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# Experience from Estonia in rivers restoration and protection

Kaja Lotman

Kaja Lotman,

Natural River Processes as a base for river related protected areas and river restoration, expert workshop

# Estonia



- **Total area - 45 339 km<sup>2</sup>**
- **Total population - 1 340 341**
- **Population density - 29 inhabitants/km<sup>2</sup>**
- **Coastline - 3,794 kilometers**
- **Number of islands and islets - 2222**



# The Fifth Season

- **Widespread flooding due to meltwater**
- **Flooded area up to 175 km<sup>2</sup> in Soomaa National Park**



# Underground secret rivers

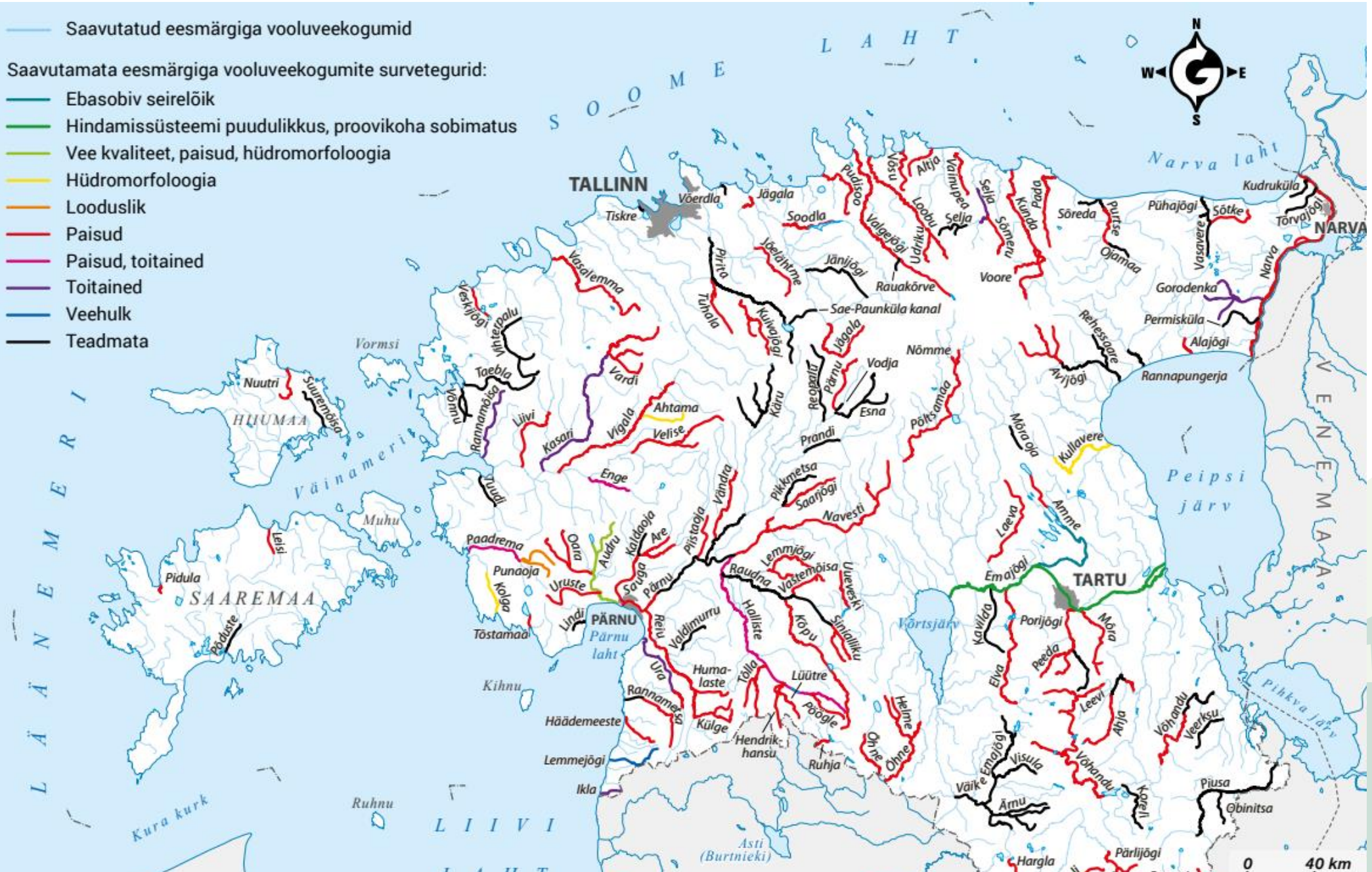
- **Karst phenomena in North-Estonia**
- **Underground river systems**
- **Secret rivers and sinkholes**



