Nutrient reduction on the wetlands of the Danube-Drava National Park

Objectives and results of the World Bank project 'Reduction of Nutrient Discharges' GEF # TF 051 289

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General Introduction of the GEF project

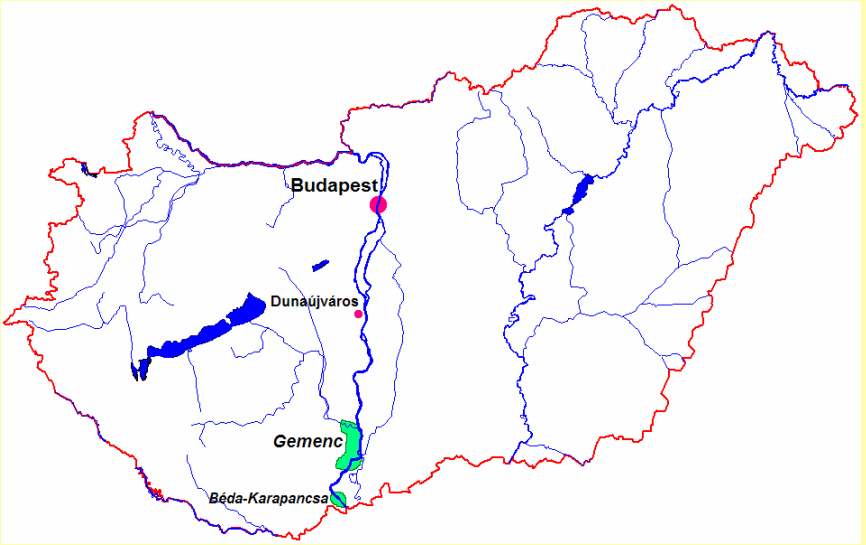
Objective: *„to decrease nutrient discharges into the Danube river and loads to the Black Sea, by improving the reduction of nutrients in effluent from wastewater treatment plants at Budapest and Dunaújváros, and by increasing the nutrient retention capacity at the Gemenc and Béda-Karapancsa regions of the Danube-Dráva National Park."*

Actions:

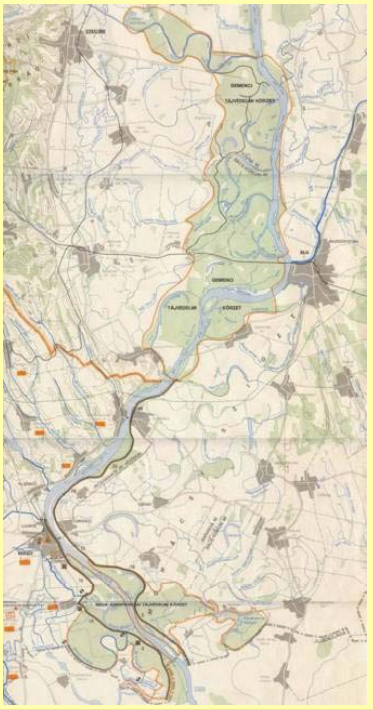
1. Building the nutrient reduction phase of the North-Budapest WWTP
2. Building the nutrient reduction phase of the Dunaújváros WWTP
3. Restoration of wetlands in the Gemenc and Béda-Karapancsa regions of the Danube-Dráva National Park.

