



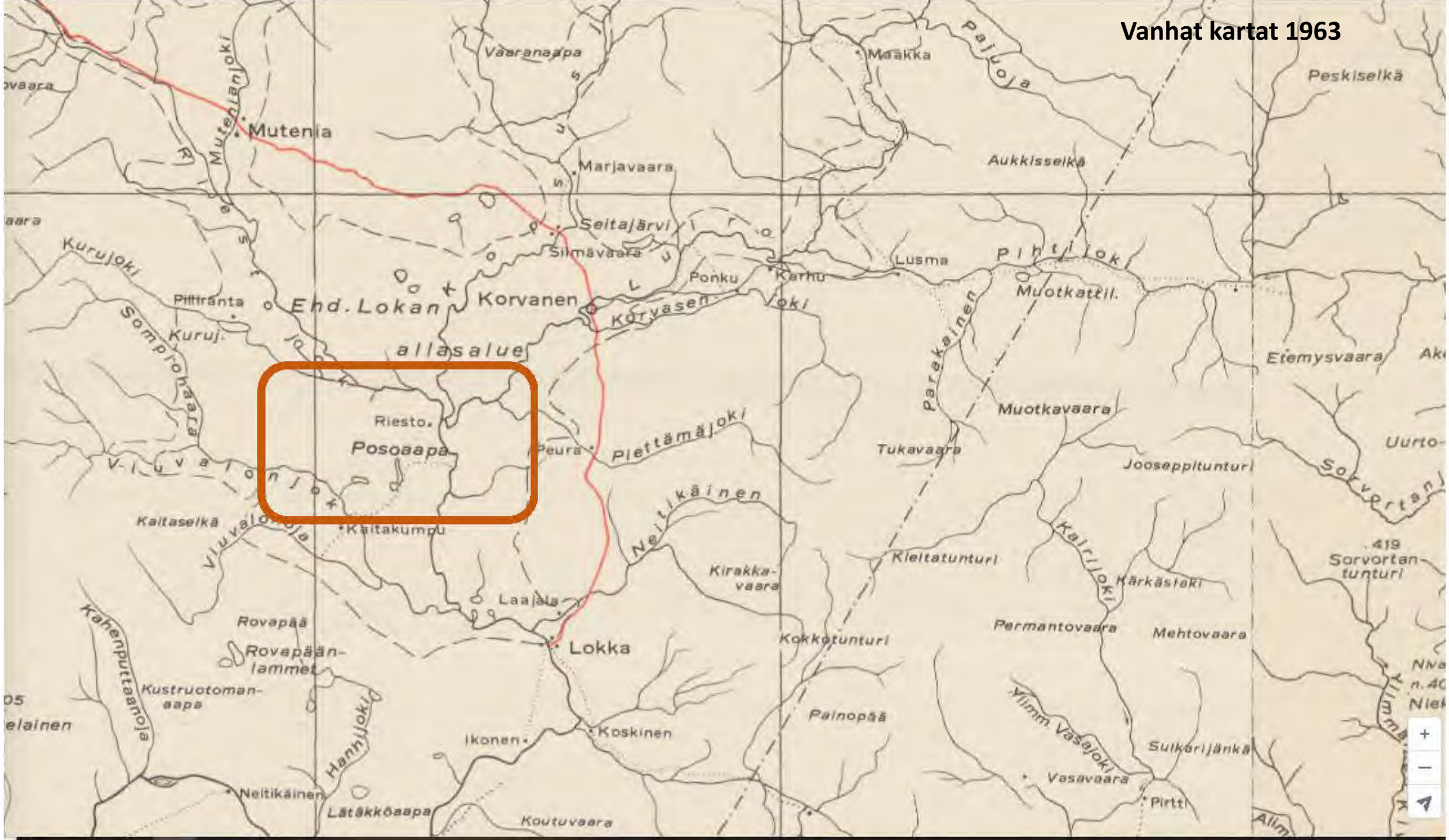
# Orgaaniset maat hyvinvointia tuottamassa - Ruokaa, puuta, palmuöljyä ja ympäristöongelmia

