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International Conference « Global interferences of knowledge society »,  
November 16-17<sup>th</sup>, 2018, Targoviste, Romania

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## Global Interferences of Knowledge Society

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<https://doi.org/10.18662/lumproc.137>

**How to cite:** Popescu, C., & Hrestic, M.-L. (2019). The Importance of Protected Natural Areas. In M. Negreponi Delivanis (ed.), *International Conference «Global interferences of knowledge society», November 16-17th, 2018, Targoviste, Romania* (pp. 201-212). Iasi, Romania: LUMEN Proceedings. <https://doi.org/10.18662/lumproc.137>





International Conference « Global interferences of knowledge society », November 16-17<sup>th</sup>, 2018, Targoviste, Romania

## The Importance of Protected Natural Areas

Constantin POPESCU<sup>1</sup>, Maria-Luiza HRESTIC<sup>2\*</sup>

### *Abstract*

*Economic relationships lead to the determination of behavior towards resources, including those related to biodiversity. Economic relationships lead to the determination of behavior towards resources, including those related to biodiversity. Human interventions are not negative only by making maximum use of biological resources, but also through activities that do not directly target these categories. The main ways humans contribute to the degradation of biodiversity are: modification and destruction of habitats, voluntary and involuntary transfer of species, overexploitation in all areas, starting with resources. The purpose of this research is to highlight the importance of protected areas in the world, as well as in Romania, highlighting economic activities that help to preserve and protect nature and the natural environment, activities that are included in management plans for sustainable development.*

**Keywords:** *biodiversity; protected natural areas; management plans; Natura 2000 sites; sustainable development.*

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<https://doi.org/10.18662/lumproc.137>

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Selection and peer-review under responsibility of the Organizing Committee of the conference



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## **1. Introduction**

Changing and destroying habitats are considered the most important causes of biodiversity erosion. These occur directly by reducing the surface occupied by natural or indirect ecosystems through the effects of pollution on the environmental components that determine the species' living conditions. Reducing the areas occupied by natural ecosystems has become one of the so-called "global problems of mankind", namely the diminishing of the forests occupied by forests, due to either deforestation for the extension of agricultural land or overexploitation of wood resources and lack of interest in the regeneration of these lands. Wood was the dominant fuel, being also used as a building material for dwellings, boats, the car industry, the pulp and paper industry, and 25% of the total harvested wood. In addition, paper production worldwide is 20 times higher today than at the beginning of the century. In the last 200 years of the last century, the anthropic pressure has reduced the forest area from 50% of the dry land to 20%, as it stands today, and the grubbing-up rates continue to rise. Most of the surface of the green carpet on the planet, if we take into account the steppes, prairies, savannas, etc. was forested before human intervention.

## **2. Theoretical Background**

Nobody denies the importance of protected natural areas for the conservation of biodiversity. Therefore, money has been invested throughout the world for the creation and maintenance of the territories. There are currently over 1388 titles of protected areas in all over the globe, which are designated by national law.

Protected areas can be found that have different names but have the same purpose as: strict natural reservation in Bhutan; nature reserve for the Bahamas; national nature reserve or marine nature reserve, or nature conservation areas, or a strict nature reserve, but all represent the namely a Strictly Protected Reservation, according to the classification developed by the research institute union.

## **3. Argument of the paper**

By integrating the data specific to this impressive number of protected areas, the following analysis resulted, which, in the limit of accepted errors, defines to a certain extent the situation of protected areas globally.

The world's network of protected areas comprises 30,350 protected areas, covering an area of 13,232,275 km<sup>2</sup>, representing 8.83% of the world's land surface. However, this percentage should be considered cautiously because it can be higher by more than one percent due to the large number of marine protected areas or maritime areas. This network of keep safe areas seems to be very extensive from a global perspective, but it has many national goals. [1]

Romania is among the countries with the highest biodiversity in Europe. Holds third and half of the Danube Carpathian chain. Of the nine biogeographical regions of Europe, five are found on the surface of our country. All these data make Romania a country with a very rich and varied nature.

It is a unique connecting corridor between these countries, both from the natural and cultural point of view. Of the more than 2,800 kilometers that the river crosses from the Black Forest springs and up to the Black Sea, more than a third is on the territory of Romania.

Half of the Carpathian mountain chain is found in Romania, the other half being divided between Austria, Slovakia, Hungary, Poland and Ukraine. Mountains stretch over 5000 kilometers about 1 second to form a mountain chain length in Europe, after the Scandinavian Mountains.

