Wetlands and their protection in North Macedonia

Province de Kénitra

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@ Studenicko blato

“Today, our incentives aren't set up well - you can make a lot of money burning fossil fuels, digging up wetlands, pumping fossil water out of aquifers that will take 10,000 years to recharge, overfishing species in international waters that are close to collapse, and so on.…”

Ramez Naam

Wetlands are ecosystems whose formation, processes and characteristics are determined by water

Wetlands are **interface between Terrestrial and aquatic ecosystems .** It is an area of land whose soil is Saturated with moisture either permanently or for a long enough season every year to support aquatic plants.

Wetlands are not necessarily "wet“ all year round

They have been called the **'nature's kidneys’** because they cleanse our environment

What else is wetland?

- **contain hydric soil - saturated by water.**
- **soil lacks oxygen when saturated**
- **land that is seasonally wet.**
- **habitat for many aquatic and terrestrial species.**
  - **Some found only in wetlands.**
  - **Wetland plants known as hydrophytes**

WATER RESOURCES OF NORTH MACEDONIA

- All the waters in N.Macedonia belong to three large basins (one Adriatic - through the river Crn Drim and two Aegean - through the Vardar and Strumica rivers) and a small part of the Black Sea basin (the catchment area of the river South Morava).

Treasure of water and aquatic ecosystems in Macedonia:

- **There are over 4400 sources with an annual capacity of 6.6 billions of m3 water;**
- **Three large tectonic lakes (Ohrid, Prespa and Dojran Lake);**
- **about 50 glacial and mountain natural lakes;**
- **about 120 small dams and reservoirs and 22 large multipurpose dams.**

Type of wetlands in North Macedonia

Marsh: areas where the soil is periodically or permanently flooded with water.

- dominated by soft stemmed grasses
- have shallow water.

Marsh plants:

- cattails
- rushes
- bur weed
- water lilies

Type of wetlands in North Macedonia

Marsh animal: can be very diverse.

Most reknown: Squacco Heron, that can observed during migration, but its breeding has not been confirmed recently

Type of wetlands in North Macedonia

- Bogs: Associated with evergreens
- Usually found in areas with short growing seasons and lower temperatures.
- pH less than 5
- Little or no drainage
- Acidified by

rotting vegetation,

- Some open water surrounded by a floating mat of sedges, sphagnum mosses, and other acid-loving species.

Function of wetlands

- Improves water quality.
- Reduces flood and storm damage.
- Regulates water levels in watersheds.
- Provides wildlife habitats
- Wetlands protect terrestrial areas adjoining them from storms, floods and tidal damage.
- Plants in wetlands help to filter pollutants in the water.
- Wetlands provide an excellent example of invasion, modification and succession.

How to protect wetland?

- Natural through ecological network
- By legislation

What is ecological network?

- The ecological network represents a system of sustainable management areas that are core to populations of significant species interconnected with corridors that their organisms enable easy migration from one to the other core area by which it is provided vitality of their populations.

WHY WATER MANAGEMENT IS IMPORTANT FOR ENVIRONMENTAL NETWORKS

- Water ecosystems are all muddy ecosystems (shrubs, marshes and wetlands, including floodplains forests and riparian belts of trees and shrubs) and waters (streams, rivers, lakes, seas, reservoirs), natural or artificial, permanent or occasional, where the water may be standing or flowing, sweet, salty or marriages.
- Aquatic ecosystems are natural corridors for movement and migration and are a very important part of the ecological networks, but not only for aquatic animals, but for a large number of terrestrial organisms. They enable the maintenance of populations of plant and animal species which are becoming more and more affected. Aquatic ecosystems are a natural resource of global significance.
- Their high biodiversity is the main reason why aquatic ecosystems have a high priority for protection worldwide supported by several international conventions (Ramsar Convention, Convention on biodiversity), the European legislation (the water framework directive) and the Macedonian legislation (the new Water Law will apply from 2014)

Protected area in North Macedonia

- According to the legally regulated procedure for protection of sites with
- natural values, 6 categories of protected nature have been established
- heritage;
- The CORINE biotopes with 77 corona places and the National Emerald have been established network of the Republic of Macedonia with 35 Emerald Areas and 11 protected areas included in the Macedonian Green Belt as part of the **Balkan green belt**;
- The number of protected areas has been rising in the last decade, from 7.4% of the national territory in 1991 to 8.7% in 2008 year;
- The area of protected areas is 2,220.5 km2

Legislation…

- N. Macedonia is in the process of transposing domestic legislation into EU legislation
- Natura 2000
- Emerald
- Law on protection of Nature (2004)
- Republic of N.Macedonia has also ratified the Protection Directive of wild birds 2009/147 / EC, as well as with the latest report by the International Union for conservation of nature (IUCN 2012)



Wealth with types of ecosystems, types of habitats, communities and species put it the Republic of North Macedonia at the very top of the list of countries with significant Biodiversity in Europe (Hot Spot).



Measures for the protection and maintenance of the functionality of aquatic ecosystems

- Management of water resources based on plans made by key stakeholders: water managers, builders, owners of land and ecologists;
- Compliance with legal provisions, in particular maintaining a minimum flow of water (biological minimum) and groundwater level;
- Maintenance of protective belts with natural vegetation along water bodies;
- Improvement of water quality and protection from pollution and erosion;
- Introducing specific restoration measures meandering channels and banks of rivers and lakes;
- Renewal of destroyed rugged vegetation which serves as a natural water purifier;
- Creation of new water bodies, such as ponds and lakes (provided this does not damage existing habitats);

Well known wetlands in N.Macedonia

- **Studenchishte Marsh** is the last remains of a previously extensive wetland habitat on the eastern shore of ancient Lake Ohrid in the Republic of Macedonia. It is also the final major coastline wetland at Lake Ohrid[1] and one of only seven marshes with relict communities that still exist in Macedonia. With several millennia of natural history, it is a site of key conservation interest.

Well known wetlands in N.Macedonia

- **Monospitovsko Blato**, the last marsh in Macedonia, is the most extensive wetland-type wetland habitat.
- Today it represents only a small remnant of former spacious areas under water, cane and wet meadows rich in living things.

Monospitovsko Blato

Well known wetlands in N.Macedonia

Belchisko Blato is a relic remains of the former Desaretsko Lake, by which the Debrca valley was flooded in the pliocene. With the withdrawal of the Desaretsky Lake along the Sateska River, numerous endemic species of plant and animal life remained in the waters of the bog. Belchisko Blato is the largest preserved water habitat in Macedonia, with an area of about 0.5 km2

The meaning of the water

Today huge terrestrial surface areas in Europe are subjected to various interventions by the man.
Natural riverbeds are channeled or diverted to build navigable roads,
while wetlands and forests are in danger of disappearing alongside them; are built against-flooding embankments and dams that adversely affect the hydrological status of aquatic ecosystems and reduce it the level of groundwater; water quality drastically decreases

Water is not just a resource or a commercial product, but a wealth that must be preserved and protected!.


COME ON EVERYONE! I'VE FINISHED THE SIGN FOR OUR WETLAND.
NO TO GLOBAL WARMING
OUR WETLAND PROVIDES:
- CLEAN WATER
- FRESH AIR
- THOUSAND OF PLANTS AND ANIMALS
- GOOD NEIGHBOURS
- NO STRESS
"LET'S KEEP IT LIKE THIS"
!?
EXCELLENT! WE ARE ONLY MISSING ONE THING!
LATER...
WE RESERVE THE RIGHT TO ADMISSION!!
Cool!!

Thank You...