RETROUT virtual study visit in Poland

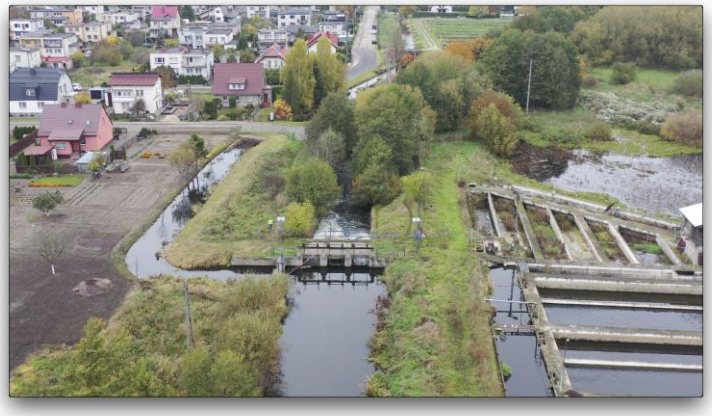
March 2021

SITES DESCRIPTION

The RETROUT virtual study visit aims to present the Polish RETROUT project sites where restoration works are being planned. Besides, examples of previously constructed fish passes and critical aspects of fish pass design have been shown.

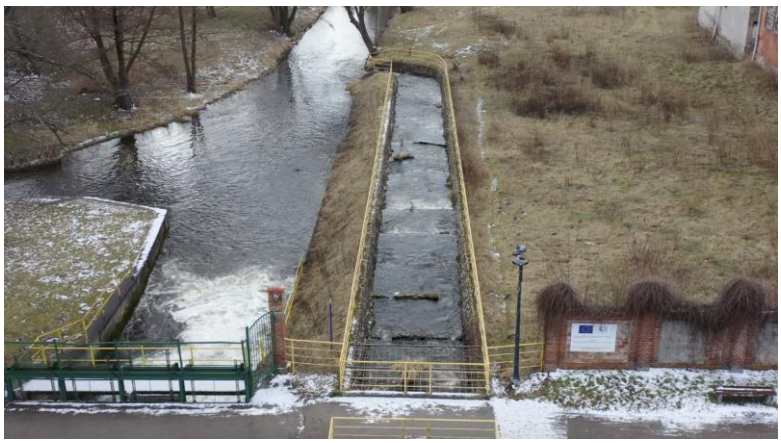
Reda, a dam on the Reda River (problem with the accessibility of the area and administrative procedures)

As part of the RETROUT project, it has been analyzing this project to improve the welfare of salmonids and migratory fish in the Reda River basin. The construction of fish pass in this place is complicated due to the minimal amount of available land. It is technically limited here by the Reda river's side channel, the Mrzezino canal, and the weir and breeding buildings' infrastructure. The fish pass is planned as a chamber flow with full vertical slots, with a total length of approx. 20-30 m. The fish pass will compensate for the drop in the water level and reduce the flow velocity to enable access of lampreys, ides and other migratory species.

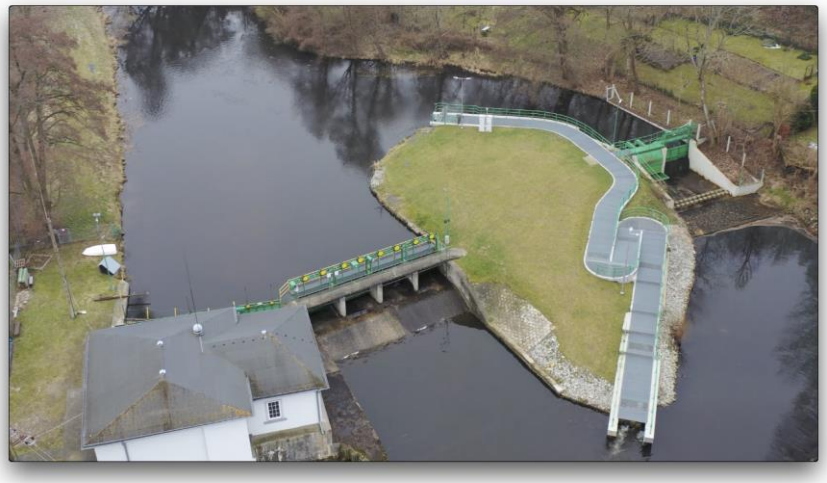


Lębork, fish pass on the Łeba River,

The Łeba River is a river in the immediate catchment area of the Baltic Sea. It is a typical Pomeranian river of upland nature. Downstream, it flows across a low-slope plain. The middle and later course reaches great falls, a gravelly bottom and good breeding conditions for the salmonids that migrate up here. The Łeba River in its transitional section also flows through the Łebsko Lake in the Słowiński National Park. It goes into the sea in the Łeba town.



