

## THE RESERVATION OF NATURAL AREAS IN THE PLAIN OF THE RIVERS AND THE VULNERABILITY OF SCI AND SAP AREAS

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### **Abstract**

*Romania is a country with a high biological diversity, expressed not only at the ecosystems level, but also at the species level.*

*Keeping the natural areas is a constant battle carried out by non-gouvernemental organizations and empowered structures specialized in the preservation of the surrounding environment and implicitly the preservation of natural areas.*

*The most part of the created to help maintaining, protecting and monitoring the preserved area to which he was assigned. The increase in number of the protected areas in the last years is an important step for our country and for the implementation of European directives on romanian territory.*

**Key words:** protected areas, Nature 2000 site, Plain of the Criș Rivers.

The area of study includes natural areas of national interest that have been declared SCIs ( sites of communitarian importance), and/ or SAPs ( areas for the special protection of avifauna ). Situated between the rivers Barcău and Crișul Alb, the natural areas of national importance are being altered due to the damages caused by touristic activities, such as air pollution, especially during the summer time, pollution of water and soil, particularly caused by large quantities of waste dumped by tourists, destruction of wildlife, the esthetic degradation of landscape, deforestation, and the overcrowding effect present in the summer period

In the last decades, the natural conditions and landscaping in România have been particularly influenced by the evolution of economic activities, followed by the economic growth of the last years which lead to an excessive exploitation of natural resources. In these circumstances, many species of plants and animals are in danger of extinction, the altering of landscape being the first indicator of environment deterioration

Romania is a country with a high biological diversity, expressed not only at the ecosystems level, but also at the species level. Although, before 1989, the problem of protected natural areas and that of the Nature 2000 sites has been more less approached, once România

became a member of the EU, the European Community benefited from a substantial contribution to the existing natural capital, provided by our country ( e.g. the high number of large carnivores living on Romanian territory are almost extinct in other EU countries). Romania needed to implement the Nature 2000 network, in agreement with EU requirements. The purpose of this system is to protect the existing special or unique natural elements within Euborders. The implementation of the plans regarding the protection and management of the preserved areas part of the Nature 2000 network, calls for a substantial growth of the financial resources allocated for natural preservation. The protected natural areas from this area of study encompass the areas situated south of the Barcău Rivers, all the way to the south of Crișul Alb River.

Pețea Creek- aquatic ecosystem with a well structured physiognomy being the only natural thermal ecosystem in Romania. It stretches over a surface of 51 ha. ( APM Bihor ). In 1932, it received the status of reservation, beginning with its spring to a 1 km distance, through the Journal of the Ministry Council no 1148, thanks to the importunities of renowned scientist Alexandru Borza. The existing species that made it a protected area are the so called endemic species, such as the thermal lotus- *Nymphaea lotus* ( *Thermalis Melanopsis parreyssi* ) , the Muhlfeld , a relict endemic species of snail, or the endemic species of the Rudd fish- *Scardinius erythrophthalmus racovitzai*. Its geographical coordinates are : latitude N 47° 0' 43" , longitude E 21° 58' 42". The entire creek surface is situated in Bihor Country.



**Fig 1.** Lake Pețea . source : foto Minodora Patroc

Clearing with daffodils from *the Goroniște forest*, village of Gurbediu, Tinca

The *Narcissium augustifolius* daffodil grows here at the lowest altitude in the country- only 100 meters, being spread throughout the under brushes of deciduous and having a variable density, from compact areas with 1 up to 10 meters in diameter, to areas in which they live isolated.



