

LITHUANIAN MAMMAL FAUNA REVIEW

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ABSTRACT – Data on Lithuania mammal fauna are presented. From 78 mammal species recorded in Lithuania, 7 were seen only in the 17-18th centuries, two species are extinct. Recent Lithuanian mammal fauna contains 68 species. Five of them are observed occasionally. 63 mammal species are permanent inhabitants, 18 included in the Red Data Book, mostly bats and dormice. 8 mammal species were introduced or reintroduced. Population tendencies of game animals are also considered.

Key words: Lithuania, Mammal fauna

NOTES ON MAMMAL FAUNA HISTORY

The recent Lithuanian mammal fauna is comparatively young. Its formation occurred 13000-15000 years ago at the end of the last glaciation. Glacial fauna, like *Mammuthus primigenius*, *Coelodonta antiquitatis*, *Rangifer tarandus*, was mixed with tundra representatives, *Bison priscus*, *Alopex lagopus*, lemmings and others.

The post-glacial fauna formation process was closely related to the climate changes and flora development. According to Paaver (1965), three periods and six phases of fauna formation are distinguished.

During the first two phases, a period of pre-boreal and a period of boreal climate, a quick rise of forests and appearance of broad-leaved trees caused forest-dwelling mammal species to appear, among them red fox, pine marten, badger, red squirrel, otter, lynx, brown bear and the others.

The next two phases - periods of Atlantic climate and subboreal climate - are related to the formation of broad-leaved forests. The whole of Lithuania with the exception of the swamps and open water bodies was forest covered. South-originated mammal species, like wild boar and *Bos primigenius* prospered.

In the last period of subatlantic climate, in the mixed forest and cultural landscape phases, no fauna change occurred until the middle of the last millennium. But in the last 5-6 hundred years some forest-dwelling species were lost. The first of them, *Bos primigenius*, was eliminated by man and by landscape changes by the 16th century. Wild horse, *Equus gmelini sylvaticus* disappeared before the 19th century. In the period between the 16th and 18th century, auroch (or bison, *Bison bonasus*) was exterminated in Lithuania.

Thus we see, that the Lithuanian mammal fauna contains mostly forest complex species, but there are also species typical of the East European taiga complexes as well as steppe species. In any case the mammal fauna is not indigenous, and there are no endemic species.

This review is based mostly on Lithuanian Fauna (Mammals) (1988) Handbook of Lithuanian mammals and some literature sources, also on my colleagues unpublished data.

PRESENT NUMBER OF SPECIES, EXTINCT AND OCCASIONAL FAUNA SPECIES

Data summarising the Lithuanian mammal fauna composition are presented in Tab. 1. From the species mentioned as “questionable”, lesser white-toothed shrew (*Crocidura suaveolens*) is known only from 19th century literature sources; Russian desman (*Desmana moschata*) was introduced in 1948 (n=28) and 1957 (n=62) but is extinct again; lesser horseshoe bat (*Rhinolophus hipposideros*), Bechstein’s bat (*Myotis bechsteinii*), greater mouse-eared bat (*Myotis myotis*) and whiskered bat (*M. mystacinus*) are also mentioned for the last time in 19th century sources; as well as the Russian flying squirrel (*Pteromys volans*). Though expected to be in Lithuania but not found, *Microtus subterraneus* as well as *Erinaceus europaeus* are not included; also *Plecotus austriacus*, due to its uncertain status in the neighbouring countries.

