

RESULTS ON MAMMAL (MAMMALIA) SURVEY FROM BULGARIAN AND ROMANIAN DOBROGEA

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Abstract. In 2008, a bilateral co-operation programme sponsored by Bulgarian and Romanian Ministries of Scientific Research, specialists from both countries surveyed mammals from all Dobrogea and report their first results. Some of mammal species (*Mesocricetus newtoni*, *Mustela eversmanni* and *Vormela peregusna*) are typical for steppic habitats or have in Dobrogea their most northern and western limits of distribution (e.g. *Rhinolophus mehelyi*, *Hypsugo savii*). Others (*Spermophilus citellus*, *Cricetus cricetus*, *Cricetulus migratorius*, *Spalax leucodon*, *Micromys minutus*, *Apodemus sylvaticus*, *A. agrarius*, *Mus spicilegus*, *Sicista subtilis*) suffered drastic decline in their populations and need to be protected.

Résumé. On présente les premiers résultats des recherches effectuées sur les mammifères par des spécialistes de Bulgarie et de Roumanie, au cours de l'année 2008, dans le cadre d'un programme de coopération bilatérale, financé par les Ministères de la Recherche des deux pays. Certaines espèces de mammifères (*Mesocricetus newtoni*, *Mustela eversmani* et *Vormela peregusna*) sont typiques pour la steppe ou bien ont dans la Dobrogea leur limite nordique et occidentale de leur aire de répartition (*Rhinolophus mehelyi*, *Hypsugo savii*). D'autres espèces (*Spermophilus citellus*, *Cricetus cricetus*, *Cricetulus migratorius*, *Spalax leucodon*, *Micromys minutus*, *Apodemus sylvaticus*, *A. agrarius*, *Mus spicilegus*, *Sicista subtilis*) ont subi un déclin tellement drastique des populations que leur protection est devenue nécessaire.

Key words: species, habitats, trends of evolution, conservation.

INTRODUCTION

Along years, from Romanian and Bulgarian Dobrogea, several small mammal species were reported. It is about the North-western steppe of Bulgaria and South-eastern one of Romania, by which the western part of the great Pontic steppe is limited. In its turn, the last one is a continuing part of the Turanian steppe.

In the past, Dobrogea was characterized by a vegetal coat with xerophilous grasslands: *Stipa*, *Festuca*, *Diplachne*, *Agropyrum*, *Centaurea*, *Artemisia* etc. The areas with this grassy vegetation alternated here and there with bushes formed of xerophilous shrubs (*Prunus spinosa*, *Evonymus europaeus*, *Crataegus monogyna*, *Ligustrum vulgare*) with rare forest patches (*Quercus pedunculiflora*, *Q. pubescens*, *Ulmus foliaceus*, *U. procera*, *U. ambigua*, *Acer tataricum*, *A. campestre*, *Pinus* sp. etc.). Today, most of the grasslands are fallowed, and the bushes and a part of the steppe forests are cut in order to create a proper land for agriculture, on larger and larger surfaces. The steppe begins right at the littoral level and stretches up to 50–100 m altitude. Here and there, an area with a transfer vegetation between lawns and forests can be identified, i.e. the so-called forest steppe area, between 200–300 m altitude.

Annual precipitation quantity is below 400 mm and decreases progressively, from the central Dobrogea to East and South-East. But, there are years when

summer downfall precipitations can exceed 1000 mm. Yearly average amplitude of the air temperature exceeds 24–25°C. Sometimes winter is hard, but for a short period of time. The snow covers southern Dobrogea rarely, and that is why in this area some sub-Mediterranean and Mediterranean faunal elements penetrated.

But, in a such mosaic of habitats from Dobrogea, in general, characteristic faunal elements distinguish: *Scolopendra cingulata*, from chilopods, the coleopterans *Scarabaeus affinis* and *Sisiphus schaefferi*, anurans *Bufo viridis* and *Pelobates syriacus balcanicus*, reptiles *Testudo graeca*, *Eremyas arguta deserti*, *Lacerta agilis euxinica*, *L. taurica*, *Eryx jaculus turcicus*, *Elaphe quatorlineatus sauromates* and *Coluber jugularis caspius*. Also, the bird group has characteristic representatives for Dobrogea: *Calandrella brachydactyla*, *Circus macrourus*, *Melanocorypha calandra* etc.

