trumpet snails and other exotic animal and aquatic plant species have come to feel at home and become established in European watercourses and how they interact with native species. The book is not only aimed at experts from the fields of biology, nature conservation and aquaristics, but also at specialists from water management and nature conservation authorities, as well as at teachers.

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Kempkes, M., Lukas, J., & Bierbach, D. (Eds.). (2018). Tropische Neozoen in heimischen Fließgewässern: Guppys und andere Exoten in Gillbach und Erft - Ursachen, Folgen, Perspektiven. Magdeburg: VerlagsKG Wolf.