

# *Best practices in freshwater fisheries management in Sweden*



# Fisheries management

You need basic knowledge about

- production
- growth and mortality
- fishing effort and catches

The next step includes life-history based research and knowledge about the target species, eg stage-specific mortality, age of maturity, fecundity etc

Ecosystem research and monitoring

➤ Adaptive management

# Examples from Sweden

## Lake Vättern

- salmon (non-native), trout, charr and northern pike
- private landowners and the Swedish state, fisheries co-mangement group

## Lake Gautsträsk

- trout and lake trout (non-native)
- private landowners association

## Lakes Västansjön and Bollvattnet

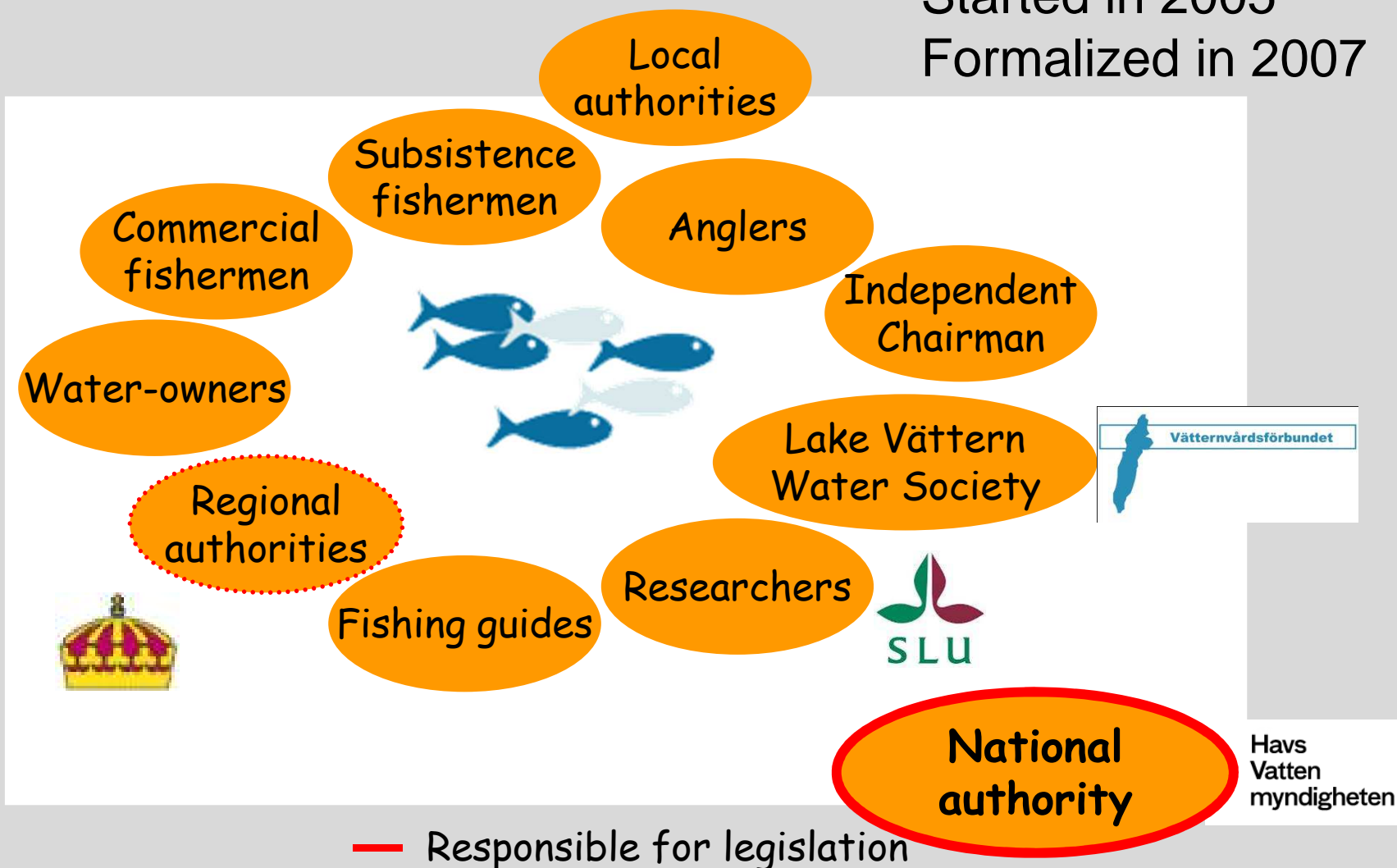
- trout and charr
- Swedish state and private landowners association