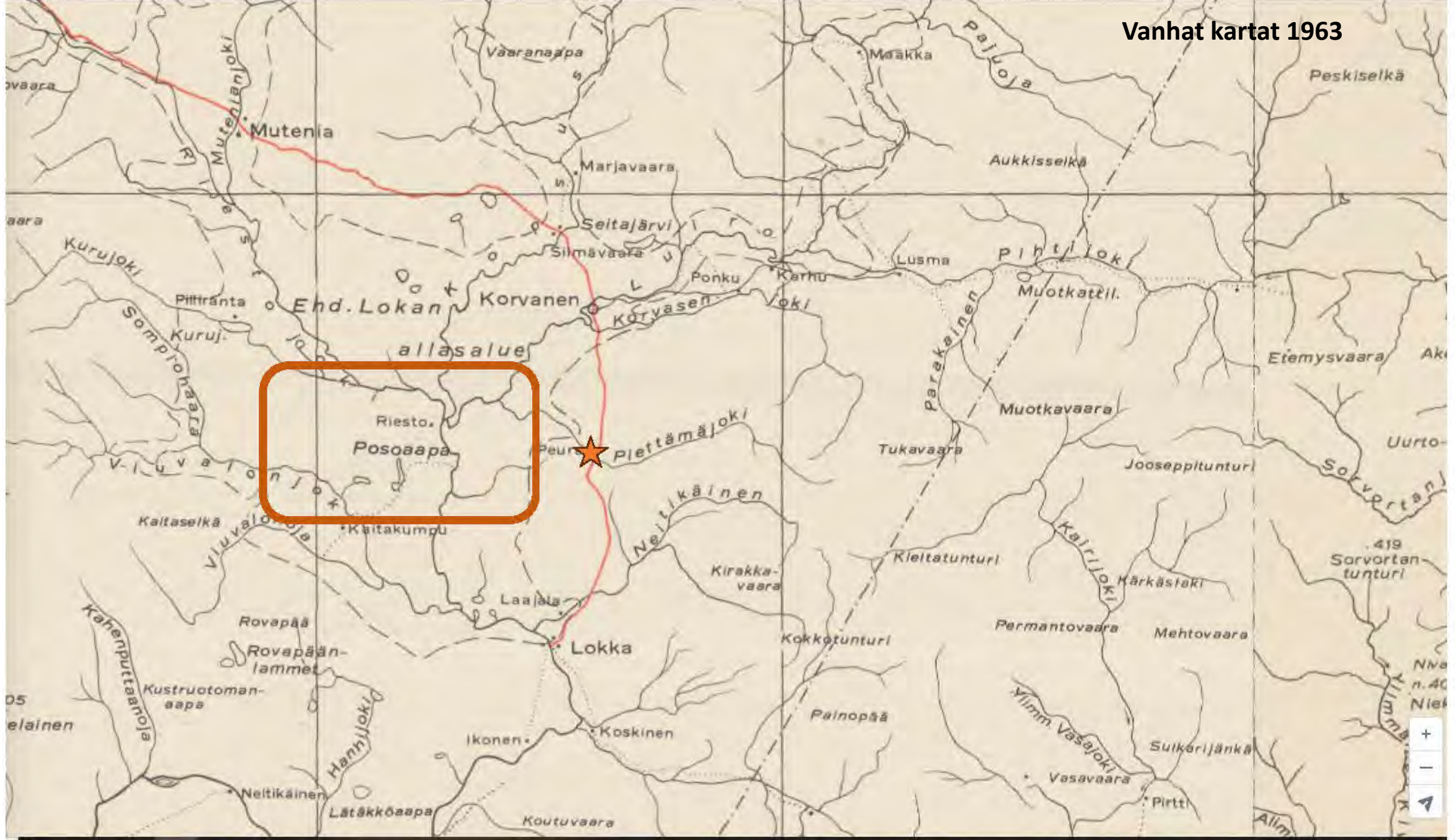
Annamari Laurén & Marjo Palviainen  
Suometsätieteen professori Metsänhoitotieteen apulaisprofessori  
Helsingin yliopisto

# Posoaapa, Euroopan suurin aapasuo



(Urpo Häyrinen / Lusto / Museovirasto)







# Perintö?



Tuleva suometsätieteen professori altaan täyttymisen jälkeen Isoisän teettämässä Vuotson puvussa



