

# Caprinae



Newsletter of the IUCN/SSC Caprinae Specialist Group



2008

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## Editors Comment

We have decided on a new publishing system. Rather than wait until there is sufficient material for a complete newsletter, we will update the newsletter pdf 2 or 3 times throughout the year. This should make it less frustrating for authors by making for more timely publishing of their work.

Please continue to **submit** material for possible inclusion in the newsletter.

## Status update and progress report: Marco Polo argali in the Afghan Pamir

Afghanistan, for understandable reasons, has not been terribly active in wildlife conservation or research during the last 25 years. Due to decades of war and grinding poverty, much of Afghanistan's native fauna has been reduced to remnants of their former levels. Habibi (1997) reported Marco Polo argali (*Ovis ammon polii*) in the Pamir Mountains of Afghanistan's Wakhan Corridor, but their status was indeterminate and surveys were needed. He estimated 1,300 argali as of 1978, based on surveys done in the mid-1970s under the auspices of UNDP/FAO by Ron Petocz (1973, Petocz et al. 1978, Skogland and Petocz 1975). In September 2002, a UNEP/FAO survey team conducted a general biodiversity assessment of the Wakhan Corridor (Fitzherbert and Mishra 2003) and saw only 34 argali during a few days in the area managed for trophy

hunting during the 1960s and 70s (the "Big Pamir Wildlife Reserve", above the confluence of the Pamir and Wakhan rivers).

The following year, George Schaller, a scientist with the Wildlife Conservation Society (WCS), spent considerably more time in the Wakhan Corridor supported by the National Geographic Society. His surveys focused primarily on what is known as the "Little Pamir" (the easternmost section of the Wakhan Corridor, adjacent to Gorno-Badakhshan in Tajikistan and to Taxkorgan County in Xinjiang, China), and confirmed that argali persisted in the Afghan Pamirs. Schaller (2004) tallied 545 individual argali in the Little Pamir, 4 in the Wakhjir Valley to the south, and 75 where the UNEP/FAO team documented argali the previous year (the Big Pamir section of the Wakhan). Bad weather prevented Schaller's team from spending more than a few days in the Big Pamir, so his counts there were not viewed as representative.

Supported by USAID, WCS began the Afghanistan Biodiversity Project in 2006. Much of the project's work has been focused on the Wakhan Corridor, both because it appears to retain much of its original biodiversity and because it remains among the most stable and peaceful regions of the country. In the Wakhan, WCS has been collecting data on the resident Wakhi and Kyrgyz people and their livestock (including veterinary status and the possibility of disease transmission from domestic to wild animals or vice versa), developing community-based conservation initiatives and plans for a suite of protected areas in the region, inventorying native vertebrates, and attempting to learn more about the status and conservation needs of argali. During summer 2006, WCS' mammal inventory team, lead by Bilal

Habib, spent enough time in the Big Pamir to view all major drainages reported to contain argali during the 1970s. This survey made 7 observations of argali, totaling 85 individuals (but only 7 lambs with the 30 females observed; an additional 39 rams were seen, all in the same valley that the Fitzherbert and Schaller teams had earlier made their observations).

By 2007, the following situation had begun to emerge: i) argali were probably faring relatively well in the remote Little Pamirs (noted by Schaller 2004 as having excellent habitat), despite illegal hunting by Kyrgyz nomads; ii) argali persisted in the Big Pamir, but only a small number of valleys, with much of the Big Pamir area no longer containing argali (or perhaps, not being appropriate habitat), and total numbers seemed much lower than during the 1970s; iii) argali were also occasionally seen in the Wakhjir Valley, and, less frequently, in other locations mostly within the easternmost section of the Wakhan corridor, but seemed absent from most other places within the Wakhan, and the relationships between the remaining "populations" (e.g., whether they were demographically or genetically contiguous) remained uncertain; and iv) local opinion was that argali, at least rams, occasionally moved across international borders, particularly between Afghanistan's Little Pamir and Tajikistan, and between the Wakhjir Valley and China.

