

# HISTORY THE LAKE TÄMNAREN

## DESCRIPTION OF THE LAKE

- Tämnnaren lies approximately 40 km NNW Uppsala and has now a surface on 38 km<sup>2</sup>. The southern part, Sörsjön, occupies 3 km<sup>2</sup> and has become overgrown with reeds.
- Tämnnaren has been formed through a crack of the ground, along the eastern beach exists rests of a precipice of this ground.
- The waterlevel of Tämnnaren has been lowered twice and been increased once.
- Tämnnaren is a shallow lake. The medium depth, at the water level 35.00 meters over the Baltic Sea, is 1,0 meters and maximum depth is 1,7 meters. 40% of the sea surface has a water depth between 0 and 1 meters.
- Tämnnaren has two big feeder streams, Harboån and Åbyån. Harboån (Vretaån) begins in Huddunge, runs through Harbo and out in Sörsjön. Åbyån comes from the lake Toften and runs through Östervåla society. From Tämnnaren runs Tämnnarån through Tierp out to the Baltic Sea.
- In Tämnnaren has earlier bog ore been taken up. At both the eastern and western side of the sea there have existed iron mines. Big quantities of timbers have been floated on Tämnnaren and through Tämnnarån to the sea, where big sawmills waited.
- Because Tämnnaren has been much deeper earlier could 1000 years ago Viking ships go from Tämnnaren on Tämnnarån and out in the sea.
- At Tämnnaren the ground increase 50 – 60 cms per century; the bottom ascends and the water depth decreases. To that, the bottom with fills with ooze, mud and still some sludge (from the feeder streams, brooks and fertilized fields) and rotted plants and reeds.

## WATER ADJUSTMENTS

- Because the lake and the feeder streams overflowed there's banks each year, there were big problems to the farmers during several centuries. Big part of Harbo and smaller part of Östervåla were under water.
- People worked during a big part of 19<sup>th</sup> century in order to get a reduction of the water level of Tämnnaren.
- Tämnnaren's water level was reduced 1876 with 1,1 meters.
- Tämnnaren was lowered 1953 with further 0,15 meter for the average level and 0,60 meters for the maximum level according to new water decision from 1946. The average depth of the lake was lowered 44 cms.
- The fields around the lake consist to a large extent of organic materials, when the fields are farmed and are set for the air's oxygen, these materials oxidize and the soil sinks.
- A new water judicial decision 1976.
- This water judicial decision says that the water surface should be 35 m<sup>2</sup>, that the summer's medium depth should be 1,0 meter.
- Big parts of the sea were embanked with sea-walls. Also along the feeder streams (Harboån, Åbyån), especially at Harbonäs and to a certain extent at Tämnnaren's northern beach. The Harboån is regulated now because waters during big parts of the year (spring to autumn) are pumped up in Tämnnaren at the reservoir of Lindsta.

- From the start Tämnares adjustments had excluding economic starting points. This was also entirely dominating until 1977.
- Since 1977 both organizations and local people want to protect preservation of natural amenities, the environment, and the interests of recreations.
- An adaptation has happened in order to meet these interests in a good way, but this stands in certain fight with current water decision.
- The winter water level according to the water decision will be 20 cms lower than what practice is. This practice has been applied since 1983. Otherwise all the water during the winter should freeze to ice to the bottom, and all fishes will die.

## CURRENT CONDITIONS

- Tämnares is an eutrophic flat land lake, very shoal, nutritional (too much of fertilizers), good bird sea with 19 threatened species of bird.
- Tämnares is popular for fishermen, skate haulers, ornitologist. But there is difficult to come out to the sea today. The access is low. Too much bushes and trees, too little of roads and paths and open places.
- The situation is critical for the sea and in Sörsjön exists no longer a water "mirror".
- The whole Tämnares is a Natura 2000-area and there exist several environment reservations around the lake.
- In the municipalities around the sea there exist interests in order to preserve Tämnares's values for preservation of natural amenities and recreation.
- If nothing is done sea will be dead within 100 years.
- An investigation during 1990-ties was done where the conditions to increase the water level additional was implemented, but because new embankings with sea-walls or extensive dredgings are needed, we have still no decision of these important moves.
- Swedish Meteorological and Hydrological Institute has established a hydrological model of Tämnares, which shows that the maximum water level becomes the same irrespective if the initial level (the winter water level), when the spring river comes, is + 34,60 meters over the sea or + 34,80 meters. On the other hand, the flood period is extended (with levels over+35,24) some.
- It is a strong overgrowth of the sea because it is so nutritional.
- However the right summer water level has probably contributed to slowing down the rat on the overgrowth.
- Bottom is increased each year 5 mm because the land increases in Uppland and sludge from decomposed plants. Earlier it was sandy bottom in Tämnares. It was so when I learned to swim in 1950-ties.
- Practice's 20 cms over current water judicial decision has been done after that Swedish Meteorological and Hydrological Institute has made the calculation that this does not influence the mound water level in the spring.
- Stakeholders around the sea are not in agreement about the water level. There are some south of the lake who are not happy of the practise. A landowner there has appealed against that the water decision is not followed. But the landowners north and west of the lake want more water in the lake.
- We await new water judicial decision that will confirm the current practice, + 34,80 cms over the Sea.

