

"Wetlands and Humans in Eastern Europe: Past, Present and Future"

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In prehistory and even recent historical times, Eastern Europe had an amazing presence of aquatic ecosystems, where the natural flow or stagnation of water created wetlands of different types, containing a rich biodiversity on which the humans were able to base their existence.





- Prehistoric times:

- -only natural processes in the landscapes
- -large areas covered by wetlands, interrelating with natural forests (forests covering naturally about 80-90% of Romania)
- -evolutionary processes of wetland biota shaped only by natural factors



- In the Danube river basin, transformation of landscapes by humans reduced the connection between these natural wetlands; the fragmentation produced a loss of biodiversity and loss of resources, too.

- **Historic times:**



- **Phase A: to a traditional society**
- -presence of humans in the landscapes: reduced forested areas, specially the transformation of floodplain forests in agricultural land
- -overhunting, overfishing with traditional style producing the reduction of targeted populations and regional extinctions of few species
(European beaver)

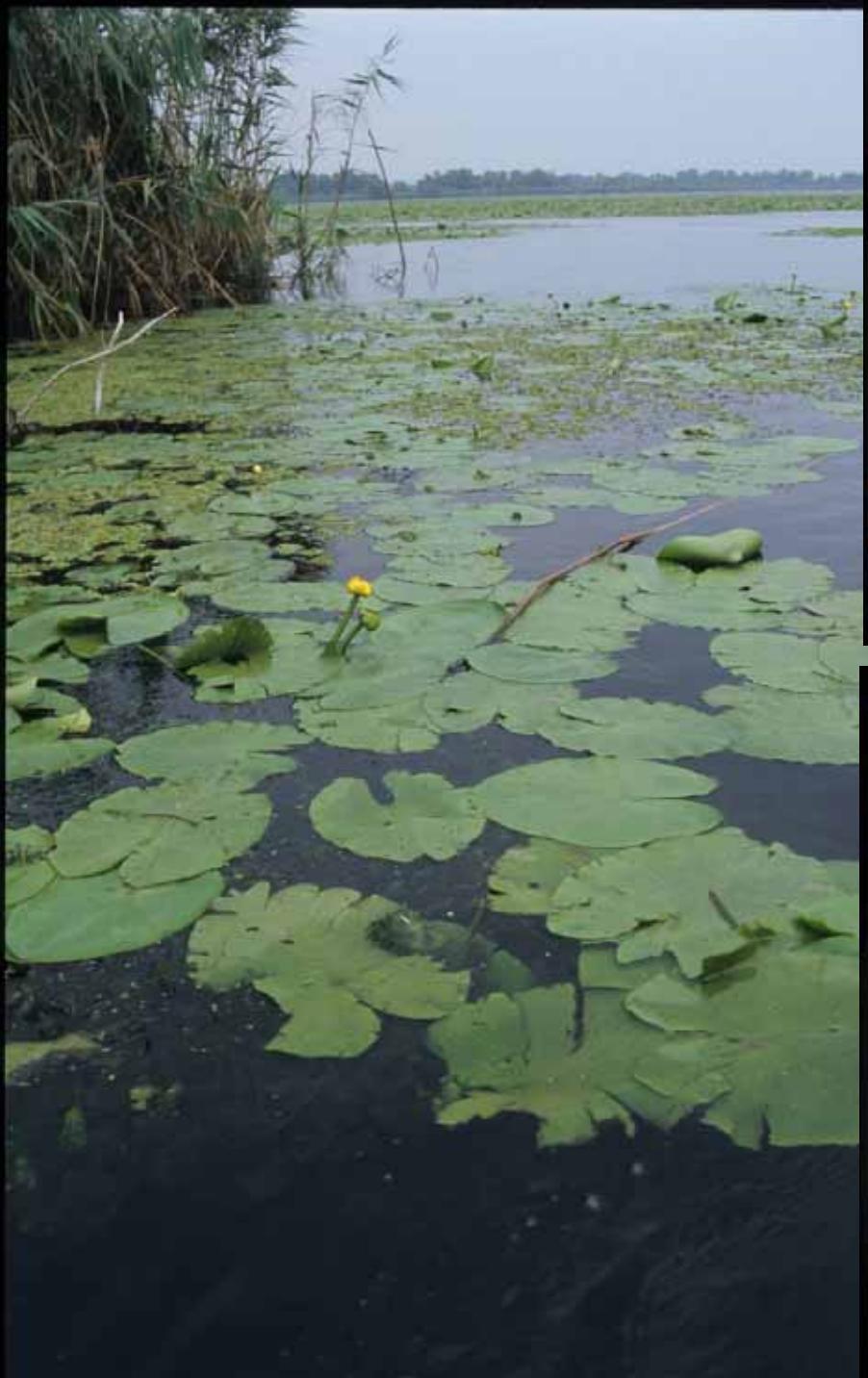






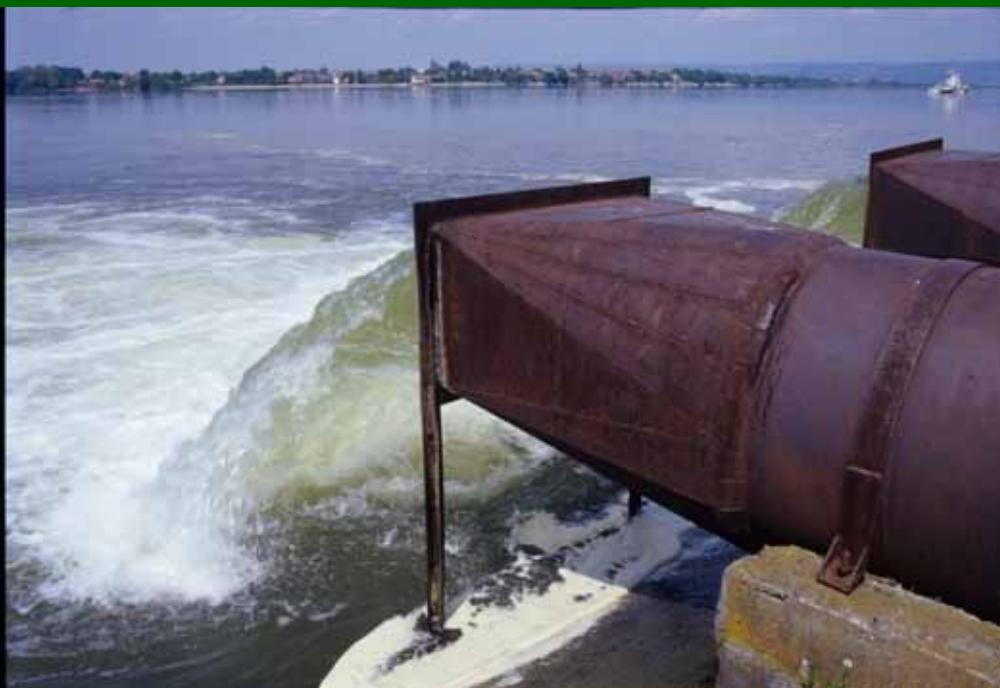
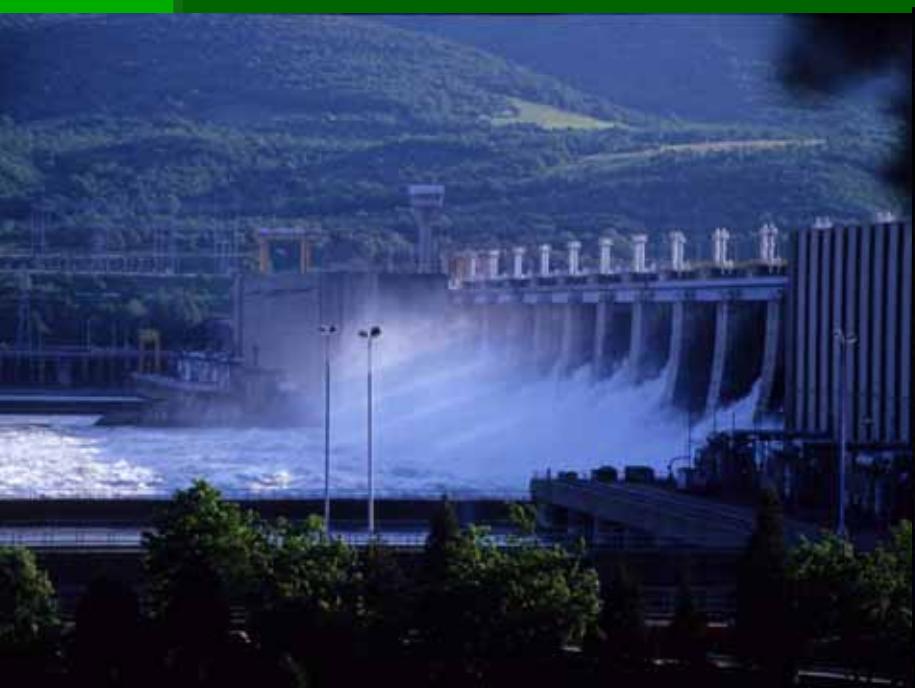


- -fishpond systems lucrative and spread in the landscape in the medieval times
- -still, human population and economy in a reasonable balance with the existing resources in the landscape.



■ Phase B: to an industrial society

- -construction of large dams (Iron Gates on the Danube rising water level with 33 meters)
- -river regulation works on large scale (e.g. Tisza river in Hungary)





- -mining industry polluting the waters (cyanide pollution from Baia Mare spill, large scale fish mortality, international conflict Romania - Hungary)



- -agricultural impact on waters: the need for agricultural land is reducing wetland areas;
- nutrient enrichment producing eutrophication, specially in lakes;



- pesticide bio-accumulation in top predators (pelicans, otters etc);
- water extraction for irrigation generally is not relevant in this region, but more in southern parts (Greece for example).