Table 1 - The number of mammal species in Lithuania, recorded from 17th century

Q = questionable; Ex = extinct; I & R = indeterminate and rare ; C = common; NC = not common; T = total

ORDER	FAMILY	SPECIES							
		Q	Ex	O	I & R	NC	C	T	
INSECTIVORA	Erinaceidae						1	1	
	Talpidae				1		1	2	
	Soricidae	1					3	4	
CHIROPTERA	Vespertilionidae	4				9	4	17	
	Rhinolophidae	1						1	
RODENTIA	Pteromyidae	1						1	
	Sciuridae						1	1	
	Castoridae				1			1	
	Myoxidae					3	1	4	
	Dipodidae					1		1	
	Muridae					2	5	7	
	Cricetidae	1			1	1	4	7	
	LAGOMORPHA	Leporidae				1	1	1	3
	CETACEA	Delphinidae			1				1
Monodontidae				1				1	
CARNIVORA	Canidae					1	2	3	
	Ursidae			1				1	
	Mustelidae		1				8	9	
	Felidae		1			1		2	
PINNIPEDIA	Phocidae			2		1		3	
ARTIODACTYLA	Suidae						1	1	
	Cervidae				3		2	5	
	Bovidae				2			2	
TOTAL		8	2	5	9	20	34	78	

Two carnivorous mammals, European mink (*Mustela lutreola*) and wildcat (*Felis silvestris*) are extinct. The former was searched for in the last decade without results. Also, no data are available about the rabbit (*Oryctolagus cuniculus*). Rabbits were introduced in 1985-1986 in three Lithuanian districts and kept in enclosures. Some individuals escaped, but most probably are extinct, and the carnivores were the main reason for their disappearance.

Thus, 78 mammal species were recorded in Lithuania, but 7 of these only in the 17-18th century. With two species extinct we can state that the present Lithuanian mammal fauna contains 68 species. Five of them are seen occasionally, mostly sea-dwelling animals. So only 63 mammal species are more or less permanent inhabitants.

INTRODUCED (I), REINTRODUCE (R) OR NATURALLY INVADING (N) SPECIES

Sciurus vulgaris exalbidus (I) - This subspecies was unsuccessfully introduced from the Altai in 1953 (n=132) to improve the condition of the native red squirrel. It was released into 3 forest areas but disappeared as the result of hybridisation with the local squirrels. It is not included as a separate species.

Eurasian beaver *Castor fiber* (R,N) - Once common, the beaver was totally overhunted at the beginning of this century and only some beavers were killed occasionally between 1920-1936 on the Nemunas river. Reintroductions were made in 1947, using beavers from Voronezh, and in 1948 and 1959, using beavers from Belarus (Gomel). After the Second World War there were also specimens invading naturally from Belarus and after 1955 they also invaded naturally from the Kaliningrad Region. Today the species is prospering. It is hunted with traps and damage to agriculture and forestry is also recorded.

Muskrat (*Ondatra zibethicus*) (I,N) - The first specimens were introduced in 1954 (n=82, from Arkhangelsk) and 1956 (N=204, from Kazakhstan). From 1960 it also invaded naturally from the Kaliningrad region (Sovetsk). By the seventies, it was established throughout its suitable environment range, with the exception of fast-flowing rivers and high spring flood water bodies and reached high population numbers of about forty thousand. The population crashed periodically, for example in 1965-1966 and 1976-1978. The species was routinely hunted and heavily poached. There is some evidence that a reduction of the muskrat population has occurred in recent years (1992-1993).

Raccoon dog (*Nyctereustes procyonoides*) (N) - This species invaded naturally from Belarus (introduced in 1936) and Latvia (introduced in 1948) and colonised the whole republic by the 1960s. It prospered until the 1980s, when it was regulated by intense hunting pressure. It is a rabies and scabies vector. It is now stable in numbers with a population density between 2-6 individuals per 1000 hectares.

American mink (*Mustela vison*) (I, N) - From 1930 mink were kept in enclosures near Kaunas and thirty-seven of these were released in two places in 1950. In 1953 three groups (n=46, 18 and 12) from Tatarstan were introduced to the south-east region. After the Second World War, mink also naturally invaded the lower reaches of the Nemunas river from Kaliningrad, where mink farms were destroyed. It is now

prospering and has totally suppressed the native European mink. There are no firm data on population numbers, but density may reach 2-5 individuals per 10 square kilometres on watercourses (A. Ulevicius, unpubl.).

