

# Constructions of wetlands for reducing leakage from farmlands

WAB Conference 25th January 2012

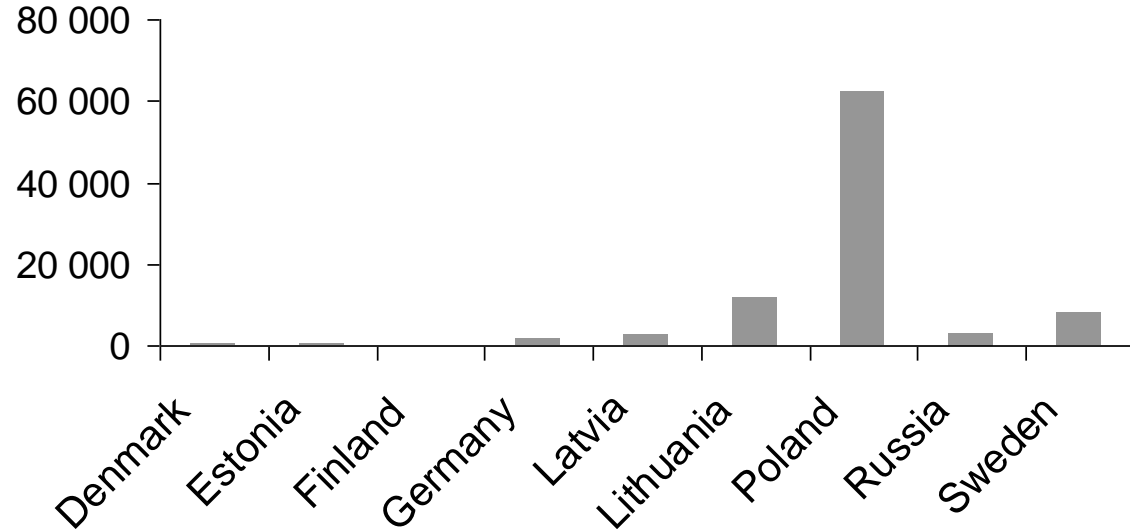
Niklas Holmgren

Competent Authority of the South Baltic Water District

# Why?

- Decrease impact eutrophication
- Increase biodiversity
- Decrease high flows
- Recreation

Allocated reduction nitrogen per country (tonnes), BSAP 2007

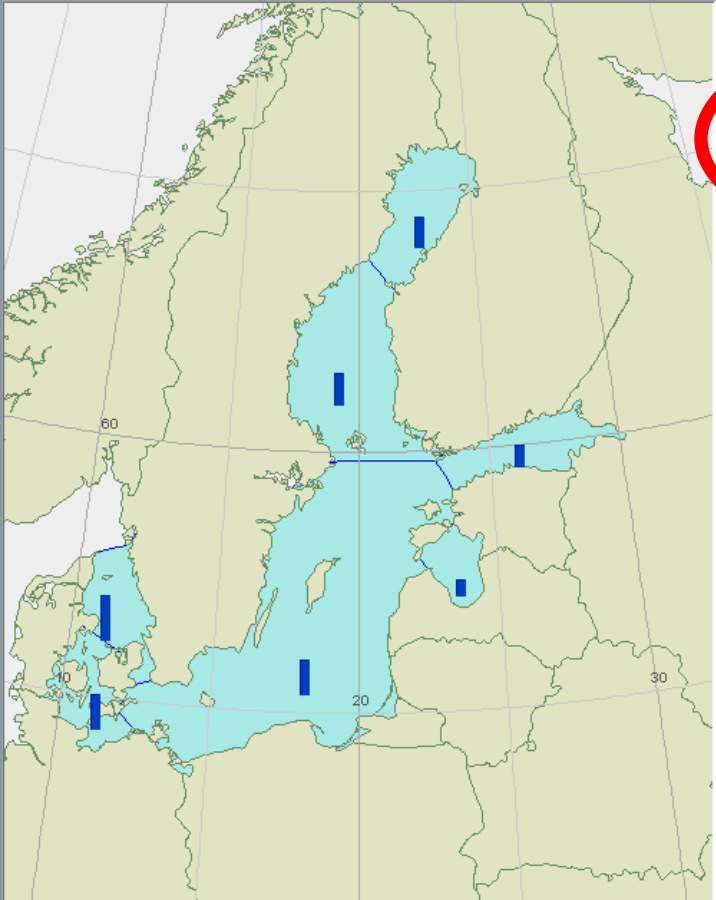


Baltic Nest

Tools

Atmospheric data | Catchment data | Riverine and marine data | BaltSem marine model | Marine model | Watershed model | Fish model | Cost calculation

