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A SYNOPSIS OF THE MAMMALS OF THE CZECH REPUBLIC

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ABSTRACT - There are 85 mammalian species reported recently from the territory of the Czech Republic. Ten species disappeared from the territory in various historical periods, and seven of them have been reintroduced or reappeared again. No species can be considered endemic, but populations of several species are isolated inside the region concerned. At least fourteen allochthonous species were introduced. Currently, **30** species are protected by law and considered endangered.

Key words: Mammals, Status, Czech Republic

INTRODUCTION

The Czech Republic is an inland country situated in central Europe which covers an area of 78,964 km^2. Historically, it can be divided into regions of Bohemia (western part of the territory), Moravia (eastkrn and south-eastern part) and Silesia (north-eastern part). The Czech Republic is populated by more than 10 million inhabitants, resulting in a population density of more than 130 people per square kilometer. Approximately one third of the territory is covered by forests, and more than half is used for arable farming. National parks and other protected areas represent about 14% of the whole territory.

The first published notes on the mammals in this region originated as early as the end of the 18th century (Schmidt, 1795) and several important publications appeared in the 19th century (Presl, 1834; Amerling, 1852; Frič, 1872; Bayer, 1890, 1894). Systematic research on the mammals in this territory began, however, only after World War 11. Hanak (1967) summarized current knowledge of the systematics and distribution of the mammals of Czechoslovakia, and several well-founded popular books dealing with mammals were published later (Hanzák *et al.*, 1970; Pelikán *et al.*, 1979; Anděra and Horáček, 1982; Dungel, 1993).

Special publications appeared devoted to a synopsis of research and the Czechoslovak bibliographies on carnivores (Heráň and Sládek, 1970, 1984) and ungulates (Stolinová *et al.*, 1973). Specialists studying mammals are associated with the Mammalogical Section working at the Czech Zoological Society. The Czech Bat Conservation Trust was established in 1991. Several projects on the protection, mapping, and ecology of the mammals of the Czech Republic are currently in progress.

