

FRESHABIT

*Healing
the Kingdom
of Water*



Inga-Haaristo/Vastavalo.fi



www.metsa.fi/freshabit
#freshabit #vedenvaltakunta





Picture: Panu Orell



Picture: Jari Ilmonen



Picture: Jari Ilmonen



Picture: Maarit Similä



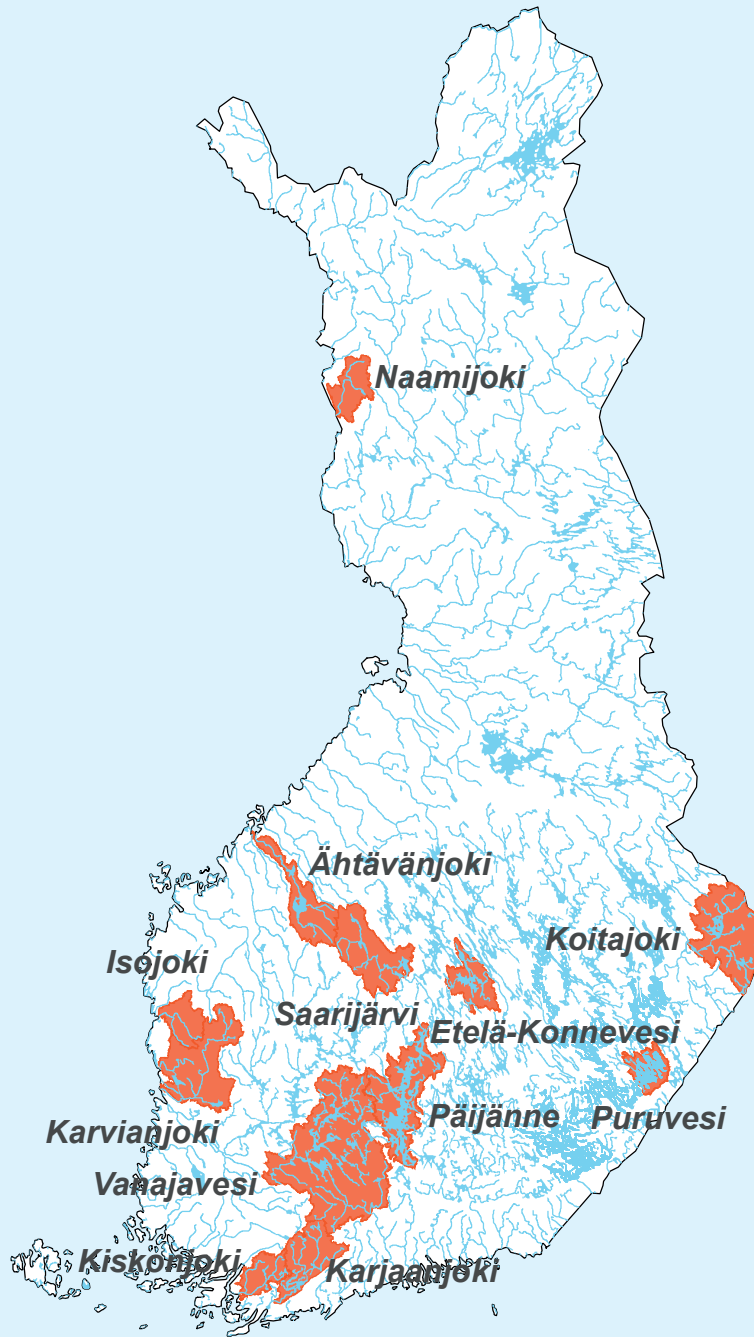
Picture: Jari Ilmonen



Picture: Paula Kallio/MWF



Picture: Jari Ilmonen



Picture: Pro Puruvesi



Picture: Suvvi Mäkelä

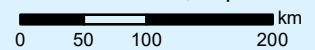


Picture: Jari Ilmonen



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FRESHABIT LIFE IP

We are constructing fish passes, reviving the freshwater pearl mussel populations and restoring streams, rivers, lakes, wetlands and mires. Our work is improving the state of inland waters and the diverse forms of nature that are dependent on them. We are producing fresh data and explaining what is going on in the kingdom of water.



7
year
project



~20 milj. €
budget



31
beneficiaries
10
co-financers



~60
complementary
projects
32 milj. €

PARTNERS

National Parks Finland
Southern Ostrobothnia ELY Centre
South Savo ELY Centre
Central Finland ELY Centre
Lapland ELY Centre
North Karelia ELY Centre
North Savo ELY Centre
Southwest Finland ELY Centre
Ministry of the Environment
Geological Survey of Finland
Natural Resources Institute Finland
Finnish Environment Institute
Finnish Forest Centre
University of Helsinki, Lammi
Biological Station
University of Jyväskylä
Jyväskylä University of Applied
Science

University of Oulu
DocArt Ky
West Uusimaa Water and Environment ry
WWF Finland
Pro Streamwater ry
Vanajavesi Centre
Finnish Association for Nature Conservation
South Häme Nature Conservation District
Organisation
Ostrobothnia District Organisation of the
Finnish Association for Nature Conservation
Central Finland District Organisation of the
Finnish Association for Nature Conservation
Metsähallitus Forestry Ltd
Vattenfall Oy
City of Raasepori
City of Saarijärvi

The project has received funding from the LIFE Programme of the European Union. The material reflects the views by the authors, and the European Commission or the EASME is not responsible for any use that may be made of the information it contains.



