



# RETURNING WATER TO CONSERVATION AREAS WILL BENEFIT BOTH FORESTRY AND CONSERVATION

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# Content of the presentation

- Background
- Pilot sites
- Operating model for returning waters to protected peatland
- Trainings
- Conclusions



Jani Antila

# Background

- In Finland Natura 2000 sites include a significant number of old forest drainage areas
- Forest drainage on surrounding areas can also have draining effect on protected peatland
- Improving peatland habitats by rewetting
- Returning waters from forest drainage area to dried peatland
  - Restoration of the natural water flow direction, which has been cut off by drainage ditches
- Water protection measure for forest management actions
- Outcome that benefits many functions, e.g. Natura 2000 peatland restoration and forest drainage
- Project is part of Hydrology LIFE project (Metsähallitus)
  - Aim to restore 103 Natura 2000 peatlands 2017-2023

# Background

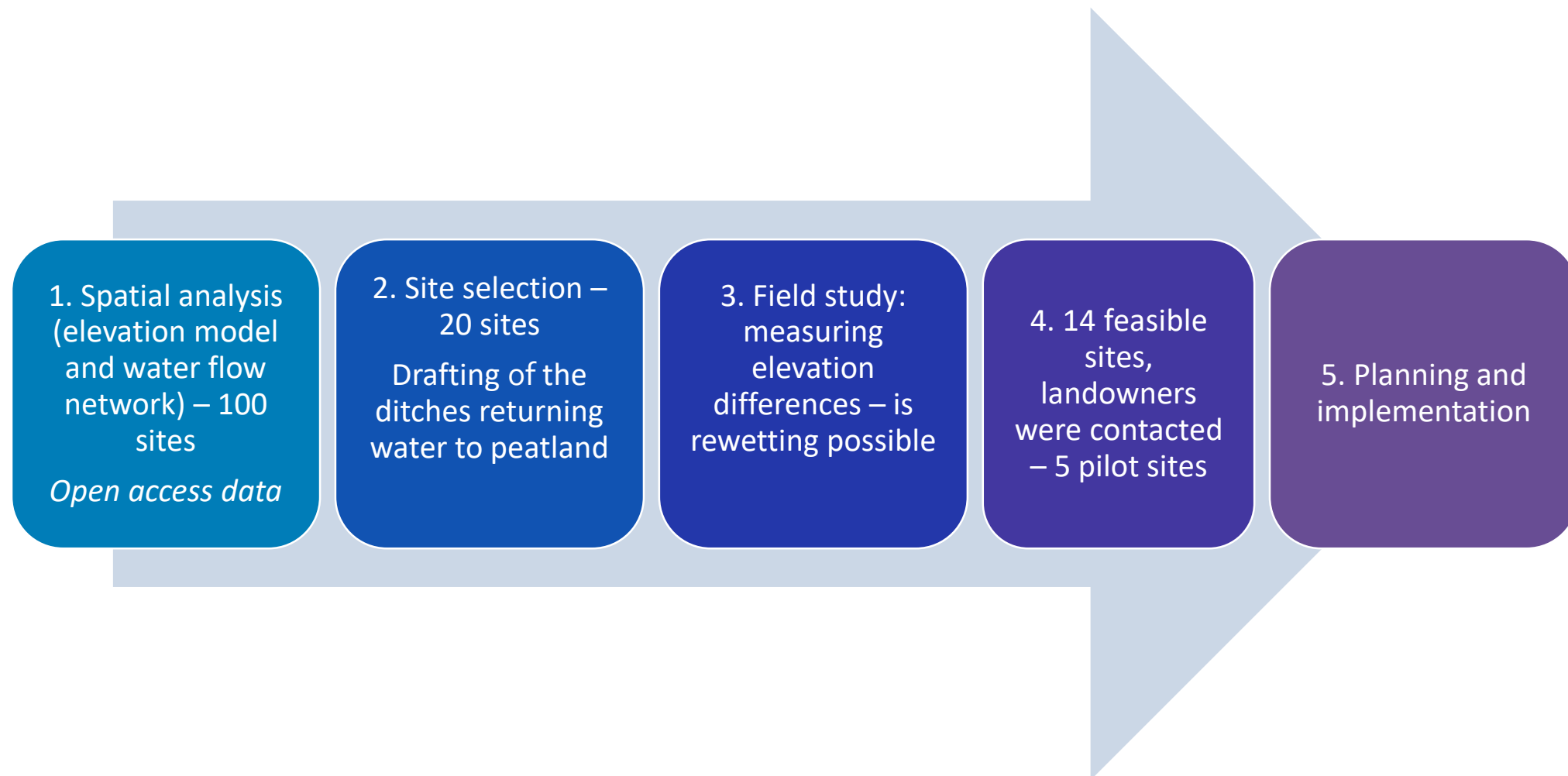
- In previous project
  - Operating model for directing waters to protected peatlands
  - Peatlands with dried boarder areas were mapped with spatial data analysis and inventories
  - Data available in open access service for drainage planners
- Current project concentrated on
  - Implementing the operating model to rewet Natura 2000 peatlands with waters from surrounding forestry areas
    - Initiating cooperation between the peatland protection and ditch network maintenance
    - Testing of the operation model – pilot sites
  - Trainings for drainage planners, authorities and landowners