In both parts of Dobrogea (Romanian part and the Bulgarian one), many scientists made studies on mammals, beginning with the first half of the 20th century (Hogguer, 1879; Lepši, 1929) etc. Then, beginning with the second half of the 20th century, ecological observations on small mammals from some protection screens from Dobrogea were made (Ausländer & Hellwing, 1957; Marcheş & col., 1954), as well as studies on their helminthological fauna (Chiriac & Barbu, 1962), on the food of some rodents (e. g., *Spermophilus citellus*, *Spalax leucodon*) in steppe and forest steppe conditions from Dobrogea (Popescu, 1972; Popescu & Torcea, 1968).

In this paper there is a synthesis of the collecting and observation results, obtained by the members of the Bulgarian and Romanian team, in June and August 2008.

MATERIAL AND METHOD

On the occasion of a Romanian – Bulgarian bilateral collaboration contract, started in 2008 and financed by the Ministers of Scientific Research of both countries, the specialists of “Grigore Antipa” National Museum of Natural History (Bucureşti) and “Konstantin Prelavsky” University (Shumen), with the Museum of Natural Sciences of Varna had several meetings. The trips were made within the period 16th–20th of June in the forest of the Celic Dere locality, in the surroundings of the localities Cerna, Greci and Măcin (Romania), and between 25th–29th of August 2008 in the screens of oak trees from localities General Toşevo, Place Dol Dobrich and in Suha Reka Valley (Bulgaria) (Fig. 1).

The observations on mammals were made taking into consideration their tracks and paths on sand and mud, the galleries and hills, food and dropping remains, nests and shelters. Small mammals were collected by traps, either with spring (for catching and killing) or Scherman type (for catching living animals, to release and recapture), for estimating the individual territory and the activity rhythm. The representatives of the Chiroptera order were caught using the nets, of 12 m long, of 3 m wide and with meshes of 1.6 x 1.6 cm. After the bats were measured, weighed and identified, they were released.

RESULTS AND DISCUSSIONS

Today, we can assert that between the mammals from the entire Dobrogea there are species deeply adapted to the life in steppe conditions, but along the rare water flows there are some species with amphibian way of life (*Neomys fodiens*, *Arvicola terrestris*, *Ondatra zibethicus*).

Family Talpidae Gray, 1825

Talpa europaea Linnaeus, 1758 avoids rocky areas; prefers humid zones with soft soil, more preferred being few river plains from Dobrogea.

Trend: – population stable.

IUCN status: – data deficient.

Conservation status: international – none; national - none.

Family Soricidae (Gray, 1821)

Sorex araneus Linnaeus, 1758 reported from the entire Dobrogea (Figs 2, 3), mainly from the habitats with afforested grasslands. Relative density is of 1 individual to 2–4 ha. Individual territory is of 800 m² in spring, and 2,000 m² in winter.

Trend: – in drastic decline.

IUCN status: – least concern.

Conservation status: international – Annex III, Bern Convention/1979; national - none.

Neomys fodiens (Pennant, 1771) occurs only in the areas with a higher humidity degree than in the most areas of desert Dobrogea. The proximity of the water flows is observed also because of the denser vegetal cover of Gramineae. Relative density is of 1–2 individuals/10 ha and the individual territory: 800–1000 m water flow of wet valley.

Trend: – in drastic decline.

IUCN status: endangered.

Conservation status: international – Annex III, Bern Convention/1979; national – in „Red Book of Vertebrates from Romania” (2005).

Crocidura suaveolens (Pallas, 1811) is a xerophilous species, in dry lands and rare vegetation, but enough shelters under stones, roots, trunks. It also reaches the gardens from the neighbouring localities, with open places. Relative density is of 1–2 individuals/ha; individual territory: 700–800 m².

Trend: – in drastic decline.

IUCN status: – vulnerable.

Conservation status: international – Annex III, Bern Convention/1979; national – in „Red Book of Vertebrates from Romania” (2005).

Order CHIROPTERA Blumenbach, 1779

Family Rhinolophidae Bell, 1836

Rhinolophus ferrumequinum (Schreber, 1774) finds shelter in the caves from entire Dobrogea (Consul hill and Priopcea, from North, Canaraua Fetii and Suha Valley, from South). Feeding habitats (Figs 3, 4) are 2–3 km far from their roosts, the lacustrine high vegetation being the preferred places for hunting insects. Mixed colonies are small, with 7–8 females and 2–3 males each.

