

# The challenges and opportunities of sustainably managing peatlands in Estonia

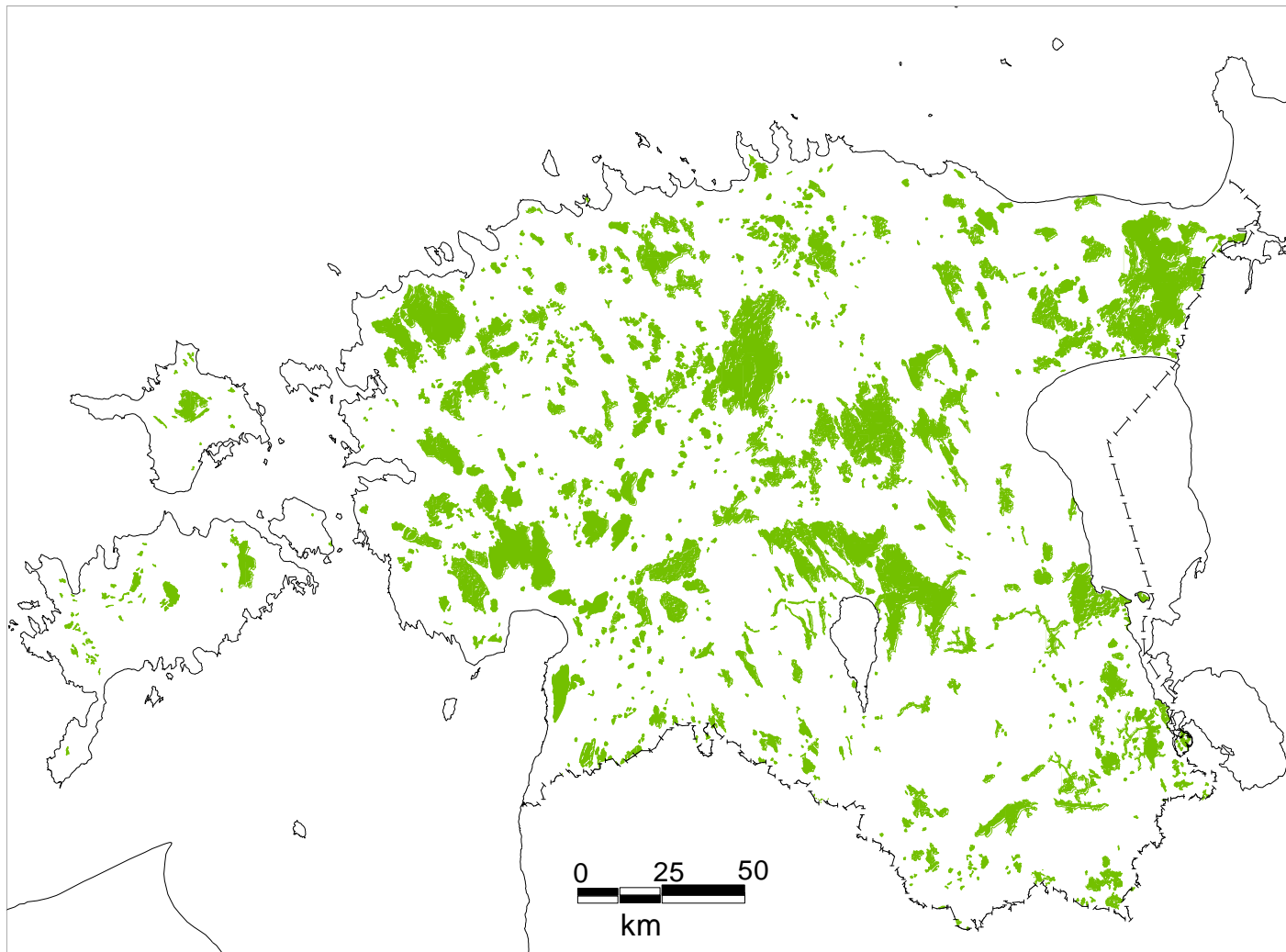
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# Peatlands in Estonia – ca 1 milj ha



# Human impact on Estonian peatlands

- Totally affected some 65% or 650 000 ha
  - For agricultural purposes ca 280 000 ha
  - Forestry drained about 320 000 ha
  - Directly for peat excavation 30 000, indirectly affected by drainage ca 20 000 ha

# Restoration activities

- Hydrology is the main abiotic driver for peatlands
- To restore the hydrology means to rise up the water level close to peat surface
- Common approach is to dam or infill the drainage ditches

# Main players

- TALLINN UNIVERSITY started with first small-scales experiments on 2003
- Some ten years later STATE FOREST MANAGEMENT CENTRE started with restoring the hydrology on abandoned peat fields
- Almost the same time ESTONIAN FUND for NATURE began with its restoration activities
- TARTU UNIVERSITY accompanied later

