

Fish Passage 2022 Distinguished Project Award:

Restoring the continuity of two rivers in southern Poland

Twenty-two fish passes for starters

In Poland, there are over forty-five thousand barriers on rivers and streams. They vary in height from 10 cm to several dozen meters. Like most such structures in Europe, they were built mainly in the second half of the 20th century. Only less than 4 percent are equipped with fish ladders, of which more than half are ineffective. Restoring the possibility for fish and other aquatic organisms to migrate freely up and down is one of the objectives of the Regional Water Management Board in Krakow (National Water Holding "Polish Waters"), which is responsible for water management in the Upper Vistula river basin. The first implemented projects concerned two rivers: Biała Tarnowska and Wisłoka.

The dams on Biała Tarnowska and Wisłoka rivers have blocked or impeded the migration of fish for decades. As a result, species such as salmon, sea trout, and sturgeon have disappeared from the list of ichthyofauna found in our rivers, while others have been placed in the highest risk category. Attempts made so far to restore these species were based primarily on stocking, which without simultaneous opening of migration routes and restoration of sections useful for spawning and fry growth, have no chance of success. Both projects do not undertake restocking activities but are aimed to restore access to spawning grounds and create conditions for spawning.

In the case of the Biała Tarnowska, the modernization included 15 fish passage barriers. Their reconstruction, concerning fish migration requirements, resulted in unblocking the 80 km (50 miles) long river corridor, including 43 km (27 miles) of the Biała Tarnowska River and 37 km (23 miles) of its tributaries, which resulted in unblocking the Biała Tarnowska River channel from its sources to its mouth. In the case of Wisłoka and its tributaries, the elimination of 7 fish migration barriers resulted in unblocking of the river corridor length of 254 km (158 miles) including 124 km (77 miles) on the Wisłoka River, 76 km (47 miles) on the Jasiołka River, and 54 km (34 miles) on the Ropa River.

Both projects were implemented under the Infrastructure and Environment Operational Program 2014–2020, which is part of the European Union financial perspective. These projects are also the first attempt in the south of Poland to test different types of fish passes for migrating fish. Particular emphasis in the design was placed on the use of natural materials which differentiates these new fishways from the existing technical, concrete, and steel fish passes. The design and construction process in both projects was the result of cooperation between engineers and biologists, and it assumed that testing the effectiveness of the constructed fish passage facilities is part of the investment process, not just an add-on.

A variety of commercially available survey techniques were used to document fish migration through the fish ladders and hydraulic monitoring was carried out at all sites. The assessments of the fish migration capacity of the structures confirmed that all new fishways have fulfilled their purpose: fish can again migrate in both directions. More information can be found in the detailed reports for the projects on these websites (English translation can be chosen in top right menu):

<https://biala-tarnowska.org/>

<https://wislokabezbarier.com/>