

IMPORTANCE OF WETLANDS NATURAL RESERVE SATCHINEZ SWAMP

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Abstract: *The importance of wetlands is that they provide many ecosystem services, like preserving biodiversity, providing wildlife habitat and support for aquatic plants, and last but not at least they are deep involved in climate change mitigation. During the year 1970, hydraulic works and drainage operations were carried out to expand the agricultural land by restricting the Satchinezswamp. As a direct consequence of the limitation of the wildlife habitat, the biological diversity has declined. The goal of this thesis is to empathise the long-term sustenance of natural wetlands functions and values.*

Key words: *wetland, marsh, swamp, biodiversity*

INTRODUCTION

Satchinez is located in western Romania, in Timiș county, which has the county seat at Timișoara. The swamp near Satchinez, known as "Satchinez Swamps" is an Ornithological Reserve and has an important value from biodiversity point of view. The marsh is also known as the "Banat's Delta" for the rich bird diversity. This area houses significant populations of various rare birds, including *Botaurus stellaris* (bittern), *Aythya nyroca* (ferruginous duck) and the *Crex crex* (corncrake).

Species like *Ardeapurpurea* (red heron), *Plegadisfalcinellus* (glossy ibis) and *Circus aeruginosus* (Western marsh-harrier) are included in the red list of IUCN - *International Union for the Conservation of Nature*, which means that these species are threatened and need immediate action to prevent them from disappearance.

The swamps are fed by many water sources which are collected in the large valley of the Ier River. This area represents an important wet habitat for all these species, which outside of this given area, are not able to provide themselves the needed supply. All birds in this area are loving the reed and the hiding places that are here to find, which makes Satchinez swamp a paradise for birds.

MATERIALS AND METHODS

The paper provides the facts that the author could observe in the field during his individual study. Through consulting the speciality literature and comparison of field data, the author could establish the result and discussion that are presented as follows.

RESEARCH RESULTS

Wetlands are among the world's most productive environments. The main trait of character of a swamp is *water*. This is the main condition that a marsh can exist and can serve as prime habitat for birds. Water insufficiency leads to the restriction of the swamp, birds leaving their habitat and default the species decline.

Wetlands play a number of roles in the environment, principally water purification, flood control and carbon sink. Wetlands are also considered the most biologically diverse of all ecosystems, serving as home to a wide range of plant and animal life.

Satchinez swamps distinguishes itself from other landforms or water bodies through the characteristic vegetation of aquatic plants, adapted to the unique hydric soil. Hydric soils are defined as soils that formed under conditions of saturation and constantly flooding

area. If normally the vegetation is determined by the hydric regime, in the wet habitat vegetation is caused by the water abundance.

First scientific work about the Satchinez swamp was made by Dionisie Linție, back in year 1936. This reserve was declared a protected area and in the year 1999 joined the LIFE project NATURA (LIFE99 NAT/RO/006394) which was developed in two stages until 2005. It aimed at the preparation of a suitable management plan for this natural area.

Once Romania joined the European Union in 2007, it was a requirement to align the natural reserves of Romania to a minimum percentage to the European standard. Government Emergency Ordinance no. 57/2007 concerning the regime of protected habitats is the national law that confers the status of protected area nationwide for Satchinez swamp.

Although Satchinez swamp is included in the ecological network NATURA 2000 and classified by IUCN as Category IV - Habitat/Species Management Area, which means that this area has an active conservation management, the conservation status of this area is deplorable.

During the '70s, hydraulic works and drainage operations were carried out in Satchinez to expand the agricultural land. These activities were not carried out directly on the reserve but however they indirectly affected its hydrology. Nowadays as well as in the past, human activities such as wood cutting, grazing animals, fishing and poaching are also impacting negatively this area. In the past, most people regarded wetlands as useless and disease-ridden 'wastelands'. Huge areas of swamps have been drained for agriculture, or filled in for building sites.

River banks have been straightened out and lined with concrete. Soon people start to benefit from the drained wetland as these soils have a massive quantity of nutrients (wetland soils are an important carbon sink), contain considerable clay and have more uniform moisture characteristics than undrained lands. Upland crops generally do very well on drained wetlands. Also drained lands are better than wetlands for most engineering purposes.

All these human made changes have irretrievably affected the swamp and had as consequence the decreasing of the biological diversity. As the biological diversity is decreasing and the loss is increasing, farmers start to observe that the crop production declines. Soon they realize that functions of a wetland and the values of these to humans depend on a complex set of relationships between the wetland and the other ecosystems in the watershed.

Now people are beginning to realize just how valuable wetlands are, not just as areas of great biodiversity, but because they perform all kinds of useful functions.

