



# **LONG-TERM PRAxis OF FISHERY MANAGEMENT OF LAKE VÕRTSJÄRV**

**AIN JÄRVALT**

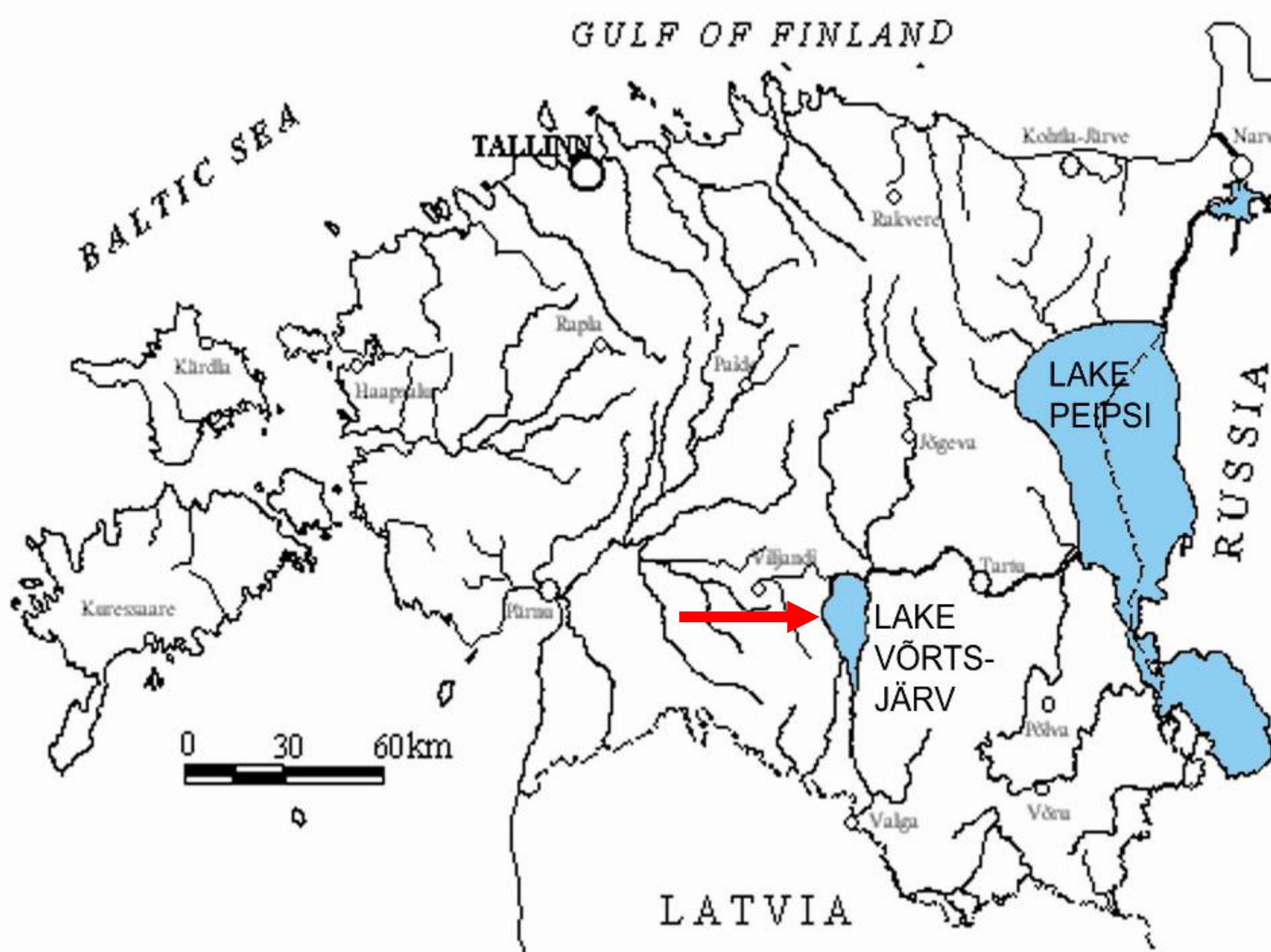
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GULF OF FINLAND





# LAKE VÖRTSJÄRV

270 km<sup>2</sup>, shallow (mean depth 2,8 m), eutrophic lake

**32 native fish species**

- **Main commercial species: eel, pikeperch, pike, bream, perch**
- **Total catch 350 t or 13 kg/ha (2008 - 500 t, 18 kg/ha)**
- **Only passiv gears - trap or fyke net 324, gillnet 360**  
**1 trap net per 83 ha and 1 gill-net per 75 ha**