Trend: – in drastic decline.

IUCN status: – vulnerable.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A II and A IV, EU Habitats and Species Directive/1992; national

– Law 90/2000; A 3 and A 4A - R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Rhinolophus mehelyi Matschie, 1901 also uses the caves of entire Dobrogea. Feeding habitats are open places and afforested grasslands. It does not make colonies with many individuals, frequently gathering 4–6 individuals in small roosts.

Trend: – in decline.

IUCN status: – endangered. In Romania, and only in its southern part, the reports are rare: Dobrogea and the Danube Floodplain, which are, in fact, the northern limit of its range, the species having a Mediterranean origin.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A II and A IV, EU Habitats and Species Directive/1992; national – Law 90/2000; A 3 and A 4A - R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Family Vespertilionidae (Gray, 1821)

Myotis myotis (Borkhausen, 1779) was also identified all over Dobrogea, preferring the caves but also using the steeples, lofts and house annexes. Feeding habitats are opened, with spontaneous Gramineae and with scattered trees. It is a species with gregarious individuals making colonies up to some hundreds of specimens (in large caves, with large roofs).

Trend: – in drastic decline.

IUCN status: – vulnerable. Although it is protected by the national and international laws, it has good refuges and feeding habitats, without polluting substances; yet, a continuous decreasing of the colony and individual number is recording in the fauna of Dobrogea.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A II and A IV, EU Habitats and Species Directive/1992; national – Law 90/2000; A 3 and A 4A – R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Plecotus auritus (Linnaeus, 1758) was reported only in northern Dobrogea, along Frăsinîş Valley, with oak forest and locust tree plantations, with hollows where it might shelter.

Trend: – in drastic decline.

IUCN status: – endangered. Rare reports of small colonies, of only 4–8 individuals while hibernating justify the statute of endangered species.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A IV, EU Habitats and Species Directive/1992; national – Law 90/2000; A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).



Fig. 2 – Habitat with forested pasture in the Bulgarian Dobrogea.

Miniopterus schreibersii (Kuhl, 1819) identified in Gura Dobrogei Cave and in the cave from Suha Valley – Bulgaria; its roosts also can be the lofts of the isolated houses. Feeding habitats can be 10–15 km far from its roost.

Trend: – in drastic decline.

IUCN status: – endangered because of decreasing number of individuals from large colonies years ago, with several hundreds up to 5000 in large caves. In small roosts from Dobrogea can occur only 10–20 specimens.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A II and A IV, EU Habitats and Species Directive/1992; national – Law 90/2000; A 3 and A 4A – R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Pipistrellus pipistrellus (Schreber, 1774) is a common species in Dobrogea, preferring the forest skirts. Hunting activity begins with about 30 minutes before the sunset.

Trend: – population stable.

IUCN status: – least concern.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A IV, EU Habitats and Species Directive/1992; national – Law 90/2000; A 4A – R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).



Fig. 3 – Floodplain from Suha Valley – Bulgaria, the prolongation of Canaraua Fetii (cliffs) from Romania.

Hypsugo savii (Bonaparte, 1837) – only in southern Dobrogea, in the Romanian territory; it does not cross the Mangalia – Hagiieni line. It shelters in lofts and in the tree hollows. Feeding habitats are the forest skirts.

Trend: – not clear.

IUCN status: – least concern.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A IV, EU Habitats and Species Directive/1992; national – Law 90/2000; A 4A – R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Nyctalus noctula (Schreber, 1774) is also a common species in the entire Dobrogea. It shelters in the tree hollows, lofts, church steeples, and in winter, in general, in any place which has an upper temperature that from outside.

Trend: – population stable.

IUCN status: – least concern. Present protection measurements are less drastic than in the previous bat species but within the context of a general threatening on bats, of a habitat destroying and of a complex pollution. *Nyctalus noctula* is present in the annexes where all microchiropterans are included.