## Nature Resort Värmland

- northern pike, perch and trout
- permits from private landowners associations, several lakes

# Lake Vättern Fisheries Co-management Group

Started in 2005  
Formalized in 2007



# Lake migrating trout – Lake Vättern

## The past

Degradation of habitats

Migration barriers

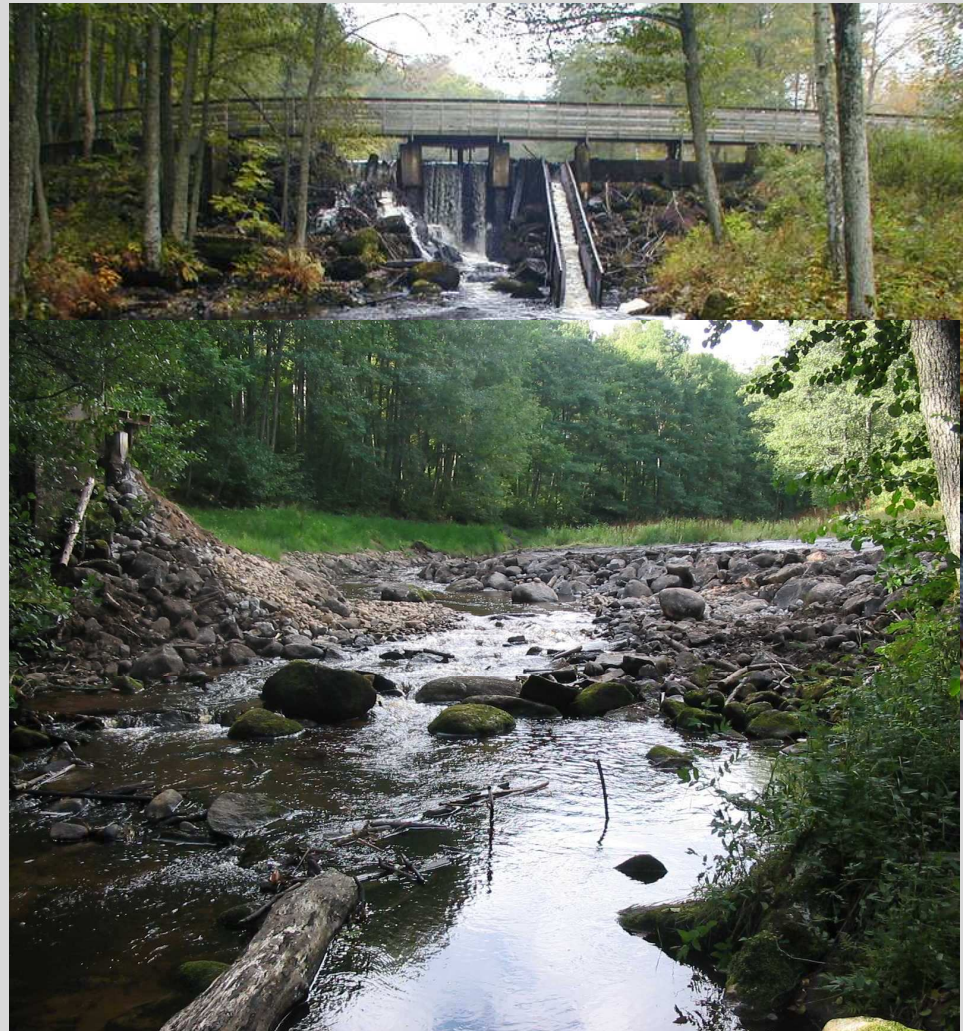
Pollutions

Large scale  
restoration of creeks  
started in the 90s

>100 projects and >2 milj EUR

Spawning in c. 60 creeks

