



SPREADING OF POLLUTANTS BY MIGRATING ANIMALS

E.K. Yes'kov, V.M. Kirjakulov

Russian State Agrarian Distance University

Different species of game animals demonstrated high variability of heavy metal content in different organs and tissues. Animals are often exposed to heavy metal pollution within their ranges and on migration pathways. Age-related patterns of heavy metal accumulation in the animal body may be significantly modified by environmental pollution and the trophic substrates consumed. Some young wild boar individuals contained more lead and cadmium than did old ones. Pollutant content in the organism of White-fronted Geese varied widely, irrespective of the age. Cadmium content in the blood of some birds returning from wintering areas was many times higher than max permissible concentrations for foodstuffs. A correlation is found between pollution levels in the body and heavy metal content in hair, bristles or plumage. Hence, the state of the environment and pollution of the animal organisms can be controlled using hair or plumage. A potential additional test object for waterfowl is fat covering their feathers.



HISTORY OF DEVELOPMENT AND MODERN CONDITION OF BEAVER (*CASTOR FIBER*) POPULATION IN THE TADENKA RIVER BASIN (PRIOKSKO-TERRASNYI BIOSPHERE RESERVE)

N.A. Zavyalov¹, S.A. Albov², L.A. Khlyap³

¹*State nature Reserve Rdeysky, Chelpanova str., 27, Holm, Novgorod area,
175270 Russia, zavyalov_n@mail.ru*

²*Prioksko-Terrasnyi Biosphere Reserve, Danki, Moscow area, 142200 Russia*

³*Severtsov Institute of Ecology and Evolution RAS, Leninskii pr. 33, Moscow,
119071 Russia*



In North America the restoration of the Canadian beaver (*Castor canadensis*) occurred in its native habitats. In Europe, the river beaver (*Castor fiber*) had been absent for more than 200 years, and it is probably an invasive species. Therefore, its ecological role would probably differ from that which the Canadian beaver plays in North America. Long-term studies of beaver populations are rare both in Europe and in America. At the same time, long-term beaver monitoring is available in many Russian reserves. This report is devoted to the analysis of the history and modern state of the population, long-term influence of beavers on habitats in the Tadenka River basin (Prioksko-Terrasnyi Biosphere Reserve, Moscow Region). We used published sources, the reserve's Nature Chronicles for the period 1946-2006, reports from the reserve archive. Field surveys of 13.4 km of streams in the Tadenka River basin were carried out in 2007-2009. The Tadenka watershed is 27.2 km², the river slope is 8 m/km. Two pairs of beavers were released in the Tadenka River in 1948. In the first 15 years the number of settlements grew slowly, in 1970 there were 6-9 settlements, in 1980-2000 – 8-10, in 2000-2009 – 9-11 settlements. Before 1987, the beavers occupied new sites each time, whereas since 1989 they have repeatedly occupied previously abandoned sites. In 1950, 1962, 1965, and 1974 the location of settlements in the Tadenka basin changed considerably. In 2009, local movements were noted in 6 of 11 settlements. The settlement mobility is caused by heavy exhaustion of wood and grassy forage resources. Four 4 years after the release, the beavers had used all readily available aspen and started to feed on birch. After 1989, the first long foraging trails across land were noted; in the absence of large predators beavers extended the trails to 50-100 m in 1991. In 2009, long trails across land were noted in 6 of 11 settlements; the average length of beaver trails was 39.6 ± 23.9 m, the longest one being 109 m. The number of dams increased as the population was ageing. In 1953, there were 3 dams in the Tadenka basin, in 1984 – 146 dams (average length 10.57 ± 0.91 m), in 2007-2009 – 179 dams (average length 26.0 ± 2.8 m).



On the scale of decades, the beaver activity complex creates conditions favorable for development of black alder forests (BAF). Nowadays, young and middle-aged BAF prevail in the Tadenka valley. The wide distribution of BAF, which are unproductive for beavers, may in the long term lead to a reduction in the number of settlements, as has already been observed in similar habitats of Voronezhsky Reserve. Simultaneously, accumulation of building activity "monuments" improves habitats. Beavers can quickly restore big dams and use the renewing food resources to the full. As the result, the population decline would be smooth and then stop.

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CURRENT STATUS OF LYNX (*LYNX LYNX*) AND DYNAMICS OF ITS RANGE IN THE RUSSIAN NORTH

N.K. Zheleznov-Chukotskiy

*Federal State Department of All-Russia
State Center of Animal Forage and Pharmaceuticals
Quality and Standardization, Moscow, Russia*

Three elements of natural zones – boreal, forest-tundra and tundra, are combined throughout the lynx range in the Russian North. The variety of vegetation types generates diverse ecological settings for this predator and predetermines its wide habitat distribution. In the east of the range, the greatest number of encounters was reported from poplar-chosenia valley forests with young willow undergrowth – 23 (23.7%), from large willow-alder valley scrub – 27 (27.8%). They contain high density populations of mountain hare, murids and gallinaceous birds. Encounters were the most frequent in mid-winter and February, the