#### *National parks*

There are currently 13 national parks in Romania, all of them in mountain areas. The largest national park is Domogled - Cerna Valley, and the smaller one is Buila - Vânturarița. The first national park set up in Romania is Retezat in 1935. The Măcinului Mountains National Park is the only park not in the Carpathians.

The list of national parks in our country is as follows: Buila - Vânturarița, Călimani, Ceahlău, Cheile Bicazului - Hasmaș, Nerei - Beusnita, Cozia, Jiu Gorge, Domogled - Cerna Valley, Măcinului Mountains, Rodnei Mountains, Pietra Craiului, Retezat Semenic - Carașul Gorge.

#### *Natural parks*

There are 13 natural parks in Romania, the last one, Văcărești, being the smallest and only natural park in the country. The Maramures Mountains constitute the largest natural park and only 5 of these parks are not in mountain areas but in wetlands.

The list of natural parks in our country is as follows: Apuseni, Balta Mica of Brăilei, Bucegi, Comana, Mureș High Gorge, Muncelului Grădiest - Cioclovina, Lower Prut Lower Flood, Mureș Plain, Maramureș Mountains, Iron Gates, Putna - Vrancea, Văcărești and Vânători - Neamț.

### *Geoparks*

At this moment there are two geoparks in Romania, both located in the southwestern part of the country. Hateg Country is the only park in our country that has been declared due to the presence of dinosaur fossils. The Mehedinți Plateau is especially important due to the carst and exocarst.

The two geoparks from us are: The Geopark of the Hațeg Land and Mehedinți Plateau.

### *Reservations of the Biosphere*

The Danube Delta is the only Biosphere Reserve in Romania that has only this status of protection and is not a national or natural park. The invaluable value of this area included Delta and the UNESCO World Heritage List, being the only natural area of its kind in Romania.

The three Biosphere Reserves from us are: the Danube Delta and parts of Rodnei Mountains National Park and Retezat National Park.

The Delta has been formed over 10 000 years and continues to grow even today, being considered the youngest Romanian land. It is the best preserved delta in Europe, and since 1990 it is part of the UNESCO World Heritage Site and is considered a biosphere reserve. It is a labyrinth of lakes and canals that roam through the biggest compact reed area in the world and is one of the areas with the highest biodiversity on the planet.

Being the third largest in Europe, and the world's 22nd, Delta grows year by year by about 40m<sup>2</sup>. At present the delta area is over 5,700 km<sup>2</sup>. Out of this area, only 10% is dry. Over 3 000 km<sup>2</sup> are natural aquatic and terrestrial ecosystems designed for ecological reconstruction. These areas are included in UNESCO's patrimony under the "Man and the Biosphere" program.

In the Danube Delta, 30 habitats are protected at European level, of which 8 are strictly protected, some of which are found only in Romania.

Delta has an amazing biodiversity, nearly 5,500 species, of which 1,839 plants. The vegetation of the Danube Delta is predominantly specific to wetlands, 78% being reed, sedge, rush, pepper, dwarf willow. It is worth mentioning that the Delta has the largest compact reed area in the world with an area of 1 750 km<sup>2</sup>. On the river banks the most common species are trees and shrubs, white poplar, black poplar, sea buckthorn, blackberries, etc. On the edge of the canals we can meet a variety of white or yellow water lilies, which are spectacular during the flowering period between June and September. Also in the reserve area are two carnivorous plants, aldrovanda and pond poison. [2]

A special place in the flora of the Delta occupies the Letea Forest, one of the oldest nature reserves in Romania and the northern subtropical

forest in the world. The scenery here is a special one, where the forest clusters alternate with the dunes of sand once formed on the seabed. Oaks predominate, some of them over 300 years old. More than 10 species of orchids can be found in the forest, but also a species of clover that can reach up to 25m.

The small area of land has made it the focus of a fauna predominantly represented by fish, amphibians, reptiles and birds. At night, there are no fewer than 10 species, including the green mistletoe, the great lake turtle, the mistletoe, the mistletoe or the tree broom. The fish fauna is represented by a variety of fish, 133 species, of which 66 are found only in saline waters: anchovy, turbot or horse mackerel; 54 species live in sweet waters: sleep, linseed, perch, carp, avatus, shag, pike and 13 species that live in salty and sweet waters: sturgeons (sturgeon, cega, morun, nest), scrumbie etc.