active monitoring in 38

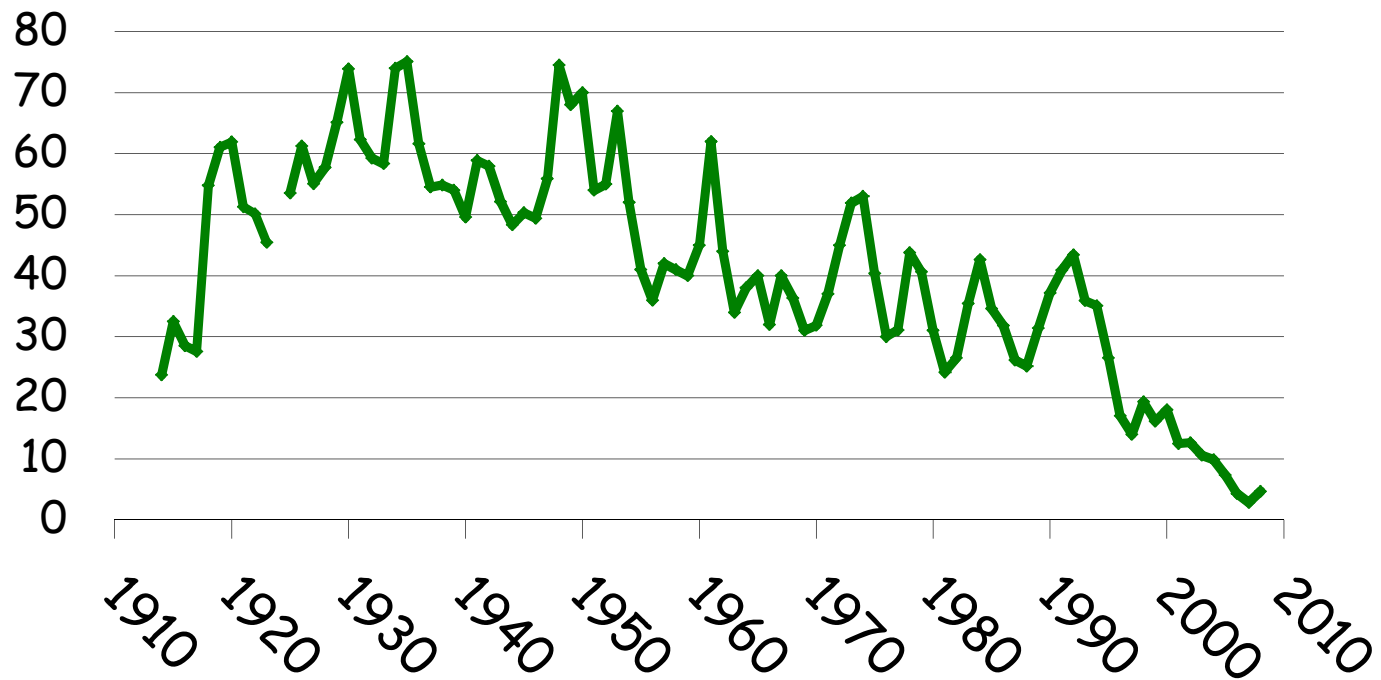






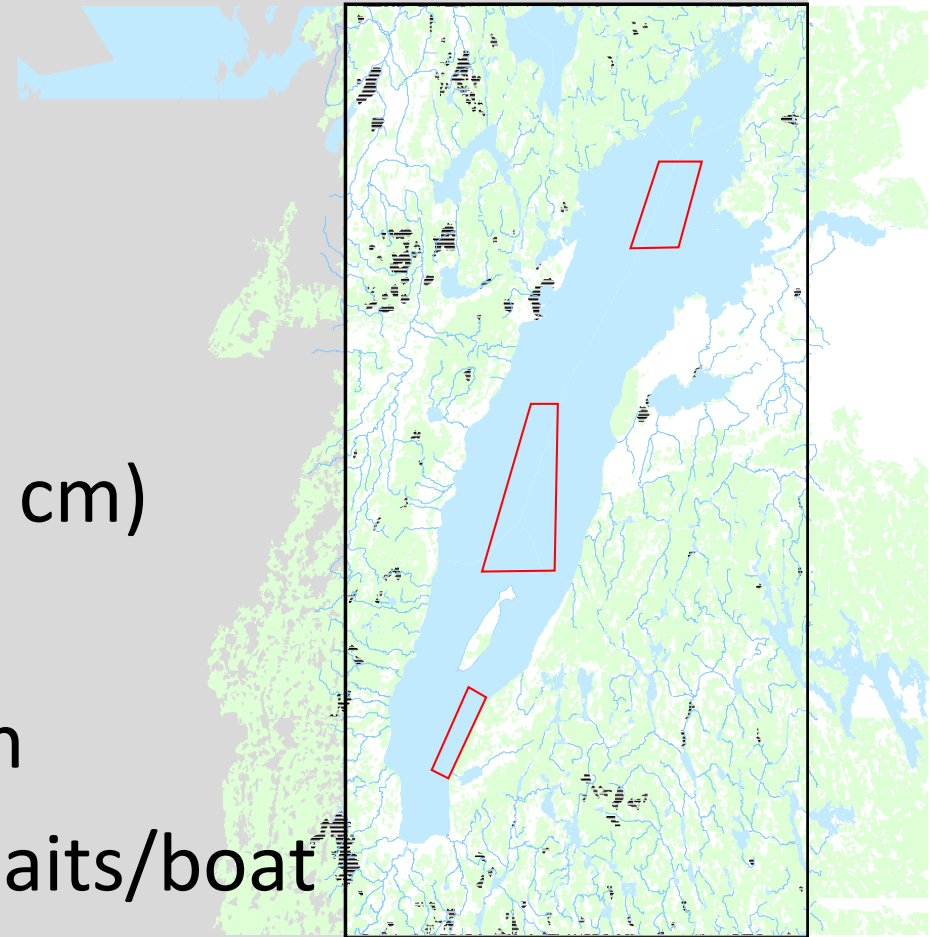
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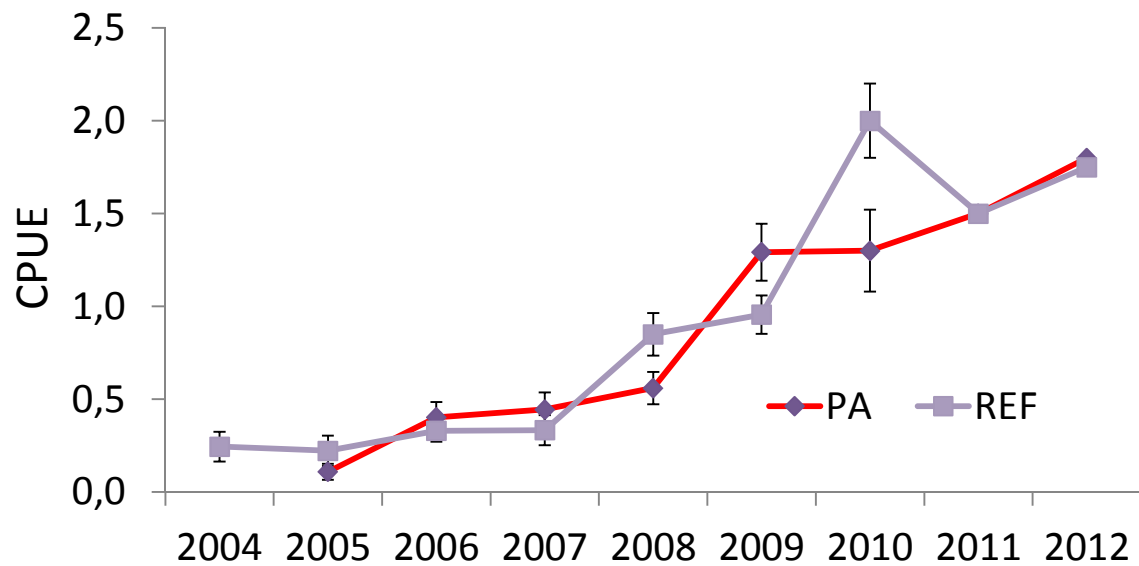
### Commercial fishery



