

LIFE-SIP AdaptEst. Ensuring the sustainability of fish stocks in changing climate.

RECONNECTING RIVERS: RESTORING MIGRATORY FISH HABITATS IN ESTONIA

Aquatic ecosystems are under growing pressure from climate change, agricultural nutrient loading, and outdated dams and drainage systems. Estonian rivers and streams contain around 1000 man-made obstacles that fragment habitats, reduce connectivity, and degrade water quality, contributing to declining fish populations.

Removing migration barriers and building fish passes will restore connectivity between spawning, feeding, and wintering areas, improving conditions for fish and other aquatic species.

The project aims to resolve at least eight migration barriers by 2030 and restore at least 1000 m² of riverine habitats and spawning grounds.

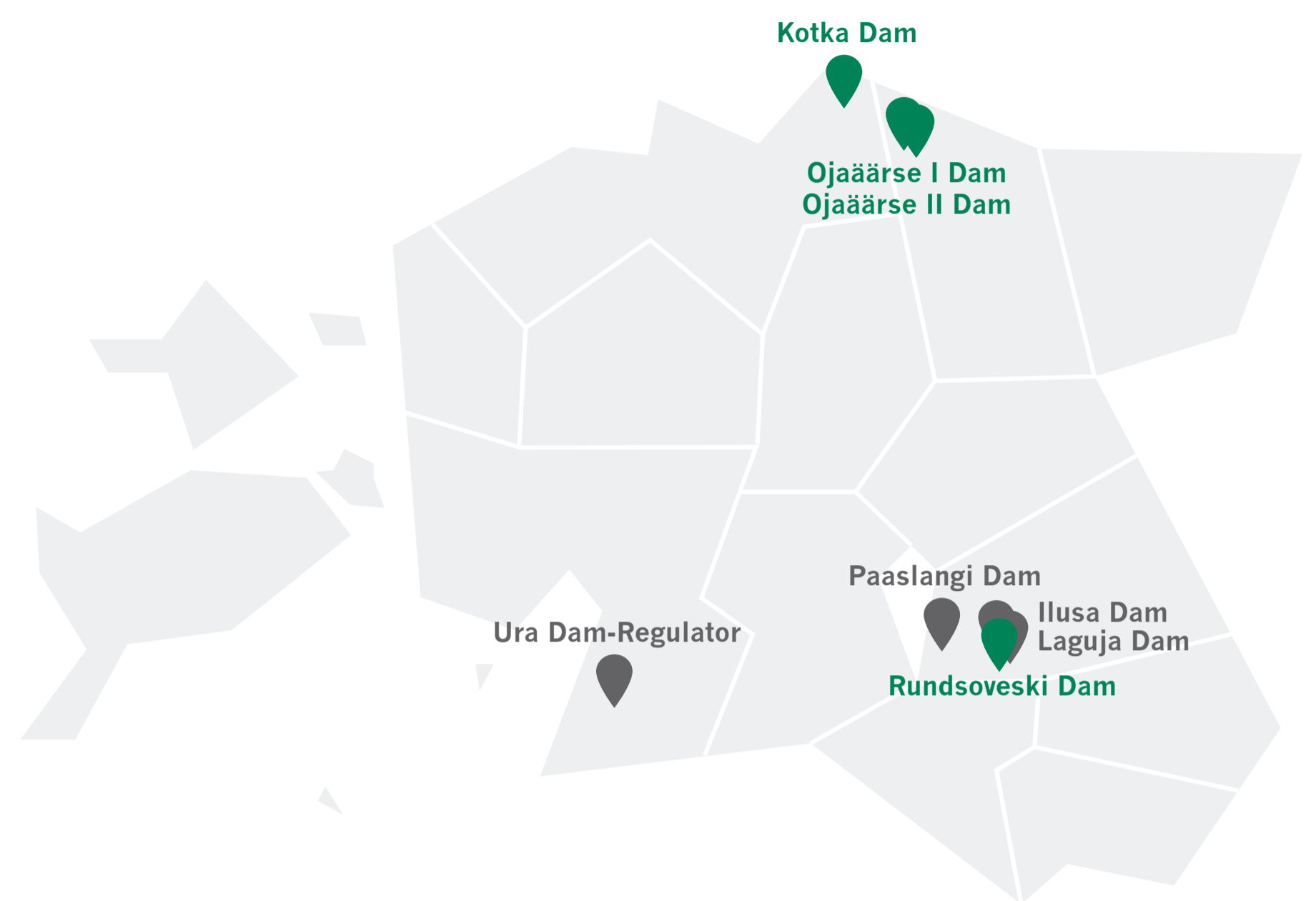
Key messages

Since 2010, more than 120 migration barriers in Estonia's rivers and streams have been removed or modified to restore fish passage.

Artificial fish passes are less effective than full barrier removal.

Our priority is always complete dam removal and the restoration of natural riverbed, allowing free passage for all fish species

Many barriers are located on private land; practical solutions often require compromise and negotiation.