As far as the mammals present in the Delta are concerned, we find 54 species, which can be found predominantly in the more isolated areas of the land or in the marshes. Among these we mention: hermina, enot dog, bizam, fox, otter, European mink, wild cat, boar, beaver etc.

Surely the biggest show Delta is given by birds, not less than 331 species. Of these, approximately 130 are migratory. In addition to the more common and common birds that can be found here (different species of ducks and geese, hawks, egrets, swans, cormorants, gulls and other wetland birds), rare and less common species are found in the Delta in other areas of Romania, such as gypsy, bumblebee, hammer, piciorongul, along with rarer goose species such as red-necked goose (50% of the world's population), rare species of raptors or small cormorant (60% world population).

The Pelicans are certainly the most emblematic birds of the Delta, and there are two species here: the common pelican, the more common the pelican and the swan. 100 years ago, the pelican was a common species throughout the lower course of the Danube. Today, however, almost the entire nestling population of the common pelican is found in the Delta, over 18,000 individuals. He comes to us in migration during the warmer months and wintering on a surface stretching from northeast Africa to India. It feeds mostly in large groups, along with cormorants with whom they are teamed to fish. Can eat about 1kg of fish per day.

#### **4. Arguments to support the thesis**

If the common pelican has a pinkish yellow plum, the crescent pelican has mostly light gray tones. The name comes from the creases on the

head, formed during the reproduction period. It is slightly larger than the common pelican and can reach over 3 m with wide wings. It is the largest bird in our country. The crescent Pelican is much less common than the common pelican, with only about 500 individuals nesting.

The Danube Delta comprises 20 strictly protected areas, totaling more than 50,000 ha, representing approximately 9% of the total area of the reserve. The most important of these are: Roșca - Buhaiova, Sărățuri - Murighiol, Popina Island, Periteașca - Leahova, Grindul Lupilor and Chituc, Ceaplace Island, Letea and Caraorman Forest, Nebunu Lake, Sacalin - Zătoane, Belciug Lake etc.

- Roșca - Buhaiova (9,625 ha) is characterized by a complex of ponds and lakes, now sheltering the largest colony of common pelicans in Europe.
- Murighiol Plate (87 ha) shelters a colony of piciorong, hammer, duck, and other limbic species.
- The Popina Island (98 hectares), formed on Lake Razelm, shelters in addition to the species of migratory birds nesting here and the only spider from Romania, the black widow or the giant miriapod.
- Periteașca - Leahova (4 125 hectares) is a place of resting and feeding for the goose with red neck, pelicans, ducks and calves. It includes a series of sandy beaches, the Church of the Island, the lakes Leahova Mare and Mica, Periteasca and Coșna.
- The Wolves' Grind (2,075 ha) does not necessarily refer to the species of the title, the only bigger carnivorous species here is the golden jackal. Otherwise, the area is of high importance for the natural reproduction of fish, carp, plaice, or chalice species.
- Chituc (2 300 ha) contains a number of small lakes, which are of real importance to birds during the winter.
- Ceaplace Island (117 hectares) is one of three locations on the Romanian territory hosting colonized pelicans.
- Letea Forest (2,825 ha) is the northernmost subtropical forest in Europe, with rare rare orchid species and many birds preferring land areas and saltings.
- The Nebunu Lake (115 hectares) offers optimal conditions for nesting and feeding for several species of birds (red stork, gypsy, yellow stallion, gray stork, plume, small corcodelle, small cormorant).
- Sacalin - Zătoane (21410 ha) offers favorable conditions for the nesting of the swan, and Sacalin Island offers shelter and nesting place for several limicultural species.