— Saavutatud eesmärgiga vooluveekogumid

Saavutamata eesmärgiga vooluveekogumite survetegurid:

- Ebasobiv seirelõik
- Hindamissüsteemi puudulikkus, proovikoha sobimatus
- Vee kvaliteet, paisud, hüdro-morfoloogia
- Hüdro-morfoloogia
- Looduslik
- Paisud
- Paisud, toitained
- Toitained
- Veehulk
- Teadmata



# Main pressure and threats

- **Dams**
- **Intensified agriculture**
- **Pollution to water due to urban run-offs**
- **Melioration**



# General activities to restore rivers in protected areas

Creating Fish spawning areas (Salmon rivers) and restoration of natural river habitats, removal of dams, restoration rivers for protected species

# Restoration of river habitats

- **Opening the migratory routes: more than 100 dams have recently been reopened for fish (Cohesion Fund)**





# Restoration of river habitats (2)

- **LIFE Happyriver**

restoration of the River Laeva natural riverbed in the Alam-Pedja Natura 2000 site

- **LIFE Happyfish**

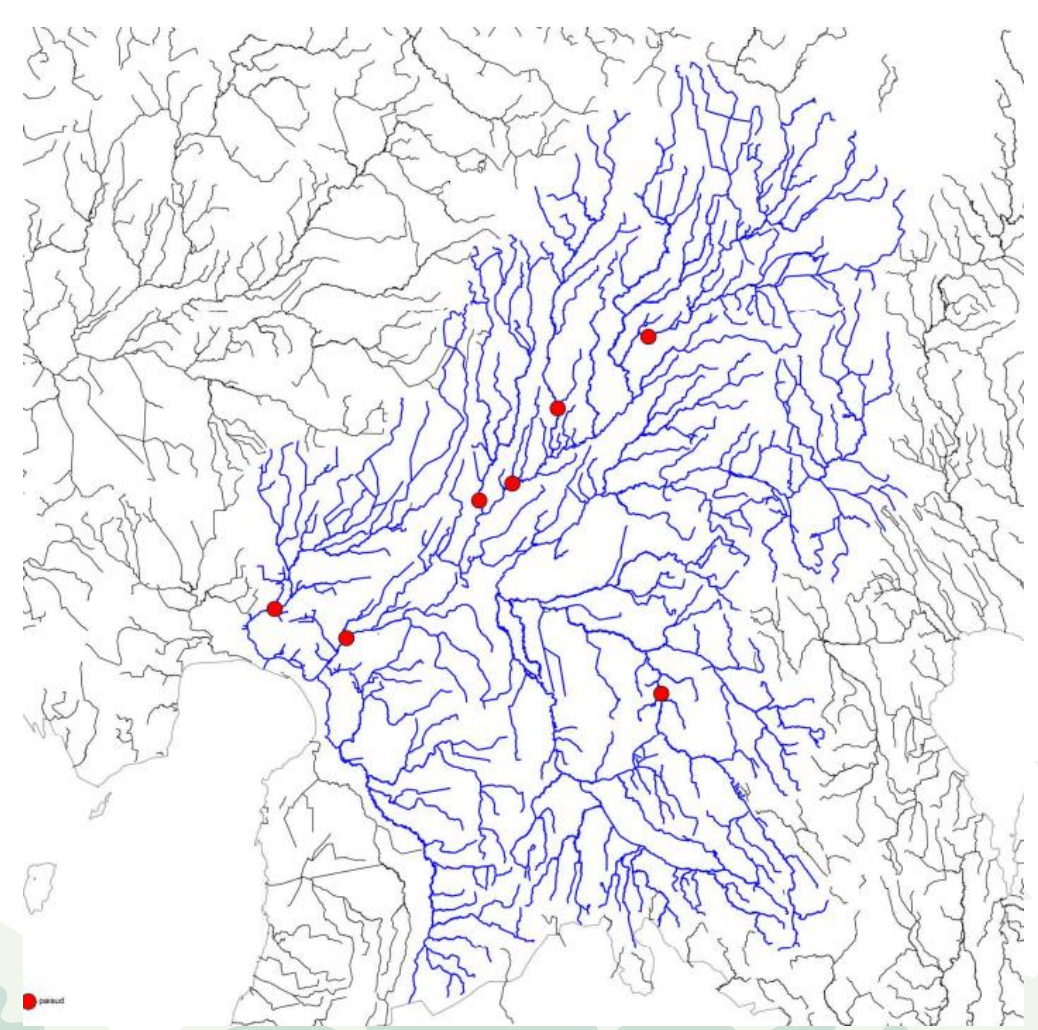
restoration of ten oxbow lakes and their connection with the main river