Table 1 List of mammals recorded in the Czech **Republic**

1. *Erinaceus europaeus* Linnaeus, 1758
2. *Erinaceus concolor* Barrett-Hamilton, I900
3. *Talpa europaea* Linnaeus, 1758
4. *Sorex araneus* Linnaeus, 1758
5. *Sorex minutus* Linnaeus, 1766
6. *Sorex alpinus* Schinz, 1837
7. *Neomys fodiens* (Pennant, 1771)
8. *Neomys anomalus* Cahrera, 1907
9. *Crocidura leucodon* (Hermann, 1780)
10. *Crocidura suaveolens* (Pallas: 1811)
11. *Rhinolophus ferrumequinum* (Schreber, 1774)
12. *Rhinolophus hipposideros* (Bechstein, 1800)
13. *Myoris mystacinus* (Kuhl. 1819)
14. *Myotis brandti* (Eversmann, 1845)
15. *Myotis emarginatus* (E. Geoffroy, 1806)
16. *Myotis nattereri* (Kuhl, 1818)
17. *Myoris bechsteini* (Kuhl, 1818)
18. *Myotis myotis* (Borkhausen, 1797)
19. *Myotis blythii* Tomes; 1857
20. *Myotis duubentoni* (Kuhl, 1819)
21. *Myotis dasycneme* (Boie, 1825)
22. *Vespertilio murinus* Linnaeus, 1758
23. *Eptesicus nilssoni* (Keyserling et Blasius, 1839)
24. *Eptesicus serotinus* (Schreber, 1774)
25. *Nyctalus leisleri* (Kuhl, 1818)
26. *Nyctalus noctula* (Schreber, 1774)
27. *Pipistrellus pipistrellus* (Keyserling et Blasius, 1839)
28. *Pipistrellus nathusii* (Schreber, 1774)
29. *Barbastella barbastellus* (Schreber, 1774)
30. *Plecotus auritus* (Linnaeus, 1758)
31. *Plecotus austriacus* (Fischer, 1829)
32. *Sciurus vulgaris* Linnaeus, 1758
33. *Spermophilus citellus* (Linnaeus, 1766)
34. *Castor fiber* Linnaeus. 1758
35. *Cricetus cricetus* (Linnaeus, 1758)
36. *Clethrionomys glareolus* (Schreher. 1774)
37. *Ondatra zibethicus* (Linnaeus, 1766)
38. *Arvicola trrrestris* (Linnaeus, 1758)
39. *Microtus arvalis* (Pallas, 1779)
40. *Microtus agrestis* (Linnaeus, 1761)
41. *Microtus subterraneus* (de Sélys-Longchamps, 1836)
42. *Micromys minutus* (Pallas, 1771)
43. *Apodemus agrarius* (Pallas, 1771)
44. *Apodemus flavicollis* (Melchior. 1834)
45. *Apodemus sylvaticus* (Linnaeus, 1758)
46. *Apodemus uralensis* (Pallas, 1811)
47. *Rattus norvegicus* (Berkenhout, 1769)
48. *Rattus rattus* (Linnaeus, 1758)
49. *Mus musculus* Linnaeus, 1758
50. *Mus domesticus* Schwarz et Schwarz, 1943
51. *Myoxus glis* (Linnaeus, 1766)
52. *Eliomys quercinus* (Linnaeus, 1766)
53. *Dryomys nitedula* (Pallas, 1779)
54. *Muscardinus avellanarius* (Linnaeus, 1758)
55. *Sicista betulina* (Pallas, 1779)
56. *Myocastor coypus* (Molina, 1782)
57. *Mustela erminea* (Linnaeus, 1758)
58. *Mustela nivalis* (Linnaeus, 1766)
59. *Lutreola lutreola* (Linnaeus, 1761)
60. *Lutreola vison* (Schreber, 1777)
61. *Putorius putorius* (Linnaeus, 1758)
62. *Putorius eversmanni* (Lesson, 1827)
63. *Martes martes* (Linnaeus, 1758)
64. *Martes foina* (Erxleben, 1777)
65. *Meles meles* (Linnaeus, 1758)
66. *Lutra lutra* (Linnaeus, 1758)
67. *Ursus arctos* Linnaeus, 1758
68. *Vulpes vulpes* (Linnaeus, 1758)
69. *Canis lupus* Linnaeus. 1758
70. *Nyctereutes procyonoides* (Gray, 1834)
71. *Felis silvestris* Schreber. 1777
72. *Lynx lynx* (Linnaeus, 1758)
73. *Lepus europaeus* Pallas, 1778
74. *Oryctolagus cuniculus* (Linnaeus. 1758)
75. *Sus scrofa* Linnaeus, 1758
76. *Odocoileus virginianus* (Zimmermann. 1780)
77. *Alces alces* (Linnaeus, 1758)
78. *Dama dama* (Linnaeus, 1758)
79. *Cervus nippon* Temminck. 1838
80. *Cervus elaphus* Linnaeus, 1758
81. *Capreolus capreolus* (Linnaeus, 1758)
82. *Rupicapra rupicapra* (Linnaeus, 1758)
83. *Capra aegagrus* Erxleben. 1777
84. *Ovis musimon* Pallas, 1811
85. *Ammotragus lervia* (Pallas, 1777)

All the species listed have been recorded since the end of the 18th century (Schmidt, 1795) in the present territory of the Czech Republic, but the existence of stable and breeding free populations is not quite certain in some bats *(Rhinolophus ferrumequinum, Myotis blythii, M. dasycneme),* large carnivores *(Ursus arctos, Canis lupus)* and introduced species (*Myocastor coypus).*

ISOLATED AND MARGINAL POPULATIONS

There are no endemic mammalian species reported for the Czech Republic. Nevertheless, populations of certain indigenous species occurring in this territory may be considered isolated from other parts of the distribution range (*Sorex alpinus*, *Eliomys quercinus*, *Sicistu betulina, Lutra lutra).* There are also many species with distribution limits in the Czech Republic, and the populations occurring there are marginal *(Erinaceus europaeus, E. concolor, Crocidura leucodon, Rhinolophus ferrumequinum, Rh. hipposideros*, *Myotis emarginatus*, *M. blythii, M. dasycneme, Eptesicus nilssoni, Spermophilus citellus, Microtus agrestis*, *Apodemus agrarius, A. uralensis, Rattus rattus*, *Mus musculus*, *M. domesticus, Dryomys nitedula, Putorius eversmanni).*

EXTINCT SPECIES

Four species are definitely extinct. *Bos taurus* and *Bison bonasus* disappeared in the early medieval ages, and that is why these species are not included in the list. The last records of *Lutreola lutreola* were reported at the end of the last century (1896-1898). The last *Felis silvestris* was recorded in 1928, but an individual temporarily reappeared in northern Bohemia in early fifties.