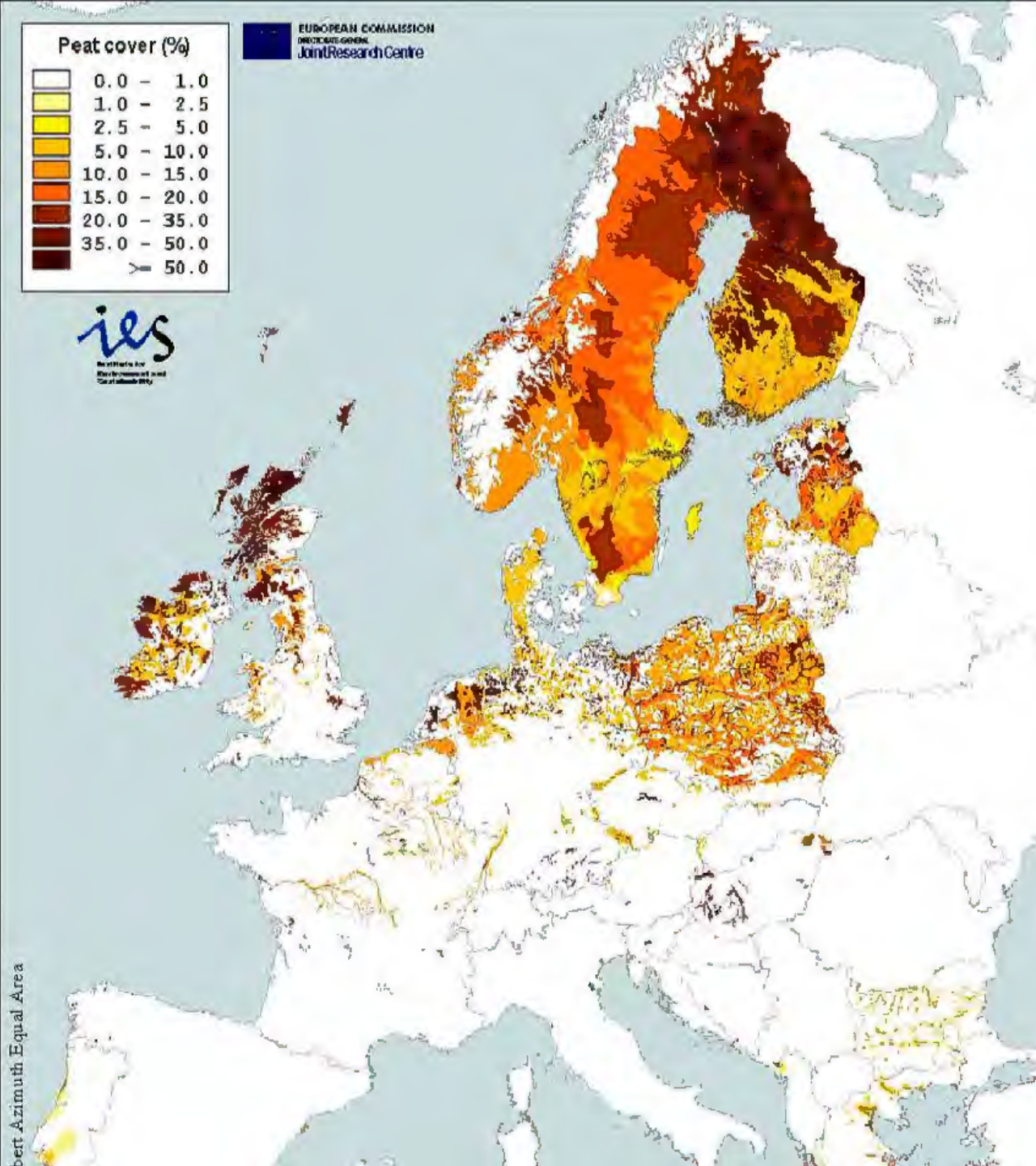
# Suot Euroopassa

## Boreaaliset:

- Metsätalous
- Maatalous
- Turvetuotanto
- Luonnontilaiset suot >50%

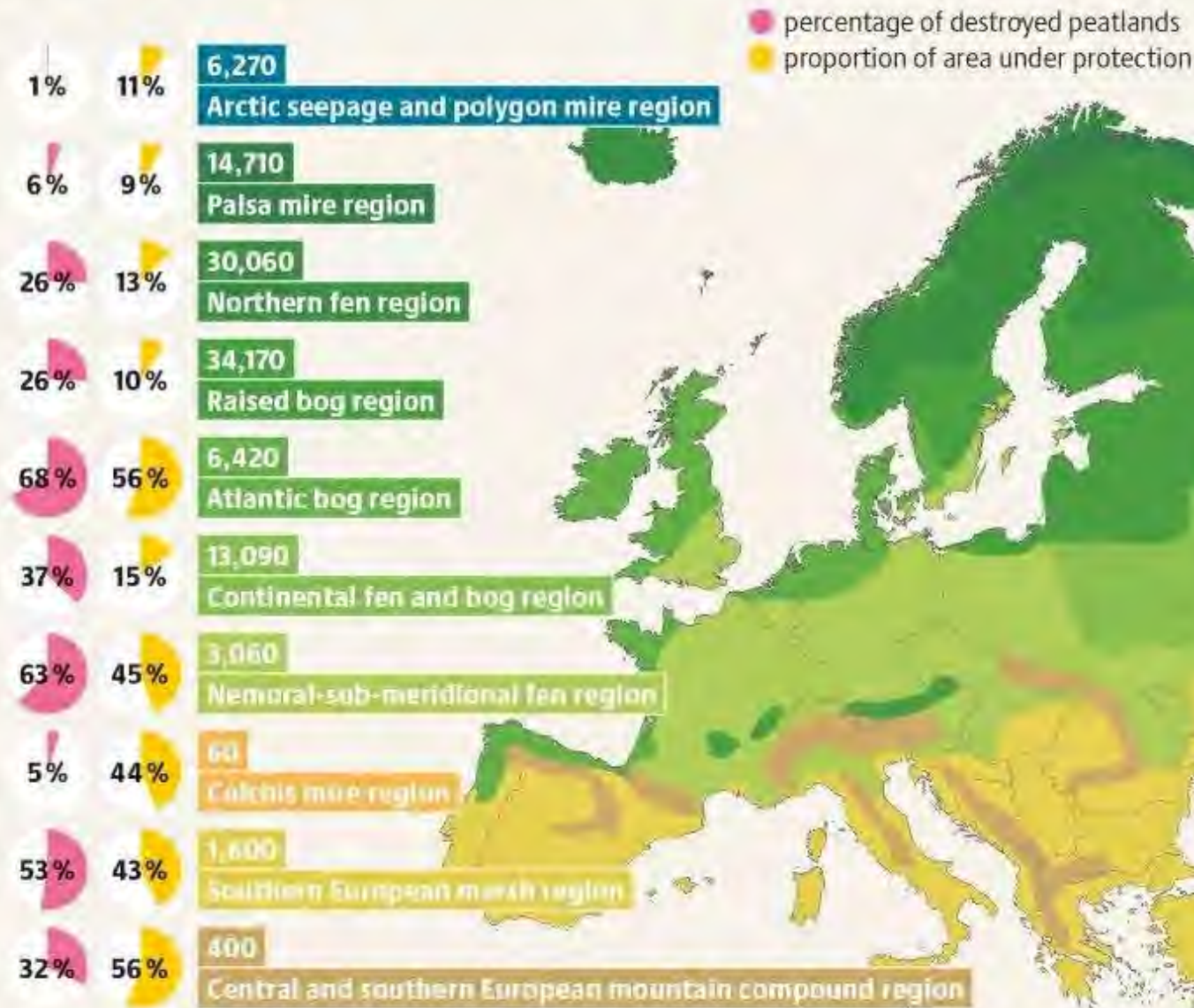
## Lauhkea:

- Maatalous
- Energiaturve
- Luonnontilaisia vähän



**VANISHING HABITATS**

European peatland regions and total area of peatlands, in 1,000 hectares





### SHADOW OF THE PAST

Peatland drainage in recent human history in Europe



**1599**  
Netherlands

One of the first European peat colonies was established in Pekela. The peat was dredged through navigable canals (wijk). The first settlers (fehntjers) had to live in primitive peat huts under miserable conditions

**1630**  
United Kingdom

A group of wealthy landowners started peatland drainage in Cambridgeshire. The inhabitants of the county feared the loss of their environment and traditional livelihood and formed the resistance group "The Fen Tigers". They started a riot, tore down the constructed dikes, ditches and sluices. Windows were shattered, shops pillaged