The drainage basin determines the state of the waterways

It all starts with the headwaters

The streams of the headwaters are in good condition if they look wild and untouched – a fallen tree here and there, aquatic mosses, a winding course, big rocks, and plenty of spawning gravel where the fish can reproduce. A straight and deep stream is rarely in its natural state: often this indicates that drying the land to produce forest, clearing out logs to float them downstream or the need for water power have moulded the water flows away from their natural state.

We are restoring the streams and rivers in the project locations so that they provide better living environments for fish and other species. Running water is also beautiful to look at, and so the restoration work also increases the pleasantness of the areas and promotes their recreational use.

Dammed up routes for migratory fish

Few animals have such love for the place of their birth as salmon do: after reaching maturity, the fish return to breed in the same waters in which their life began. Although this instinct is powerful, even the strongest of salmon can't break through a concrete wall. In Finland, many migratory routes have been blocked by dams.

We are fixing these blocked migratory routes in many of the project locations by building fish passes and restoring the fishes' living environments. These measures are a good beginning, but long-term additional work is needed, including waterway restoration work and monitoring of the outcomes of this. Where migratory routes have been blocked for decades, restoring them also takes a long time.





Water conservation begins on the way to the rivers and lakes

Just like people, water also gets mucky as it travels its long journey. Along the way, the flowing water picks up solids and nutrients that decrease the water quality. This environmental load on the waterways comes from the whole drainage area and is in part a natural process, but the loading caused by agricultural and forestry activities, for example, needs to be reduced in order to improve the condition of the water bodies. The size and source of the environmental load can also be forecast using modelling techniques in order to help reduce the load and strengthen water conservation measures.

We are reducing the environmental load on the waterways in the project areas by using constructed wetlands and other structures that absorb the load. In the project, we are combining for the first time several loading models into a toolkit which can be used to illustrate how solids and nutrients can be washed out by rain water into water bodies from land that has been left bare by forest renewal.

The battle for the bird wetlands

Many birds are in a tight spot because the condition of bird wetlands has been steadily getting worse. It is hard to paddle around and dive in dense reed fields.

We are restoring bird wetlands by raising the water level, removing shore vegetation, increasing animal pasturing in shore areas and removing invasive species of predators, raccoon dogs and minks. The restoration work is particularly beneficial for waterbirds, seagulls and waders, but also for other wetland birds.

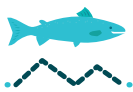
Freshwater pearl mussels get a romantic spa break

When environmental load has been contained and the migratory fish have returned, the state of the freshwater pearl mussel will also start to improve. Currently, though, this species is still in a very bad state: In the rivers of southern Finland, there are mostly only old freshwater pearl mussels that are in a bad condition and do not have the strength to reproduce. And even if they would have enough strength, their larvae need salmon in order to grow, as they spend their first winter living on the salmon's gills before then descending to the stream bed or river bed.

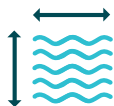
Without salmon, there is no future for the freshwater pearl mussel. Furthermore, the poor quality of the stream beds and river beds and the environmental load coming from the drainage area inhibit in many areas the growth of the small freshwater pearl mussels, even if there would be host fish for the larvae. In our four river locations, freshwater pearl mussels have been rehabilitated at the Konnevesi Research Station, where the work has already borne fruit and the adult freshwater pearl mussels have begun once again to reproduce. The small freshwater pearl mussels developed from larvae on fishes' gills will need to continue to grow for a couple of years at the research station until they are big enough to be returned to their restored home waters.



122 ha
new conservation
areas



205 km
of re-opened migration
routes for salmonid fish



70
surveyed study
areas in lakes



470
freshwater pearl mussels
in the Konnevesi Spa



130 T
of cyprinid fish
biomass removal



1500
restocked juvenile
freshwater pearl mussels



16
restored bird
wetlands



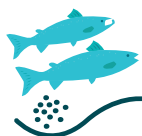
6,5 km
of new or
renovated
nature trails



1250 ha
of restored peatlands



1500 m
of new
duckboards



12 ha
of restored spawning
grounds for whitefish
and land-locked salmon



5
bird watching
towers



20 km
of restored
streams



150
nature school days
3000
participants



145 km
of stream inventories



5 volunteer camps
40 days of voluntary work
100 participants



80 000 ha
impact area



40 ha
of constructed
wetlands



7
fish
passes



500
water protection
structures