Wetlands control flood and play an important role in the water purification. This is why most of the swamps are freshwater habitats. Other beneficial functions of wetlands are:

- Preserving biodiversity
- Recharging groundwater
- Regulating flow to control flooding
- Providing pressure against saltwater intrusion
- Retaining nutrients
- Removing toxins
- Capturing carbon dioxide (14,5 % of the world's soil carbon is found in wetlands)
- Providing wildlife habitat
- Providing support for aquatic plants
- Producing fuel products
- Maintaining gene bank

- Climate change mitigation
- Recreation and tourism

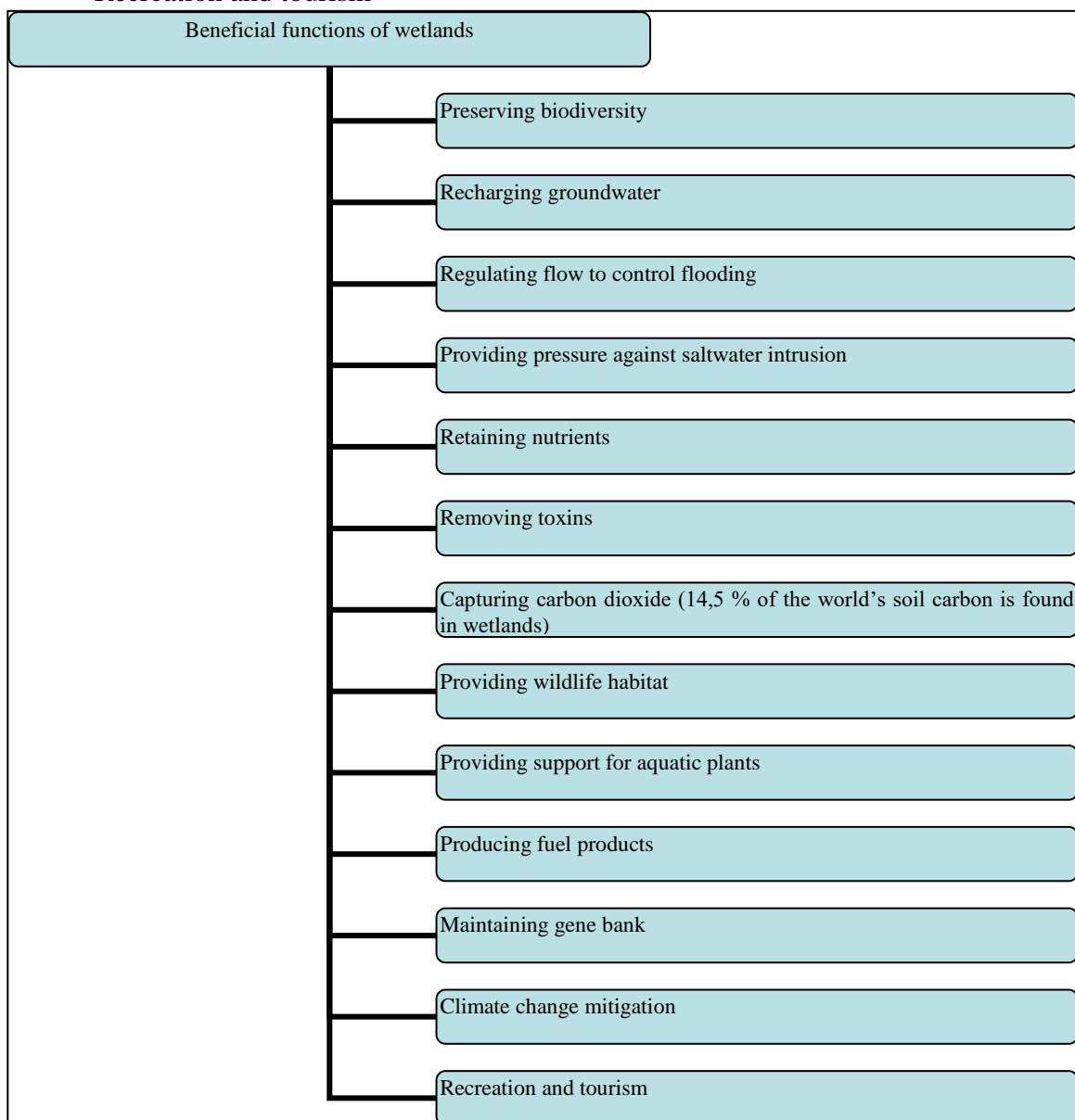


Figure 1 Beneficial functions of wetlands

CONCLUSIONS

Not all wetlands, including Satchinez marsh, provide all the services listed above all the time of the year. Different wetlands provide a range of services according to their type, size and location.

In countries like U.S.A. the growing understanding of the economic benefits of wetlands has resulted in significant expenditure on wetland restoration and rehabilitation of lost or degraded hydrological and biological functions of wetlands. The stated national goal for natural wetlands in the U.S.A. is one of no net loss, or protection of existing functions, as well as restoration of degraded functions.

Managing wetlands is a global challenge and the RAMSAR Convention presently counts over 160 countries as Contracting Parties, which recognize the value of having one international treaty dedicated to a single ecosystem. We need to recognise their value in

delivering water, raw materials and food. They are essential both for life and the sustainability of the world's economies.

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