**1930s**  
Germany

The Nazis forced concentration camp prisoners to drain peatlands and extract peat. Their hard labour features in the famous protest song "Peat Bog Soldiers" (German: Moorsoldaten). The former concentration camp Esterwegen has devoted a memorial to commemorate this history

Lauhkean alueen suot



Saksa 98%  
ojitettuja

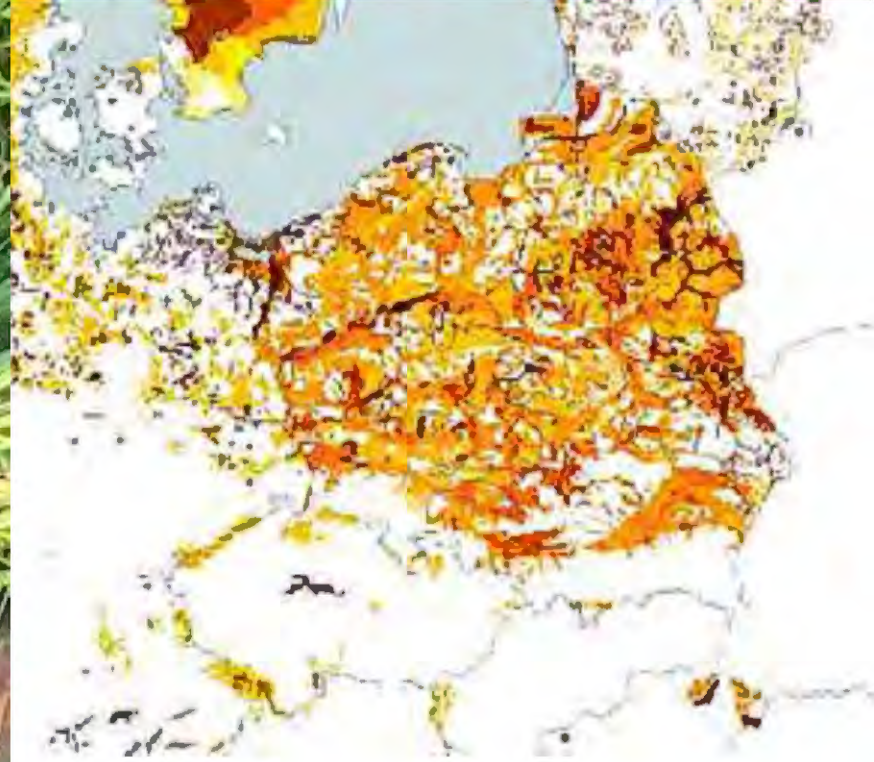




PLATE 1. Holme Post (protruding c. 3.9 m). Photograph taken June 1978, looking SE, by Miss Joyce Gurr.