# Peculiarities of fishery

## L. Vörtsjärv

- **Water level changes**
- **Native fish species**
- **Eel stocking** - annual investments 100-130 000 EUROS
- **Main problem:**
- **Balance between sustainable catch of native fish species (pikeperch, pike) and maximal catch of eel (changes according to EMP since 2008)**

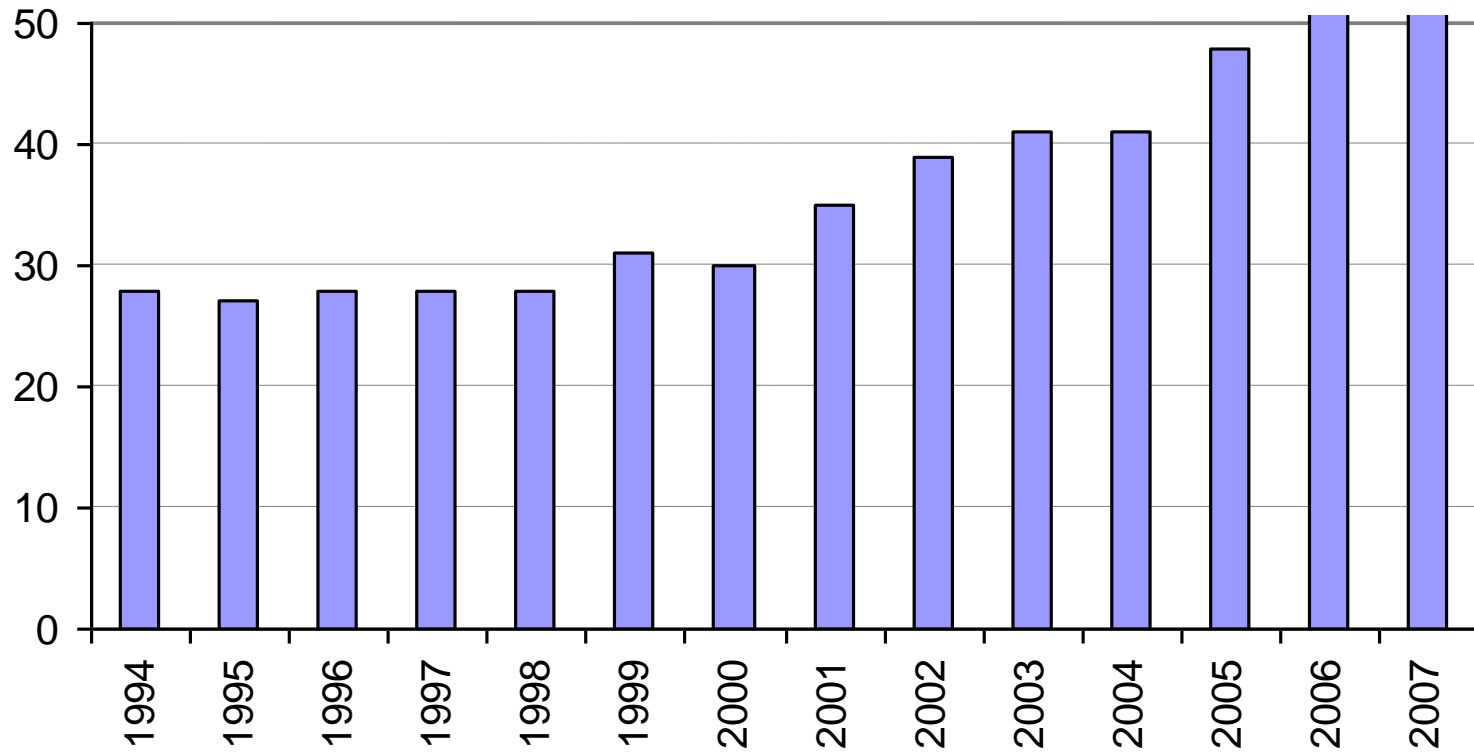
# Fishery management of Lake Võrtsjärv since 1920

