

Comparative Craniometric Measurements of Two Sympatric Species of *Vulpes* in Ikh Nart Nature Reserve, Mongolia

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Abstract

Key words: Corsac fox; cranium; morphometry; red fox; *Vulpes*; skull.

Article information:

Received: 08 Febr. 2018

Accepted: 31 May 2018

Published online:

12 June 2018

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Cite this paper as:

In Mongolia, both the red fox (*Vulpes vulpes*) and corsac fox (*Vulpes corsac*) occupy broad sympatric ranges, but despite their expansive ranges, few published details of the craniometry of either species exist in Mongolia and other parts of northern and central Asia. To determine the morphological differences between two species of foxes, we tested for morphological and morphometrical differences between the red (n = 13) and corsac (n = 11) foxes using 63 cranium measurements. All significantly different skull variables were larger for red foxes than corsac foxes. This paper reports comparison of the cranial measurements from skulls of red and corsac foxes and serves as a preliminary investigation of interspecific variation between these species.

Munkhzul, Ts., Reading, R. P., Buuveibaatar, B. & Murdoch, J. D. 2018. Comparative craniometric measurements of two sympatric species of *Vulpes* in Ikh Nart Nature Reserve, Mongolia. *Mong. J. Biol. Sci.*, 16(1): 19-28.

Introduction

Red fox (*Vulpes vulpes*) and corsac fox (*Vulpes corsac*) populations have declined over recent years in Mongolia due to over-harvesting triggered by a high demand for furs and habitat degradation (Clark *et al.*, 2006, Wingard & Zahler 2006). As a result, both species were designated under the IUCN Red List Categories and Criteria as Near Threatened regionally in 2006 (Clark *et al.*, 2006), and Least Concern globally more recently (Murdoch 2014; Hoffmann & Sillero-Zubiri 2016). Long-term conservation of Mongolian fox populations

requires knowledge of the species' biology and ecology, including especially the influence of poaching on population size and structure (Murdoch *et al.*, 2010b).

The corsac fox differs in body size from sympatric congeners in the overlapping parts of their ranges. Corsac foxes may reach the body mass of the smallest red foxes, but generally corsac foxes are much smaller than red foxes, whose body mass ranges from 3-14 kg (Lariviere & Pasitschniak-Arts, 1996; Clark *et al.*, 2009, Murdoch *et al.*, 2009). Red foxes display sexual