SPECIES OF COMMUNITY INTEREST IN THE MUREŞ FLOOD PLAIN NATURAL PARK

SUCIU CODRUȚA[1], PETROMAN I. [1], PETROMAN CORNELIA[1], MARIN DIANA[1]

[1]*USAMVBTimișoara, Faculty of Agricultural Management*

Abstract: *In the last decades the natural ecosystems lost territories to the detriment of extending the agricultural lands and the human settlement areas – all caused by demographic expansion. In the Mureşului Floodplain Natural Park, the fauna is relatively rich, being represented by the diversity of land and wet ecosystems. The ecosystems from the protected area offer various landscapes like ponds, swamps, proper lands for agriculture, grassland, steppe, forest and human settlement. In this area, we can find species of community interest that need a special attention regarding their protection, that live in Mureşului Floodplain Natural Park and they are also included in the Red List I.U.C.N.: European ground squirrel – Spermophilus citellus and the European otter– Lutra lutra.*

Keywords: *ecosystems, community interest species, protected areas*

INTRODUCTION

Starting from the concept of sustainable development, we believe that neglecting the environment for generations has lead to its irremediable degradation as well as to the disappearance of several plant and animal species.

This concept was first issued in 1987 in the Bruntland Report that says, "sustainable development is an economic development that meets immediate and future needs (resources, jobs, etc.) in parallel with minimising the imapct on biodiversity" [2,4,8].

The irrational way in which humans have interacted with the environment has lead to the disappearance of some bird species (the Dodo *Raphus cucullatus* bird native from the Mauritius Archipelago, the ibex from the Pyreneis Mountains *Capra pyrenaica pyrenaica*, the cave bear *Ursus spelaeus* from Europe, etc.) as well as of some plant species; some of the animal species have reached the thershold of extinction: the black rhinoceros *Diceros bicornis*, the Californian condor *Gymnogyps californianus*, the grey worlf *Canis lupus*, etc.

Extinction is the absence all over the Earth of all individuals of a species. However, the term can be applied to [6,9]:

- Extinction in the wilderness that refers to those species that have disappeared completely from their natural environment but can still be found in smaller numbers in man managed areas (the panda bear *Ailuropoda melanoleuca)*;
- Local extinction that refers to the presence of some species within a territory considered smaller than that inhabited by the species in the past (the bison *Bison bonasus*);
- Ecological extinction (still a rather new concept) that refers to plant or animal species represented by a smaller number of individuals that are threatened and cannot keep their place in teh food chain (the Bengal tiger *Panthera tigris tigris* – according to the red list of the IUCN).

There are several main and secondary causes of plant and animal species extinction. The main causes are the unprecedented growth of the population, the excessive use of non-renewable resources, as well as the lack of a good environmental management.

Secondary causes are even more numerous: habitat degradation and loss, introduction of new species, climate change, presence of diseases or parasites, intensive fishing and poaching, as well as exotic plant and animal trafficking.

All this has lead to the alarming loss of plant and animal species: according to the IUCN, a quarter of the mammals on the Earth and one third of the amphibians are threatened and are listed on the red list of the IUCN [3,5,7].

MATERIAL AND METHOD

To carry out this study, we have researched species of community interest in the Muresului Floodplain Natural Park and the causes of the lower number of animal items.

RESULTS AND DISCUSSION

European otter (*Lutra lutra*)

European otter (*Lutra lutra*) is a mainly nocturnal mammal living along rivers and tributaries deeper than 30 cm. They move over areas of up to 7 km from their nesting area; since they are meat eaters, they feed mainly on fish, amphibians, sometimes reptiles and very rarely birds or invertebrates.

In Muresului Floodplain Natural Park, of the total 17,166 ha, European otter lives on about 70% of the protected area, more precisely 12,127 ha, with 11 resident areas near the localities Igriș-Nădlac, Șeitin, Semlac, Prundu Mare and Cenad. [*8*].

Starting with the years 1970 and until after 2000, the European otter population was strongly decimated; nowadays, they live on very restricted areas in both Romania and abroad.

The causes of the decrease of European otter population have been excessive hunting, removal from areas inhabited by humans because otters, as meat eaters, feed on fish, a source of meat for the humans, too.

Another cause of the decrease of the numbers of European otters in Romania and, implicitly, in the Muresului Floodplain area, has been the destruction of the natural river habitat. Romania's economic development involved the building of numerous plants and chemical plants, great polluters that did not take into account the discharge of chemicals in the natural environment. Thus, chemicals have reached the Mures and its tributaries that degraded log-term the flora and fauna (including fish). [1, 10, 11]

Without abundant food sources, European otter populations were decimated considerably making them migrate to other riparian habitats (meadow forests) beyond Romanian borders.

After 2000 and particularly after Romania's accession to the European Union, its Directives asked great polluters to adopt non-polluting technologies to recover the habitats affected. Thus, the River Mures was repopulated with amphibians, small crustaceans and fish, making possible the appearance of European otter in the Muresului Floodplain Natural Park.