File Tools **Warning: Some data behind this model are outdated!**



**Input data**

**Measures**

- Fertilizer use
- Sewage reduction
- NOx reduction
- Wetland restoration
- Change of N spreading time
- Livestock reduction
- Land use

Calculate

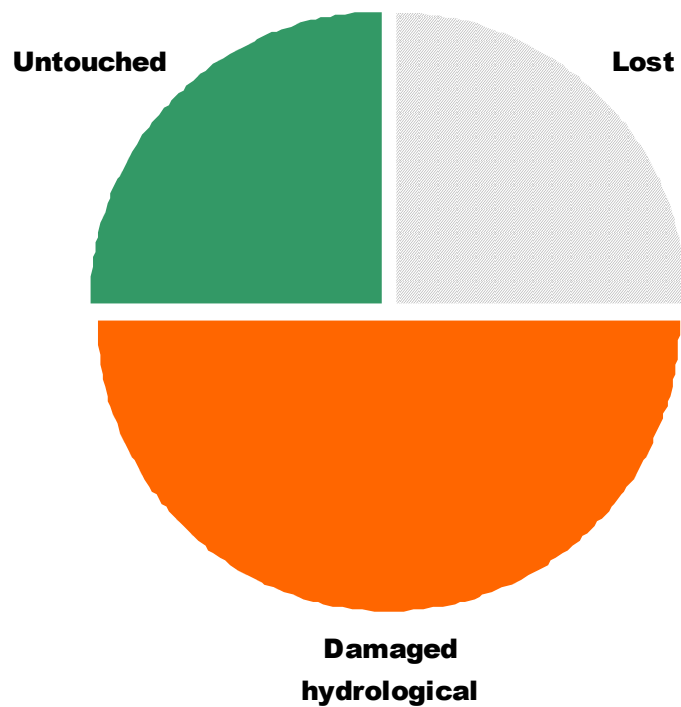
**Result**

Countries | Sea regions

Country	Cost	N Reduction	P Reduction
Total	0.0	0.0	0.0
Sweden	0.0	0.0	0.0
Finland	0.0	0.0	0.0
Russia	0.0	0.0	0.0
Estonia	0.0	0.0	0.0
Latvia	0.0	0.0	0.0
Lithuania	0.0	0.0	0.0
Poland	0.0	0.0	0.0
Germany	0.0	0.0	0.0
Denmark	0.0	0.0	0.0

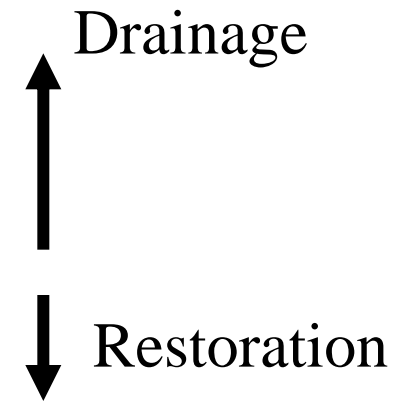
Model of coupled nitrogen and phosphorus biogeochemical cycles