Period	Owner	Users	Number of fishermen	Fishing gear
1920-40	state	private fishermen	50-70	various seines, weirs, traps, gill nets
		Ltd-s and unions of fishermen		sailing trawls
1950-65	state	collective farms	35-45	Fine-meshed trawls, gill nets, seines
1965-91	state, Ministry of Nature Protection and Forestry	state farm	25-30	fyke nets, gill nets
				seines,
1992-93	state, Viljandi, Tartu, Valga county	private fishermen	20-23	fyke nets, gill nets
1994-2000	state, 7 municipalities	private fishermen	20-26	fyke nets, gill nets
2001-	state, 7 municipalities	private fishermen	48	fyke nets, gill nets

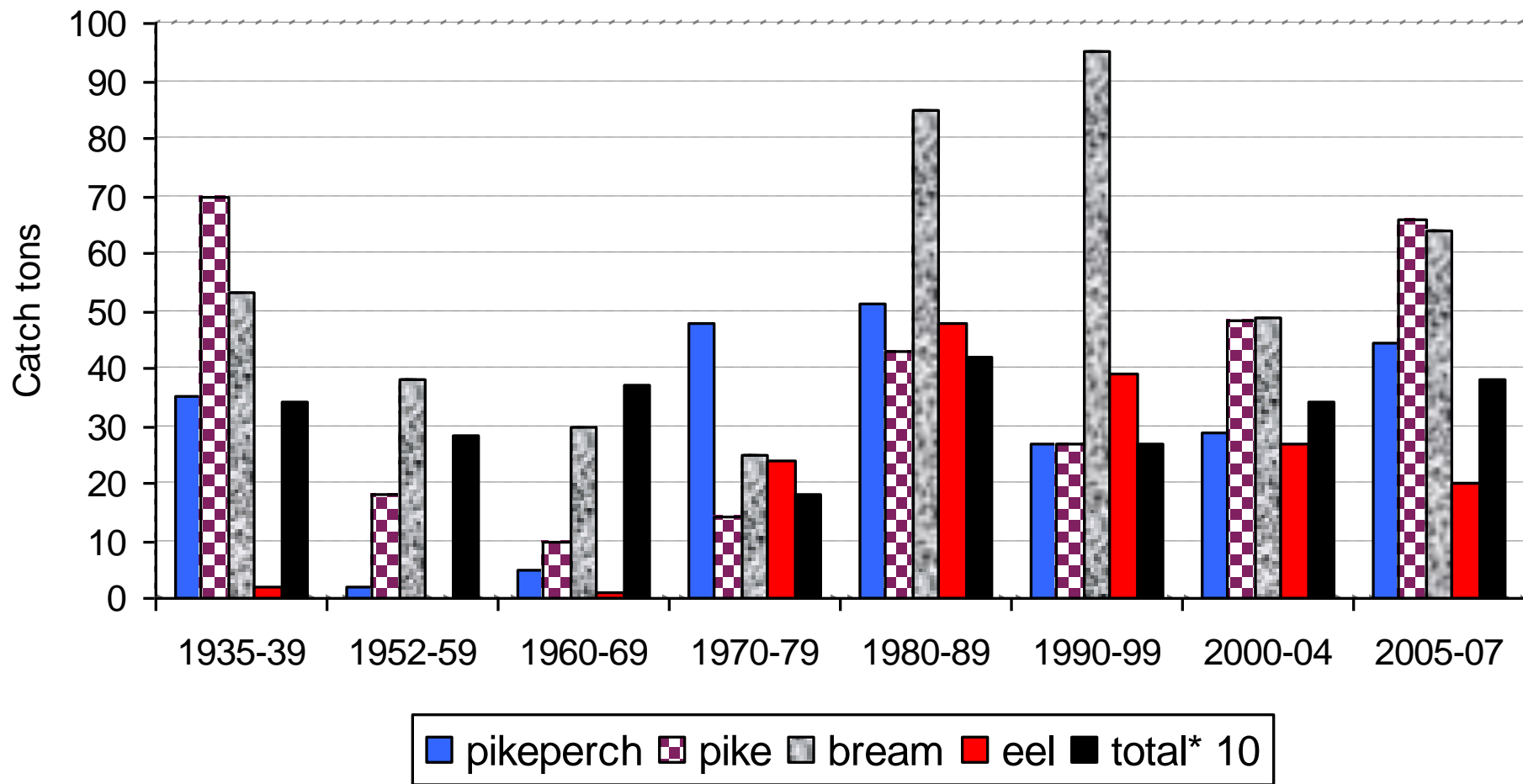
# Management in 2008

- State waterbody
- Responsible manager - Ministry of Environment and Ministry of Agriculture
- 46 professional fishermen (2008)
  - 324 fyke nets (length 150 m), annual tax 300 EUROS per fyke net (100% for restocking of eel)
  - 360 gill nets (min mesh size 65 mm), 20 EUROS per net
  - by the historical right (mean number of gears during last 3 years)
- low recreational fishing
- annual state support for restocking of eel
  - in 2002-2006 up to 25 000 EUROS per year, since 2007 = 0
- Cost of total annual catch – 0,5-0,6 million EUR (2 EUR/ha)