**What was done**

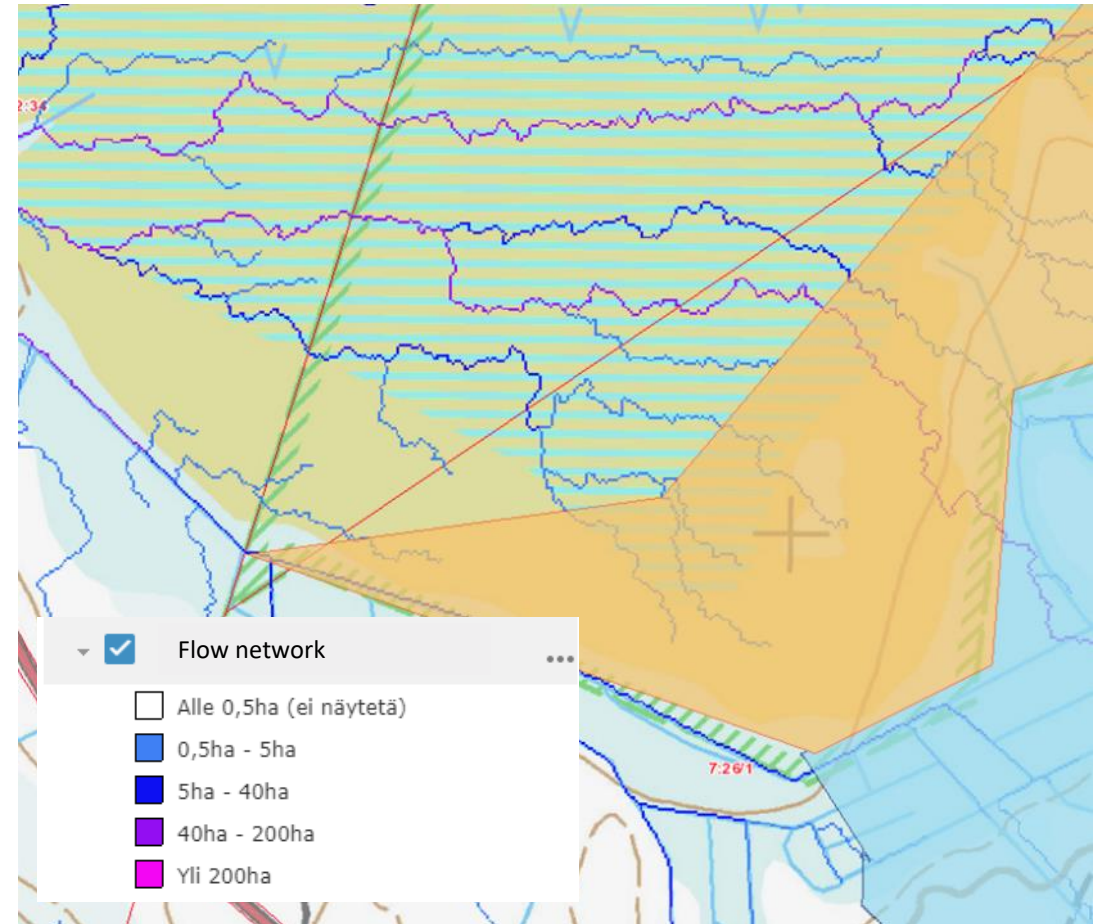
**TAPIO** 

# Pilot site selection



# Pilot site selection – flow network

- Flow network describes the direction of water flow with different colored lines
- Colors indicates the size of catchments
- When a catchment study is combined with the flow network, the design area, and the size and location of the water protection structures can be assessed.