# Loss of wetlands in Sweden



# Financial support for drainage and restoration of wetlands in agricultural areas

Diagram



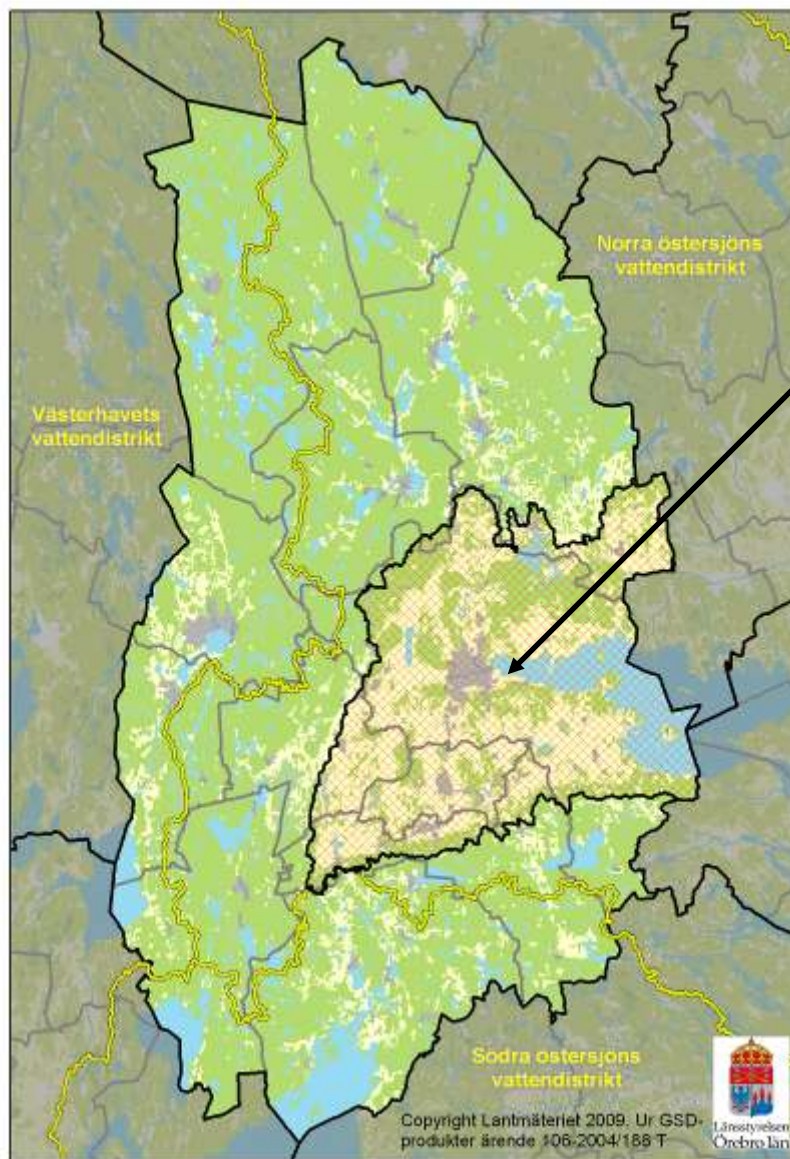
Source: Våtmarksstrategi Skåne, Länsstyrelsen i Skåne 2007:5

# Financial support systems

- Rural Development Plan – Sweden
  - Wetlands
    - New wetlands
      - 90-100% for investment costs
      - last for >20 years
      - 10 000-30 000 Euro/ha maximum
    - Yearly maintenance – 300-400 Euro/ha\*year
    - Wetlands – reduce 50-500 kg Nitrogen/ha\*year
    - Goal BSAP – 6 000 ha – 300 ton Nitrogen
  - Phosphorous traps – dams
    - Maximum 90% or 30 000 euro/ha of investment
    - 25 kg Phosphorous/ha\*year
    - Goal BSAP – 500 ha – 12 ton Phosphorous
- BSAP national fund – LOVA
  - >50% co-financing by municipalities or voluntary
  - All kinds of eutrophication decreasing measures



