

An aerial photograph of a vast wetland restoration site in Finland. The landscape is dominated by a dense forest of young, green coniferous trees. In the center-right of the image, there is a large, irregularly shaped pond or wetland area with a mottled appearance, likely due to water levels and vegetation. The background shows a flat expanse of forest extending to the horizon under a clear sky.

Restoration of wetlands in Finland

Eira Luokkanen

Vadsø, Oct 3, 2019

- **The brief history of restoration of peatlands**
- **EU Life funding**
- **Some findings**
- **NatNet Life+**



More than 30 years of restoration of peatlands

- ▶ **1970' and 1980's** first trials
 - ▶ sites of very high ecological value very soon after they had been drained
- ▶ Starting with manual blocking of ditches, **since 1992** machinery involved
- ▶ **Mid 1990's** EU Life funding an important funding tool -> areas increased
- ▶ **2003** -the first national Forest Biodiversity Programme METSO launched and findings of the habitat restoration working group (appointed by the Ministry of the Environment) published

Guidebook

- ▶ A new guidebook for the restoration (in Finnish) published in 2013 (Aapala et al. 2013)
 - ▶ coordinated by the Finnish Expert Group for Peatland Restoration (SuoELO*) in connection with the Boreal Peatland LIFE project and the Forest Biodiversity Programme METSO, with funding from the Ministry of the Environment
 - ▶ <https://julkaisut.metsa.fi/julkaisut/show/1601>
- ▶ **Ecological restoration in drained peatlands - Best practices from Finland**
 - ▶ Similä, Aapala & Penttinen (Eds) 2014
 - ▶ summarises the most important contents of the Finnish guidebook in English
 - ▶ financed through the Boreal Peatland LIFE project
 - ▶ <https://julkaisut.metsa.fi/julkaisut/show/1733>

EU Life funding

- ▶ first Life projects in 1995, by 2012 a total of 124 projects
- ▶ almost half of the Life nature projects have concerned peatlands to some degree
- ▶ peatland habitats the focus of many Life projects
 - ▶ promoted the conservation of peatlands through additional protection or enhanced land use planning, by restoring peatlands earlier cleared for agriculture or drained for forestry purposes, and even by recreating areas of peatland habitat where such areas had been lost
- ▶ peatland associated habitat types restored in Life projects (by 2012)
 - ▶ active and degraded raised bogs 1700ha
 - ▶ aapa mires, 4000 ha
 - ▶ bog woodlands, 2000 ha
 - ▶ alkaline fens 350 ha
 - ▶ transition mires and quaking bogs >100 ha

Some findings

- ▶ The goal of restoration should not be to restore the site to its exact condition before drainage, but to strive to trigger a process through which the site will become a peatland ecosystem with near natural functions.
- ▶ ecosystem-based approach ->re-establish and reinforce the ecosystem services provided by peatlands
 - ▶ in global terms: climate regulation. Mitigating climate change
- ▶ Local impacts: water flow and water quality regulation
- ▶ recreating the natural structural features of the landscape
- ▶ re-establish the natural hydrological functioning of the entire peatland complex
- ▶ the impacts of restoration on runoff and its variability

Some findings contd

- ▶ Restoration methods have been subsequently improved over more than 20 years, but restoring natural hydrological conditions to peatlands still cannot be considered as a straightforward process where success can be assured.
- ▶ The most serious water quality problem is the risk of a steep increase in phosphorus leaching.
 - ▶ occurred in more than half of the sites monitored.
 - ▶ not easy to predict
- ▶ Careful planning



