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Markhor and Siberian ibex occurrence and conservation in northern Afghanistan

Zalmai Moheb^{1,2 *}, Said Naqibullah Mostafawi¹, Peter I. Zahler^{1,2,3} & Todd K. Fuller²

¹ Wildlife Conservation Society, Afghanistan Program, Kabul Afghanistan

² University of Massachusetts Amherst, Massachusetts, USA

³ Woodland Park Zoo, Seattle, Washington, USA

* mohebzalmai@yahoo.com

Abstract — In Asia, markhor *Capra falconeri* and Siberian ibex *Capra sibirica* occur in six and eleven countries respectively, and both species have been reported in Afghanistan. However, few wildlife studies in Afghanistan have been made in recent years and the current distribution of markhor and ibex is largely unknown. We conducted field surveys in northern Badakhshan Province, Afghanistan in July-October 2011, and documented the presence of markhor and ibex there for the first time. We made direct observations of markhor in Shahr-e Buzurg District and the Darwaz region, and collected indirect field evidence and community reports of markhor and ibex. The strip of land along the Amu Darya River from western Darwaz to Shahr-e Buzurg district through Khawahan and Raghistan districts should be a priority site for future markhor and ibex conservation in Afghanistan. If protection measures are taken, this area along with the adjacent protected area in Tajikistan, could act as valuable and viable refuge for sustaining markhor and other wild species that inhabit the region.

Keywords: Shahr-e Buzurg, Darwaz, *Capra falconeri*, markhor, *Capra sibirica*, ibex, conservation.

Introduction

Few wildlife studies have been made in recent years in Afghanistan and thus the current distribution of

many wild ungulates, including markhor *Capra falconeri* and Siberian ibex *Capra sibirica*, remain largely unknown in most of the country. This is important because future conservation actions depend on up-to-date data on species distribution and population status. Markhor are listed as protected in Afghanistan, and hunting of the species is prohibited throughout its range (Zaher 2010). Siberian ibex are nominally protected from human harvest by a nationwide presidential ban on hunting. However, both species are most likely hunted throughout their range by local tribesmen (Reading & Shank 2008).

Markhor are among the rarest wild ungulates in Central Asia (Michel 2010). The species is listed as Near Threatened by the IUCN, and three subspecies *C. f. falconeri*, *C. f. heptneri*, and *C. f. megaceros* have been recognized globally (Michel & Michel 2015). Markhor distribution extends over six countries, including Tajikistan west of the Amu Darya River and in northern Afghanistan (Michel 2010; Michel et al. 2015). It is thought that all three subspecies of markhor occur in Afghanistan, distributed in the north and northeastern parts of the country (Petocz 1972; Hassinger 1973; Habibi 2003; Michel & Michel 2015). Although markhor distribution is claimed to cover northern Badakhshan Province and western Darwaz region (Hassinger 1973; Habibi 2003; Michel 2010), we were only able to find two documented records of markhor in Afghanistan, both in the northeast (Hassinger 1973; Stevens et al. 2011), indicating that the distribution of markhor in Afghanistan is still unclear.

Siberian ibex have a wide distribution that extends over eleven countries from northern India in the south to Russia in the north, and Afghanistan in the west to Mongolia in the east. In Afghanistan, ibex distribution covers the Hindu Kush, Pamir, Koh-e Baba ranges from the Wakhan National Park in north-east to Badghis in the west (Hassinger 1973; Schaller 2007) and from Darwaz in the north to Kabul in the south (Habibi 1977).

Here we report the results of two field surveys conducted in the Shahr-e Buzurg District and in the Darwaz region (60 km apart) in northern Badakhshan Province, Afghanistan to evaluate the current presence of markhor and ibex there. In addition, we aimed to gather information relevant to establishing conservation areas in northern Badakhshan.