Financing organisations: World Bank, Hungarian Government

Project sites



The Gemenc and Béda-Karapancsa systems



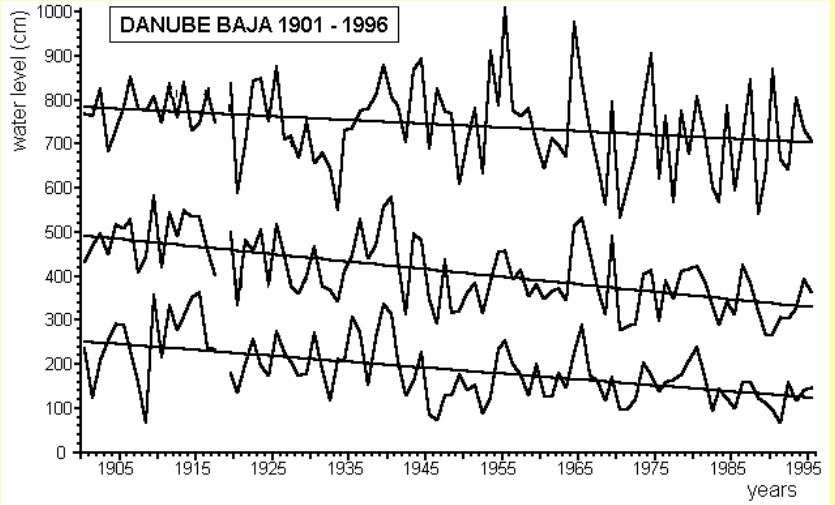
Objectives and constraints

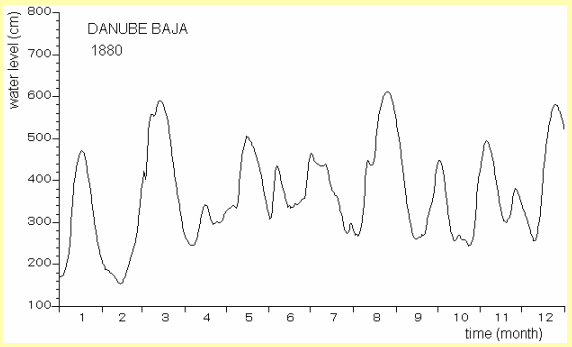
Objectives:

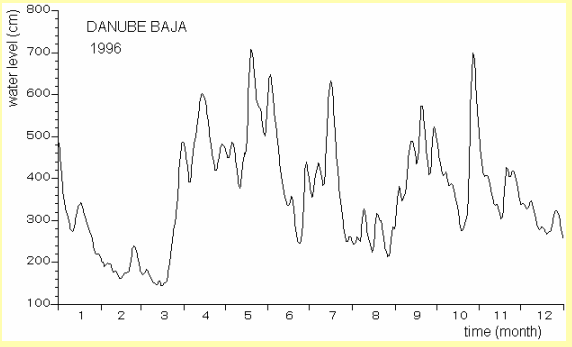
1. Nutrient retention and removal
2. Ecological restoration
   - habitat restoration (fish, amphibians, waders)
3. Nature sound land use development
   - eco-tourism
   - promotion of traditional floodplain management practices

Constraints:

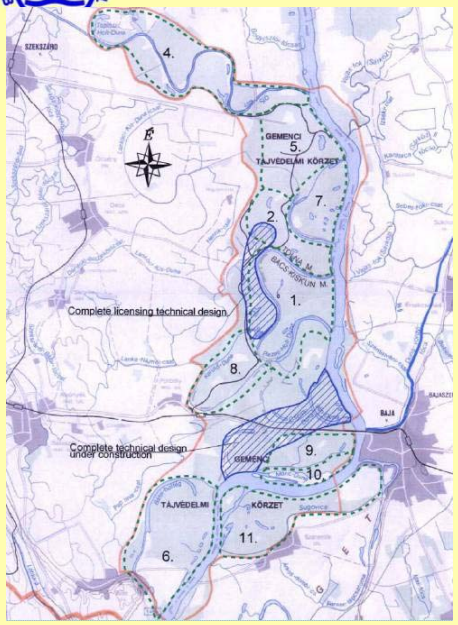
1. River regulation and flood control aspects
2. Land uses:
   - forestry
   - recreation

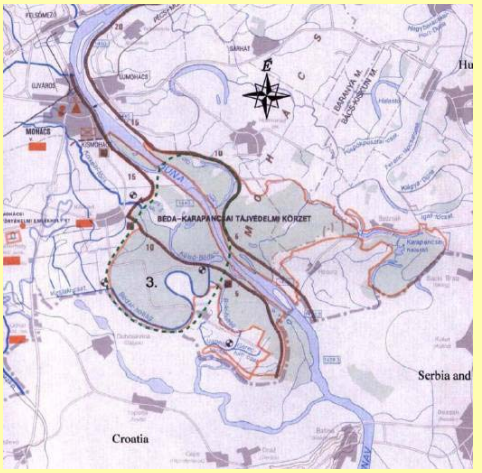






The 11 subsystems





Phase I. of the project: Feasibility study and preliminary impact assessment (March 2005)

Feasibility study: DHV Hungary

Environmental and social impact assessment: VITUKI, INNOSYSTEM

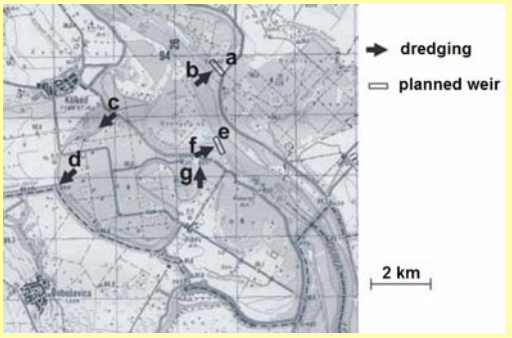
Evaluations were based mainly on expert judgement.