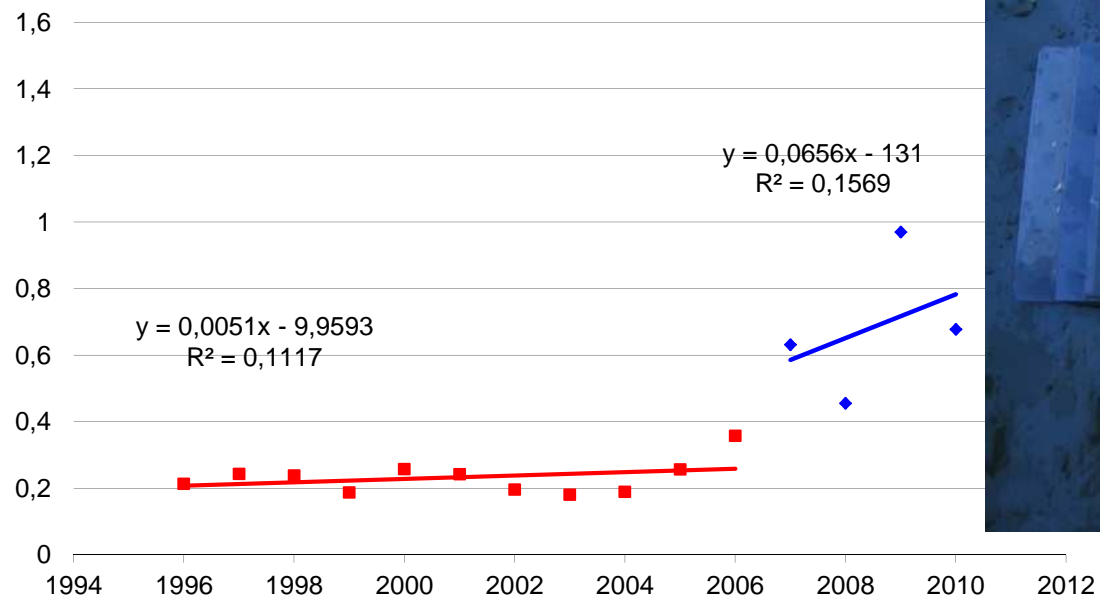
# Regulations

- Increased minimum size (50 cm)
- Protected spawning areas
- Bag limit for sport fishermen
- Single hook baits, max ten baits/boat
- Gear limitations for commercial fishermen
- Closed fishing areas (MPA-model)





## CPUE





# Some words from Cecilia Lundholm

Associate Professor at Stockholm Resilience Centre

## **Co-management - What does it take?**

- ✓ Funding resources
- ✓ Organised fishermen and internal communication
- ✓ Skilled leadership
- ✓ Time

## **Getting stakeholders to the table and staying...**

- ✓ The importance of neutral leadership of chair
- ✓ Coordinator; credibility, passion