Fig 2 The Goroniște Forest, source: APM Bihor

The *fishery of Cefa- Rădvani Forest*, stretches over a surface of 5.413 ha. It is part of the Bihor County patrimony (in proportion of 100 %). It is also part of the SCIs and SPAs. The bird colony from Rădvani Forest (Cefa Township)- the colony is situated in a underbrush of oak and ash, counting approximately 100 trees with heights ranging from 20 to 25 meters. The number of nests ranges from 1 to 8 per tree, averaging 4 to 5 nests per tree. A number of 215 bird species have been identified in the Natural Reservation of Rădvani Forest and the Ponds of Cefa.( APM Bihor )

The area of Cefa is characterized through a high diversity of habitats and their mosaic-like placement, but also through their high degree of ecological integrity. Therefore , in a confined area we can encounter different types of habitat, such as marshlands, piscatorial ponds, channels of many sizes, ditches, puddles (temporary and permanent) of various depths and ways of water flow, with or without aquatic vegetation (submersed, natant, emersed

and palustrine vegetation), forest bodies, saline soils, harvested lands, pastures and wet hay lands. The heterogeneous conditions present here, allow sheltering for a large spectrum of species, in this mosaic of habitat, from the most diverse systematic and ecological groups.

All these, create the opportunity of scientific and administrative fundamentation of the Cefa Natural Park, but also that of designing infrastructures of prevervation, tourism and monitoring. The fishery of Cefa and the humid areas nearby represent the most important location in the western Romania, for the nesting of pond birds, respectively, for the migrating species. Insaide the fishery with vast reed thickets and water surfaces, and in the Forest of Rădvani, lay important effectives from six endangeros species of birds at the EU level. Two species of global conservative interest are present here : the red duck( in significant numbers), and the Danube hawk, which appears regularly in the area. During migration, specifically in the winter, the lakes and nearby open areas are visited by a large number of egrets, ducks and geese. Over 80 thousand pond birds visit this area annually. Large flocks of geese can be often seen on the pastures cocated south of the lakes.(APM BH).

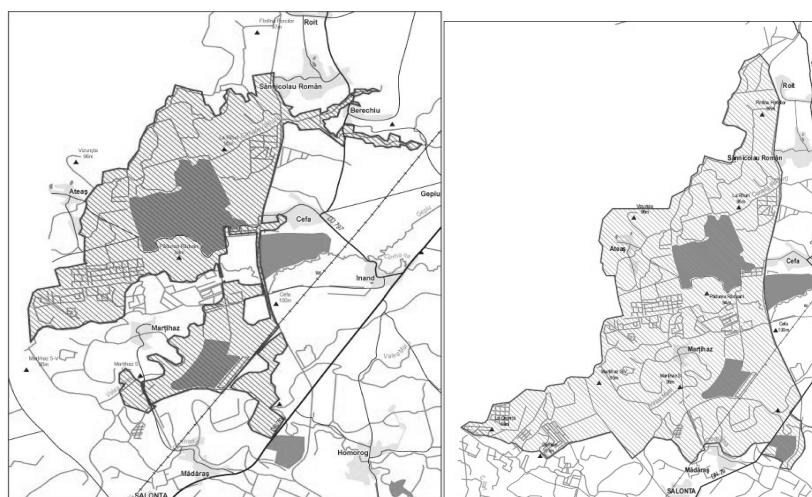


Fig. 3 The Cefa Area <http://natura2000.mmediu.ro/site/109/roci0025.html>



Fig. 4 The Cefa Area. Source: APM Bihor

The Rădvani Forest natural reservation nearby the Cefa Township and the area of the Cefa Ponds is a humid habitat of great avifaunistic importance, as it ensures conditions for passage, feeding and nesting to a very large number of birds protected by law at European and global level. This humid area of great avifaunistic importance is located on the Panonic- Bulgarian passage of avifaunistic migration, being also in the vicinity of the protected area of Biharugra, part of the National Koros-Moros Park of Hungary. Numerous species of plants, animals and habitats are included in the European Directive regarding Birds and Habitats 79/409/CEE and 92/43/CEE( APM Bihor ).