NATNET Life+ -project

Increasing ecological
connections and coherence
of the Natura 2000 network

South-West Lapland, FINLAND

0,5 million hectares

6,9 million euros

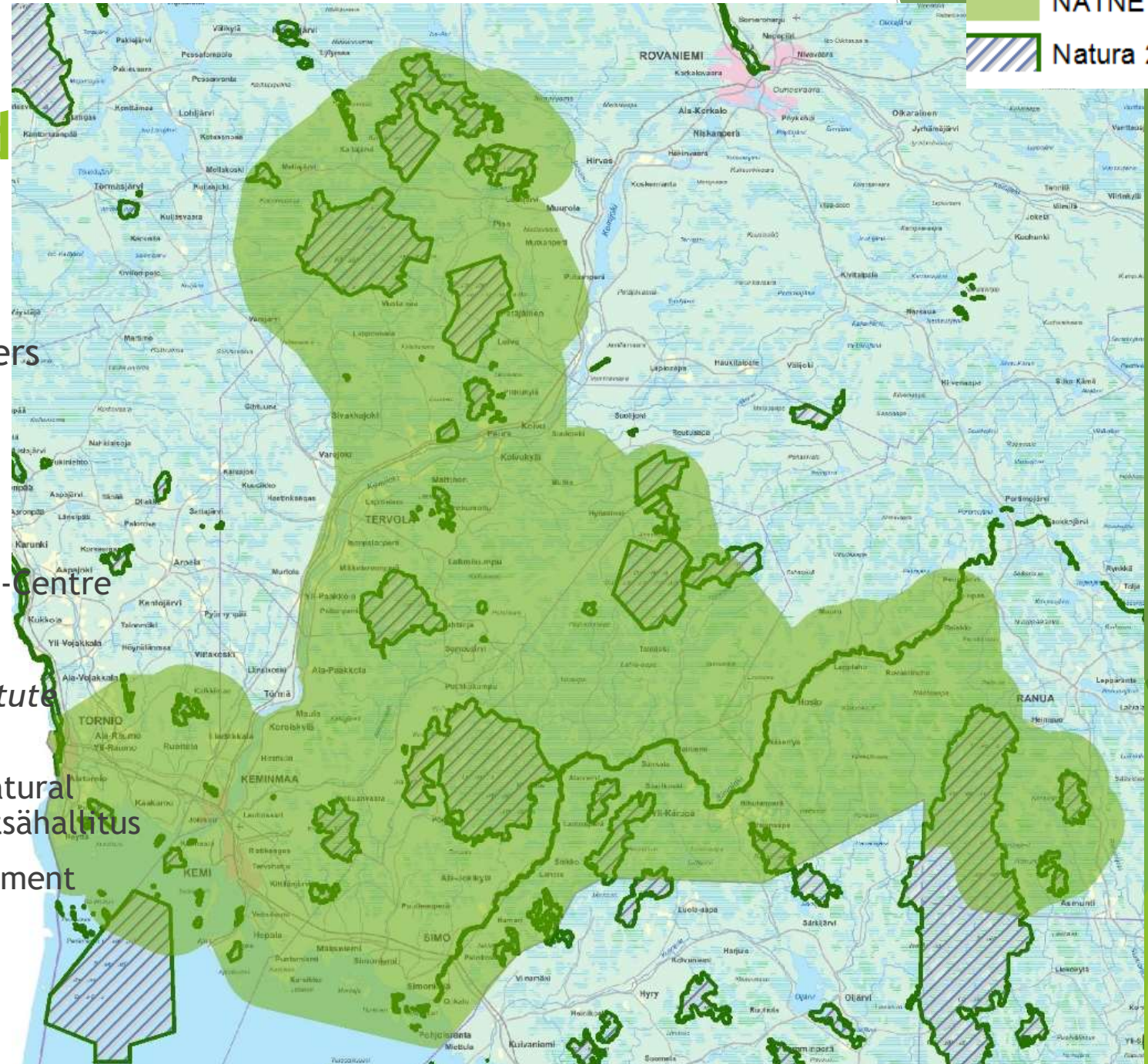
37 Natura 2000 –areas

PROJECT AREA

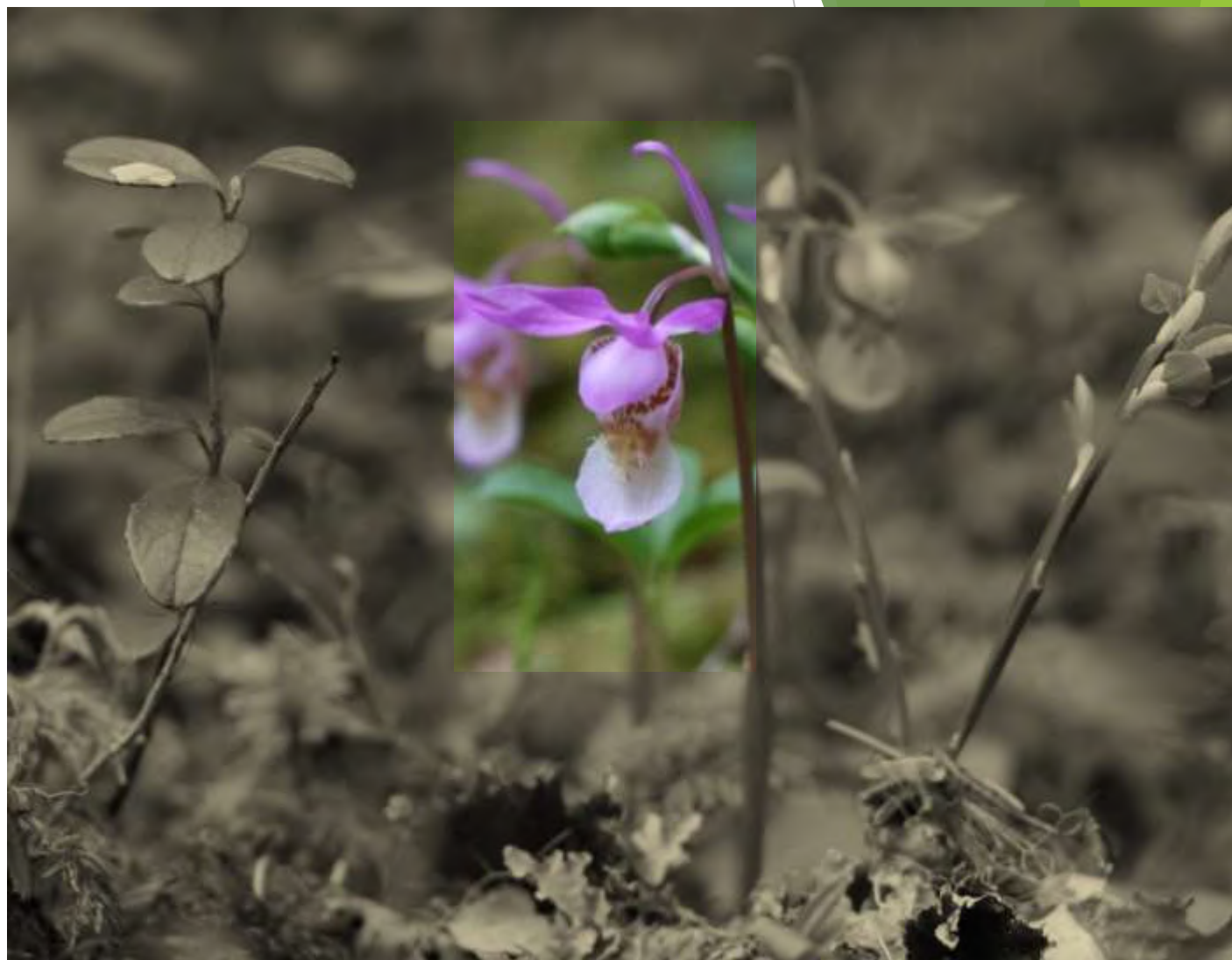


Parties involved

- ▶ 8 municipalities
- ▶ 3 000 private forest owners
- ▶ 120 000 ha Natura areas
- ▶ 5 partners:
 - ▶ Coordinator Lapland ELY-Centre
 - ▶ Finnish Forest Centre,
 - ▶ *Natural Resources Institute Finland*
 - ▶ *The Forestry and The Natural Heritage Services of Metsähallitus*
 - ▶ *The local Forest Management Associations*



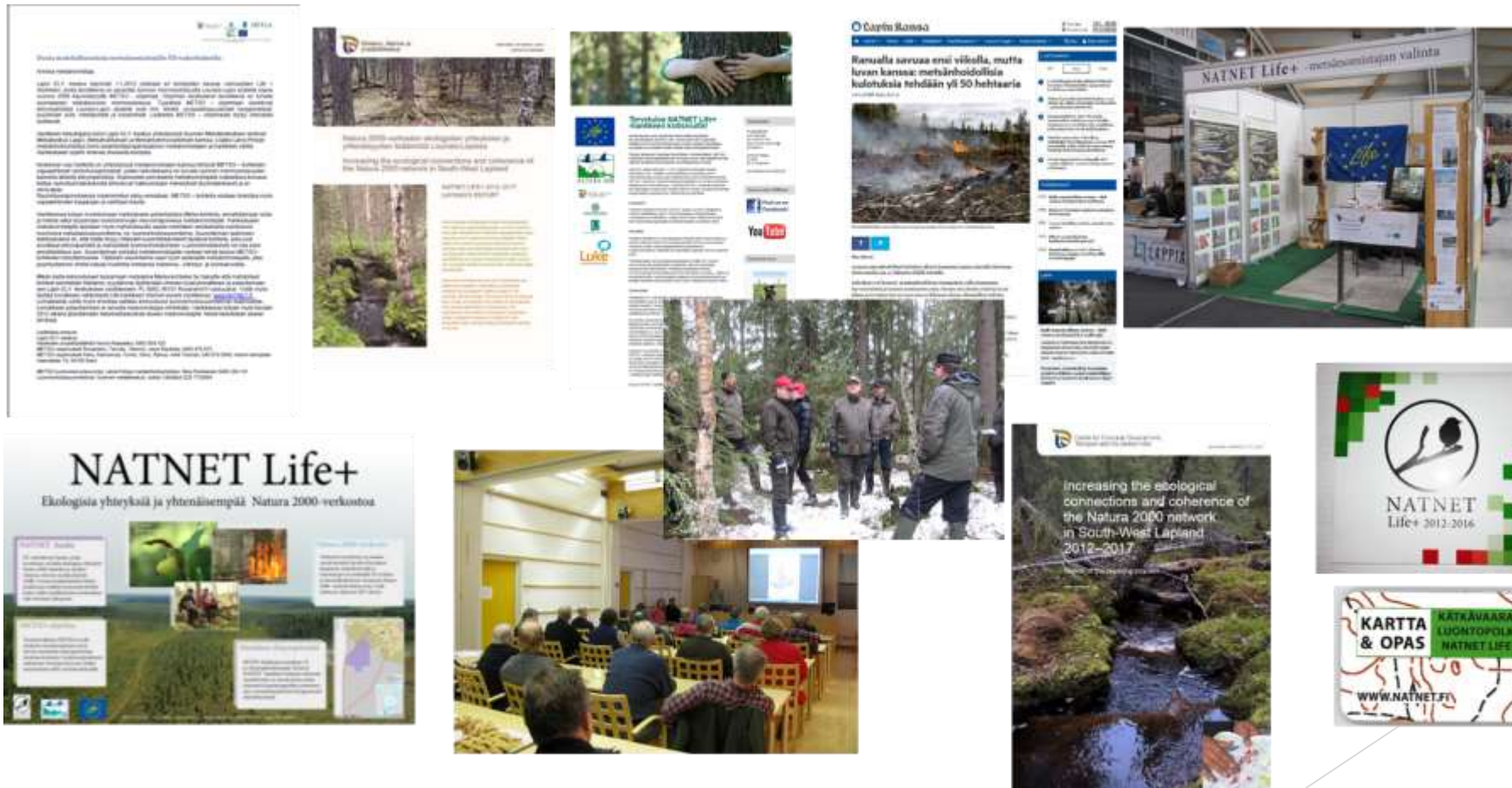
- **Expected results and Outcomes were:**
- Protection agreements 2800 hectares - *2860 hectares achieved*
- Restorations in the Natura 2000 sites: Mire restorations 120 hectares - *195 hectares achieved (mire and forest restorations in total)*
- Restorations in the private land :Mire restorations 600 hectares - *610 hectares achieved*
- Production of decayed wood 200 hectares - *201 hectares achieved*
- Production of charred and burned wood 150 hectares - *155 hectares achieved*
- Nature management plans for in all 5000 hectares - *5018 hectares achieved*
- Green infrastructures and ecological connections, for in all about 250 kilometres. -- *381 kilometers achieved*
- Several reports - *5 reports achieved*
- Other material and outputs according to the actions and dissemination plan - *lots of material and outputs*