# Total number of professional fishermen in Lake Vörtsjärv

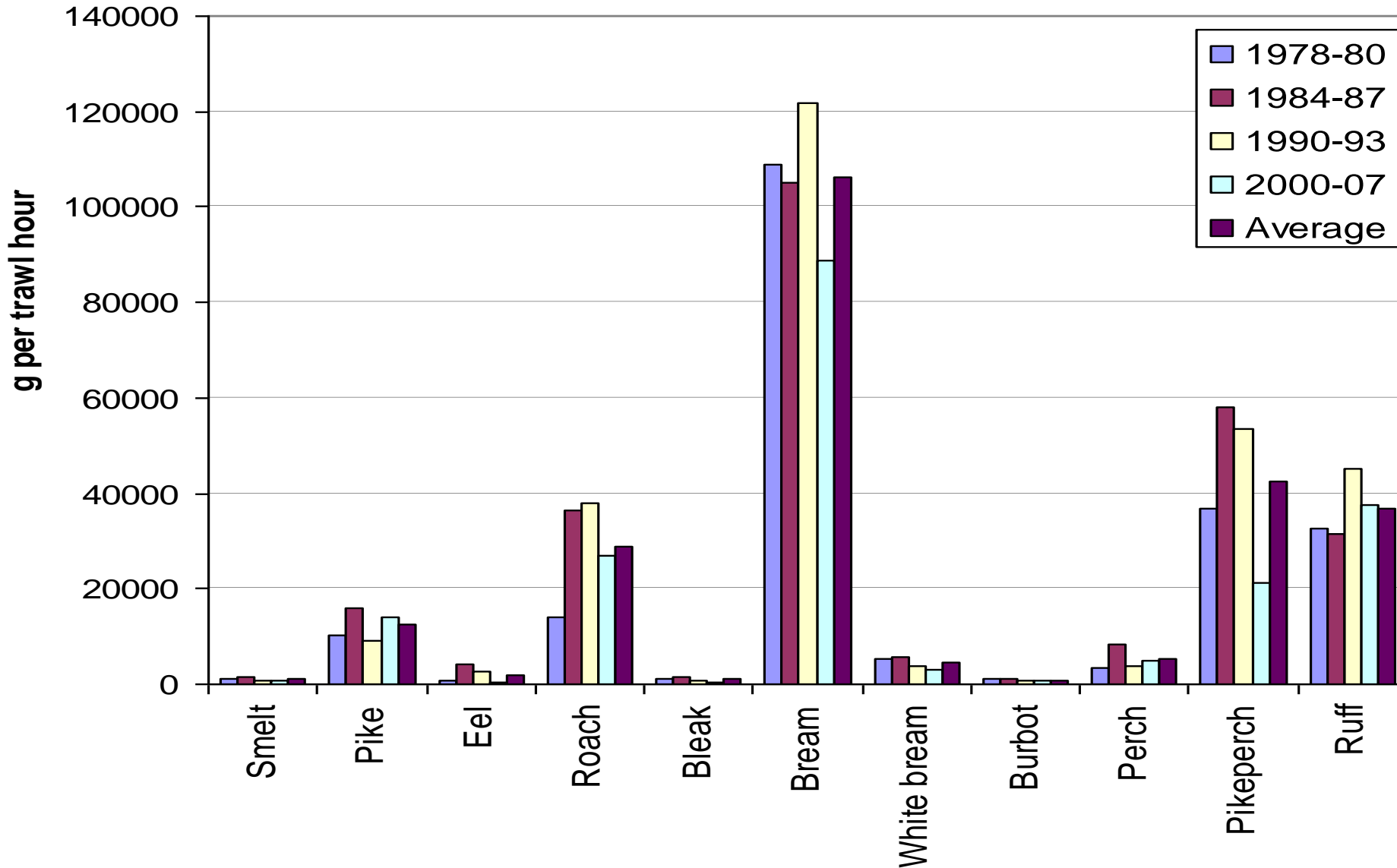


# Average annual catch of main fish species in L. Vörtsjärv 1935-2007





# Species composition and average CPUE of trawl catches in L. Vörtsjärv 