Conservation status: international – A II, Bern Convention/1979; A II, Bonn Convention/1982; A IV, EU Habitats and Species Directive/1992; national – Law 90/2000; A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Order LAGOMORPHA Brandt, 1855

Family Leporidae Gray, 1821

Lepus europaeus Pallas, 1778 practically, identified in the entire territory of Dobrogea. It prefers the commons with bushes, but it also goes in forests and in the cultivated lands, especially in those with cereals. It looks for juicy vegetation, and, also there, it finds shelters against predators. Relative density is of 1 individual/2 – 3 ha; individual territory is of 10 ha for females and of 15 ha for males.

Trend: – population stable.

IUCN status: – least concern.

Conservation status: international – A III, Bern Convention/1979 (included in *Lepus capensis*); national – A 1, Law 103/1996; A 5B, R.G.O. 57/2007, on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Order RODENTIA Bowdich, 1821

Family Sciuridae Gray, 1821

Spermophilus citellus (Linnaeus, 1766) a typical steppe species, present in all Dobrogea, but with populations less numerous. It looks for the commons; it does not enter in cultivated lands. Relative density is of 2–15 individuals/ha; individual territory is of 0.5 ha, for both sexes.

Trend: – in drastic decline.

IUCN status: – vulnerable.

Conservation status: international – A II, Bern Convention/1979; A II and A IV, EU Habitats and Species Directive/1992; national – A 3 and A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Family Myoxidae Gray, 1821

Dryomys nitedula (Pallas, 1779) was observed and collected from the forests of Dobrogea. Relative density is of 10–15 individuals/ha, and the individual territory is of about 0.5 ha, for both sexes.

Trend: – in drastic decline.

IUCN status: – endangered.

Conservation status: international – A III, Bern Convention/1979; A IV, EU Habitats and Species Directive/1992; national – A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Family Cricetidae Rochebrune, 1883

Mesocricetus newtoni (Nehring, 1898) – also named the Romanian hamster is occurred only in small isolated populations. In one of the galleries, with a hard access, of Gura Dobrogei Cave, several mandibles and other skeleton remains of this species were recently found. They reached the cave probably due to the pluvial waters from the surface. Otherway we had no result in collecting.

Trend: – in drastic decline.

IUCN status: – endangered.

Conservation status: international – A II, Bern Convention/1979; national – A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Family Arvicolidae Gray, 1821

Arvicola terrestris (Linnaeus, 1758) was observed in the basement of the forest range from Cetățuia, on the left bank of the river with the same name and along Taița River. It prefers the places with high grassy vegetation and with a well structured soil for digging easily its galleries.

Trend: – in decline.

IUCN status: – vulnerable.

Conservation status: international – none; national – in „Red Book of Vertebrates from Romania” (2005).

Microtus (= *Pitymys* Mc Murtrie, 1831) *subterraneus* (de Sélys-Longschamps, 1836) was observed on the eastern slope of the Măcin Mountains and near Celic Dere.

Trend: – in decline.

IUCN status: – near threatened.

Conservation status: international – none; national – none.

Microtus arvalis (Pallas, 1779) was observed in the cultivated lands as well as in their adjacent areas. After the paths under grass it is easily recognized. It feeds on spontaneous herbs, but it prefers alfalfa and clover, reason why it is expected that the species is present in any vegetable culture. It is very important in trophic chains of Dobrogea, being included in the food of all carnivores and night and day birds of prey.

Trend: – population stable.

IUCN status: – least concern.

Conservation status: international – none; national – none.

Ondatra zibethicus (Linnaeus, 1766) was not observed but only along the few rivers and lakes of Dobrogea (e.g. near locality Balbancea and in Valea Suha). Thick, high grassy vegetation is preferred as food as well as for their nests; they are always placed in one of the rooms from the upper level, higher than the maximum level of water.

Trend: – population increase.

IUCN status: – least concern.

Conservation status: international - none; national – A 1, Law 103/1996; A 5B, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Family Muridae Gray, 1821

Apodemus sylvaticus (Linnaeus, 1758) is present in all afforested areas of Dobrogea, but he also adapted very well in the afforested grasslands, even in the cultivated lands. It is a good runner in open places and in forests it is a good climber.

It is important in trophic chains. Relative density is of 15–30 individuals/ha; individual territory is of about 2000 m² for both sexes.

Trend: – population stable.

IUCN status: – least concern.

Conservation status: international – none; national – none.

Apodemus flavicollis (Melchior, 1834) was not collected and identified but only in the compact forests of Dobrogea. As biomass for carnivores and the birds of prey, it is more important than other small Muridae species.

