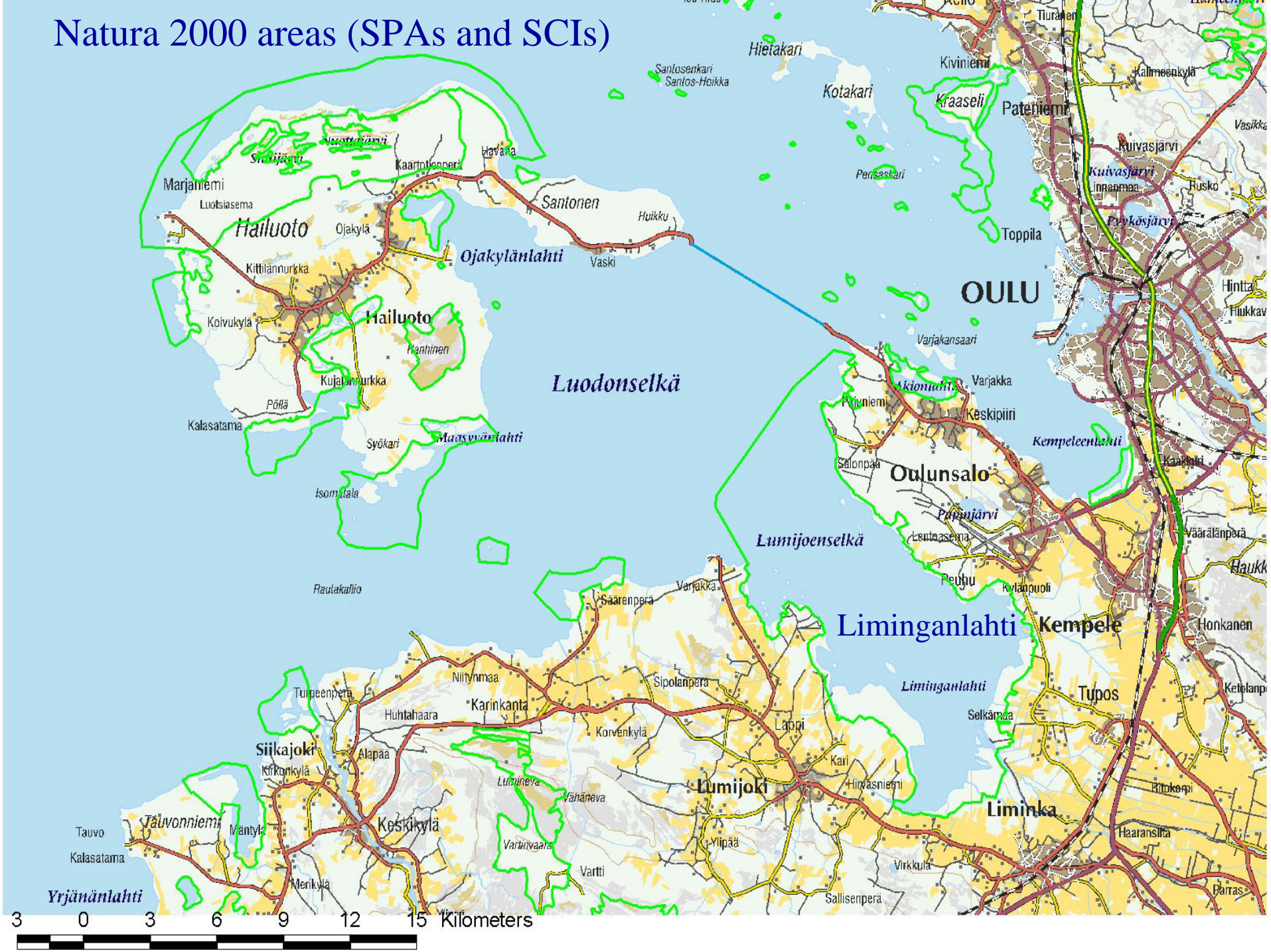


# Restoring and managing Baltic boreal coastal meadows in North Ostrobothnia, Finland

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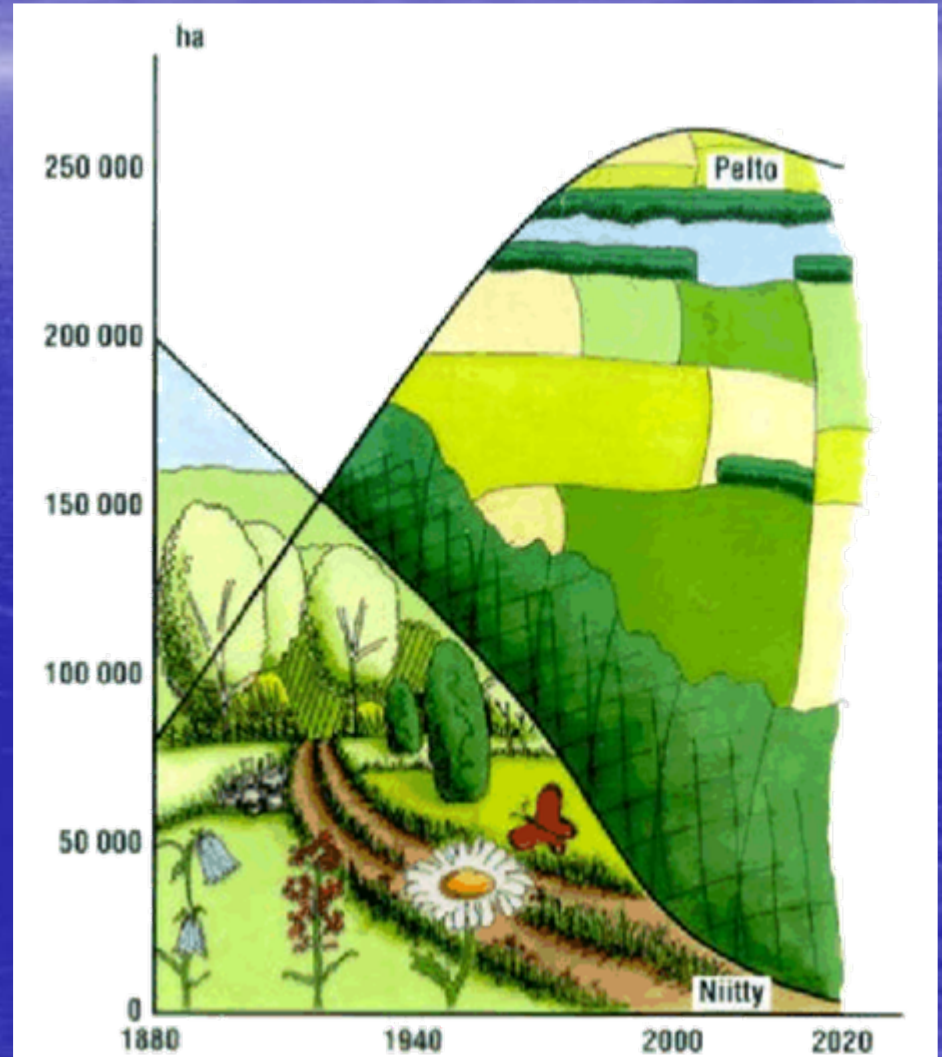
# Natura 2000 areas (SPAs and SCIs)





# Management history of meadows

- 2 000 000 hectares at the end of 19th century
- 20 000 hectares at the end of 20th century
- Amount of managed coastal meadows has increased since 1995 => agri-environment support
- Reference: The ministry of agriculture and forestry 2000