1978-2007

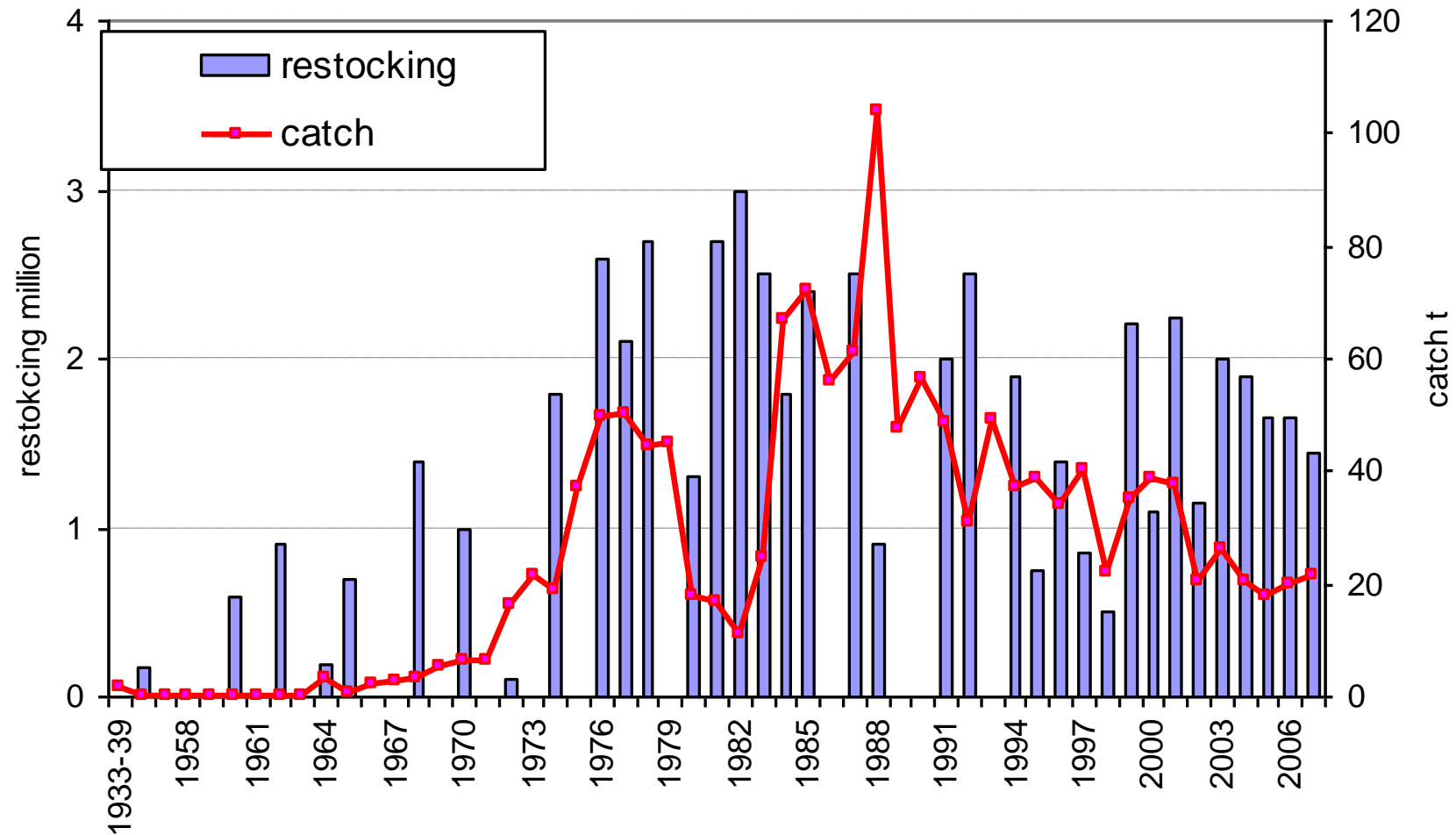








# The stocking and catch of eel in L. Vörtsjärv 1933-2007





# Class-eels Klaasangerjad







Restocking of farmed eels into Lake  
Vörtsjärv in 2006





HOLLAND  
8113  
F.E.G.

