

Biotope of Corsac Fox and Red Fox in Ikh Nart Nature Reserve

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Abstract

Corsac foxes (*Vulpes corsac*) and red foxes (*V. vulpes*) range widely across northern and central Asia, occupying a variety of arid biotopes. In Mongolia, both species live sympatrically throughout most of the country, but few details of their habitat associations exist. We examined the biotope of corsac and red foxes in Ikh Nart Nature Reserve in Dornogobi Aimag, Mongolia, which lies at the confluence of steppe and semi-desert vegetation zones. We evaluated the extent to which both species occur in these two zones and the habitats within them based on locations of scats ($n = 1,967$), opportunistic sightings ($n = 219$), and captures ($n = 35$) collected from August 2004 to August 2007. Corsac and red foxes occurred in both steppe and semi-desert zones and all habitat types in the reserve. However, corsacs occurred more frequently than expected in steppe zone and red foxes occurred more than expected in semi-desert zone. Corsac locations associated positively with steppe habitats, including grass, shrub, and semi-shrub plains, whereas red fox locations fell mainly in drier, more rugged semi-desert habitats, suggesting ecological separation exists between species. As corsac and red foxes appear to be declining in Mongolia, our results suggest that protection efforts in Ikh Nart should focus on steppe habitats for corsacs and semi-desert habitats for red foxes.

Key words: biotope, corsac fox, habitat, red fox, semi-desert, steppe, vegetation, *Vulpes*

Introduction

Corsac foxes and red foxes range widely across northern and central Asia (Heptner & Naumov, 1992; Macdonald & Reynolds, 2004; Poyarkov & Ovsyanikov, 2004). In Mongolia, both species occur sympatrically in many parts of the country and have been described as favoring open expanses of steppe and semi-desert environments (Allen, 1938; Ognev, 1962; Mallon, 1985; Heptner & Naumov, 1992). Descriptions of both species, however, have been based largely on anecdotal reports and hunting records, and few studies have examined their habitat associations or general ecology in Mongolia.

Corsac fox range extends across the steppe, semi-desert, and desert regions of Mongolia (Mallon, 1985; Poyarkov & Ovsyanikov, 2004). However, historic accounts of the species indicate that corsacs occupy mainly open grassland and shrubland steppe environments,

but also semi-deserts in some areas (Ognev, 1962; Heptner & Naumov, 1992). Red foxes, by comparison, purportedly range throughout the entire country, occupying all major vegetation zones from lowland desert regions to high alpine environments (Mallon, 1985; Macdonald & Reynolds, 2004). Although both species appear relatively common, declines in recent years from over-hunting led to both species being listed as IUCN 'near threatened' in Mongolia (Clark *et al.*, 2006).

Here, we describe the biotope of corsac foxes and red foxes in a nature reserve in central Mongolia that lies at the confluence of steppe and semi-desert vegetation zones. The unique biogeography of the region allowed us to examine the extent to which corsac and red foxes occur in both zones and the habitat types within them. Based on previous accounts, we expected corsacs to occur mainly in steppe areas and red foxes to occur equally across both vegetation zones.