# Pilot site selection and field study



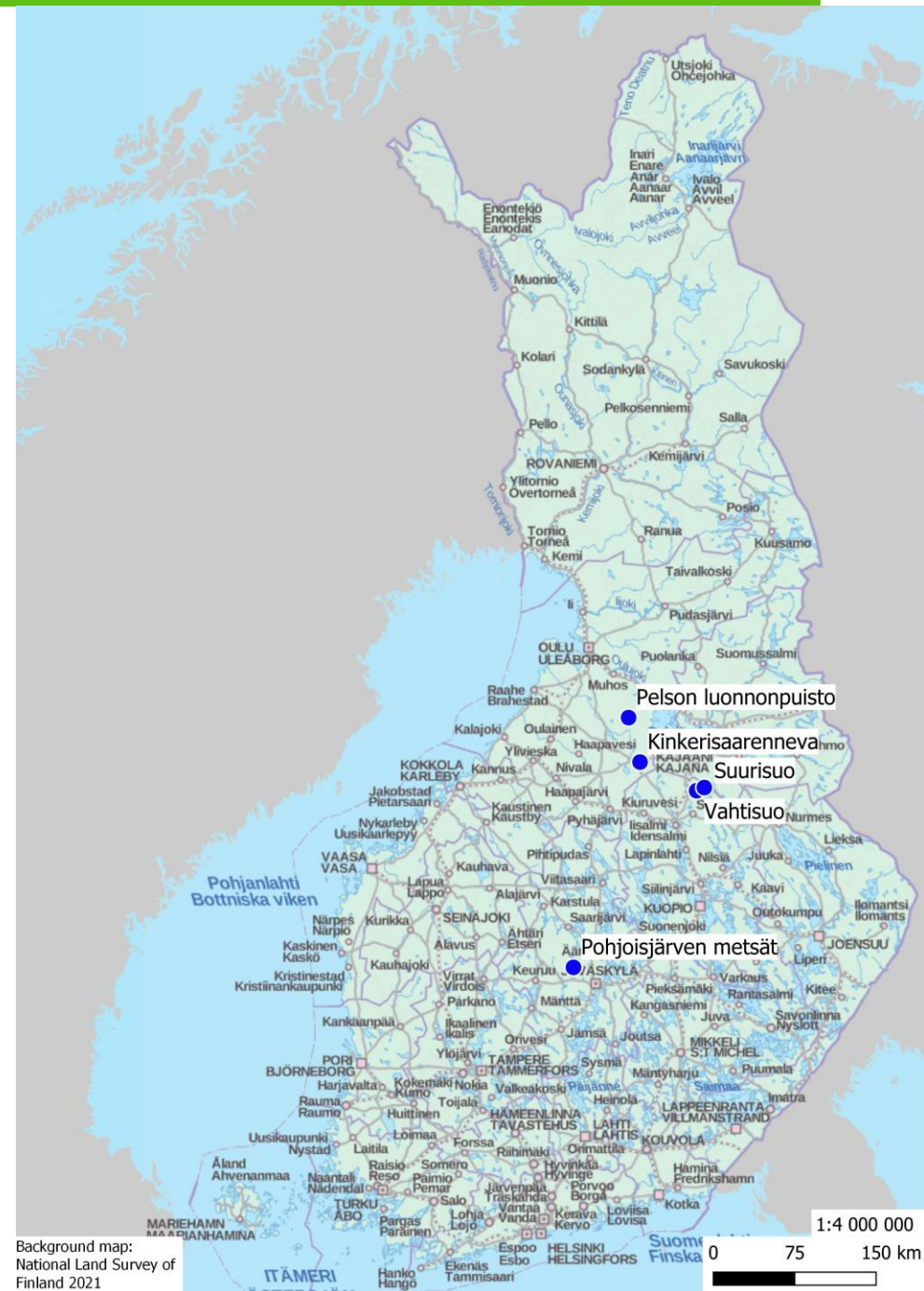


**Pilot sites**

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# Pilot sites

- 5 pilot sites were selected
- 4 aapa mires
- 1 spruce carr



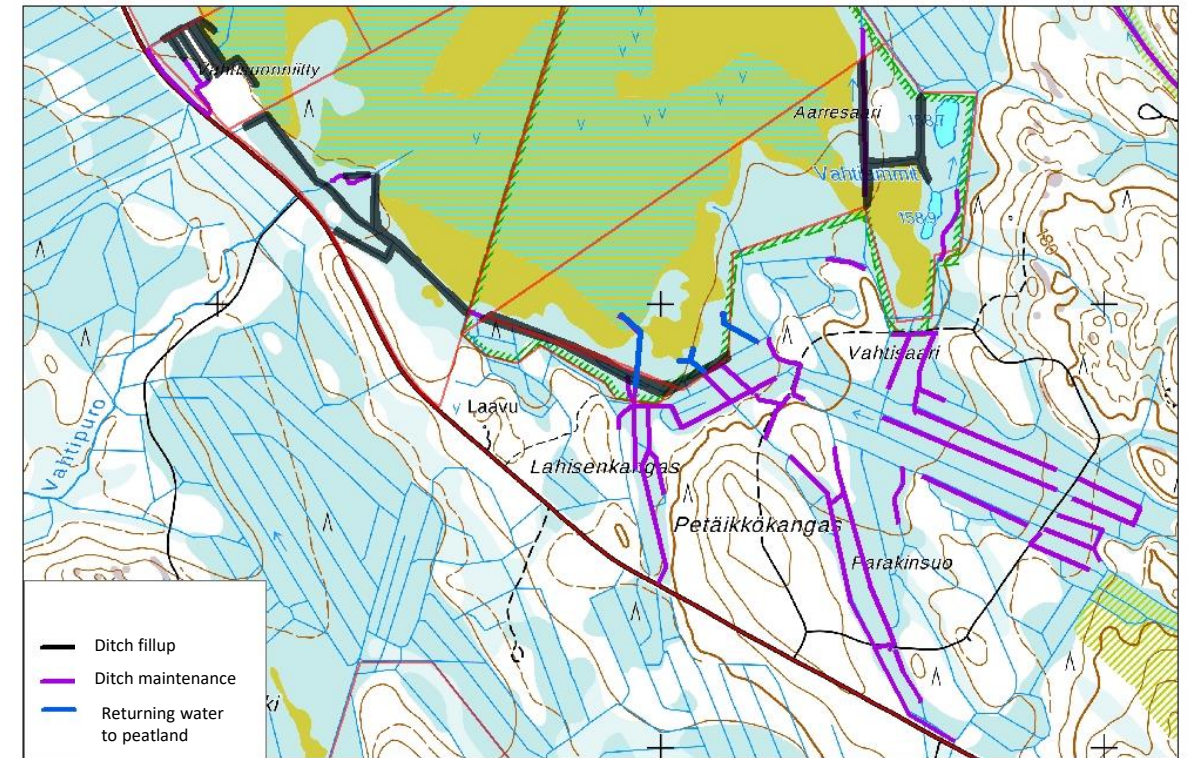


# Pilot site - Vahtisuo



Vahtisuo

1:10 000





# Vahtisuo, Sonkajärvi





# Operating model for returning waters to protected peatland

Sites where returning of the water is possible have been mapped with Spatial analysis (elevation model and water flow). Data is available with open access for planners.

While planning drainage planner spots a potential site – contacts land owner

Field inspection with Metsähallitus  
Measuring elevation differences – is rewetting possible

Metsähallitus issues permit for returning water to protected peatland

Finalization of planning – notification to regional authority

Processing and approval of the plan (authority)

Preparation of the project

# Trainings

- Drainage planners, landowners and authorities
- Due to the trainings
  - Landowners and authorities were familiarized with the new method
  - Drainage planners are able
    - to identify sites where returning water is possible and cost-effective;
    - to use open access spatial datasets and tools to plan and implement the ditch network maintenance measures
    - to assess in field whether measures are possible to implement
    - to plan the forest drainage in such a way that no further drying takes place on the protected area;
    - to correctly plan the ditches that lead water into the Natura 2000 site in order to improve the condition of habitats;
    - to contact the right authorities in when additional information about Natura 2000 site near the planning area is needed.



# Conclusions

- During the project private ditch planners and specialists of Metsähallitus planned five sites – plan was implemented at three sites, where returning of water to the protected peatland was successful
- Detailed planning is essential – accurate mapping and measuring elevations of the sites
  - Optimal length and right direction of the ditch
  - Minimizes the risk of potential damage due waterlogged conditions in forest land
- Education of private landowners, through whose lands water is to be directed to peatland, is important – agreement of the landowner is needed for the actions
- Education of planners is important and essential to get the new method widely used
- The implementation of returning water to protected peatland can be linked to
  - ditch network maintenance actions on the forestry area next to peatland
  - nationally managed nature management projects organized by the Finnish Forest Center
  - planning and implementation of restoration within a protected area

# Thank you.

*Project was conducted in partnership with:*



Hydrologia-LIFE



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