Trend: – in decline.

IUCN status: – least concern.

Conservation status: international – none; national – none.

Apodemus agrarius (Pallas, 1771) – more frequent than the other two *Apodemus* species; collected along valleys with a high degree of relative humidity and invaded by grassy vegetation. It is hunted by predator mammals and birds.

Trend: – in decline.

IUCN status: – least concern.

Conservation status: international – none; national – none.

Rattus norvegicus (Berkenhout, 1769) was observed mostly in the surroundings of the localities of Dobrogea; it is an anthropophilous species. It is the biggest murid of the fauna of Dobrogea. As we have pointed out on other occasions, there are necessary control measures, using raticides, besides the hunting made by carnivores and the birds of prey, because it is the host of many pathogens, hard disease, which can be transmitted to man: viruses, rickettsiae, spirochetosis, leishmaniasis, leptospirosis, salmonellosis, etc. Relative density is of 1 individual/1000 m², and the individual territory is of 25 m² for both sexes.

Trend: – population increase.

IUCN status: – least concern.

Conservation status: international – none; national – none.

Mus musculus Linnaeus, 1766 – only as commensal species, but which was occurred outside localities of Dobrogea, in summer. Although it is smaller than the previous murids, it is in a high percentage (10–20%) among the components of food of the carnivores and birds of prey. In spite of this, they have to be controlled, at least in winter, when they come back in localities from the field. Beside *Rattus norvegicus*, it is the host of some dangerous pathogens of some bacterial and viral diseases.

Trend: – population increase.

IUCN status: – least concern.

Conservation status: international – none; national – none.

Mus spicilegus Petényi, 1882 is present in agricultural lands from Dobrogea (Figs 4, 5). It is easily identified due to the supplies which it gathers in summer, from different food sources: inflorescences, pods, ears of spontaneous Gramineae, beans and seeds. They are covered with a thick soil layer of about 20 cm. Supply height is of about 50 cm. It is included in the food of the carnivores and of the birds



Fig. 4 – Habitat from Bulgarian Dobrogea for the rodent, carnivorous and artiodactyl fauna.

of prey. But, as *Mus musculus*, this species is the host of many pathogens, of some hard diseases, which can be transmitted to man: viruses, rickettsiae, spirochetosis, leishmaniasis, leptospirosis, salmonellosis, etc. Relative density is of 1–2 individuals/ha, and the individual territory is of 150–200 m² for both sexes. Its populations do not distribute continuously.

Trend: – population stable.

IUCN status: – least concern.

Conservation status: international – none; national – none.

Family Spalacidae Gray, 1821

Spalax leucodon Nordmann, 1840 can be easily identified after the different hill of the mole, both by the large diameter of the galleries and by the obstruction of the end of the gallery beneath the hill with soil plugs. It is present in all Dobrogea, without altitude limits, from the valley level to the peak of the hill, which rarely exceed 550 m altitude. Relative density is of 1–10 individuals/ha, and the individual territory is of 4–6 ha for both sexes.

Trend: – in decline.

IUCN status: – near threatened.

Conservation status: international – IUCN Red List as vulnerable; national – none.

Family Zapodidae Coues, 1875

Sicista subtilis (Pallas, 1773) – species characteristic to the steppe areas, but only in the grassy hills, without forests. It couldn't be catch in any type of trap; it was just observed.

Trend: – in drastic decline.

IUCN status: - endangered.

Conservation status: international – A II, Bern Convention/1979; IUCN red List; national – A 3 and A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Order CARNIVORA Bowdich, 1821

Family Canidae Gray, 1821

Canis aureus Linnaeus, 1758 is a species with a great mobility, with a large range, from South to the North of Dobrogea. As yet, it occurs in stable populations, reported from North Dobrogea about 25 years ago. There were found several footprints on the ground, but also it was identified according to its unique howl. Relative density is of 1 individual/km², and the individual territory is of 2–3 km² for both sexes; it is a social mammal, walking and especially attacking in packs.

Its biology and distribution is not known entirely. It seems that there is a tendency of enlarging its range towards North and West. Some specialists assert that it occupies a free niche, left behind by the wolf. Jackal tracks were found in Valea Izvoarelor and in Valea lui Puiu (Fig. 5).

Trend: – population increase (recently).

IUCN status: – data deficient.