# Ammarnäsöringen - Gautsträsk

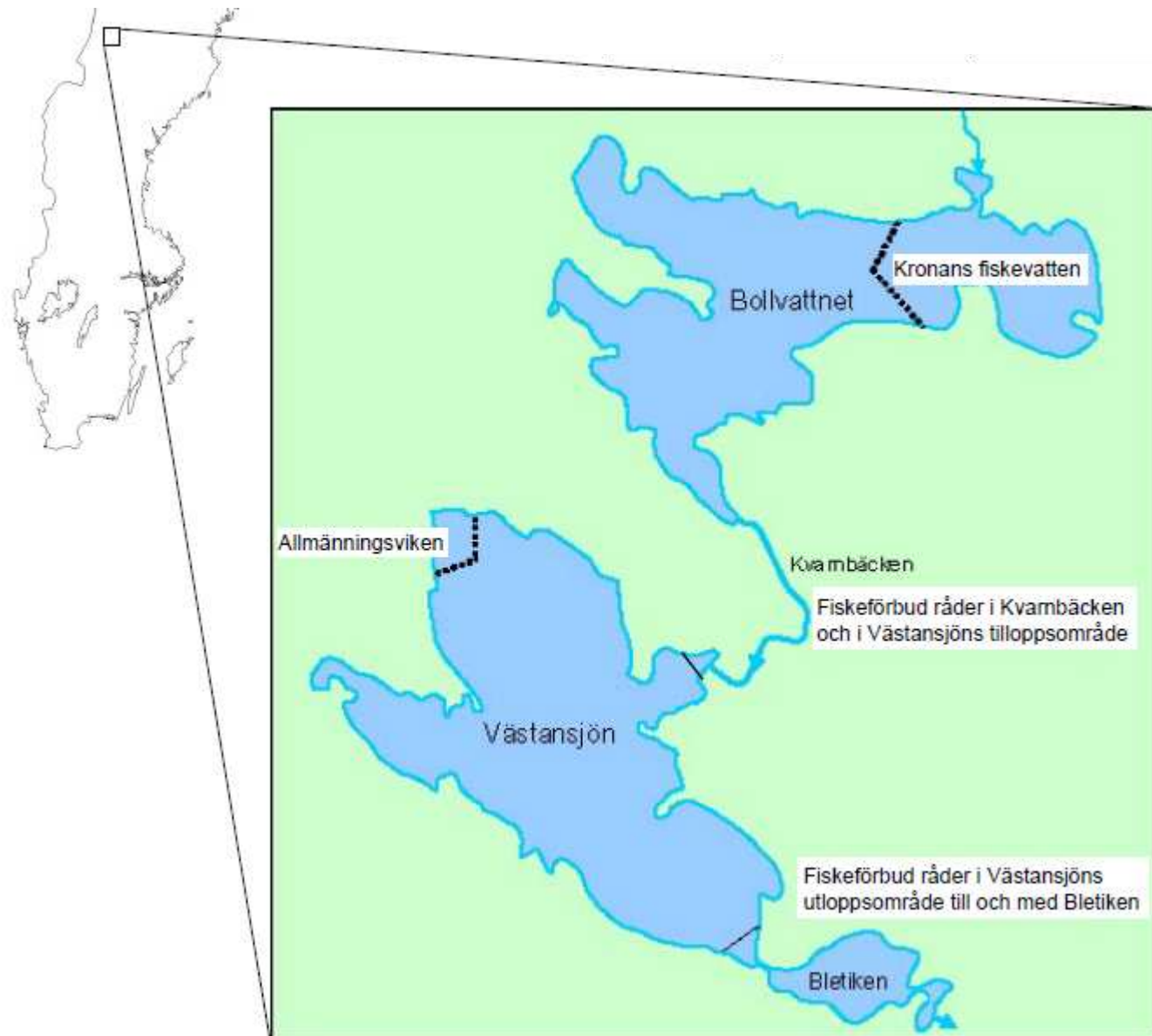


# Ammarnäsöringen - Gautsträsk

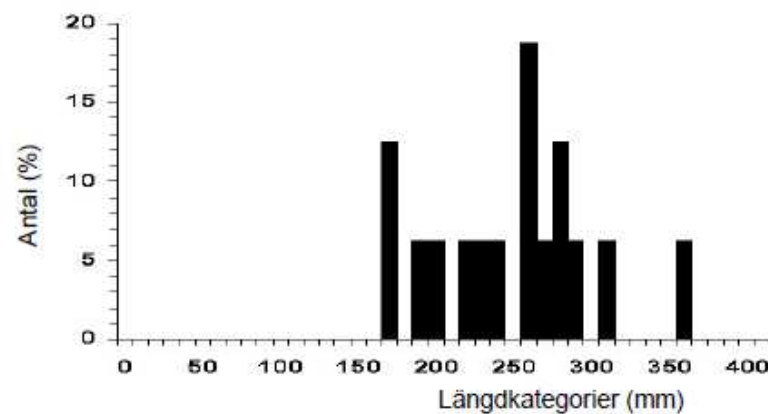
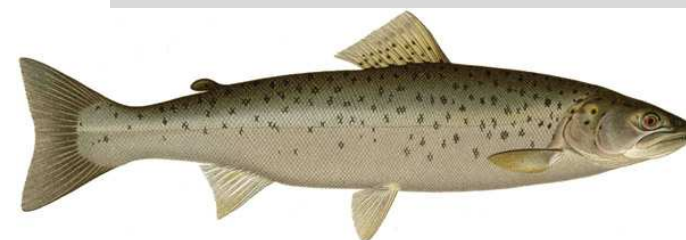
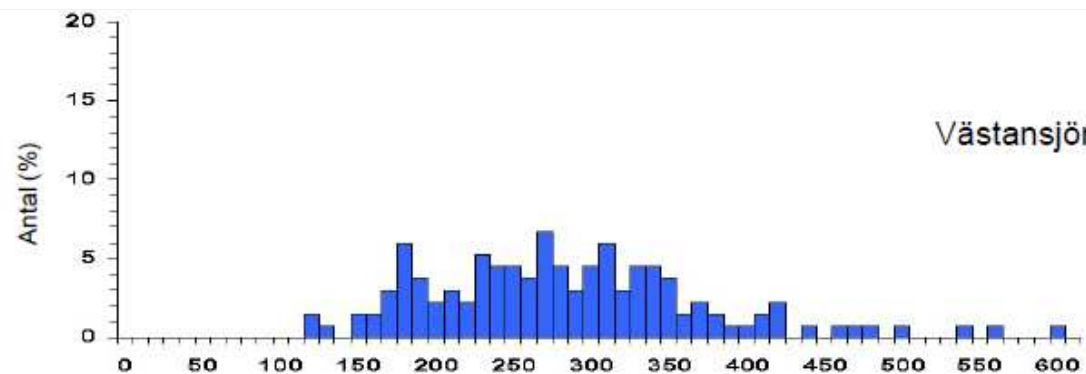
- Strong local fishermen and landowner association
- Min size 40 cm
- Closed fishery during the spawning season
- Limited number of river licenses/day
- Only artificial lures with barbless hooks allowed
- Catch & Release, alternative 1 trout/day
- Annual rod catches of c. 100 trout >1,5 kg (mean 3,6 kg)
- ...and lake trout

