

Sex-age structure of bovids in Ghameshlou, Central Iran

(Mammalia: Bovidae)

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Abstract. Ghameshlou National Park and Wildlife Refuge is home to three bovids, Goitered Gazelle, *Gazella subgutturosa* (Güldenstädt, 1780), Wild Sheep, *Ovis orientalis* Gmelin, 1774, and Wild Goat, *Capra aegagrus* Erleben, 1777. These have been subject to predation by Grey Wolf, *Canis lupus* Linnaeus, 1758, as well as to annual trophy hunting. In a demographic study between July 2007 and April 2009, we assessed the seasonal group size variation among the bovids and found that Goitered Gazelles have the largest groups in winter, while Wild Sheep form the largest groups in autumn. This difference is thought to be the result of patchily distributed, poor quality vegetation during the autumn and winter seasons, and the pursuit of different foraging strategies. Sex ratio was highly skewed toward females in Wild Sheep, but appears to be more balanced for the other two bovids. Twin lambs were encountered rarely in gazelles and Wild Sheep herds. Severe drought and wolf predation were considered to be the main causes of lower reproductive success in these two species compared to the Wild Goat. It is recommended that population parameters of the species should be monitored in order to predict potential demographic trends.

Key words. Populations, Goitered Gazelle, Wild Sheep, Wild Goat, Iran, Middle East.

Introduction

The Iranian plateau is home to four representatives of the family Bovidae (KARAMI et al. 2008), of which three occur in Ghameshlou Wildlife Refuge, central Iran: Goitered Gazelle, *Gazella subgutturosa* (Güldenstädt, 1780), Isfahan Wild Sheep, *Ovis orientalis isphahanica* Nasonov, 1910, and Wild Goat, *Capra aegagrus* Erleben, 1777. The latter two species represent the most numerous big game mammals in Iran (VALDEZ 1977). These species provide the main source of prey for predators, especially Persian Leopard, *Panthera pardus saxicolor* Pocock, 1927, Asiatic Cheetah, *Acinonyx jubatus venaticus* Griffith, 1821, and Grey Wolf, *Canis lupus* Linnaeus, 1758 (ZIAIE 2008, FARHADINIA & HEMAMI 2010). Meanwhile, these bovids are usually subject to legal exploitation in some habitats, including our study area which is one of few reserves in the country where the hunting of Goitered Gazelles is sometimes permitted. Although they are still found within several reserves in Iran, little is currently known about their populations.

Detailed knowledge of local population dynamics is essential for the conservation and recovery of small wildlife populations (ENK et al. 2001). Estimating ungulate population parameters and determining the causes of mortality are imperative for the proper management of prey and predators (ARYAL et al. 2010).

Ghameshlou Wildlife Refuge where this study was conducted has been receiving significant support from the government for the promotion of wildlife conservation, particularly for game species, yet despite four decades of official protection little scientific research has been conducted in the area.