*The grove of Santău* is a site of communitarian importance (SCI), with a surface measuring 113 ha. It was declared a protected area for its alluvial forest packed with Black Alder( *Alnus glutinosa*) and ash ( *Fraxinus excelsior*) trees, also for its habitat, very rich in Black Alder ( *Alnus glutinosa*), European Mudminnow ( *Umbra krameri*), and weatherfishes ( *Misgurnus*). Here was also identified the water soldier plant( *Stratiotes aloides*), included in the red list of superior plant species in Romania (1994), and the European fire- bellied frog( *Bombina orientalis*) ( APM Bihor and <http://natura2000.mmediu.ro>).

*The saline soil reservation of Socodor* ( SCI), is situated in the Plain of the Criș Rivers and has a total surface of 102 ha. The main natural assets protected here are the vegetal carpet, accommodating species of halophiles, xerophiles and neophiles, species of plants like the pseudovina ( *Festuca pseudovina*), marsh beet ( *Statice gmelini*), mediterranean barley ( *Hordeum hystrix*), sea wormwood( *Artemisia maritima*), bulbous bluegrass( *Poa bulbosa* var. *vivipara*), couch grass( *Cynodon dactylon*), european alkali grass

(*Puccinellia distans*), *camphorosma ovata*, *pholiurus panonicus*, creeping bentgrass (*Agrostis stolonifera*), ribwort plantain (*Plantago lanceolata*), common knotgrass (*Poligum aviculare*), as well as alkaline, saline and gleized soils with concretions of calcium carbonate lacking gypsum, sodic – alkaline soils and alluvial- sodic soils. (<http://natura2000.mmediu.ro/site/125/rosci0231.html>)

The river *Crișul Negru* has been declared site of communitarian importance (SCI). It is located in a proportion of 17 % in Arad County and 83 % in Bihor County. The site has a total surface of 1895 ha. The reason why it was chosen as SCI is to protect the Thick Shelled River Mussel (*Unio Crassus*) species, which has a stable population in this area, with a large number of individuals. The structuring on age classes and sexes of the Thick Shelled River Mussel (*Unio Crassus*) indicates definite chances of perpetuation in the future, but they are conditioned by maintaining of the ecological state close to the current parameters (<http://natura2000mmediu.ro/site/113/rosci0049.html> and APM Bihor)