Conservation status: international – A V, EU Habitats and Species Directive/1992; national – A 1, Law 103/1996; A 5A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Vulpes vulpes (Linnaeus, 1758) is the species with frequent tracks print on the ground, after its night activities, all around Dobrogea. Relative density is of 1 individual /km², and the individual territory is of 3–4 km². It has an important role in rodent control of the area.

Trend: – in decline.

IUCN status: – least concern.

Conservation status: international – none; national – A 1, Law 103/1996; A 5B, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Family Mustelidae Swainson, 1835

Meles meles (Linnaeus, 1758) is a more rarer presence in Dobrogea, many individuals being poached for fur or because of the wrong thoughts according to it damages the cereal crops. Besides the fox it is among the mammals which control the excessive development of rodents. Relative density is of 4 individuals/km², and the individual territory is of minimum 400–500 linear m between the groups of 10–12 individuals each.

Trend: – in drastic decline.

IUCN status: – vulnerable.

Conservation status: international – A III, Bern Convention/1979; national – A 1, Law 103/1996; A 5B, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.



Fig. 5 – Stubble field (close shot) and oak forest skirt (farther) from the surroundings of the locality General Toșevo – Bulgaria.

Martes foina (Erxleben, 1777) prefers the afforested rocks from entire Dobrogea, but also it shelters around the stronghold ruins, deserted houses, etc. Its tracks are frequently occurred along roads and paths, this thing suggesting an unusual dynamics, especially at night, but also the presence of some satisfactory populations from numerical point of view. Relative density is of 1 individual/100 ha, and the individual territory is of 100 ha for both sexes.

Trend: – population stable.

IUCN status: – near threatened.

Conservation status: international – A III, Bern Convention/1979; national – A 1, Law 103/1996; A 5B, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Mustela putorius (Linnaeus, 1758) is a relatively frequent species in Dobrogea, daring to enter localities and to attack the poultry. Relative density is of 1 individual/100 ha, and the individual territory is of 100 ha for both sexes.

Trend: – population stable.

IUCN status: – least concern.

Conservation status: international – A III, Bern Convention/1979; EU Habitats and Species Directive/1992; national – A 1, Law 103/1996; A 5A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Mustela eversmanni Lesson, 1827 was only in Dobrogea, usually in the same habitats with *Spermophilus citellus*.

Trend: – in decline.

IUCN status: – vulnerable.

Conservation status: international – A II, Bern Convention/1979; national – A 3 and A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Vormela peregusna Gldenstaedt, 1770 is a species whose presence is often contested because it is a nocturnal species and can be hardly observed by man. It is surely present in all Dobrogea. The proofs are the tracks on the ground and some specimens hit by cars. Relative density is of 1 individual/5 ha, and the individual territory is of 100 ha, with superposition of this territory control.

Trend: – in decline.

IUCN status: – vulnerable.

Conservation status: international – A II, Bern Convention/1979; national – A 3, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Family Felidae Gray, 1821

Felis silvestris Schreber, 1777 was identified after the tracks left in the floodplain soil and after the local people’s stories; it cannot be confounded with the domestic cat, both because of its size greater than the last one and because its tail is shorter, always with black rings; it is a better climber and more agile. Relative density is of 10–20 individuals/km², and the individual territory is of about 200 ha.

Trend: – population stable.

IUCN status: – near threatened.

Conservation status: international – A II, Bern Convention/1979; A IV, EU Habitats and Species Directive; A II, CITES; national – A 2, Law 103/1996; A 4A, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Order ARTIODACTYLA Owen, 1848

Family Suidae Gray, 1821

Sus scrofa Linnaeus, 1758 is a frequently occurred species in Dobrogea. It leaves hoof prints, well defined on the ground. Its presence is also remarked after its pouncing in soil and litter when searching rodent shelters, bird nests, snails, larvae, earthworms, etc. It looks for food especially at night. Relative density is of 10 – 20 individuals/100 ha, and the individual territory is of about 100 ha, usually walking in flocks with individuals of different ages.

Trend: – population increase.

IUCN status: – least concern.

Conservation status: international – A III, Bern Convention/1979 (for *S. s. meridionalis*); national – A 1, Law 103/1996; A 5B, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna.

Family Cervidae Gray, 1821.