Brown bear (*Ursus arctos*) (N, O) - The last native specimen was shot in 1883. It now invades occasionally from Latvia and Belarus. There are no data on reproduction or wintering.

Red deer (*Cervus elaphus*) (R,N) - The native population became extinct or was extirpated in the early nineteenth century. The first reintroduction were made in the early 1930s in Zagare from captive populations. It was also reintroduced from Voronezh in 1956 (n=37) and 1972 (n=14) and has naturally invaded from Poland and Kaliningrad since 1930s, By 1982 two local herds of red deer had formed in neighbouring regions. During the period 1969-1983 about 800 red deer were captured and released in empty forests, thus helping the spread. Now this species inhabits all forest types and has remained abundant for the last decade in spite of hunting.

Fallow deer (*Cervus dama*) (I) - This deer was first introduced in the 18th century and ranged free in some areas until the First World War. Records after the Second World War are questionable and perhaps some young red deer were mistakenly identified as fallow deer. In 1976 and 1977 the species was reintroduced from East Germany (n=2), Czechoslovakia (n=20) Hungary (n=20), Askanya Nova (n=21) and again from East Germany (n=2). Deer escaped from all four enclosed areas and have moved around, though the species is not common.

Sika deer (*Cervus nippon*) (I) - Introduced from the Altai in 1954 (n=24). It was released near Kaunas where it remains free-ranging but not extending its range.

European bison (*Bison bonasus*) (R) - Exterminated in the early 17th century, with the last Bialowieza specimen shot in 1919. In 1969 it was reintroduced again from the Central Breeding Station near Moscow and the first five were released free near the enclosure in 1973. The next release in 1974 in the Sirvintai forests failed. Now almost all bison are in fenced areas. Financial problems do not allow the breeding station to pay compensation for bison damage to the new private landowners. In the fenced areas, the number of bison is limited by the area and by forage prices. In 1993 there were 33 bison (enclosed and free). It is a Red List species in Lithuania (IUCN category Rs).

Mouflon (*Ovis ammon rrusimon*) (I) - Introduced in 1976 from Askanya Nova (n=24) and released. In 1977 it was introduced from Czechoslovakia and kept in enclosed areas. In 1985 mouflon were released free in the Punia forests and there are now three localities for this species.

OCCASIONALLY OBSERVED SPECIES

Common porpoise (*Phocaena phocaena*) (O) - In 1908 a single specimen was caught in a net near Palanga (Greve, 1909). In the nineteen-thirties and forties it was seen occasionally by fishermen. In 1935 one stranded specimen was found near Sventoji and in 1938 one was caught in a net. More recently, a specimen was caught in a net in Latvia in 1964 and one was reported from the Kaliningrad region in 1981.

White whale (*Delphinapterus leucas*) (O) - In 1906 a single specimen was caught near Klaipeda (Greve, 1909). In May 1982 one was observed near Juodkrante.

Ringed seal (*Phoca hispida*) and Harbour seal (*P. vitulina*) (O)- The first of these has been observed only twice and the latter only once from 58 observations. No exact data are available (Skeiveris, 1992).

Grey seal (*Halichoerus gryphus*) (O, Red data) - Recorded 40 times between 1960 and 1990; 18 swimming, 14 hauled-out, 8 dead. Also 3 reports of 1 month old pups.

RED LIST SPECIES

Threatened species in Lithuania were mentioned for the first time in the Nature Protection Law, 1959. In 1962-1964 a list of the rare and threatened animals and plants was compiled. In 1981 the first Lithuanian Red Data **book** (with 41 animal species without defining categories of rarity or threat) was published. In 1992 the second Red Data book including 18 mammal species (Tab. 2) was published.