# Hara bog

103 ha



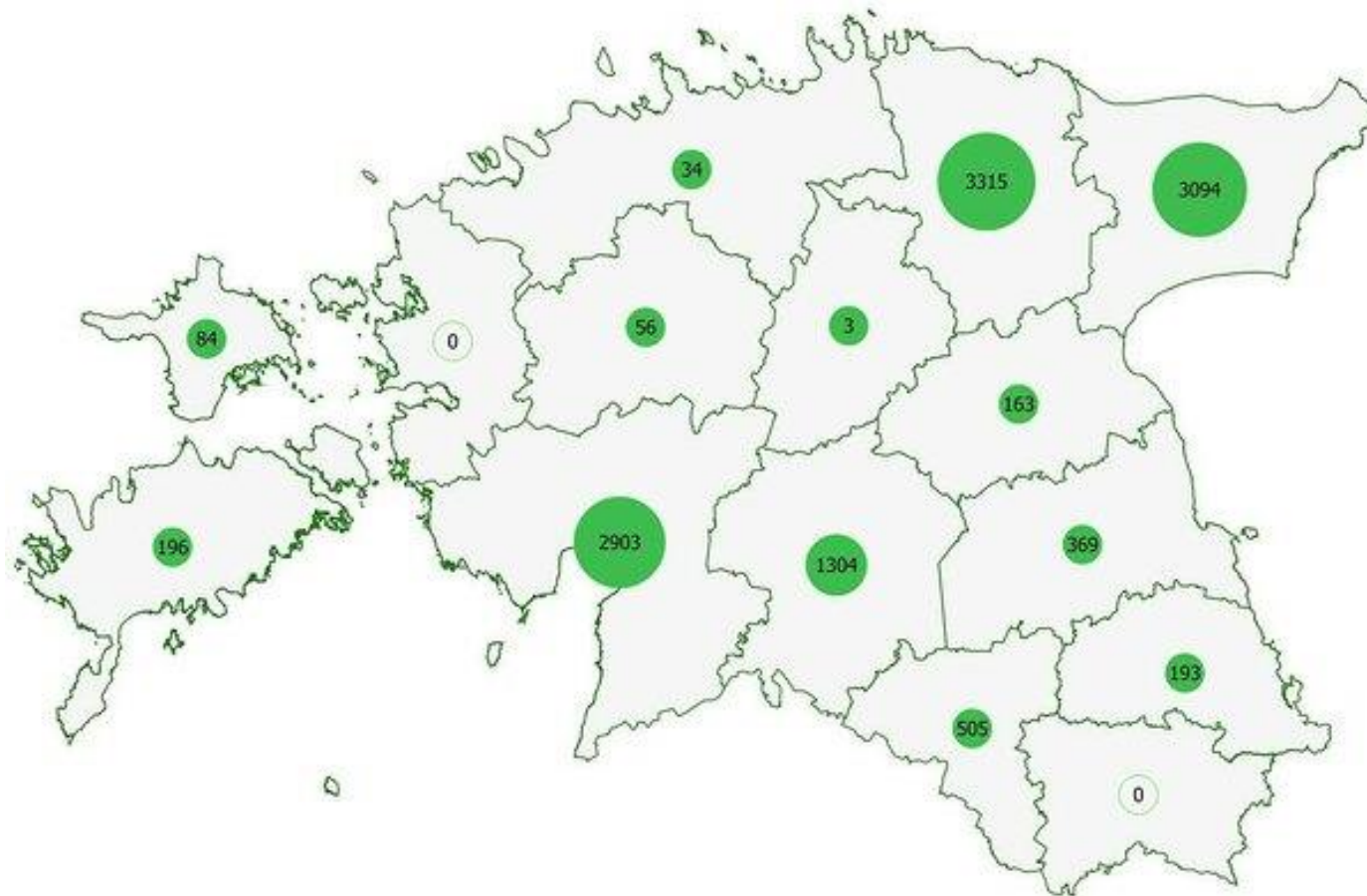
Lahemaa loodusala



# Covering with straw mulch on Sphagnum propagules distributed on abandoned peat field



Restored (= dammed the ditches) on 12 000 ha mainly abandoned peat fields between 2017 - 2020





# Restoration of minerotrophic fen – ditches infilled, trees cut down

2019



2020





**Alkaline fen**

**Mixed mire forest**

# Life Peat Restore project – Tallinn University restored the water level on large fen, over 3340 ha (March 2021)

**Dam built at the distance of ca 40 m  
parallel with the stream (right)**



**Peat dam with wings (flow to left)**



# Peatland Forests, left –drained, right--near-natural Life IP – restoration of minerotrophic birch fens



# OUTCOMES

- At present restoration = rising up the water level is in operation. BUT this is just a first step of the process
- There is great variety of different types of disturbed peatlands
- No any cook-book exists – failing is greatly possible
- Long-term monitoring is needed. Still even short-term monitoring of the restoration success is not funded

# Conclusions

- Rising the water level does not mean the site is restored
- Every action takes more time you planned
- Be ready for unknowns, especially for unknown unknowns (after D. Rumsfeld)
- **No panic – it just takes time to understand how a valuable mire is functioning!**