## Areas prioritized for new wetlands – example Örebro

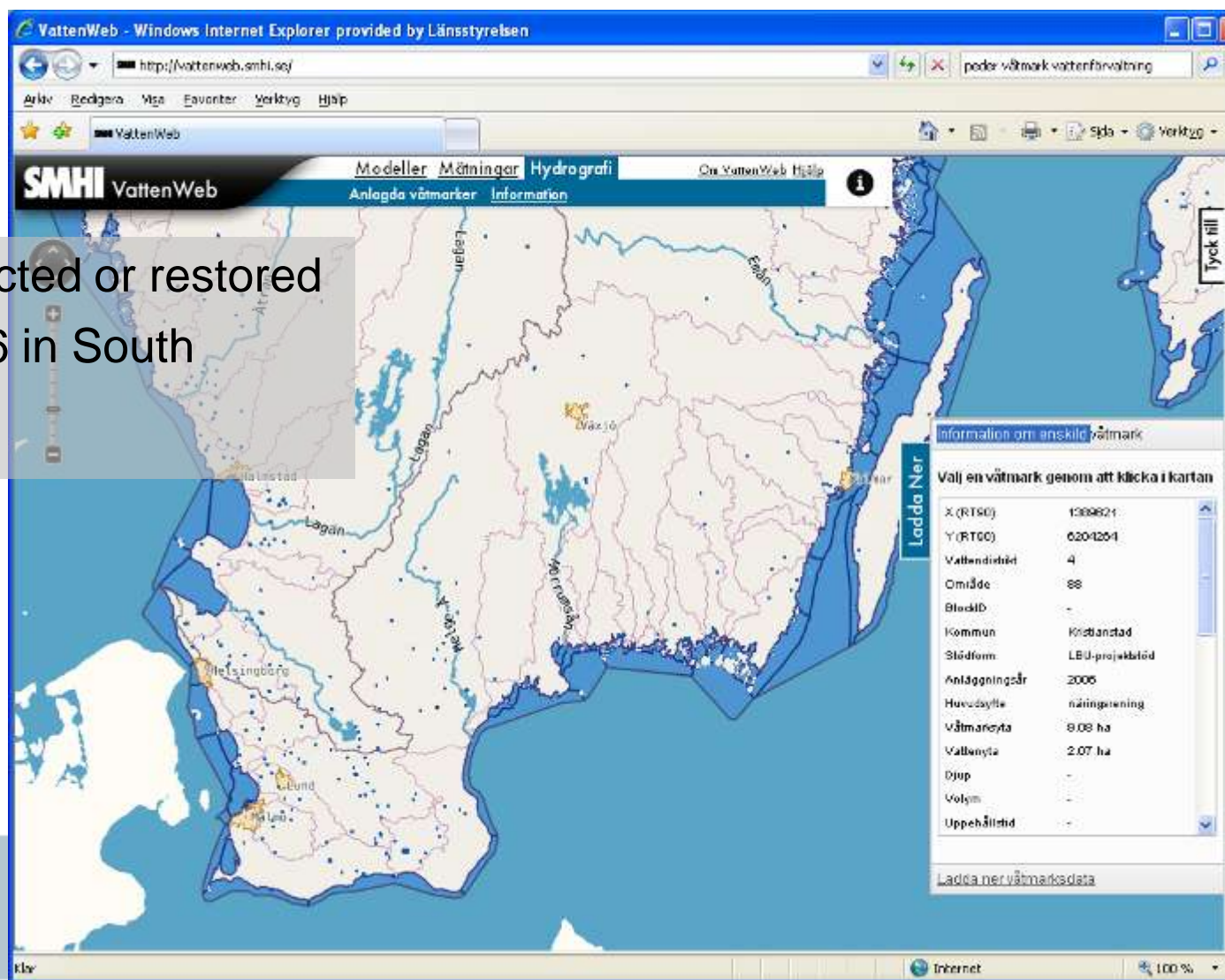


Suitable  
for  
wetlands



# New wetlands on the web

About 1500 constructed or restored wetlands 1996-2006 in South of Sweden





# Conclusions

- Keep the water in the agriculture areas
- Wetlands are cost efficient decreasing nutrient flows but might require subsidies
- To reach a healthy Baltic Sea we need all measures!

**Dziękujemy za uwagę!**  
**Thank you for your attention**



[niklas.holmgren@lansstyrelsen.se](mailto:niklas.holmgren@lansstyrelsen.se)

Wetlands database: [vattenweb.smhi.se](http://vattenweb.smhi.se)

Water Authorities of Sweden: [www.vattenmyndigheterna.se](http://www.vattenmyndigheterna.se)