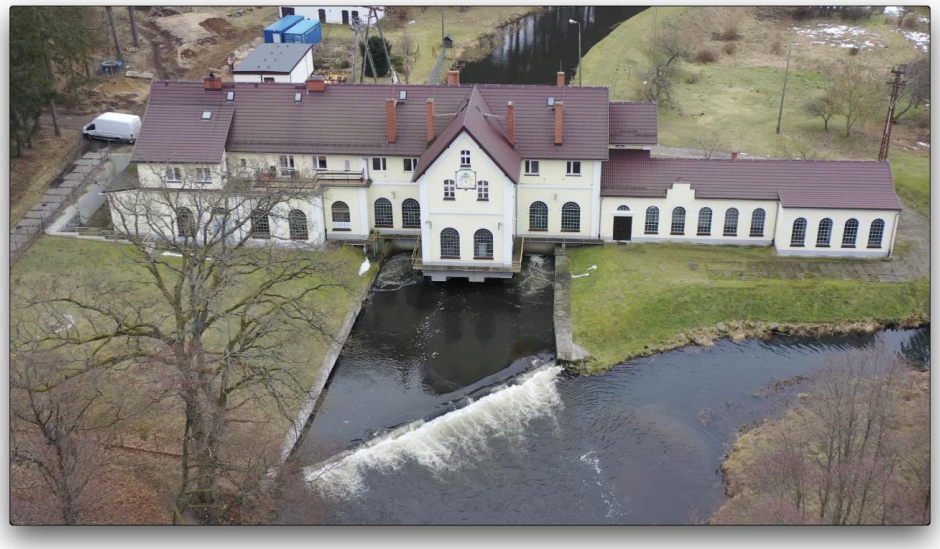
Smołdzino, hydropower station with fish pass on the Łupawa River (the latest fish pass in northern Poland opened in March 2020),



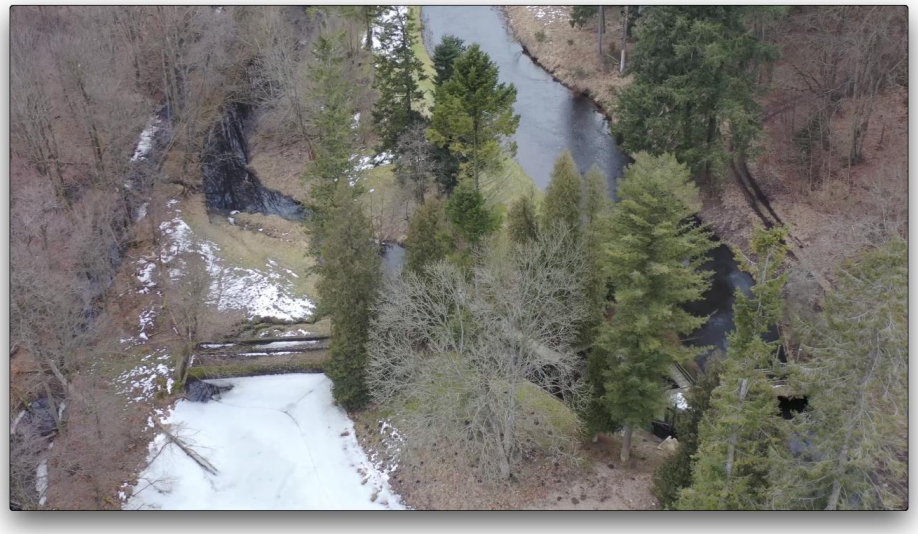
The fish pass was built in 2020 as part of the "Life Natura_Słowińska PL" project. The fish pass allows all migrating species to migrate upstream. Until now, this migration has been disrupted by various types of dams. The power plant was established in 1935, and from then on, the migration of fish was disturbed. Now its is the stage where that migration can stop obstacles, and from 2020 take pride in restoring the natural pathways that fish have travelled for millions of years to spawn upstream.