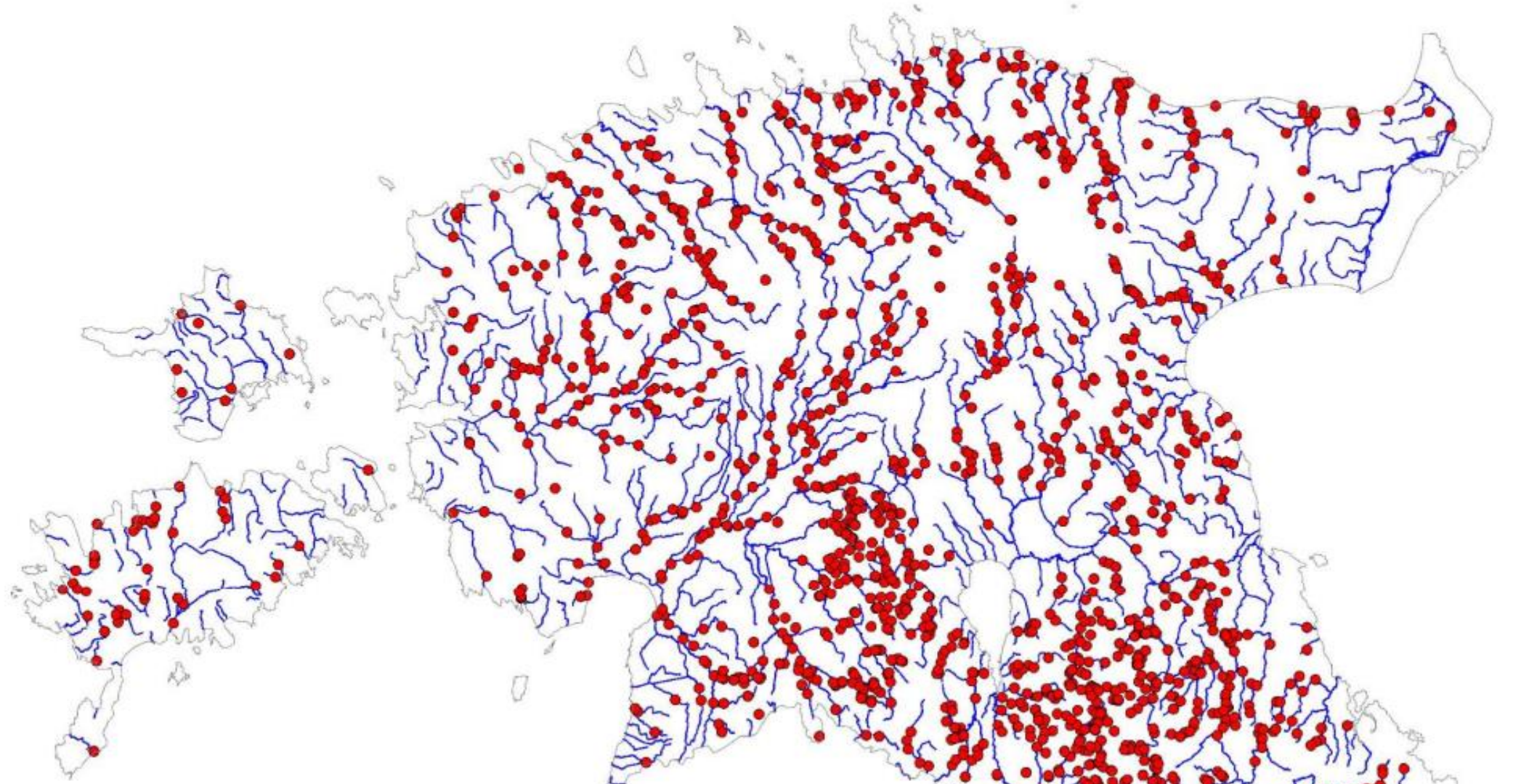
# Restoration of Pärnu river and its tributaries