PALING  
ELS

LEBENDE  
AALE

WILLES

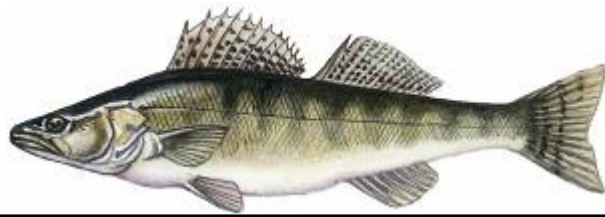
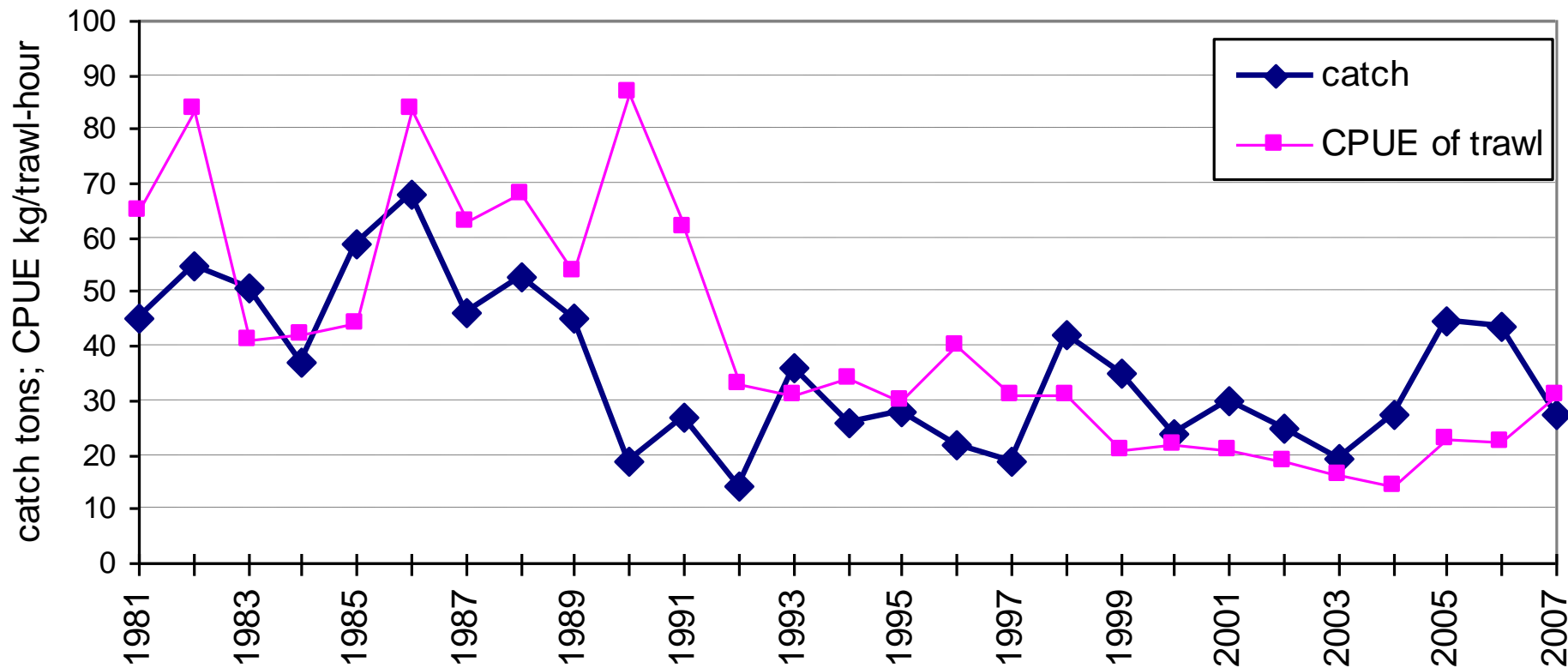