# Britannia

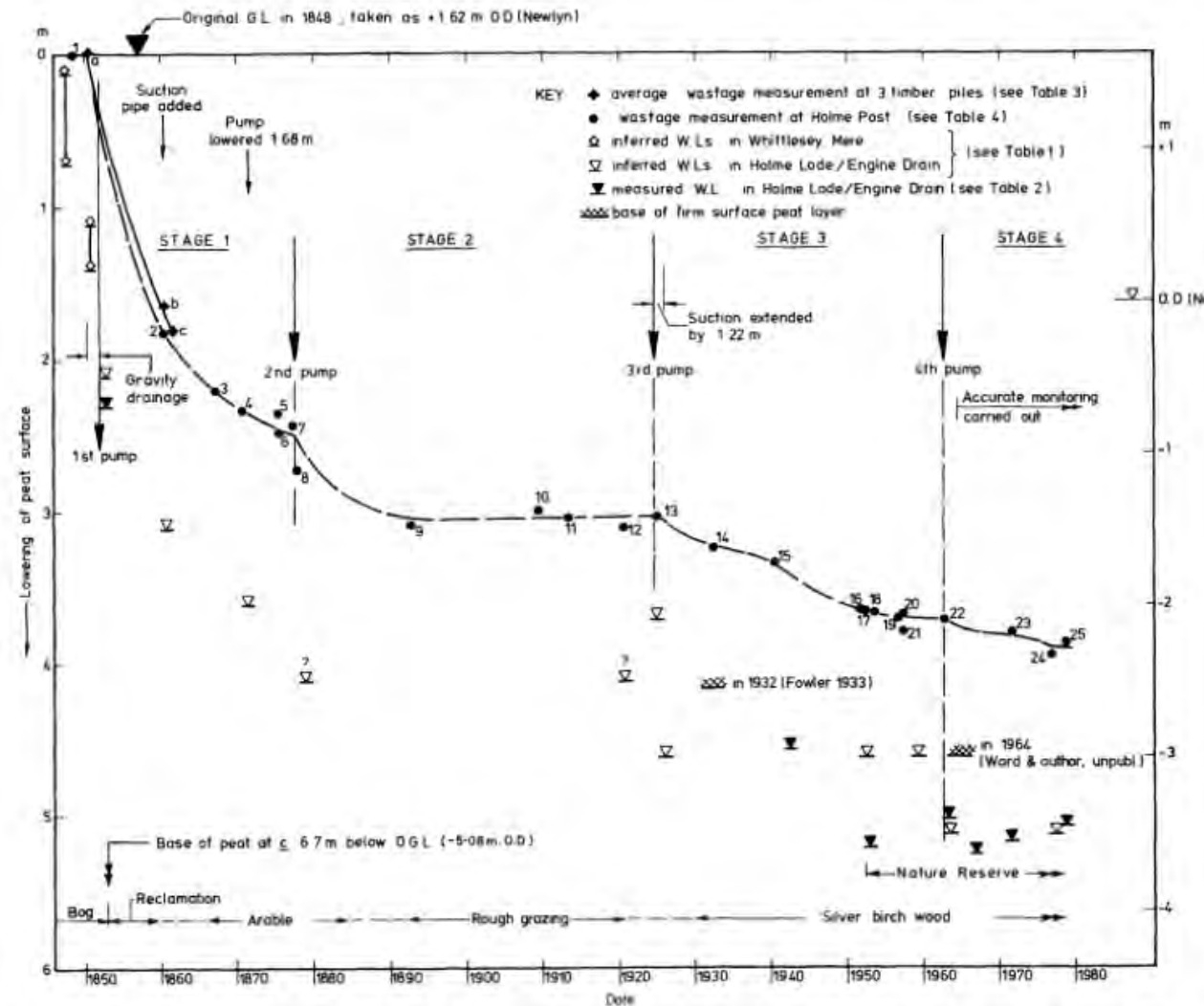


FIG. 3. Plot of lowering of the peat surface at Holme Post from 1848 to 1978 A.D. The available information on pumping and water levels in Holme Lode/Engine Drain is also shown. For key to nos 1-25, see Table 4.

# Suot maailmalla

## MILLENNIA OLD, WITH A SIZE OF MILLIONS AND MILLIONS OF HECTARES

Global distribution of peatlands



\*including European Russia

© 2023 WWF International. All rights reserved.

**Peatland Atlas 2023** Peatlands exist in the mountains, in lowlands, along rivers and at the coast. Their vegetation and condition vary from one climate zone to another, but all types of peatland have something in common: their continued existence is in danger.

by Dr. Alexandre Barthelmes

11 September 2023 ⌚ Reading time: 4 minutes

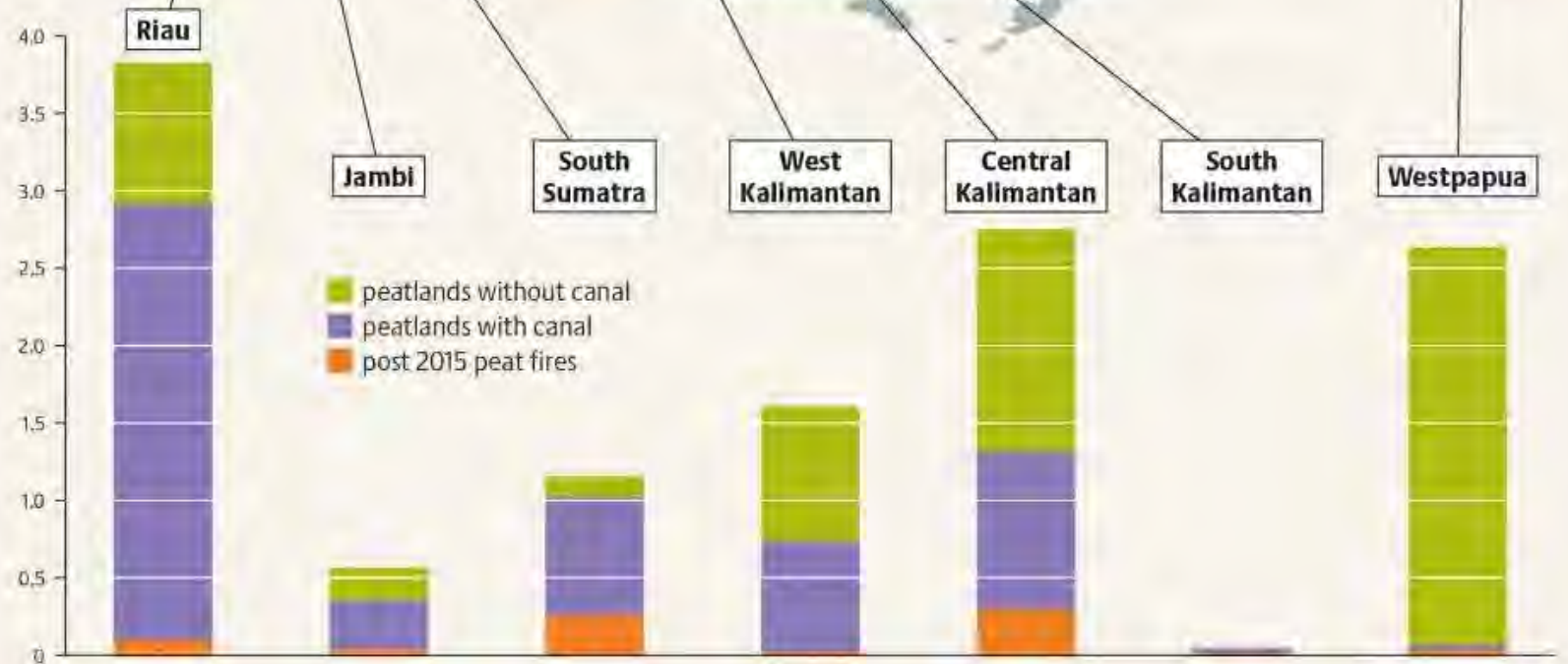
# Trooppiset suot

## FROM DESTRUCTION TO RESTORATION

Target areas for peatland restoration in Indonesia, in million hectares

In 2015 to 2016, peatland fires got out of control: one of the world's biggest climate disasters. Damages are estimated at more than 16 billion US dollars, with some estimates exceeding 28 billion US dollars. Over 100,000 people lost their lives

One third of all tropical peatlands are located in Indonesia, home to more than 20 million hectares of peatlands. For years, the areas were cleared and drained for industrial plantations, often leading to fires