- Pärnu river 144 km, with its tributaries (rivers and streams) 3300 km, Sindi dam 14 km from mouth of the river
- The biggest historical salmon river in Estonia (until now only 1%)
- The largest river restoration project in Europe to date
- Total costs 15 mln euros, EU Cohesion Fund (95%)

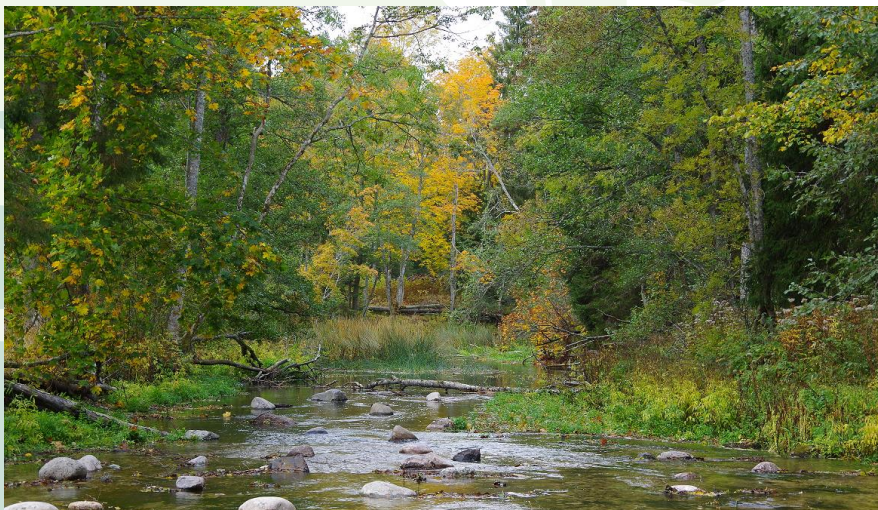




# HISTORICALLY MORE THAN 1000 BARRIERS ON RIVERS



# Kloostri, Vasalemma, Häädemeeste rivers 2022



# River species

- **Fishes (34 species), Cyclostomata (2 species)**
- **125 salmonid rivers**
- **11 salmon rivers (3 with natural salmon population)**
- **Freshwater Pearl Mussel**
- **European Mink**





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# Thank you!

Keskkonnaameti üldkontakt

[info@keskkonnaamet.ee](mailto:info@keskkonnaamet.ee) | 662 5999

Keskkonnarikkumisest või erijuhtumist  
teata riigiinfo telefonile **1247**

Jälgi meid:

[keskkonnaamet.ee](http://keskkonnaamet.ee)

