

Fish migratory's history in the Rhine basin
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Abstract

For the benefit of the Rhine, alltributaries and the catchment, the members of the International Commission for the Protection of the Rhine (ICPR) – Switzerland, France, Germany, Luxemburg, the Netherlands and the European Commission successfully co-operate with Austria, Liechtenstein and the Belgian region of Wallonia as well as Italy.

One of the issues in the ICPR is the ecological river restoration, for which the Atlantic salmon has become the symbol. The Atlantic salmon used to be a widely spread species in the Rhine system. The complete extinction of the Rhine Salmon was observed in the 50ies of the last century.

In 1986, the Sandoz disaster practically wiped out aquatic life in the Rhine. Already one year later, the ministers of the Rhine bordering countries adopted the Rhine Action Programme. The ministers chose the Salmon as symbol of a healthy Rhine. Atlantic salmon are representing all migratory fish species and living conditions in European freshwater systems with open down- and upstream migratory routes from and to salt waters like the North Sea and the North East Atlantic. In the years that followed, the water quality improved significantly. Today the implementation of the 'Master Plan Migratory Fish Rhine' aiming at the restoration of a healthy aquatic ecosystem, is a main goal. This objective is to be achieved by restoring river continuity – not only for salmon but for all species – by restoring habitats, and by creating living conditions for self-sustaining salmon populations and other migratory fish species.

Present challenges within the Rhine basin:

Until 2013, almost 500 barrage weirs were made passable for fish by building fish passages or by even removing the barriers. A special measure has to be taken at the main 'front door' of the Rhine and Meuse rivers, the Haringvliet, that currently is shut off from the sea by a dam that only allows downstream migration. In 2018, the dam will be partly opened, in order to make upstream migration possible.

In the Upper Rhine, at Iffezheim and Gamsheim, upstream fish migration is possible but five barrages still have to be provided with fish passages in order to meet the Rhine objective of 'passability' to Basel in 2020. The fish passage at the Strasbourg impoundment will start operating this year. The same year, construction work on the fish passage at the Gerstheim impoundment will start in order to reconnect the Elz-Dreisam area with the Rhine. The experience and assessment of the effectiveness of the fish passages in the river system built so far will contribute to improve the technical solutions still to construct. The transfer of fish into the old bed of the Rhine in the region around the barrages Vogelgrün/Breisach is a technical challenge. An efficient fish pass system at the barrages Rhinau, Marckolsheim and Vogelgrün on the Upper Rhine is still to be planned and implemented. Between 2000 and 2013, 250 hectares of fish habitats were made accessible to the dynamics of the Rhine. All in all more than 1,200 hectares of spawning and juvenile habitats are supposed to be opened in the Rhine catchment. The ecological network and the recovery of habitats benefit to migratory fish, but also to local fish species and invertebrates.