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O.G.Mantorov, I.A.Vizir. The features of winter spending and spring flight of aquatic birds on middle Dniester during winter-spring period of 2006-2007 years /International Symposium "Diversity, rational exploitation of animal world" Academy of Science, Science, 2009, p. 66; (Rus)

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Photo 1. The died chick of a cormorant



Photo 2. The active chick of a cormorant

POPULATION NUMBER DYNAMIC OF THE JACKAL (*CANIS AUREUS* L, 1758) IN BULGARIA: PAST, PRESENT AND FUTURE

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According to the historical records, the jackal (*Canis aureus* L, 1758) is an autochthone species in Bulgarian mammals' fauna. His exterior somatometric measurements are: total length – up to 80-85 cm; tail length – up to 25-30 cm; withers – up to 45-50 cm. Weight is usually about 12-14 kg and more. Footstep length is about 6 cm and width is about 5 cm. Males are slightly larger than females. Jackal begins to reproduce in February-March. After 60-62 days of pregnancy the female gives birth to 4-6 cubs, which open their eyes after 10-11 days. Under environmental conditions of Bulgaria, the jackals begin to reproduce in February-March.

Until the early 1960s the jackal has occurred only in the region of Strandja Mountain, in the Southeast part of the country. After that his numbers rapidly increased. The main reasons for its expansion throughout the country were: (1) large amount of available food provided by intensive development of hunting in the country during this period; the offspring of mouflon, fallow-deer and roe-deer as well as the pheasants and rock partridges, introduced into Southeast Bulgaria and Thracian Valley, have become main food base for the jackal at this time; (2) in 1962 the jackal has been declared a protected species. As a result of cumulative impact of these two factors, the jackal has rapidly occupied lowland habitats in the country and has extended its distribution to the west. Its numbers has increased and after 1985 it was assumed that the jackal had occupied almost the entire country with less manifested presence in highlands.

According to the data obtained from the game count carried out in 2011, the increase in total number of jackals becomes more and more sensible in the recent years. The total number of jackals recently reached 39 343 animals, and there are 3268 more jackals in the country than in 2010; that means increase of 8% of total population numbers. It seems that the largest jackal population in Europe occurs in Bulgaria.

While occupying new territories, the jackal avoids large and canopy forests; it adheres mainly to dense

parts of small in size forest habitats – young coniferous plants and clearing areas near to settlements and roadside restaurants. The presence of people doesn't disturb this animal. At night it comes close to settlements and even goes in there searching for food wastes. Wolf and large shepherd dogs are the natural enemies of the jackal in Bulgaria.

According to the current regulations the jackal could be shot yearly in order to control its numbers, but the payment of bonuses for killed animal has stopped after 2009. This is probably one of the subjective reasons that the number of jackals remained relatively high over the country after 2009; in 2010 it was 36075, higher than in 2009 by 229 animals.

Improved assessment of jackal distribution obtained after the 2011 count showed that the jackal have extended its distribution range in the country and have found suitable habitats in the mountainous и semi-mountainous part of hunting regions.

The jackal chases in groups and easily catches cubs of artiodactyls. The high numbers of jackal in these newly occupied habitats probably could represent one of the factors limiting the numbers of game animals and harming domestic animals. At the same time, there isn't any quantitative information on diet composition in lowland agricultural environment in Bulgaria in relation to food availability in different seasons. To obtain this information, which could help assessing the jackal impact on wild and domestic animals in different landscapes, a specialized investigation on jackal diet composition and food availability, especially the abundance of small mammals, is in progress in agricultural regions, where a different set of factors are likely to operate.

As the numbers of jackal in Bulgaria retain its trend to increase, adequate measures for its regulation are needed in regions with proven harm of jackal on game and domestic animals. Preservation and stable presence of jackal in Bulgaria could be achieved through declaring it normal game species and treating it as native species of Bulgarian mammals' fauna.

SMALL-MAMMALS IN EAST AND WEST OF AUSTRIA (COMPARISON OF 2 STUDIES)

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In 2001 (May to September, 3780 trap-nights, 3 seasons, 18 study plots) at the Nationalpark Lake Neusiedl in E-Austria and from June 2007 to April 2009 (5922 trap-nights, 8 seasons, representing two full year-cycles, 9 study plots) in the Lower Rhine Valley in W-Austria (NATURA 2000 and other protected areas) two studies about small-mammals were carried out. At Lake Neusiedl effects of different management methods (reed- and grass-cutting, cattle-grazing) on small-mammal communities was evaluated. The second study location was 500 km far from the first and basal data of the small-mammal fauna (and bats) of this region (species-richness, population parameters) should be obtained. Both localities are representing a wide variety of habitats: pastures, meadows, areas with short grass and almost bare soils, reed areas, high-grass areas with much herbs, riparian woods. Moreover methodology (traps, CMR or killing of animals, determination of animals, evaluation of vegetation or not), climate, hydrology and soils of both localities are different. Aim of this presentation is to compare these different studies by means of classifying 1) 27 ecologically homogeneous, but different plots into 3 habitat-groups (differed by vegetation, management methods, hydrology and soils), 2) small-mammals into 3 life-form types (*Soricidae*, *Muridae* and *Arvicolidae*) and 3) to evaluate species-richness and abundance by Shannon-index and Evenness. Habitat-group A (8 plots) was characterized by high vegetation with trees and bush, high vegetation cover, much plant litter and wet soils. Habitat-group B (10 plots) had medium vegetation (height from 20 cm to one metre), much grass and wet soils only most of the year. Habitat-group C (9 plots) showed short vegetation (<20 cm), little plant litter, often hard soils with salt surface and is flooded merely a few months in the year.

Total 687 individuals of 15 species were captured, whereas at Lake Neusiedl only 233 individuals of 11 species and in W-Austria 454 individuals of 10 species were recorded. Despite Shannon-index and Evenness didn't differ very much. At each locality two species (*Apodemus sylvaticus* and *Sorex araneus* in E-Austria