In 2007, we began orienting the work in the Big Pamir toward two primary objectives: 1) determining if argali were restricted to only a few of the available valleys, and if so, why; and 2) obtaining a more rigorous estimate of population size. To do the latter, we decided to supplement our ground observations with a mark-recapture approach, using DNA

microsatellites extracted from fresh fecal pellets as the primary data source. At the same time, we began to examine the broader questions of population structure over the entire Pamir area (including the small population in the Khunjerab area of Pakistan), using mtDNA and microsatellites extracted from feces to make inferences about population subdivisions, gene flow, and possible recent bottlenecks (e.g., Epps et al. 2005). For the genetic part of the work, we involved Gordon Luikart at the University of Montana and Albano Beja-Pereira of Universidade do Porto, in Vairao, Portugal.

During summer 2007, we were able to expand on the existing knowledge of argali distribution and numbers in the Big Pamir. We documented 120-210 individuals (depending on assumptions about duplicate observations) in 21 separate observations of argali groups. We recorded an impressive 93% natality rate, but the timing of our survey (late June/early July, just after lambing) allowed little time for lamb mortality. A month later, Bilal Habib and Zalmal Mohreb spent a week in the Wakhjir Valley, about 130 km southeast, tallying some 106-191 argali (again, depending upon assumptions about duplicate counts) in 19 observations. Curiously, every argali seen in the Wakhjir was a ram (mostly adults).

We returned to the Big Pamir in mid-November 2007 to locate argali wintering areas, add to our observational data, and collect additional fresh fecal pellets. During this winter survey, we were able to account from 174-185 individual argali, the majority of which were in a single, large aggregation of 119.

Thus far, our observations in the Big Pamir support “local wisdom” that argali are restricted to a subset of the available valley systems. We will be collating habitat, topography, livestock, and other data to attempt to shed light on why this may be. Is it hunting (as some locals believe)? Forage competition with the relatively large livestock population in the area? Displacement by pastoralists and their herds? Thus far, our data suggest that argali avoid people and livestock. However, it might simply be inherent habitat characteristics that limit this segment of the overall Pamir argali population.

Laboratory analysis is ongoing and we are optimistic that many of our samples will prove to be of sufficient quality to yield useful micro-satellites as well. To our knowledge, our attempt to derive a statistically-based estimate of population size for argali, using non-invasively derived DNA, is a first for the species. We hope that it proves successful because most observational surveys of argali suffer from considerable uncertainty. Our population structure analyses when complete, should yield useful insights into whether, and where, human activities have added to topographic features in reducing (or perhaps encouraging) gene flow within the Pamirs.

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### Increasing population trend for Nubian Ibex (*Capra nubiana*) in the Ibex Reserve, central Saudi Arabia

[Taxonomic note: We consider the Nubian ibex a distinct species (*Capra nubiana*), different from the Alpine ibex (*Capra ibex*) following a systematic provided by Wilson & Reeder (2005) and recent analyses of mitochondrial DNA (Regnaut 2007).]

This report presents data on the occurrence and status of Nubian Ibex (*Capra nubiana*) in the Ibex Reserve in the Jibal Tuwayq Mountains in Central Saudi Arabia. The Ibex Reserve (23°30'N, 46°30'E) near Hawtat Bani Tamim was established in 1988 by the National Commission for Wildlife Conservation and Development (NCWCD) to protect the last Nubian ibex in Central Saudi Arabia. Annual rainfall in the Ibex Reserve averages 85.4mm (Robinson 2007) and precipitation occurs mainly during winter and spring. The summer is dry and hot (mean temperature 40°C). The reserve covers approximately 2000 km<sup>2</sup> and comprises an undulating, stony, limestone plateau, 800-1100m asl, which is deeply incised by wadis (up to 200m deep), where runoff water accumulates after rain. Plant standing crop is sparse on the plateau, but greater in wadis, where *Acacia* bushes and trees dominate the vegetation. Local people use the wadis for grazing domestic livestock, collecting fire-wood, and recreation. Portions of four wadis (Ghaba, Gafar, Nukhailan, Jidr) were fenced to protect the vegetation from domestic camels which roam the reserve unaccompanied. While excessive hunting caused the extinction of mountain gazelles (*Gazella gazella*), the Nubian ibex survived in small number by the time the reserve was gazetted (Habibi & Grainger 1990).