# Trooppiset suot



# Kuivatus



Do not copy, use  
or share this figure

# Uudistamista odotellen

Do not copy, use  
or share this figure





## Rates and spatial variability of peat subsidence in *Acacia* plantation and forest landscapes in Sumatra, Indonesia

Chris D. Evans<sup>a,\*</sup>, Jennifer M. Williamson<sup>b</sup>, Febrio Kacaribu<sup>b</sup>, Denny Irawan<sup>b</sup>, Yogi Suardiwerianto<sup>c</sup>, Muhammad Fikky Hidayat<sup>c</sup>, Ari Laurén<sup>d</sup>, Susan E. Page<sup>e</sup>

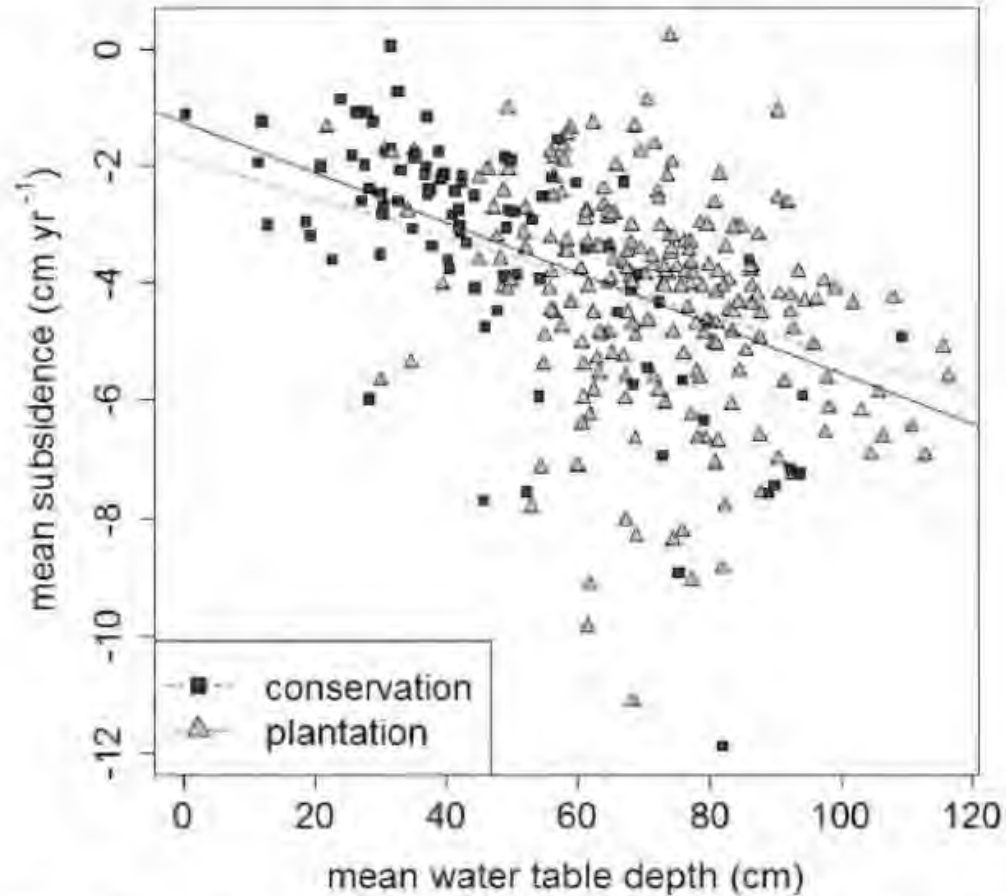


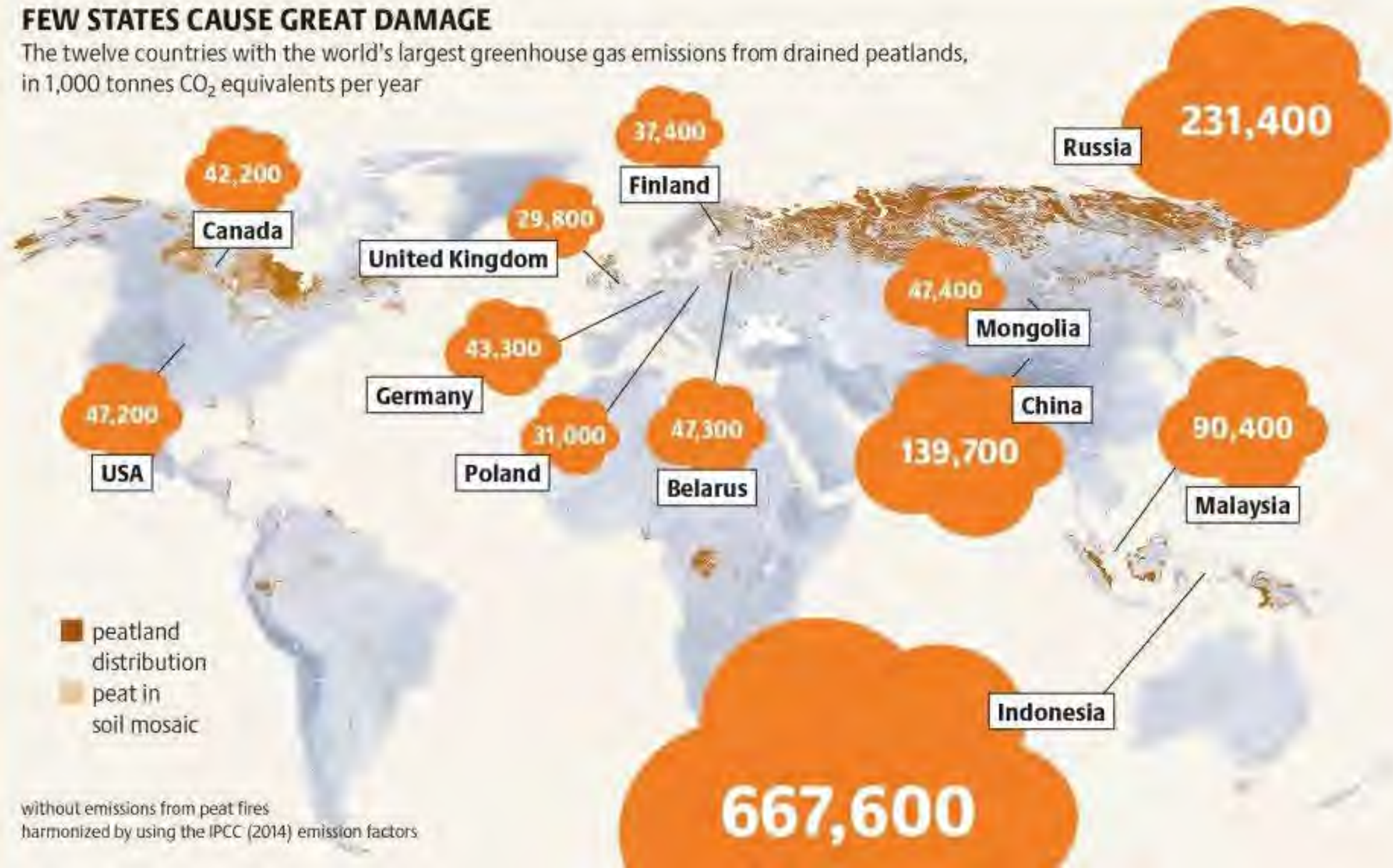