Żelkowo, hydropower station

Currently, it is a power plant that prevents migration upstream. Along the canal through which the Łupawa River runs, an oxbow lake can be effectively used as a potential route for migrating fish. At present, the fish stop at the damming stage, and there is no further possibility for them to move upstream, which excludes the upper reaches of the river from being potential breeding sites for fish.



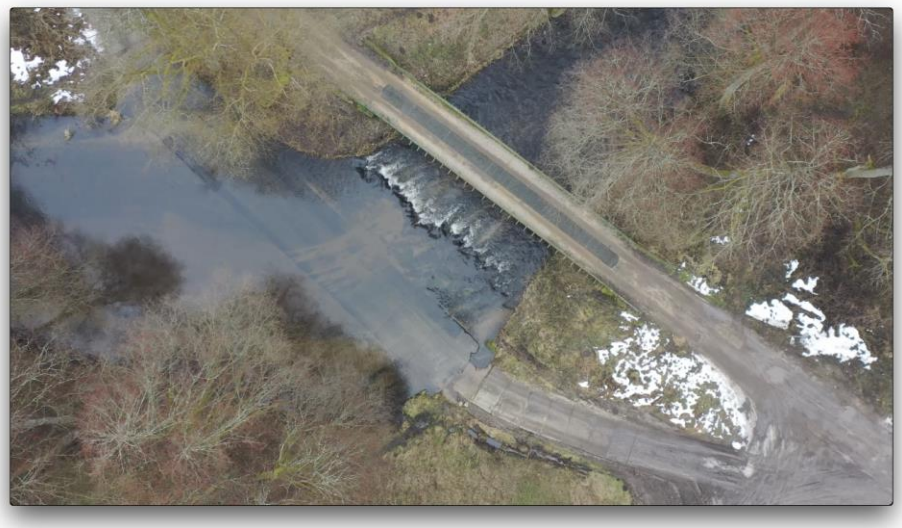
Żelkowo, the Łupawa River - a potential site for implementing the RETROUT project recommendations,



The place could potentially turn out to be a great way to use the existing unused infrastructure to build another fish pass. It is a great place that, after minor modification, can contribute to the improvement of fish migration conditions. The possibility of using the results of the RETROUT project provides the knowledge of how to use and improve the chances of fish migration.

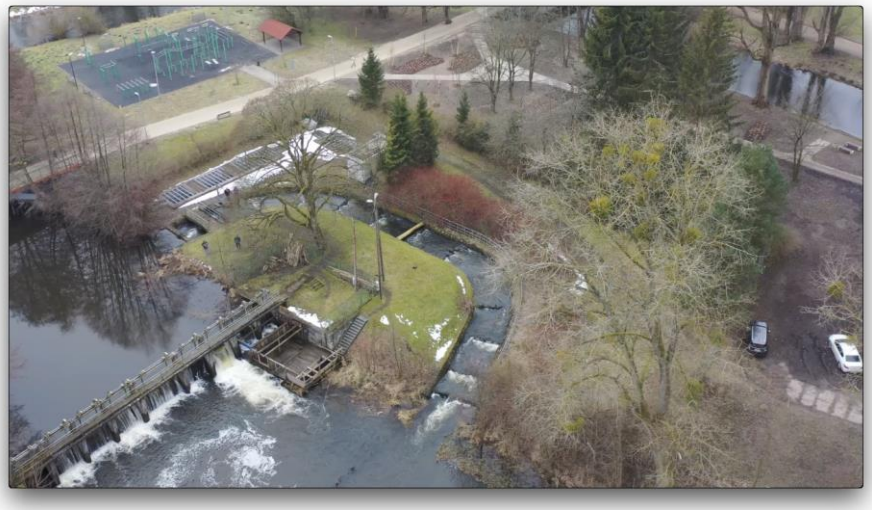
Skarszów Dolny, the Skotawa River (natural spawning ground)

Skarszów Dolny on the Skotawa River, the most significant 44 km tributary of the Słupia River. Here in Skarszów Dolny, there is the most considerable natural spawning ground for Atlantic salmon and sea trout. This part of the river naturally has good fish spawning conditions. No supporting activities were carried out for spawning here, which means no extra gravel was added.