- -polluted waters from towns, cities, flowing in the rivers: even major cities like Budapest had still in 2006 more than half of the wastewaters with no any purification, while Bucharest have no functional water purification facilities even today.
- it is impossible to calculate the impact on biota of the synergistic effects of millions of chemicals resulting from the human society, including medical biologically active compounds, which is growing with an aging population.



- -voluntary introduction of sport-fishing species
- -involuntary introduction of alien invasive species
- -human population and economy exceeding the carrying capacity of the ecosystems, resulting a large scale degradation of the resources.



■ Phase C: Recent environmental policy

- -large scale degradation and loss of resources has produced an environmental legislation;
- relevant for wetlands in the European Union are the Water Framework Directive, the Birds Directive and the Habitats Directive, each Member State having the obligation to implement them (together with other 1,000 Directives).



- -implementation is very weak, because of low real political support for biodiversity, producing low funding, resulting in impossibility to protect nature in front of other interest like infrastructure development, overexploitation of the last remaining resources, spreading of settlements, etc.
- -European Union's decision to halt loss of biodiversity by 2010 was not accomplished, because it is not targeting the basic causes of biodiversity loss

- EU wants to be a global leader in biodiversity conservation and sustainable development but it is not able to implement these ideas in it's own territory.





- Some major wetlands like the Danube Delta have survived, presenting natural patterns which become very important for scientific research, biodiversity conservation, and being models for ecological restoration.

- **Importance of existing large and functional ecosystems**
- -an ecosystem should have large predators which need large landscapes for their populations to survive: colonies of pelicans in Danube Delta
- -mosaics of natural habitats able to provide conditions for survival of a rich biodiversity need a large area





- -natural ecological processes can't be contained in small patches of natural habitats, because these are influenced very much by their surroundings
- -large natural wetlands are the base for understanding wetland dynamics and for developing models for wetland ecosystem restoration

- -even the best wetland of Europe, the protected Danube Delta Biosphere Reserve, is inevitably based on Danube waters collecting pesticides, fertilizers, medical residues from large parts of Germany, Austria, Hungary, Serbia, Bulgaria, Ukraine, Romania etc.
- -maintaining isolated ‘protected areas’ in a landscape characterized by overexploitation, pollution and degradation under the human pressure is impossible on long term.

- protected areas are emergency measures, short term solutions to protect genetic diversity, species and ecosystem samples, till humans will understand the fact that human civilizations' survival is possible only in a functional matrix of natural ecosystem





- now, probably the best protected wetland in the Danube river basin is the part of Kopacki Rit Nature Park in Croatia, which is a minefield resulting from the recent war in the region.



- NGO involvement in research, conservation policies and ecological education is today a hope for a better connection of humans and wetlands in the future.



- NGOs for protecting the future of humans
- -the human civilization is totally dependent on the functional ecosphere, in which it is a part.
- -our Planet has a certain ecological carrying capacity, which is already exceeded by the human use of resources. We do need a paradigm change in order to save the future of our human civilization, which can't survive without the ecological basis of it, a problem which will be even deeper in the near future when the fossil fuels will be terminated



- -biodiversity conservation is not about lizards and dragonflies, it's about the future existence or extinction of our human civilization.
- -in the NGO sector the think-tanks have the brain-power to analyze the ecological sustainability of the human civilization, based on scientific facts, trends and scenarios



- NGO representatives have the freedom of speech, more than do mandated representatives of governments and international bodies:





- NGO representatives have the capacity to formulate their ideas in an easier-to-understand style comparing with the representatives of the “pure science”/ academic sector focused on researching the details.





- the NGO sector representatives can focus on
 1. easy leaflets about wetlands and other soft issues, ‘implementing the existing environmental policy’, but also can get involved in ...
 2. ‘hard-talks’ about the basic problems of our civilization: impossibility to maintain a growing population and growing economy based on limited resources of our Planet.



- focusing on small-scale demonstration projects may involve the risk of winning small fights but loosing the battle



- -Used to think on unlimited growth, people are facing a big difficulty to understand the absolute ecological limits of this small planet. This limit is forcing us to decide to limit our self (which species was able to do it?) or to proceed in the direction of the global ecological disaster, which will be most painful for the humans understanding what is going on. If already we do have problems with the existing resources, a bigger difference between demand and realities will increase the tensions, with major consequences regarding security, socio-economic wellbeing, health etc.



- There is Hope! We can hope in human genius, to find the possibilities to put back our civilization on a sustainability path, but we should accept this as being the most difficult question from the moment when our ancestors have started the very first fire. Probably the elite of the civil society is positioned on the best point, being able to communicate, think and rise a voice regarding the real problems we are facing now.



The end

- Thanks!