Kotka Dam [0,8 m ↑] - Valgejõgi

Background:

Valgejõgi is about 90 km long and is one of Estonia's most important salmonid rivers. Located about 8 km from the river mouth, Kotka dam historically blocked around 80% of suitable spawning habitat.

Main issue:

Although the dam broke in 2016, the remaining 0,8 m concrete threshold still restricts fish migration, especially during low flows.

Why is it complicated?

After the dam broke, the owner attempted to rebuild, resulting in seven years of legal disputes. The issue was only resolved after RMK acquired the property in 2025, making the site state-owned.

Planned solution:

The goal is the full removal of the remaining structure and the restoration of the natural riverbed.

Key lessons:

Even a partially collapsed dam can remain a significant migration barrier, and legal as well as ownership issues can delay restoration for years.



Ojaäärse I Dam [3,5 m ↑] - Võsu River

Background:

The Võsu River is about 26 km long. It flows through Lahemaa National Park and supports several protected species, including brook and river lamprey, and trout.

Main issue:

Ojaäärse I dam has an impoundment height of 3,5 m, and the goal was to restore the natural riverbed.

Why is it complicated?

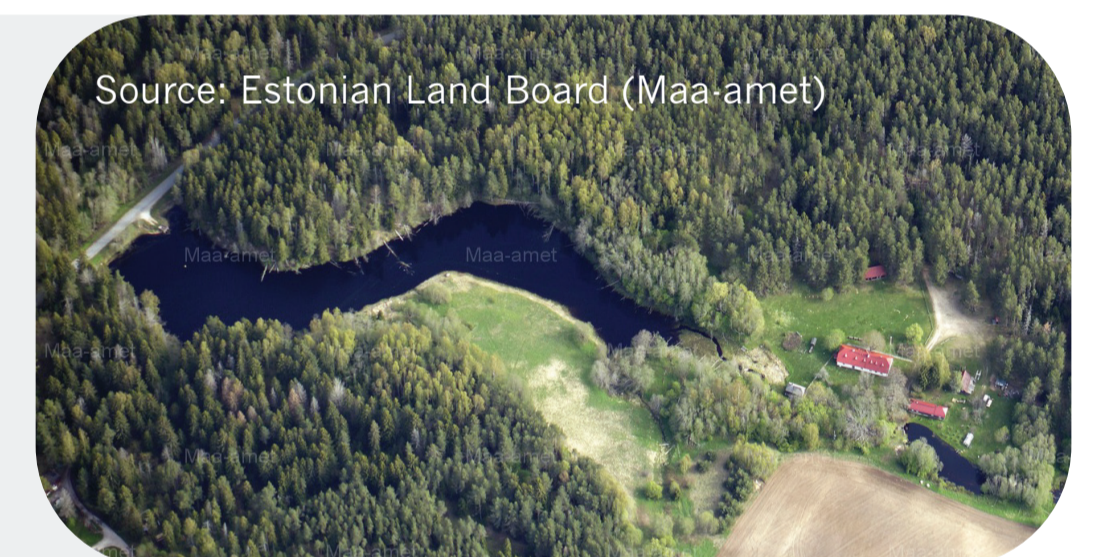
Although on state land, the project required negotiations. The structure lies beneath a paved road, borders Palmse Manor park on one side and Natura 2000 habitats on the other, and raised concerns among the local municipality and residents.

Planned solution:

The plan is to remove the dam and restore the natural riverbed. The technical project was adjusted through negotiations with the relevant authorities and concerned parties, including slight modification of the habitat boundary to enable the works.

Key lessons:

Even relatively straightforward dam removal can become highly complex when infrastructure, heritage, nature conservation and local interests overlap.



Ojaäärse II Dam [1,6 m ↑] - Võsu River

Background:

Ojaäärse II is located about 400 m upstream of Ojaäärse I on the Võsu River. The dam is located entirely on state-owned land, with only a few private owners nearby.

Main issue:

The site provided an opportunity to assess how quickly the river corridor could recover after lowering the water level.

Why is it complicated?

Work during the spring spawning season was initially restricted. However, an exemption was granted because five dams remain downstream and the fish fauna in the area has become impoverished.

Planned solution:

In 2025 the water level was lowered, and within months the reservoir became a green area. As recovery was faster than expected, the plan was reduced. The new plan is to regrade the banks and remove an old inflow regulator upstream.

Key lessons learned:

Natural recovery can be rapid after lowering water levels, allowing technical plans to be simplified.



Rundsoveski Dam [0,6 m ↑] - Elva River

Background:

Many dams in Estonia are privately owned, so landowner consent is essential. The landowner did not oppose dam removal, but they granted permission only if an old bridge was replaced.

Main issue:

Although the Rundsoveski dam was only 0,45m high, it was still considered difficult to pass for some species.

Why was it complicated?

This project required compromise with the landowner as the bridge had limited use but remained important. The site was in thick-shelled river mussel habitat, so all were relocated beforehand. Work was done in a temporarily diverted dry channel.

Planned solution:

Remove the dam, replace the old bridge, relocate thick-shelled river mussels, and temporarily divert flow to allow construction in dry conditions.

Key lessons:

Even small barriers can require complex ecological mitigation and significant compromises with landowners.