Table 2 - Mammals from Lithuanian Red Data book (1992). ¹E = endangered; R = rare; I = indeterminate; Rs = restored; Ex = extinct; ²R = rare; NC = not common; C = common; VC = very common; U = unknown; ³I = Increasing; ⁴S = stable; R = reduction; U = unknown; ⁴S = stable; R = reduction; I = increasing; U = unknown

SPECIES	STATUS (IUCN) ¹	RELATIVE ABUNDANCE ²	POPULATION TENDENCIES ³	DISTRIBUTION AREA ⁴
<i>Myotis dasycneme</i>	I	R	U	U
<i>Myotis brandti</i>	I	R, U	U	U
<i>Barbastella barbastella</i>	I	NC	R	U
<i>Nyctalus noctula</i>	I	NC (C?)	R	R?
<i>Nyctalus leisleri</i>	I	U	U	U
<i>Pipistrellus pipistrellus</i>	I	NC	R	R?
<i>Eptesicus serotinus</i>	I	NC	R	R?
<i>Eptesicus nilsoni</i>	I	R	R	R?
<i>Vespertilio murinus</i>	I	R	S?	U
<i>Eliomys quercinus</i>	I	R	U	U
<i>Dryomys nitedula</i>	R	R	S?	S?
<i>Myoxus glis</i>	R	NC	R	R
<i>Sicista betulina</i>	I	NC	S	S?
<i>Lepus timidus</i>	R	NC	R	R
<i>Mustela lutreola</i>	Ex			
<i>Lutra lutra</i>	R	VC	I-s	I
<i>Halichoerus grypus</i>	E	R	R	R
<i>Bison bonasus</i>	Rs	NC	S	S

Forest dormouse (*Eliomys quercinus*) - One population known from 1991; earlier the only from 1934.

Fat dormouse (*Myoxus glis*) - 5 populations known. Reducing due to the lack of mature (mainly oak) forests.

Northern birch mouse (*Sicista betulina*) - Perhaps not so rare, but indeterminate species, that may occur everywhere in Lithuania.

European mink (*Mustela lutreola*) - Reintroduction unlikely. Ecological niche is already occupied by American mink.

Otter (*Lutra lutra*) - Propsering species, inhabiting almost all open water bodies of the Republic. Beaver pond-making activity creates excellent living conditions for this species and enables it to live in drainage system also.

GAME AND OTHER MAMMALS

Official survey data may differ two-to-three times from actual populations in both directions (unpubl. survey data of Laboratory of Theriology, Institute of Ecology). So the next table shows trends, not the figures (Tab. 3).

Table 3 - Official game survey data (1940-1993) from Lithuania

SPECIES	1940	1950	1960	1970	1980	1985	1990	1993
Moose	333	154	1100	7400	7500	7800	6900	3444
Red deer	190	122	380	1800	7300	10900	13400	13391
Roe deer	35030	10500	26541	60500	36000	41200	42900	37850
Wild boar	1960	3800	4139	12000	14000	19000	23800	16620
Beaver		58	700	5900	7300	10950	11650	8442
Wolf	280	980	104	56	290	290	350	485
Red fox	12050	7890	16000	13300	9400	8400	9800	8816
Lynx	4	25	35	150	120	200	170	106
Badger	4320	2600	5320	8700	4790	1800	1330	1445

Moose (*Alces alces*) - In the last two year period we lost 2/3 of the herd (real estimate was no less than 10-12 thousands of moose, and the last official survey is more less reliable). Main reasons are changes in the hunting practice (earlier the meat was not given to the hunters - now they get each second animal hunted), and heavy poaching, especially in central-west regions. No science-based herd regulation ever occurred.

Wolf (*Canis lupus*) - Population number is increasing in the last decade in spite of round the year hunting practice.

Lynx (*Lynx lynx*) - There are no reliable data on lynx survey; this species is not rare only in the biggest mixed and coniferous forest areas (north-east to South Lithuania). Not hunted in the last years.

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