# PIKEPERCH

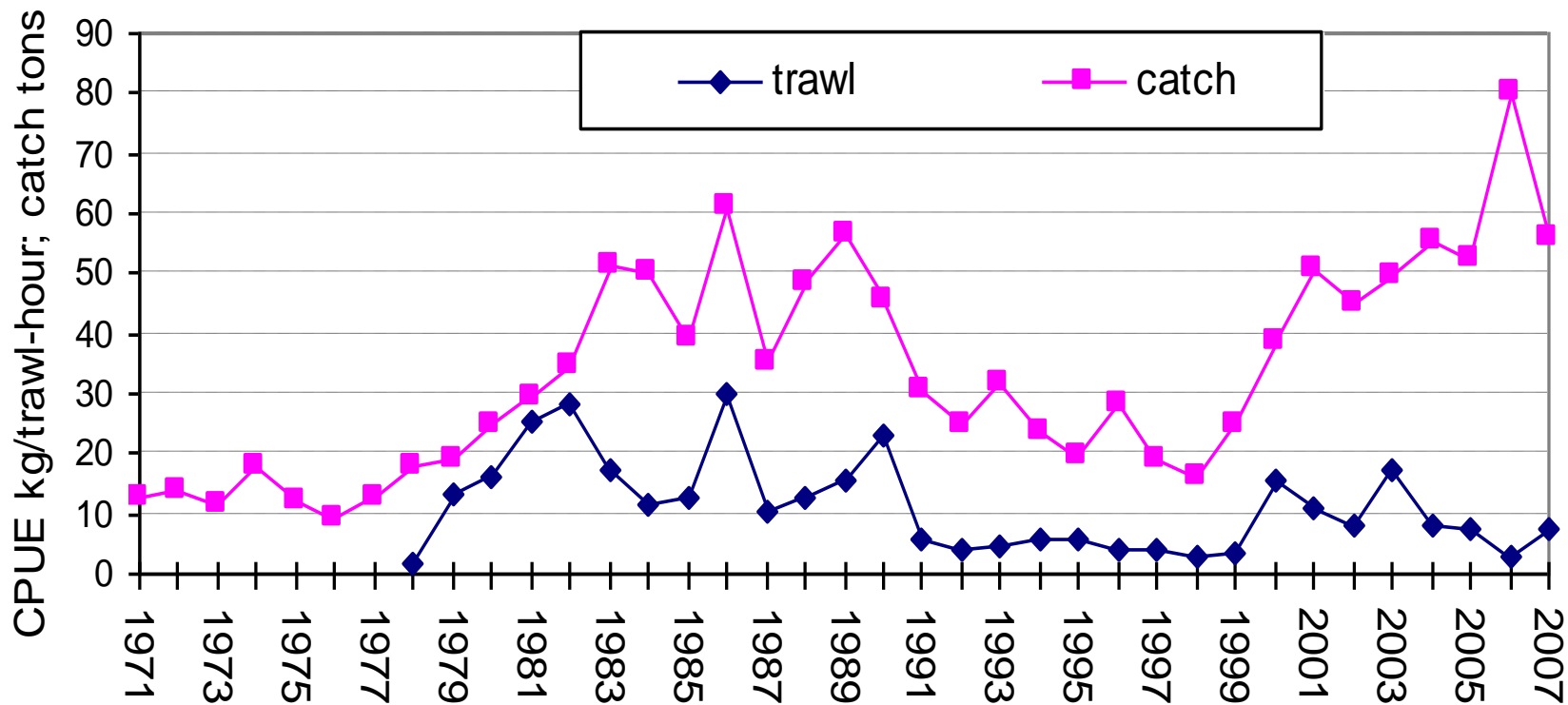
- Legal size 45 cm (SL), 51 cm (TL) >1,3 kg



# The commercial catch ( t ) of pikeperch and CPUE (kg per trawl/hour) in Lake Vörtsjärves 1981-2007



# The commercial catch ( t ) of pike and CPUE ( kg per trawl/hour) in Lake Vörtsjärves 1981-2007





# Winter gill net catch - divides activities and incomes of fishermen



- 90 % of total
  - pikeperch
  - pike
- second-rate abundant
  - bream and burbot



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# **Main problems connected of fishery caused by hypoxia in L. Vörtsjärv**

- Decrease of moving activity
  - lower winter catches (pikeperch and pike)
- Fishkill
- Disturbing the overwintering of eel
  - emigration
  - easy prey for pike

A photograph of a shoreline covered in ice chunks next to a forest. The foreground and middle ground are dominated by a large pile of broken, translucent ice chunks of various sizes, some partially submerged in dark water. The background features a dense forest of tall, thin trees, including evergreens and bare deciduous trees, under a clear blue sky. The lighting suggests a bright, sunny day.

**THANK YOU !**

Foto: A. Tuvikene