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Original Article

Craniometric Characteristics of the Introduced Muskrats (*Ondatra zibethicus* Linnaeus, 1766) in Khar-Us Lake National Park, Western Mongolia

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Abstract

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Muskrat is an invasive species in Mongolia, which came to Mongolia through Russia. Later, it was introduced into Khas-Us Lake in western Mongolia, and subsequently, the distribution of muskrats has expanded throughout the wetlands of this lake. Based on the 694 skulls, we studied craniometric variations among different age classes and sexes of muskrats. The skull measurements showed no statistically significant difference between juvenile male and female muskrats. However, there were slight differences between upper molar row length measurements of males and females in subadult and adult muskrats, whereas interorbital width measurement was significantly greater for females than males. This study also demonstrates that interorbital width does not show any correlation with other skull measurements for all age classes. The similarity between male and female skull measurements decreases with increased muskrat age, and the variations of all cranial measurements were greatly variable in juveniles, while these are stable in subadult and adult muskrats. We revealed no significant difference between the cranial measurements of the Mongolian population and those of the other countries, which indicate no craniometric changes occurred in muskrats during its acclimatization in Mongolia.

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Introduction

Muskrat, *Ondatra zibethicus* (Linnaeus, 1766) is a native species of North America ranging from Canada down to northern Mexico (Willner *et al*., 1980; Cook, 2017). At the beginning of 20th century, this species was introduced to Eastern Europe, and established a small population, which grew rapidly in numbers and the resultant population spread into many western European countries (Andera & Gaisler, 2012). Later, muskrats were introduced to the various regions of the Former Soviet Union (Sokolov & Lavrov, 1993), and eventually, through Russia these animals came to Mongolia around 1940's (Dash, 1967; Shar *et al*., 2013; Saveljev *et al*., 2015). Since then this species spread widely in the Selenge River Basin. In 1967, a total of 180 individuals of muskrats were introduced into the Khar-Us Lake's surrounding areas (Chono Kharaikh River, Durgun Lake, Lun Valley and Tsagaan River) in Khovd Province (Dash & Bold, 1968; Dash, 1993; Shar *et al*., 2013; Saveljev *et al*., 2015). The muskrat population of Khar-Us Lake has grown rapidly and the species is now common in its surrounding wetlands.

Khar-Us is a freshwater lake, which is located in the Great Lakes Depression in western Mongolia