Fig. 2. Mean measured rate of subsidence and water table depth for all individual measurement sites. Solid line shows the best fit line of a linear regression fitted to all data ( $n = 318$ ), short dashed line show fit to native conservation forest sites ( $n = 92$ ) and long dashed line fit to *Acacia* plantation sites ( $n = 220$ ).



Do not copy, use or share this figure

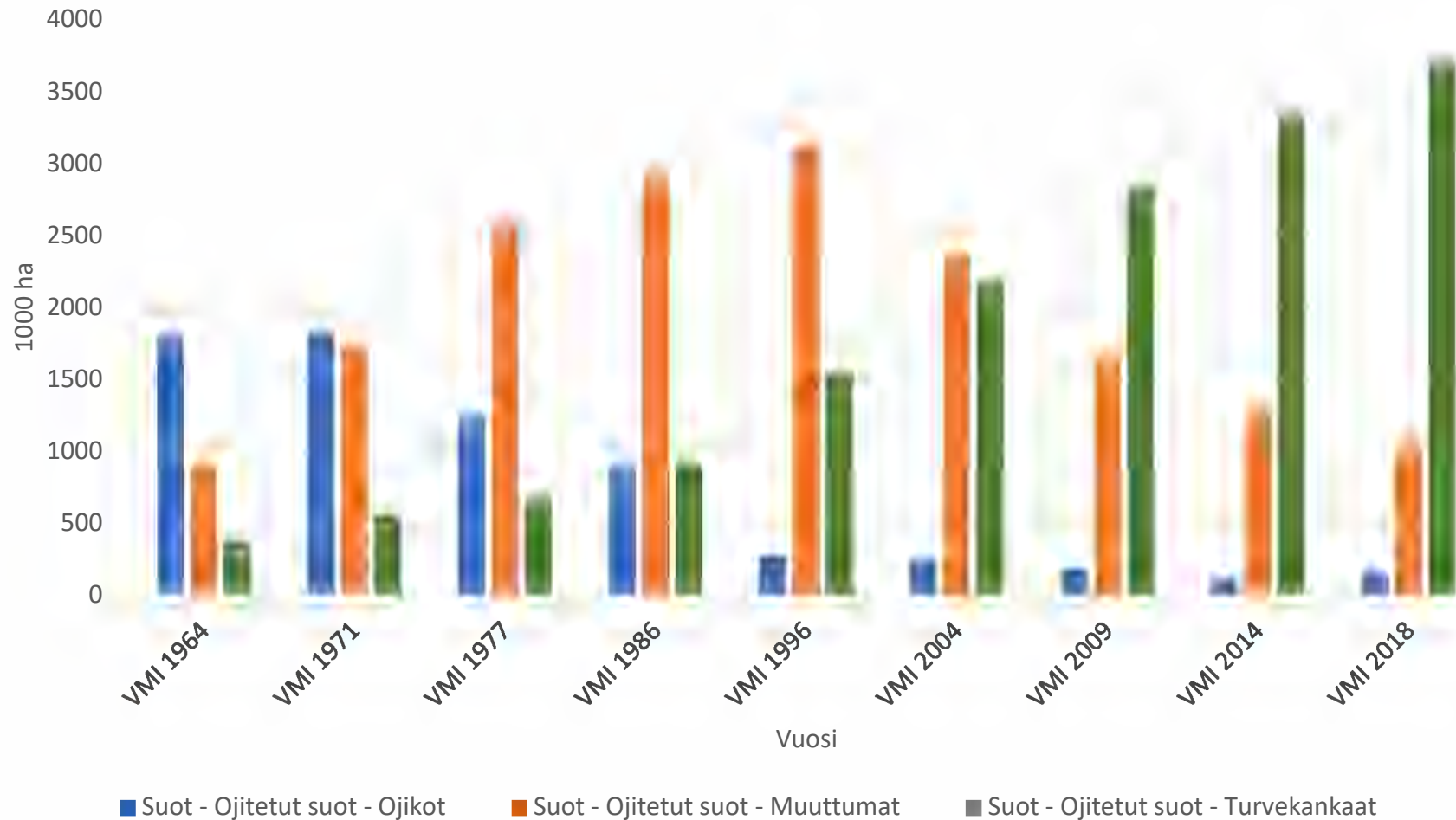
## FEW STATES CAUSE GREAT DAMAGE

The twelve countries with the world's largest greenhouse gas emissions from drained peatlands, in 1,000 tonnes CO<sub>2</sub> equivalents per year