*Recommendations for visitors to the Danube Delta*

- Late spring is the best season for a visit to the Delta. Birds return from migration, the landscape turns, and water lilies appear to the end. At the same time it is prohibition to fish so it is not very crowded on the canals and it is much quieter.
- No other seasons are avoided, the autumn brings new migration into the landscape and the species you can meet can be some rare and special. Winter is spectacular especially if it freezes the lakes and the landscape changes completely. In February, the grown pelicans are already dressed in bridal feathers, this species being one of the most impressive in the Delta at this time.
- Mila 23 is perhaps the best point to explore Delta, it is quiet, it is not on the big canals, and its position in the middle of the reserve facilitates transport to almost any other area. Letea is the best preserved village in the Delta, and if you want to discover the specificities of the fishing houses this is the perfect place to explore. Sfântu Gheorghe also offers a special one, especially because the landscape changes and the unification of the Danube with the Black Sea is unreachable for a complete experience, especially if you want a wild beach corner.
- Letea Forest is a special place where you can admire the Greek liana as it climbs on the surrounding trees, you can see many species of orchids or very old oaks, which make up a unique landscape in Romania formed by sand dunes alternating with vegetation strips.
- Always choose a handy guide and small speed boats that do not disturb the place. The Delta is quietly discovered at a slower pace and not speeding. The complete and perhaps the most extraordinary experience is given by a kayak, so do not miss this opportunity. We recommend you [www.descoperadeltadunarii.ro](http://www.descoperadeltadunarii.ro)

*Danube Delta Performance:*

- Does the Danube Delta occupy one of the world's leading places of biodiversity? Some sources place it on the third place on the number of species (over 5,000) on the surface.
- More than 50% of bird species in Europe are found in the Delta?
- The Cretan Pelican is the largest bird in Europe? It measures 180 cm and has a wingspan of 320 cm. At the same time, in the Delta, there is also the smallest bird in Romania, the sandwich, measuring only 10 cm and weighing 10 grams [3].

### *Natura 2000 sites*

Natura 2000 sites cover about 23% of Romania's surface area, our country having the largest biogeographical regions in Europe, five of our continent's nine.

The Natura 2000 network has emerged to protect the natural heritage of the European Union.

The basic idea is that biodiversity conservation activities and socio-cultural development activities must be complementary.

There are two types of protection: SCI (Sites of Community Importance) and SPA (Avifaunistic Special Protection Areas). At this moment in Romania there are 383 SCIs and 148 SPAs. In many cases the surfaces of the two types of protected areas overlap both with each other and with the surface of the natural and national parks.

## **5. Arguments to argue the thesis**

If 100 years ago, almost 80% of the country's surface was forested, today we have less than 30% of the wooded area. This means that with man's expansion, we need these tools, protected natural areas, to preserve nature. Otherwise we will not have any more. Man needs resources, space, and most of the time, he does not care if there is anything else to be left with for future generations.

The representatives of the Natura 2000 Coalition, which administers through the members 10% of the protected areas in Romania, say that "at present there are almost 1000 protected natural areas in Romania, of which half are not managed. Less than 500 were administered by the custodians. When the government cut custody, 160 entities were left without a legal category. They can no longer carry out this form of management of protected areas. "

According to the same source, 25% of the country's surface is protected natural areas, that is, the best part of nature that we still have today.

Over the past 10 years, the Natura 2000 Coalition has handled over 50 cases of abuses in and outside protected areas.

"If you are aware of what is happening in Hungary, Poland, there has been a persecution of NGOs fighting for human rights, environmental rights. We do not know whether that ordinance, even if it came into force, is effective, or whether NGOs can do their job anymore. And in order to better understand what the control right means, we have prepared a list of over 50 cases that we have been working on over the last 10 years.

There are cases of abuse in and outside protected areas. They start from politicians or local businessmen who wanted to build a villa in a protected area, or economic activities taking place in or protecting areas. For example, two years ago I had a case with a mink farm, which was left out in a protected natural area. Cases of mine types, wells, exploits - this year we have been abused by all sorts of laws and initiatives that were trying to open the way for the destruction of protected natural areas to take resources there. It's the simplest way to make a profit in a very short time. Then there are hydropower constructions. Only in protected areas there are over 100 and something special that are theoretically illegal because you are not allowed to build such a micro-hydropower plant in a protected natural area. Then we take into account everything that means ripping the rivers. Last year we managed to stop the Mures River in Arad. They wanted to make locks for boats, which seems to be very nice for the locals, but they would have destroyed LuncaMureş Park downstream. We can also talk about illegal forest cuts, controlled tourism. Custodians have ranks on the field controlling the disposal of garbage. If we are now on a mountain path and clean, it is also possible to act as a custodian, "the representatives of the Natura 2000 Coalition said. The International Union for the Conservation of Nature (IUCN) formulates the most widely used definition of a protected area - A terrestrial and / or marine area specially dedicated to the protection and maintenance of biological diversity, natural resources and associated cultural affairs, with management based on legal or other effective means" [2].

The same union has set many names for protected areas around the world, such as National Parks, Natural Reserves, Forest Parks, Marine Ships, but these titles can have different meanings in different countries [4].