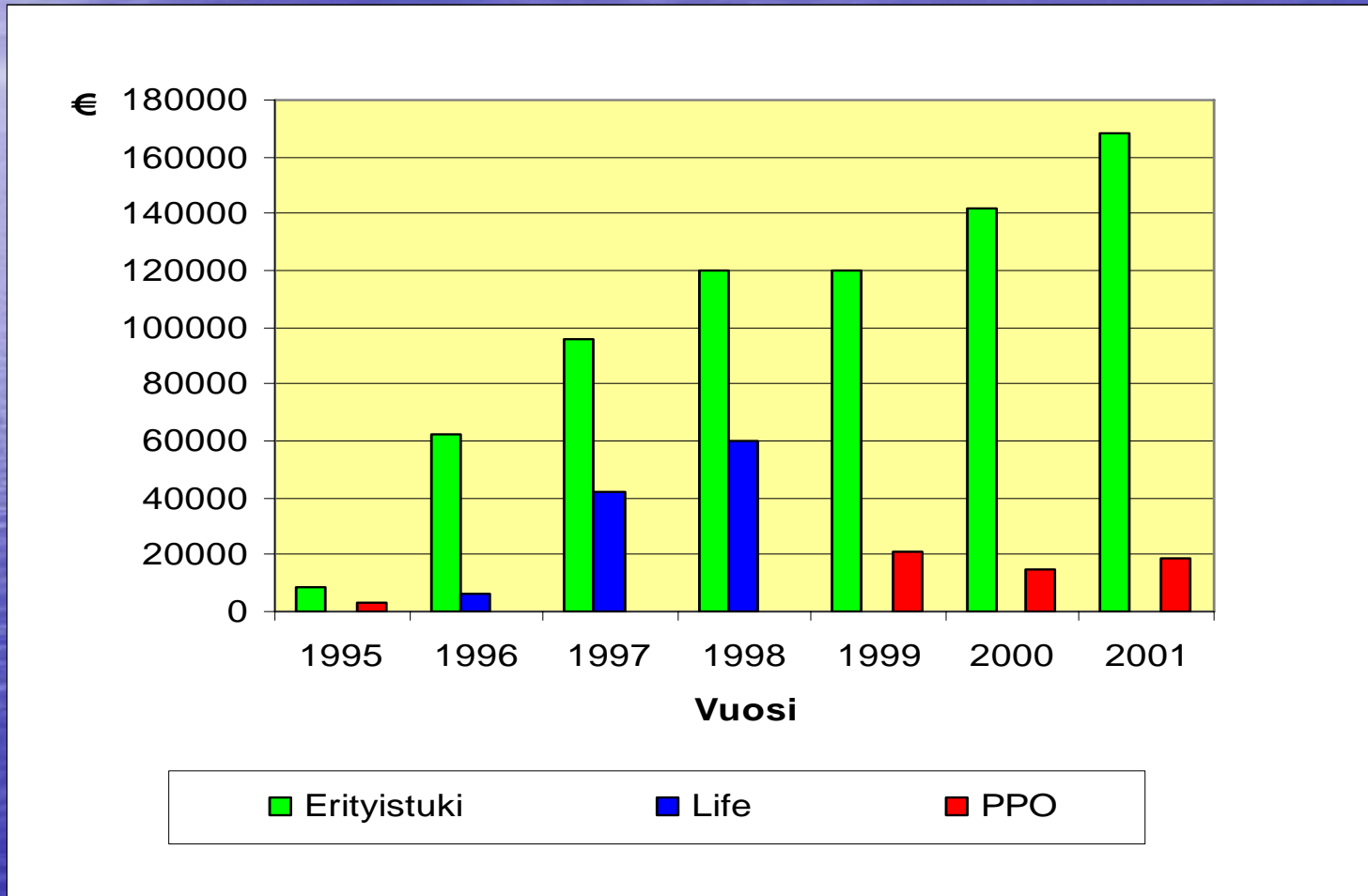


# Conservation of Liminganlahti wetland

## *Restart for management of wetland habitats*



# The financial instruments of the management of biotopes in Liminganlahti Natura 2000 site



# Agri-environment support and measures carried out

## ❖ 3 parallel programmes

- Management of traditional rural landscapes
- Enhancement of biodiversity
- Management of landscape

