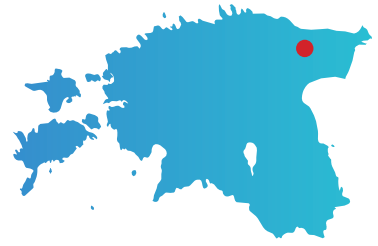




LAKE MUSTIJÄRV

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Country: Estonia

Name of the site: Lake Mustijärv

Area (ha/km2): 1 ha

Ecosystem type: Small shallow lake

SITE DESCRIPTION

Lake Mustijärv is a small, shallow lake (≈ 1 ha, mean depth 2 m, max depth 3.8 m) in central Estonia. In 2016, it was restored through complete desiltation to increase lake depth. Also, the bottom morphology was modified through crafting deeper sediment accumulation areas. The sediment removed was shown as a source of P for plants, first in the mesocosm study, then also under four-year field study (the study is still continued), rendering it the first well-documented case of lake restoration combined with nutrient recycling for agricultural use. An assessment in 2018 indicated hypertrophic conditions of the lake with high contribution of external P load, but also internal P load. Internal P load was found to originate from the pool of sediment created by the accelerated inflow of nutrient-rich sediment particles from the upstream area. In FERRO, Lake Mustijärv serves as an experimental area to demonstrate the best practice of lake restoration by sediment removal.

CHALLENGES

High external and internal P loading. Lake is surrounded by agricultural landscape.



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RESTORATION GOALS

The goal is to improve lake ecological conditions of the lake by addressing both pressures, i.e. internal and external P load. The results of the lake comprehensive limnological assessment in 2024 as a part of the FERRO project confirmed the importance of both pressures and paved the way for the restoration measures in 2025. The goal is to demonstrate the best practice of lake restoration by sediment removal and recycling sediment removed as P fertiliser.



CURRENTLY USED RESTORATION MEASURES

The goal is to improve lake ecological conditions of the lake by addressing both pressures, i.e. internal and external P load. The results of the lake comprehensive limnological assessment in 2024 as a part of the FERRO project confirmed the importance of both pressures and paved the way for the restoration measures in 2025. The goal is to demonstrate the best practice of lake restoration by sediment removal and recycling sediment removed as P fertiliser.



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STAKEHOLDERS

Local farmers are interested in sediment reuse as a P fertiliser. Furthermore, farmers are advised on the measures enabling to diminish negative effects of agricultural activities.



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