Study area

We surveyed a strip of land along the Amu Darya River that falls under four districts of northern Badakhshan Province: Shahr-e Buzurg district, and Kof Ab, Shukai, and Nusai districts, all in the Darwaz region. The Darwaz region is the northernmost part of Afghanistan and it shares a border with Tajikistan (Fig. 1). The Amu Darya River serves as the international border between the study site and Tajikistan.



Figure 1: Map showing the study area in Northern Afghanistan and markhor distribution in the region.

We visited 46 villages and four field sites, most of which were located in valleys that drain into the Amu Darya River. The study covered 300 km² of Shahr-e Buzurg district, and 1,997 km² of the Darwaz region. Darwaz is among the most remote areas of Afghanistan, due to poor road connections, and its wildlife remains largely un-surveyed. Topography of the area varies from steep slopes and cliffs to undulating terrain and flat areas. The steep slopes and cliffs become more dominant in the landscape the further along the Amu Darya river one travels from east to west. The vegetation of the area is largely scrubland, occupied by a variety of shrub and tree species.

Methods

Surveys were carried out from July to October 2011, and included interviewing local people, gathering observations and identifying specimens of markhor, ibex and other wildlife species. We focused our interviews on village headmen, hunters and shepherds, as they were believed to be the most

knowledgeable concerning the status of local wildlife. For more accurate identification of animal species, we showed photographs of large mammals, including ibex and markhor, that were known or suspected to be distributed in the area, based on the “Mammals of Afghanistan” by Habibi (2003).

Based on our survey experience in adjacent areas where villagers were unreceptive to formal interviews and the recording of their responses, we conducted informal interviews where we discussed and inquired about wildlife without immediately recording the responses. We feel it was the best approach to use under the circumstances, and are confident in our recall of responses.

Following interviews, we visited potential markhor and ibex habitats suggested by the interviewees, using experienced hunters from the local communities as field guides, and aiming to confirm the presence of the species in the area.

Results

Shahr-e Buzurg — Of 67 respondents, 41 (61%) from northern Shahr-e Buzurg stated that markhor were present and once abundant in their area. However, respondents thought that populations have declined, and few remain in northern Shahr-e Buzurg. During our field surveys we observed four markhor (Fig. 2) in the Payan-e Moor area, close to the border with Tajikistan. Experienced hunters from Payan-e Moor believed that there were roughly 20 markhor remaining in the area, other respondents also concurred with this view.



Figure 2: One of the four markhor observed in Payan-e Moor area of Shahr-e Buzurg District, Afghanistan.

In addition to our direct sighting of markhor in Payan-e Moor area of Shahr-e Buzurg, horns of a five-year-old male markhor and a skin of a female, said to be local to the area, were shown to us during the survey (Fig. 3). Also, a young markhor had reportedly been captured from the area, about three months prior to our survey, and smuggled elsewhere, where it was kept as an exhibit by a wealthy person.

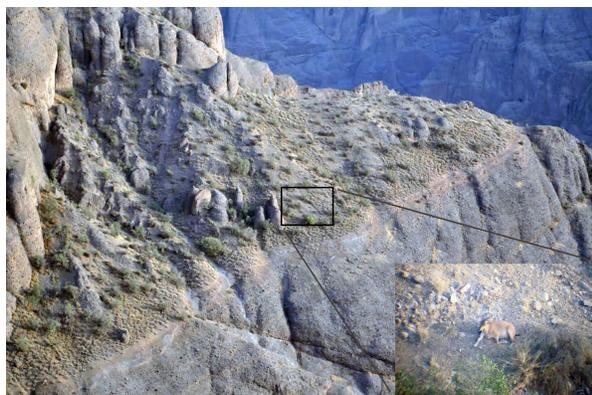


Figure 3: (left) A skin and a pair of horns showed to us in Payan-e Moor Village in Shahr-e Buzurg and (right) one of four sets of markhor horns photographed in Leiwgard Village of Kof Ab in Darwaz Region.