Proposed interventions

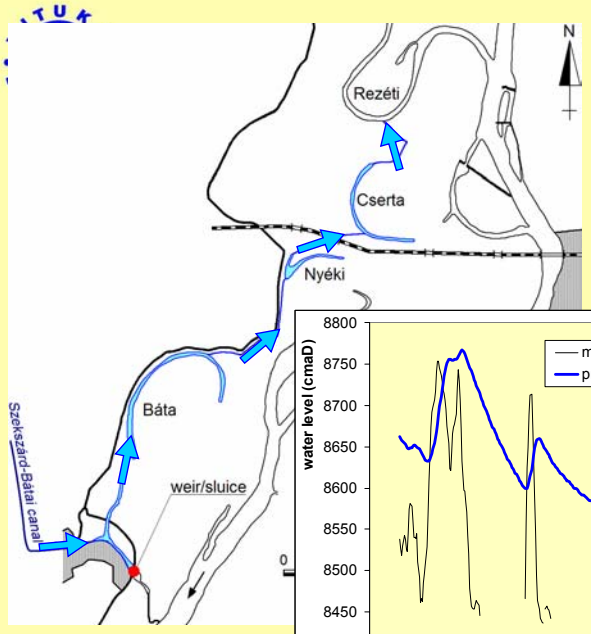
Diverting water onto the floodplain

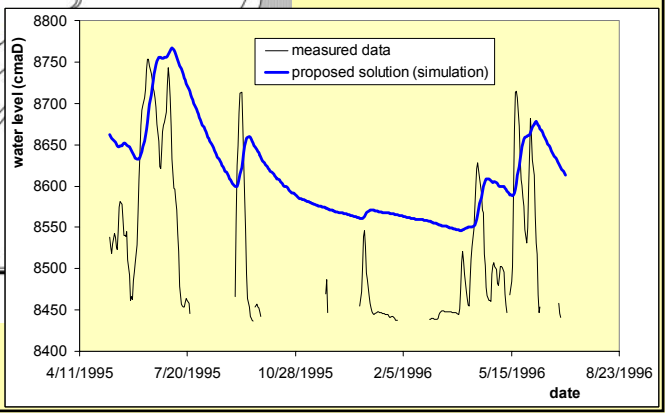
Keeping water on the floodplain

Increasing the volume and cover of water on the floodplain

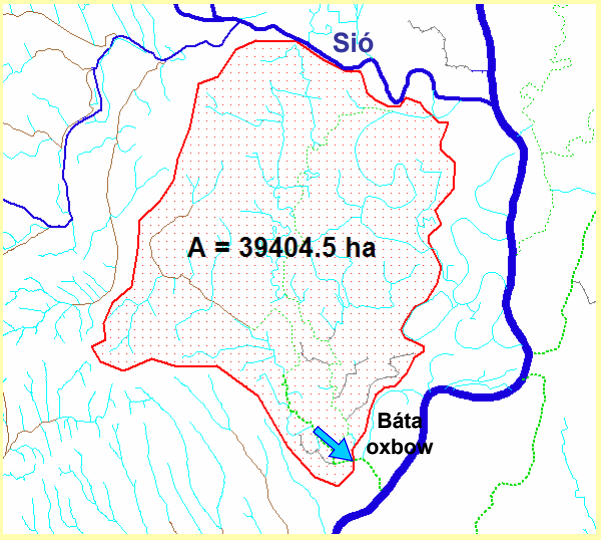


Restoration of the Báta oxbow

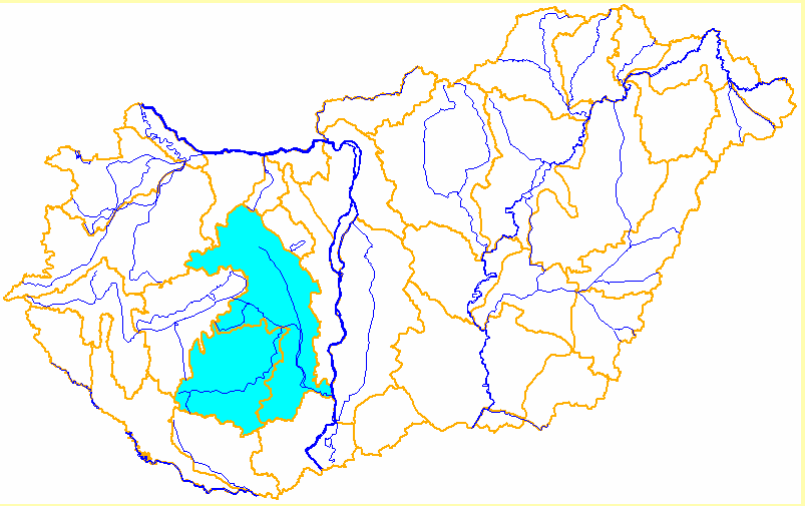




The Szekszárd-Bátai canal:



Catchment of the Sió canal:



Conclusions

Nutrient retention:

1. Nutrient removal from the water of the main channel: *limited possibilities*
   - the amounts of water that can be diverted to the floodplain are very small comparing to the amounts, which remain in, and are discharged by the main channel
2. Nutrient removal from the water of the tributaries: *good possibilities*