[http://www.youtube.com/watch?feature=player\\_embedded&v=NiEBtU2fAls](http://www.youtube.com/watch?feature=player_embedded&v=NiEBtU2fAls)

# Effects of harvesting

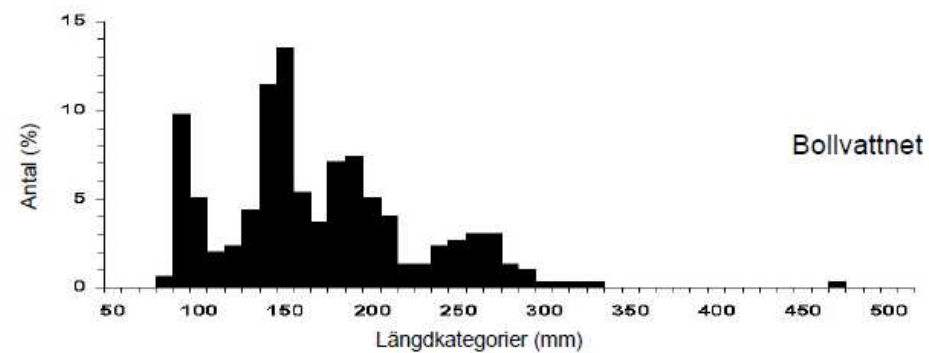
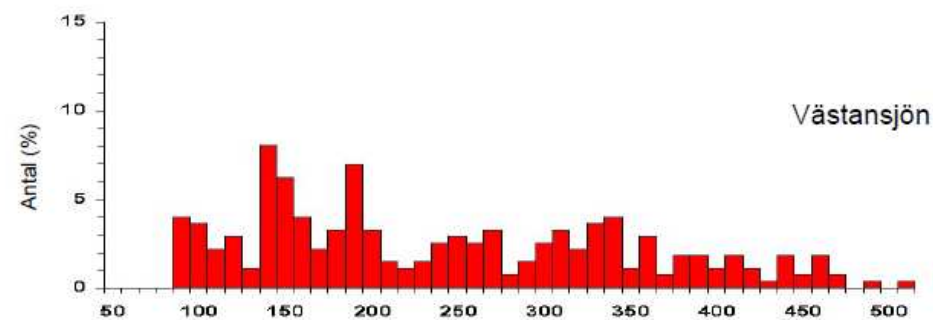