Capreolus capreolus (Linnaeus, 1758) is a common presence in Dobrogea, especially in compact forests, but also in the protection screens. It goes in cultivated lands for feeding but shelters and rests in thick forests and in rocky lands. Relative density is of 16 individuals/100 ha, and the individual territory is of 100 ha; it lives in family groups.

Trend: – population stable.

IUCN status: – least concern.

Conservation status: international – A III, Bern Convention/1979. national – A 1, Law 103/1996; A 5B, R.G.O. 57/2007 on the regime of protected natural ranges, conservation of the natural habitats, of wild flora and fauna; in „Red Book of Vertebrates from Romania” (2005).

Conclusions

1. Taking into consideration the general fauna characteristic elements, mentioned above, we can assert that the mammal fauna of Dobrogea mostly resembles that of the South-East Europe but also it includes characteristic species, as the rodent *Mesocricetus newtoni* or carnivores *Mustela eversmanni* and *Vormela peregusna*. For all these three species, Dobrogea is the northern and western limit of their range. From chiropterans, *Rhinolophus ferrumequinum*, *Myotis myotis*, *Pipistrellus pipistrellus*, etc. prefer mainly the caves and the clefts from the gorges (Canaraua Fetii, Suha Valley etc.). Northern limit of the range of the species *Hypsugo savii* is also in Dobrogea; for the time being, *Rhinolophus mehelyi* does not exceed northern limit, Dobrogea line and the Danube River.

2. From the mammals species which have a wider distribution than the steppe area, some of them are rarer and even have a protection statute, both in Dobrogea and in the rest of the range: *Spermophilus citellus*, *Cricetus cricetus*, *Cricetulus migratorius*, *Spalax leucodon*, *Micromys minutus*, *Apodemus sylvaticus*, *A. agrarius*, *Mus spicilegus*, *Sicista subtilis*. From Romanian Dobrogea, *S. subtilis* was reported as having the greatest populations between 1950–1970. That period, numerous individuals of the species were collected by traps and frequently were found in the pellets of the night and day birds of prey, especially in the area of the protection screens from Valul lui Traian. It seems that the cutting of the protection screens from Dobrogea was a management mistake, because in that area this species found good refugees, was occurred frequently and had an important role in trophic relations of the area; today, only accidentally it occurs in the field collecting.

3. From the dormouse species mentioned from both Dobroudjean sectors (Romanian and Bulgarian) it has to be pointed out the species *Dryomys nitedula*, still well represented by numerous species.

4. Besides small mammals, from middle sized carnivores, *Canis aureus* spread in all Dobrogea and, during the last 20 years, it has stable populations; today the species is in full distribution westwards.

5. *Nyctereutes procyonoides* was frequent, especially in the Danube Delta in the '60s, but, maybe, the hunters' pressure made it to migrate to West, and in Dobrogea occurs accidentally. As a matter of fact, it was a species which escaped from the fur farms from the European areas of the ex-USSR, its origin being in Ussuri from the Far East. Mustelid *Martes foina* occurs frequently all over Dobrogea.

REZULTATELE CERCETĂRII MAMIFERELOR (MAMMALIA) DIN DOBROGEA BULGĂREASCĂ ȘI ROMÂNEASCĂ

REZUMAT

Dobrogea românească și cea bulgărească deține o faună de mamifere asemănătoare cu cea din sud-estul Europei, dar și cu elemente specifice zonelor de stepă – unele din ele având aici limita nordică și cea vestică a arealului lor de răspândire, cum este cazul chiropterelor *Rhinolophus mehelyi* și *Hypsugo savii*, a rozătorului *Mesocricetus newtoni* sau al carnivorelor *Mustela eversmanni* și *Vormela peregusna*. Alte specii, cu răspândire mai largă decât Dobrogea (*Spermophilus citellus*, *Cricetus cricetus*, *Cricetulus migratorius*, *Spalax leucodon*, *Micromys minutus*, *Apodemus sylvaticus*, *A. agrarius*, *Mus spicilegus*, *Sicista subtilis*) au suferit reduceri drastice ale populațiilor lor și au dobândit diferite statute de ocrotire sau sunt în evidență pentru a fi ocrotite. Dintre carnivore, speciile *Canis aureus*, *Nyctereutes procyonoides* și *Martes foina* sunt în extindere de areal spre nord și vest, au populații stabile și chiar cu efective în creștere, în Dobrogea.

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