ojikko → muuttuma → turvekangas

Ojitetut suot - Koko Suomi



# Uusi toiminta

## Kasvillisuus

- + kangaslajit
- + juuret

## Muuttunut pintaturve

- + tiheys
- + ravinnetiheys
- ilmanvaihto
- vedenjohtavuus



## Kangashumus

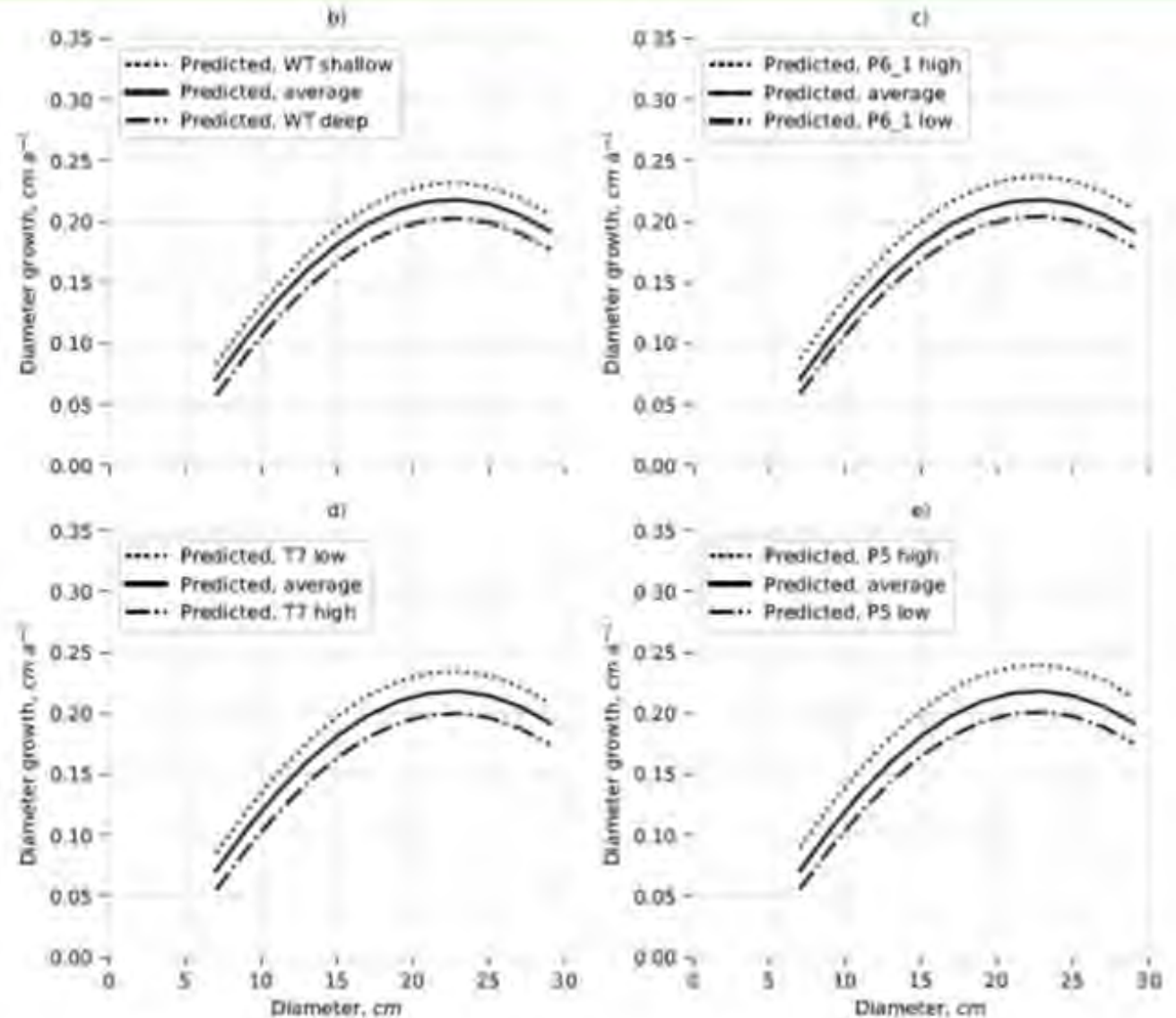
- + suurhuokoset
- + ilmanvaihtio
- + ravinteiden vapautuminen
- kapillaarisuus

## Syvempi turvekerros

- + vain vähän muuttunut

# ...hyötyy korkeammasta veden pinnasta

Hökkä ym. 2024 (accepted)  
Changed role of water table and weather conditions in diameter growth of Scots pine on drained peatlands  
Canadian Journal of Forest Research



# Onko totta?

50 vuotta ojitetuna,  
ennallistettu 20 v sitten  
puusto poistettu



# 130 vuotta paremman elämän eteen.

"Vanhan eukon turpastölli ja navetta Ängeslevänjoen varrella" (Liminka 1910).



**Fig:** Samuli Paulaharju: *Kymmenen virran maata*, 1995.