Several other extinct species occurred recently again after a reintroduction, or migrate irregularly from the adjacent Slovakian Carpathians. Thus, *Castor fiber* disappeared in the second half of the last century (the last record in 1871). Large carnivores became extinct in the same period. The last *Ursus arctos* was shot probably in 1856, *Canis lupus* in 1850 or 1891, *Lynx lynx* in 1890. *Alces alces* disappeared as early as between the 12th and 15th centuries, and also *Sus scrofa* vanished temporarily at the beginning of the 19th century. *Rattus rattus* might also temporarily disappeared and reappeared.

INTRODUCED SPECIES

A total of 14 allocthonous species of varied origin were introduced in various periods. In the Medieval ages, or even earlier, *Rattus rattus, Oryctolagus cuniculus* and *Dama duma* were introduced, either deliberately or accidentally. *Ovis musimon* was introduced for the first time in the middle of the 19th century, and *Odocoileus virginianus* in 1884. *Cervus nippon* originating from the Japanese Islands was introduced in western Bohemia and northern Moravia in 1897, and other imports of continental *C. nippon hortulorum* have been reported during this century. *Rupicapra rupicapra* from the Alps .was introduced in northern Bohemia in 1907 and in

northern Moravia in 1913-1914. In 1905, the first introduction of *Ondatra zibethicus* in the Old World took place in central Bohemia. *Capra aegagrus* was introduced to a reserve in southern Moravia in 1953, and in 1976 a herd of *Ammotragus lervia* escaped from a zoo in western Bohemia. All the species mentioned form stable and breeding populations now and some of them are widespread. It should be noted, however, that the occurrence of certain other species (e.g., the house mouse or certain bats) is largely dependent on the historical human settlement of the country.

The other group of introduced species is represented by allocthonous forms escaping recently from fur farms *(Myocastor coypus, Lutreola vison)*. These species are found only rarely, and the occurrence of stable and breeding populations is dubious (with a possible exception of ***L. vison)***. There are even quite exceptional reports of the occurrence in the wild of some other species escaping from farms *(Alopex lagopus* - 1991; *Procyon Eotor* - 1952, 1959, 1965). These species are not, however, included in the current list of the Czech mammals.

Several unsuccessful attempts to introduce mammals happened also in the past (e.g., *Marmota marmota* in north-eastern Bohemia and northern Moravia).

REINTRODUCED AND REAPPEARED SPECIES

In the last decades seven species were reintroduced or reappeared. Individuals of *Castor fiber* have been reported to occur infrequently since the late seventies. These individuals have apparently originated from introduced populations in neighbouring Austria and Bavaria. Three years ago, a reintroduction was attempted in northern Moravia. Introductions of *Lynx lynx* have started since 1970. However, individuals of *Lynx lynx* appeared regularly in the Czech Republic even before the introduction attempts. These wandering individuals originated either from natural populations in the Carpathians or from introduced populations of Carpathian origin in Bavaria. *Ursus arctos* and *Canis lupus* originating mostly from Carpathian populations appear rather regularly in Moravia and adjacent regions. Individual migrating *Alces alces* have been recorded since 1957, and since 1979 a spontaneously formed breeding population has been reported from southern Bohemia.

ENDANGERD SPECIES AND THEIR PROTECTION

Thirty mammals are included in the list of endangered species of the intimation No. 395/1992 of the law No. 111/1992, and are thus under strict legal protection. These species are distributed into three categories: Critically endangered: *Rhinolophus ferrumequinum, Rh. hipposideros, Castor fiber, Spermophilus citellus, Eliomys quercinus, Ursus arctos, Canis lupus, Felis silvestris.* Seriously endangered: *Sorex alpinus, Myotis myotis, M. blythii, M. bechsteini, M. dasycneme, Nyctalus leisleri, Pipistrellus nathusii, Barbastella barbastellus, Sicista betulina, Lutra lutra, Lynx lynx, Alces alces.* Endangered: *Crocidura leucodon, Myotis brandti, M. emarginatus, Vespertilio murinus, Plecotus austriacus, Sciurus vulgaris, Cricetus cricetus, Myoxus glis, Dryomys nitedula, Putorius eversmanni.*

The red data book was published for former Czechoslovakia (Barus, 1989), and there are several versions of the red data list applying the IUCN categories proposed

for the mammals of the Czech Republic. However, none of these proposal could be considered definitive and generally accepted. That is why we prefer to avoid presenting such data at the moment.

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