Ecological restoration:

3. Connection to the river is not enough in itself. Restoration of the hydrological regime is also very important.

Potential conflicts

Nutrient retention ⟷ **Ecological restoration**

eutrophication

denitrification

Disturbance and destruction (wood cutting, reed and weed harvesting)

Burial → aggradation

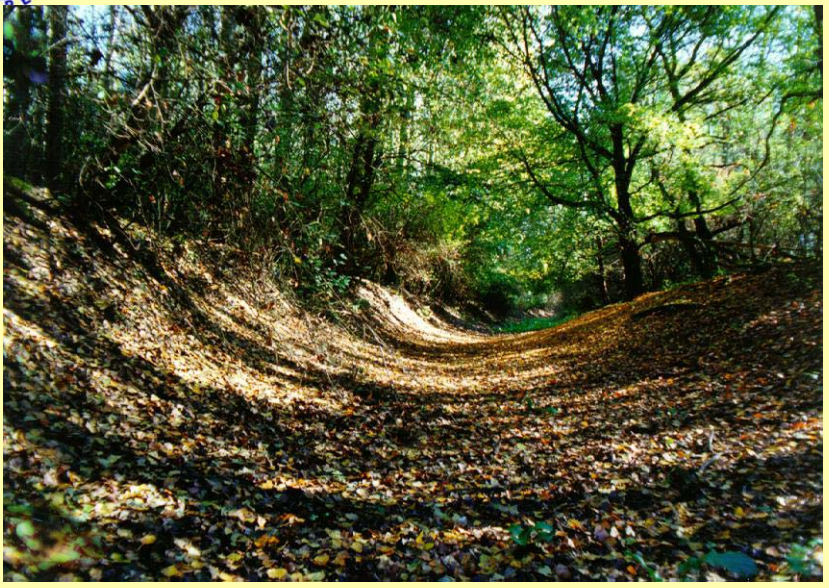
Land uses ⟷ **Ecological restoration**

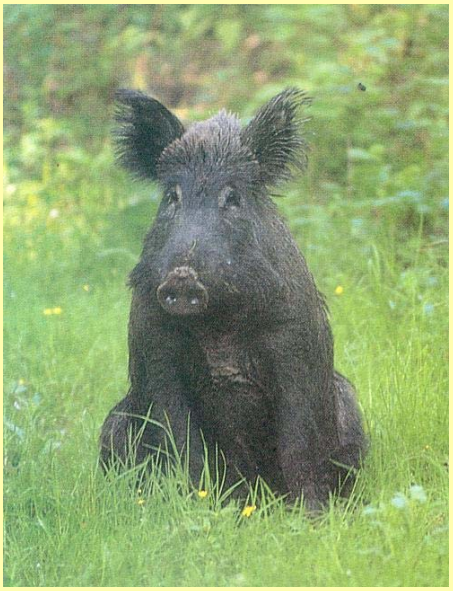
***Challenge**: searching for mutually beneficial, best compromise solutions*

Continuation

Phase II. of the project (2007-):

- Detailed planning
- Monitoring
- Impact assessment (models!)
- Operational policy
- Implementation





Thank you for your attention!