Słupsk, the Słupia River (examples restoration solutions in the city centre)

- **fish pass at the main dam** (an excellent example of modernization, sea trout scanners)

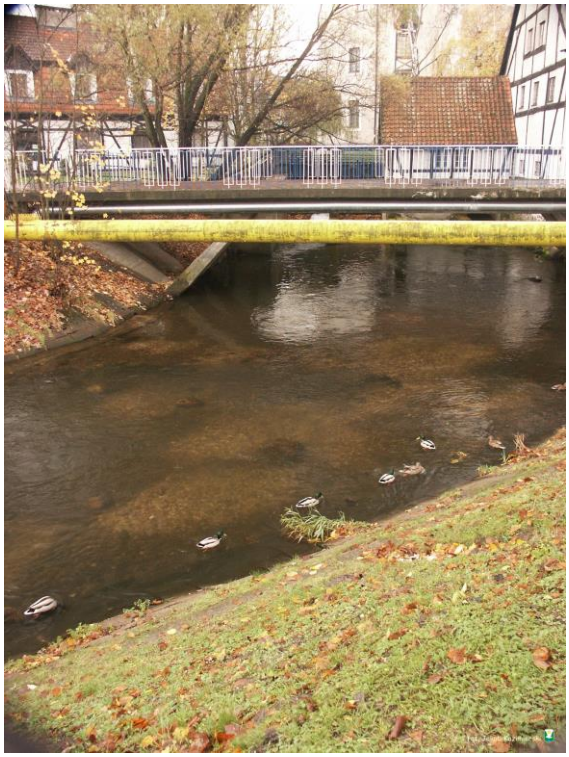


In 2013 slight modifications to this fish pass were added. They consisted of adding another transom and creating another chamber. A more negligible difference in height was obtained between the last basin of the fish pass and the river's water level on the lower water, which facilitated the migration of slower-moving fish species. Sea trout had no problems with crossing the fish pass. Simultaneously, the significant difference in height before the reconstruction created problems with the migrations of carp fish and protected species that swim less well and live in the Słupia basin, such as the European bullhead, river lamprey or brook lamprey. After constructing an additional bolt, the fish pass is open to fish that are already less able to swim.

- **fish pass at the old mill**,

Second of the Słupsk fish pass at old grain plant. In the case of low waters occurrence, it was utterly inaccessible to fish. As part of the Słupia Valley Landscape Park project "Protection of Natural Spawning of Atlantic Salmon and Sea Trout in the Słupia River Basin", implemented in 2006/2007, reconstruction of this fish pass took place with the demolition of a concrete bolt. The number of chambers was increased from 3 to 6. Stone bolts were inserted with gaps reaching the bottom and arranged alternately between the chambers, i.e. modified into a slotted fish pass. Besides, the water outlet on the lower waterside was changed. This fish pass, which uses only 0.28 cubic meters per second, has become a highly efficient fish pass.

- **spawning ground in the city centre**



The spawning area built in 2005 became very effective because, in 2006, there were over 20 spawning nests of sea trout. In addition to sea trout, lampreys and other fish also spawned here. To mention a fascinating case: in the Fall of 2016, the Atlantic salmon was noticed flowing into a small canal. Annual and effective salmon spawning was earlier recorded only in the lower section of the Słupia River.
In 2016, some salmon spawning appeared in the city centre. Since 2016, they are observed more regularly, and now practically every year. It is an event, at least on a national scale. In 2018 fishers from this district managed to capture the spawning with an underwater camera. The entire spawning act is recorded. It can be seen all nicely in the Słupia River, on the artificial spawning ground built in Słupsk.

- **Gdynia,** the Kacza River (a potential site for implementing the RETROUT project recommendations)

The Kacza River in the Gulf of Gdańsk scale is a unique watercourse. It is one of the two small tributaries where the natural spawning of salmonids is still noted. The remaining tributaries of the Gulf have already been completely transformed. The salmonid fish population in these little tributaries has disappeared.
The idea is to take advantage of the recommendations and research carried out as part of the RETROUT project to obtain funds and convince local authorities to increase this river's spawning potential. Above this section, clearing the migration barrier and adding artificial spawning grounds could increase the spawning space for occurring fish.