During our survey we did not record reports suggesting the presence of ibex in northern Shahr-e Buzurg, nor did interviewees recall presence of the species in the past.

Darwaz — Of 40 respondents from Kof Ab District, 15 (37%) indicated that markhor existed in the western part of the district. This assessment was further supported by our sighting of six markhor in the area between Dahan-e Ab Kof and Leiwgard village in Gandamargh Valley. We also observed four pairs of markhor horns in Leiwgard village that were from the local area (Fig. 3). Three pairs were old, but one pair was relatively recent with presence of old blood around the horns.

Seventy-four out of 131 respondents (56%) stated that ibex occurs in some parts of Darwaz. One of the informants showed us a skin and horns of two individual ibex in Nusai District, about 60 km northeast of where we sighted markhor. In addition, we found ibex horns in Gandamargh Valley where we saw six markhor. According to interviewees, ibex are present in the survey area, yet distributed sparsely due to unsustainable hunting.

Ibex populations in Shukai and Nusai districts were thought to be on the brink of extirpation due to poaching. The distribution of ibex and markhor in western Darwaz overlaps, but is thought to be segregated due to ibex preference for higher elevations.

Discussion

Our sighting of one markhor in Shahr-e Buzurg and six in Leiwgard, Darwaz region confirmed the presence of markhor on the Afghan side of the Amu Darya River for the first time. Interviewees also stated that western Darwaz and Shahr-e Buzurg support markhor populations. However, markhor populations in Shahr-e Buzurg are thought to be small and may only survive due to immigration from larger source populations in nearby Tajikistan. Markhor populations in Leiwgard appear larger and more stable, though this population is also connected to neighboring Tajik populations. The Leiwgard area is the most remote part of Kof Ab District and is lacking road connections with other parts of Badakhshan. The Amu Darya River separates Leiwgard from Tajikistan and the M-Sayod Conservancy which is known to harbor Markhor populations (Fig. 1). We suspect that when water level drops in the river during winter, markhor could move between both areas. The remoteness of Leiwgard is likely the primary reason that markhor and ibex still exist in this area.

According to the interviewees, Leiwgard is home to about 80 markhor, as well as numerous ibex, brown bear *Ursus arctos*, leopard (probably snow leopard, *Panthera uncia*) and other mammalian species. Respondents from Leiwgard village stated that markhor and ibex utilize the same area with different altitudinal preferences. Markhor are said to inhabit the lower elevations and prefer steep cliffs, while ibex utilize the higher elevations in the upper valleys with colder environments. This if true is one of the very few areas where these two caprid species overlap.

We believe the Leiwgard area represents the easternmost occurrence of markhor in Badakhshan, as we failed to record any evidence of the presence of markhor in Nusai and Shukai, the two northeastern districts of Darwaz (Figure 1). The western part of Kof Ab district, mainly the mountains section surrounding Leiwgard that runs along the

Amu Darya River, seemed to offer suitable habitat for markhor. It contains rugged mountains with steep cliffs and areas that were free of livestock and human disturbance. The vegetation cover was open woodland with sparse juniper trees, pistachio trees, wild almond, and many shrub species. According to respondents, the markhor distribution continues towards Khawahan and Raghistan districts in the western side that has the same habitat type.

Several conservation management actions to promote persistence of Markhor and other biodiversity in the Leiwgard area are required. A priority is the protection of the area along the Amu Darya River starting from Leiwgard and continuing through Khawahan and Raghistan districts to Payan-e Moor and beyond into the Shahr-e Buzurg district. This area is a priority for future markhor conservation and for other endangered wildlife such as snow leopard. The area has the advantage of being connected to the M-Sayod Conservancy on the Tajik side of the border, and so efforts could be combined between Afghanistan and Tajikistan to promote conservation in the larger area. By coordination of conservation efforts, an important area with unique habitats and endangered wildlife could be preserved.

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