- Practice gives less risk of “bottom freezing” winter time. But this winter it is a big risk that “bottom freezing” takes place, whereupon the fishes die. There have been too little of rain during the autumn.
- There is not question about changing the summer water level according to proposals to new water decision (practice). Since the fields are embanked with sea-walls, there does not exist any conflict between the fishing, the recreation interest and most landowners.
- Certain areas around the sea were considered of the water court 1976 have so low productivity, so it was not financially excusable to embark them, instead some single landowner got a compensation.

## The WATERCOUNSEL of TÄMNAREN

### COOPERATION FOR GOOD WATERS

The Watercounsel is a voluntary non-profit corporation and a spokesman of the district around Tämnaån, its feeder streams and outfall. The Watercounsel is organizer, knowledge agent and effector, and its views have big dignity. The Watercounsel will help the county board with improving the waterquality of Tämnaån. An important point in the work is also to increase the public's participation and leverage in the work. The Watercounsel of Tämnaån was formed June 4, 2007. It will preserve the lake's interests in a big perspective, and to increase the local effect over the sea's future when European Union:s water directive will be implemented.

### MEMBERS IN THE WATERCOUNSEL OF TÄMNAREN

This Watercounsel consists of stakeholders around the whole sea as landowners, water organizations, water adjustments organization, environment protection organizations, ornitologists, interest organizations, municipalities and county board.

### OBJECTIVES AND AIM

The Watercounsel wants to investigate the possibilities to improve and to develop Uppland's biggest sea Tämnaån for the future, including its current water quality and environment in the sea and its immediate surroundings. “Tämnaårens Vattenråd” wants to take a whole grip of the area, both the sea and its immediate surroundings. In this we include all feeder streams and outfall. The objective is that Tämnaån will live additional least 100 years.

### MISSIONS

Within the following areas “Tämnaårens Vattenråd” intends to come with proposals to measures for Tämnaån:

- **Access:** An access is necessary in order to create a participation and in order to be able to do work according to the programme. Roads and beach clearance is needed and possibilities to boat harbours.
- **Water judicial decision:** A new version of the plan is imperative for the water quality and will open up many parameters.
- **Water level:** Entirely deciding for water quality and plants. Now, we see after many years' experience which importance it has and agrees also on environment

responsible for Natura2000 and in environments reservations. Also fish and bird life is concerned. So a high and an uniform water level are one of the solutions for a good water quality.

- **Pools and obstacles:** Here, we have an important parameter that should be seen over. We have got a huge big obstacle with this and fish and survival can not continue naturally.
- **Dredging:** This is probably the most effective solution getting good water quality. We can dredge more on set places and to save in order to favor fish and bird lives. Dredging is especially important with all incoming feeder streams and outfall, there are often a lot of nutrition.
- **Sea-walls:** This is must be looked over. This has collapsed and disappeared through the years on certain directions. This favors also water levels that are deciding for the water quality.
- **Sewers:** The sewage pipes are not of good quality around the sea. Here, a measure should be done.
- **Ditches and water supply:** A lot of flow and nutritional comes in ditches and inflow. Often these are rinsed and gets a lot of nourishments from agricultures that influence the water quality negative.
- **Vegetation:** There are a lot of growing plants, trailers and reeds in the lake, and we see less of water. Ooze and mud is formed on bottom and on stones.
- **Ooze and mud:** There exists a laurel of ooze and mud on approximately 30-60cms on the sea's bottom. Under this laurel we find sand.
- **Fish and game periods:** This has decreased. We need a good research of the fish quality, fish number, and fish stock.
- **The bottom fauna:** It has become a big change in this through the years.

The Watercounsel of Tämnnaren intends to work in order to influence both citizens' and stakeholders' opinion, politicians and authorities in order that Tämnnaren will be restored and the above problem areas will be solved.



ÖSTERVÅLA 17TH NOVEMBER, 2007

**TÄMNNARENS VATTENRÅD**  
**KIELL TOFTERS, CHAIRMAN**

*Kiell Tofters*