## ❖ Measures

- grazing
- mowing on the natural meadows
- coppicing of trees and bushes



# Cooperation in management planning

NOREC has helped the farmers

⇒ To find most suitable areas

⇒ To prepare management plans

⇒ To choose the best management measures





# Basic restoration and non recurring management measures



Removing of the Reed



Removing of stumps



Clearing of the Reed and bushes



Burning of the clearing waste

# Recurring management measures



Cattle grazing



Sheep grazing



Mowing



Management of threatened plants

# Recurring management measures



Mowing of islands



Mowing of wet meadows



# Removing of the Reed



- Restoration of former low-growing meadows was done by Liminganlahti LIFE-Nature project
- Cooperation with the Finnish state energy production corporation (Vapo Ltd) was done
- Total area 492 hectares
- Recurring management measures were carried out by the local farmers => mainly by grazing

# Grazing – a primary management measure

- Size of management areas has increased since 1995
  - In Liminganlahti from 80 hectares (1995) to 900 hectares (2001)
  - In North Ostrobothnia from 200 hectares (1995) to 2 000 hectares (2006)
- Head of livestock > 1 800 animals (> 90 % beef cattle)
- Support for farmers 200 € per hectare on the average



# Mowing of meadows



- Size of mowing areas has increased since 1995
  - In Liminganlahti from 40 hectares (in 1995) to 150 hectares (in 2001)
  - In North Ostrobothnia from 150 hectares (1995) to 350 hectares (2006)
- Support for farmers 160 € per hectare on the average

# Monitoring of breeding bird populations in management areas at Liminganlahti

- Annual wetland bird monitoring
  - covers the whole SPA area
  - started in 1954
  - methods used: round and point counts, mapping census, line transect census
- Monitoring of management areas (every 5 year)
  - covers almost the all management areas
  - mapping census method (4 counts per year)
- Special studies (e.g. *Calidris a. schinzii*, *Limosa limosa*, *Sterna albifrons*)

# Monitoring methods

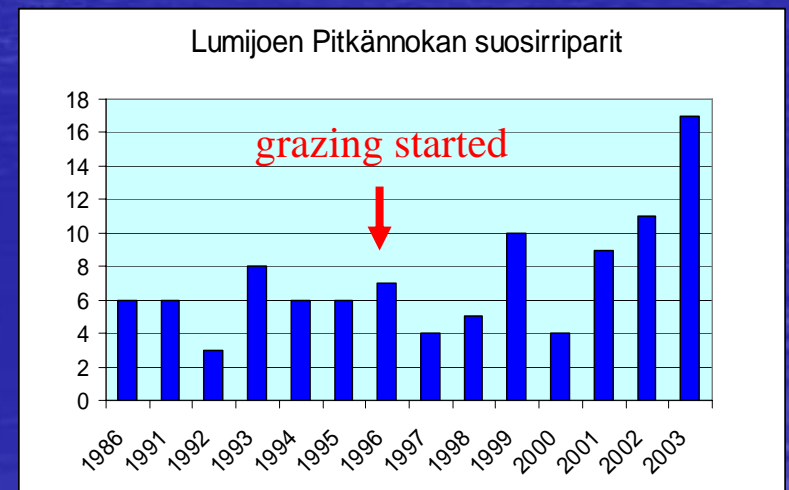


Mapping census  
Round/Point count  
Line transect





# Monitoring of Southern Dunlin (*Calidris a. schinzii*) population in Liminganlahti wetland



# Monitoring of vegetation



## Stable monitoring areas

- 14 monitoring areas
- 16 sample areas/area marked with wood poles
- The size of sample area 1 m<sup>2</sup>
- Monitoring rhythm: years 0, 1, 2, 3, 5, 7, 10, 15, 20
- Identification of plant species
- Estimation of the coverages of each species in every sample areas



# Management process in a nutshell

- Activating and educating the farmers => what kind of profit they can get out of this?
- Find out suitable management areas
- Monitoring of management areas => improving management measures and rules from the point of view of nature conservation values (habitats, animals and plants)
  - ⇒ guidelines for state authorities
  - ⇒ Improving the rules in co-operation with scientists, farmers and state authorities
- Introduce " the best management practices" in a wider scale