European ground squirrel - *Spermophilus citellus*

European ground squirrel *Spermophilus citellus* is a land mammal of medium size that lives during several activity seasons: de-wintering (March-April), mating (April), farrowing (May), and wintering (September-March).

During March-August, it is very active, except for low temperature periods. European ground squirrel is an animal active during the day: it lives in colonies digging galleries with up to 5 entrances, of which only 2 are permanently active; the other 3 are

meant to deceive the predators and are often filled with soil or vegetal wastes; in case of danger, the European ground squirrel can use the too.

European ground squirrel lives on the meadows of Romania, particularly in the Baragan Plain, in Moldova and Crisana. In western Romania, it is also found in the Muresului Floodplain Natural Park, where its density is 46 animals/hectare. [*8*]

European ground squirrel feeds on roots, buds and seeds and, sometimes, on millipedes, insects or snails. Its presence on a certain territory depends on the existence of a relatively dwarf vegetation where it can observe freely potential predators.

Besides its natural predators – foxes, raptor birds, mustellidae (European polecat, least weasel, martens), the European ground squirrel also confronts with human brutality because the latter chase them (squirrels invade their crops) and with shepherd dogs that chase and hunt them. Another disturbing factor for European ground squirrels is the numerous sheep herds that graze near the localities Zădăreni and Felnac – part of the Muresului Floodplain Natural Park. The herds, increasingly numerous these years, set the soil and stuck the access of the squirrels to their galleries, making them look for other territories to live on.

CONCLUSIONS

Compared to the past decades, European otter populations in the Muresului Floodplain Natural Park have reached optimum values and are increasing. This says that the River Mures is less polluted because environmental management is higher quality.

Statistics show that there are currently 814-2,369 European ground squirrels, more numerous near the locality Zădăreni, and the conservation status of this species is favourable from the point of view of its numbers; however, from the point of view of its habitat, it is not favourable because its territories are decreasing in size because of the predators and manmade factors.

REFERENCES

1. **CHANIN, P.,** Monitoring the Otter, Conserving Natura 2000 Rivers, – Monitoring Series No 10, Peterborough, 2003;
2. **MARIN DIANA, PETROMAN CORNELIA, PETROMAN I., BĂLAN IOANA, CIOLAC RAMONA, DINCU ANA MARIA, DUMITRESCU CARMEN, LOZICI ANA**, The role of non-agricultural activities in rural area development, Lucrări ştiinţifice Management Agricol, Seria 1, vol. XV (4) „Dezvoltarea rurală durabilă", ISSN 1453-1410, Facultatea de Management Agricol, Timişoara, 2013
3. **PETROMAN CORNELIA, MATIUŢ A., PETROMAN I., PÎRVULESCU LUMINIŢA, MARIN DIANA, CĂPRAR D., IVAŞCU GABRIELA, RUS I**., CITES Plant Species, Lucrări ştiinţifice Management Agricol,Seria 1, vol XII (3) , Pg. 267-272, Timişoara, 2010
4. **PETROMAN CORNELIA, PALADE SĂNDEL, PETROMAN I., POPA DANIELA, ORBOI DORA, PAICU D., HEBER LOREDANA**, Managerial strategies for the conservation of rurality in rural tourism, Lucrări Științifice Zootehnie și Biotehnologii, vol. 43 (1, 2), Editura Agroprint Timişoara, 2010
5. **PETROMAN I. M., PETROMAN I**., Conservarea autenticităţii prin activităţi agroturistice, Editura Eurostampa, Timișoara, 2013
6. **PETROMAN I., PETROMAN CORNELIA, MARIN DIANA, BUZATU C, DUMITRESCU A., COMAN ŞT, STAN ANDREEA, AVRAMESCU DANIELA**,

Solutions for destination management on agri-tourism farm, Lucrări Ştiinţifice Zootehnie şi Biotehnologii (Scientific Papers: Animal Science and Biotechnologies), vol. 45 (1), pg.. 456-459, Timişoara, 2012,

7. **POPA DANIELA, PETROMAN I., PETROMAN CORNELIA, LALA V., PAICU D., HEBER LOREDANA, MARIN DIANA**, World European and National policies in the field of cultural tourism, Lucrări Științifice Zootehnie și Biotehnologii, vol. 43 (1,2), Facultatea de Zootehnie şi Biotehnologii, Editura Agroprint Timişoara, 2010
8. ***Parcul Natural al Luncii Muresului, Planul de Management, http://www.luncamuresului.ro
9. ***http://www.rowater.ro/dacrisuri/
10. ***https://romanialutra.wordpress.com/European otter-in-romania/
11. ***http://www.academia.edu/3553245/estimation_of_european_otter_lutra_lutra_population_size_by_fecal_dna_typing_in_southern_italy