Web pages

- ▶ <http://en.natnet.fi/>

Active information activities and good co-operation with landowners behind the success



After Life Management Plan

- ▶ **Monitoring and inventories**
 - ▶ Follow-up of the monitoring sites - Metsähallitus
 - ▶ repeated after five and ten years
 - ▶ calypso inventories continued - the Nature Resources Institute Finland (LUKE)
 - ▶ bird inventories carried out
 - ▶ After one, five and ten years
 - ▶ Monitoring the state of the conservation sites - Metsähallitus
 - ▶ in 2021 -> Decision of further inventories
- ▶ **Nature management plans**
 - ▶ The Finnish Forest Centre will monitor implementation
 - ▶ Renewed between 10 - 15 years.

After Life Management Plan Contd

- ▶ Protection agreements
 - ▶ conservation areas established under the Nature Conservation Act
 - ▶ aim to establish more conservation sites based on the Zonation analysis, the corridor areas defined in the project are prioritized
- ▶ Funding needed:
 - ▶ follow-up of the established monitoring sites on the restoration areas
 - ▶ monitoring of the state of conservation areas
 - ▶ calypso inventories, bird inventories
 - ▶ renewal of the nature management plans
 - ▶ establishing new conservation areas
 - ▶ maintenance of the nature trail in Kätkävaara
- ▶ And future financiers
 - ▶ Ministry of the Environment
 - ▶ Ministry of Agriculture and Forestry
 - ▶ Municipality of Tervola (nature trail in Kätkävaara)

Some projects

- ▶ **Boreal Peatland LIFE, 2010-2015**
 - ▶ <http://www.metsa.fi/web/en/borealpeatlandlife>
- ▶ **LIFEPeatLandUse, 2013-2018**
 - ▶ <http://www.metla.fi/hanke/8547/index-en.htm>
- ▶ **Hydrology LIFE, 2017-2023**
 - ▶ <https://www.ser-rrc.org/project/hydrology-life-restoration-of-peatlands-small-water-bodies-and-bird-lakes-in-finland/>
 - ▶ **Twining with the PeatLIFE in UK**

An aerial photograph of a forest landscape. The terrain is a mix of vibrant green trees and numerous dead, grey, skeletal trees. A stream flows through the center-right of the image, with white water rapids visible. The ground is covered in a dense layer of moss or low-lying vegetation, interspersed with fallen branches and debris. The overall scene suggests a forest in a state of ecological transition or recovery.

Thank you!