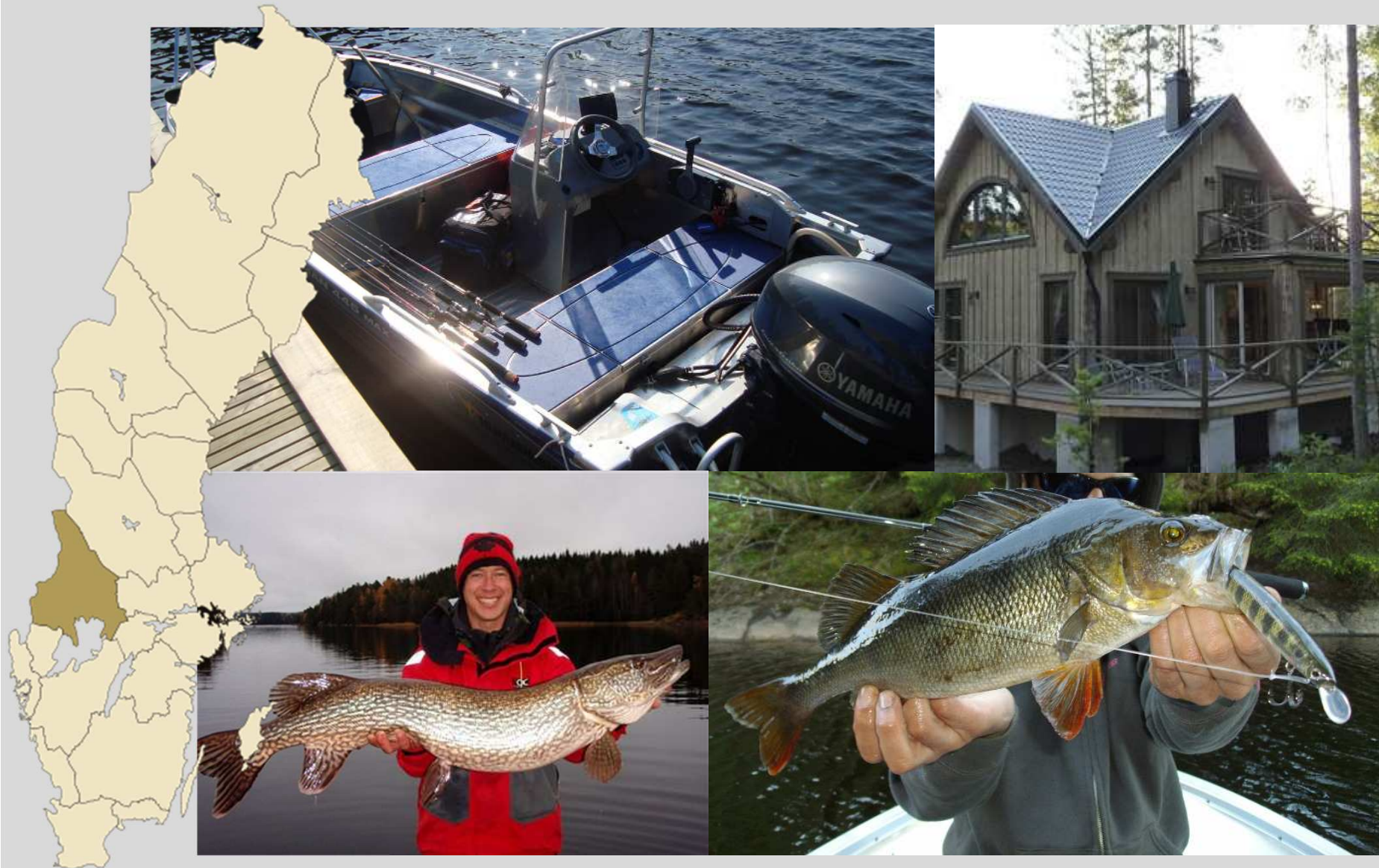
Bollvattnet

Figur 9. Öringens längdfördelning i Västansjön och Bollvattnet 1992, 1999.



Figur 10. Längdfördelning av röding i Västansjön och Bollvattnet 1992, 1995 och 1999.

# Nature Resort Värmland





# Nature Resort Värmland









# Some hard tips

- Habitat restoration and free migration routes
- Ecological adapted minimum size threshold
  - Consider harvest windows
- Protected areas and time windows during the spawning season
- Gear and effort regulations
  - Limit the total catch
  - Reduced mortality in the Catch & Release fishery

Tack för uppmärksamheten!

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[www.vattern.org](http://www.vattern.org)

[www.nrrv.se](http://www.nrrv.se)

# *Lessons (not) learned from Sweden*

“Lack of basic ecological information, as river return and fisheries catch rates, estimates of wild smolt production and survival, and releases of hatchery-reared fish, complicate an effective management of these unique populations. There is need for coordination of present and future research, monitoring and restoration strategies.”

Johnny R Norrgård

*Landlocked Atlantic salmon *Salmo salar* L. and trout *Salmo trutta* L.  
in the regulated River Klarälven, Sweden  
Implications for conservation and management*

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