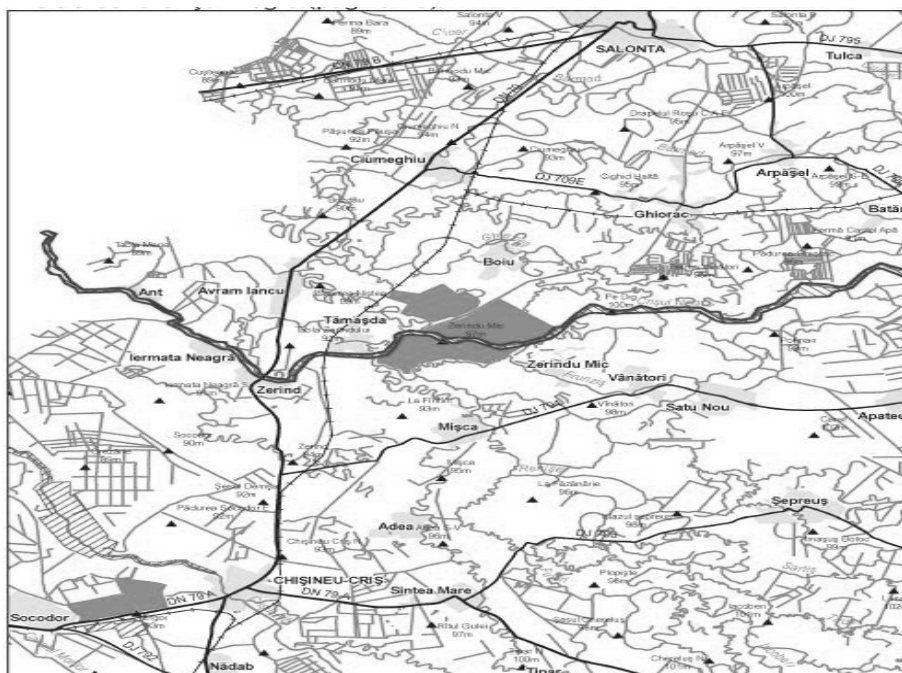
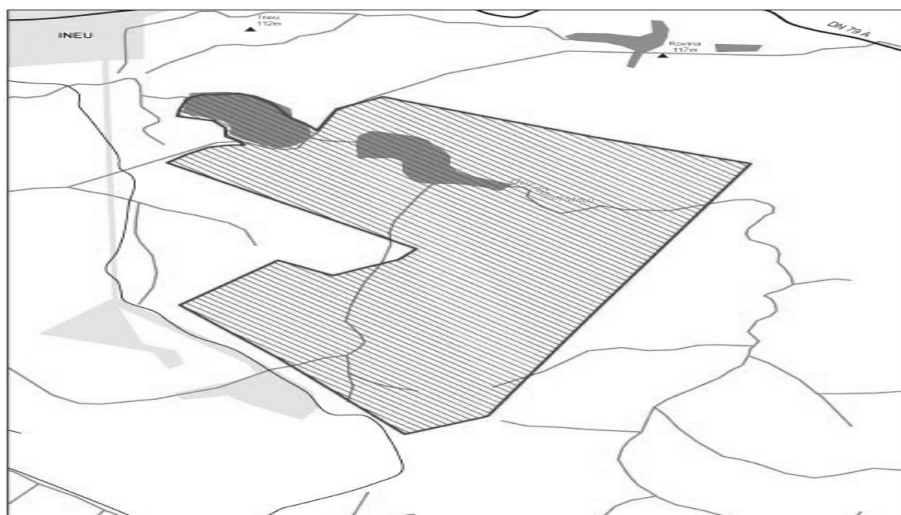


Fig. 5 source: <http://natura2000mmediu.ro/site/113/rosci0049.html>

The *Rovina –Ineu* site has been declared site of communitarian importance (SCI). The site has a total surface of 874 ha, situated in Arad County. Types of habitats present here: Sub-Atlantic and Medio- European forests of oak, or hornbeam belonging to the Carpinion Betuli family with oak, as well as riverside coppices with white willows (*Salix Alba*) and white

poplar (Pppulus Alba). Some of the endangered insect species living here are the dragonfly(Ophiogomphus Cecilia), Eriogaster catax (moth), Pilemia Tigrina , false comma (Nymphalis Vaualbum) and Dioszeghyana Schmidtii. ( <http://natura2000.mmediu.ro/site/123/roschi0218.html>)



*The Gray Herons of Sic Reservation*, is part of the Institute of Forest Management Beliu, sitated south of its headquarters, in the mesdow of Teuz river. Its main obiective is to protect the gray heron species in the area( *Ardea Cinerea*).

Based on the level of specificity of each SPA area or SCI site, they show certain vulnerabilities regarding the undergoing activities within the site, or in its vicinity. From the activities that present a great risk fot the existing habitats, or species of wildlife protected by law, we summarize the following: the intensification of agriculture, mowing, or grazing during the nesting period, poaching, draining of the humid areas due to canalization works carried along the river banks, long-term works in the porximity of nests during the reproduction period, burning of vegetation and stubbles, the illegal commerce of cubs, the use of bird traps, tourism and the practicing of extreme sports, deforestation, forest works resulting in the severance of large surfaces of trees, hunting during the nesting period, the uncontrolled growth of invasive species, and the extensive sport fishing which disturbs the migrating birds.

## CONCLUSIONS

Keeping the natural areas is a constant battle carried out by non-gouvernamental organizations and empowered structures specialized in the preservation of the surrounding environment and implicitly the preservation of natural areas.

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