It is important to understand that defining these categories also determines the main management priorities of the respective protected areas. The category type is recommended, but it is not mandatory and often varies according to existing national legislation.

#### *Management of NATURA 2000 sites*

The declaration of an area as a Natura 2000 site is proof that the area has a particular natural value, generating income from ecotourism and other associated activities (labeled traditional food, labeled handicraft, etc.).

Any Natura 2000 site is managed on the basis of sustainable development principles.

The purpose of this network is not to ban economic activities but to find solutions to enable them to be deployed simultaneously with the protection of biodiversity in Europe.

The Directives stipulate that within the Natura 2000 sites:

- activities that can significantly affect the habitats and species for which they are designated must be avoided;
- measures must be taken to maintain or bring those species and habitats in a favorable conservation status.

As a result, most of the Natura 2000 sites will maintain economic activities, but with particular emphasis on the conservation of the species and habitats for which they have been declared.

Thus, traditional farming activities will be allowed in the Natura 2000 sites, some of which are necessary to maintain landscapes (eg mountain meadows), cultivate and obtain organic products - vegetables, fruits, dairy products, meat, fruit juices, hunting and fishing, provided that the Natura 2000 sites are preserved. However, the exploitation of agricultural land should not lead to the degradation or destruction of natural habitats and of plant and animal species of Community interest for which the site was declared a Natura 2000 site.

These activities will respect the minimum management measures for species of community interest, for example:

- observance of breeding, nesting, resting and wintering periods.
- wood exploitation - depending on the habitat / species for which the site was declared as Natura 2000 site;
- constructions made of traditional materials, in accordance with the architecture of the area;
- activities to promote and develop sustainable tourism, with an emphasis on ecotourism [5].

Protected buildings and infrastructure works affecting the habitats / species for which the site was declared as Natura 2000 site will not be allowed in protected areas. Exceptions do those works that are important to people's safety or national importance.

Under current legislation, activities in Natura 2000 sites will be subject to the Environmental Impact Assessment procedure if the planned work affects the habitats and / or species for which that site has been designated as a Natura 2000 site.

## **6. Dismantling the arguments against**

However, the environmental impact assessment will not be necessary for daily activities; also declaring an area as a Natura 2000 site will not affect the ownership of the land. If there are activities to be stopped due to the

declaration of an area as a Natura 2000 site, farmers, owners, administrators and land concessionaires will receive compensatory payments. [3]

## 7. Conclusions

In addition to conserving natural capital, the Natura 2000 network offers important opportunities for sustainable economic development, both through the possibility of attracting funds and through efficient economic management for the benefit of people and nature.

### *Management Plan for a Natura 2000 site*

The management plan is the official document of a continuous process that in time makes it possible to achieve an efficient, productive and adaptable management of the protected area.

In the simplest form, the management plan is a clear-cut document:

- the scope of the protected area;
- why it is needed to reach the goal;
- what needs to be done to achieve them.

A management plan should act as a guide, instrument and incentive for the protected area management team to work efficiently and productively to implement it.

The management plan must be a document that is often used on the office, and not a document that is unattended on the shelves in the library.

Managerial planning should be understood not only as the development of a finished product, but as a continuous process from research and information gathering, evaluation and analysis, to the development of the plan itself, its implementation, and the return to the monitoring and gathering phase of new information.

### *Management Plans for Natura 2000 Sites:*

- They are developed by the administrators of protected areas;
- Approved by the Ministry of Environment / National Agency for Protected Natural Areas;
- They are endorsed by the Romanian Academy;
- They are developed together with all the stakeholders of interest;
- They may be modified only with the approval of the institutions that approved it;
- P.U.G. and P.U.Z. will be harmonized with the provisions of the management plans;

- The provisions of the management plans are prioritized by any other development plan [6].

Some Motivations for the Need to Develop a Management Plan:

- provide basic information and description of the protected area;
- identifies the management policy to be followed, the objectives to be achieved and the management required to achieve the objectives;
- anticipates any conflict and suggests the best ways to solve it;
- implements current policies and strategies, identifies the necessary monitoring to measure the effectiveness of management;
- plays the role of a new staff guide and ensures the continuity of effective management;
- is a communication and education tool;
- demonstrate that management is effective and efficient;
- highlights the legislative areas requiring improvements;
- promotes the recognition of a set of biodiversity / local protected area values;
- defines who is addressed to planning and management.

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