Nubian ibex is listed as Endangered (C2a) in the 2007 IUCN Red List of Threatened Animals (IUCN 2007). Habitat destruction, competition with domestic livestock, and poaching have been identified as the major threats to the ibex. Particularly the development of remote regions by extension of roads, livestock encroachment and other development pressures continue to displace and further isolate the ibex populations in the Kingdom (Habibi & Tatwany 1997). A general hunting ban implemented in 1979 could not stop poaching even in protected areas. Due to the use of water tankers and 4x4 vehicles, the ability of Bedouins to stay in remote areas for long periods has improved in recent times and therefore increased the competition and disturbance of ibex (Habibi & Tatwany 1997).

Data presented in this report were obtained from Standard Monitoring Patrols executed between April 2001 and October 2007 (Robinson & Sandoka 2002, 2003; Grobler & Sandoka 2004, 2005, 2006, 2007). The survey focused mainly on ungulates but also recorded smaller mammals such as hare, hedgehog and hyrax, anthropogenic disturbances and domestic livestock.

Seven standardised patrol routes were established following the major wadi systems in the reserve. Survey patrols were carried out simultaneously once a month in each of the seven wadis to avoid double-counting and to minimise identification errors. Two trained observers for each of the seven survey patrols were driving in a 4x4 vehicle, each of them surveying the steep slopes on one side of the wadi.

The Ibex Reserve landscape presents a very difficult environment to assess numbers of intimate large ungulates. Moreover, ibex travel easily over all elements of the landscape including the steepest slopes, cliffs and cracks. The result is that the Ibex Reserve topography introduces a major limitation to our methodology and makes it virtually impossible to employ a logical scheme to convert observed numbers of ibex into a meaningful density estimate. All methods of assessing population size depend on the fulfillment of various assumptions such as; the transect route is representative of all habitats found in the survey area, that all animals along the transect line will be observed, and that visibility will decrease

with increasing distance from the transect. These assumptions were almost invariably violated to some degree during our surveys, possibly introducing a considerable bias to our data. However, Habibi (1994) recognized already that a set of systematic, repeated counts in defined localities offers the only practical approach for assessing the population size of Nubian ibex as well as population structure and recruitment in this difficult environment. Therefore our surveys follow Habibi's (1994) general approach by not establishing visibility profiles along transects, but instead recording only date, time, position (GPS), group composition and the habitat type (wadi bed, scree slope, cliff face, cliff top, plateau) for each ibex sighting (Wacher et al. 2000).

Only a few systematic censuses have been carried out in Saudi Arabia and most data were obtained from aerial and ground reconnaissance surveys made on isolated populations (Habibi & Tatwany 1997). Ibex populations are known to occur in 15 sites of the Kingdom, of which only 3 are in protected areas (At Tubayq Reserve, Ibex Reserve, Hemah Fiqrah Tribal Area). Highest densities appear to be in Jabal Qaraqar and Hemah Fiqrah, while the Ibex Reserve represents the major stronghold of this species in Saudi Arabia (Habibi 1997). Apart from Saudi Arabia, the Arabian populations of this species are known from Syria (extinct; Serhal 1997a), Yemen (greatly reduced and confined to remote regions; Shackleton 1997), Oman (vulnerable; Daly et al. 1997), Jordan (greatly reduced but stable; Hays & Bandak 1997) and Lebanon (extinct; Serhal 1997b). Furthermore, a stable and healthy population is found in Israel (Alkon 1997).

Since the Ibex Reserve was established, Standard Monitoring Patrols have revealed that the ibex population is moderately increasing in the total Ibex Reserve (Fig. 1). This trend became more marked within the last four years (between 2004 and 2007) when conservation measures seem to have tangibly manifested. This is particularly true for the Wadi Mut'im system in the western part of the reserve. More than half of the total ibex population of the reserve (average of 55%) was counted in this wadi. The Wadi Mut'im system extends over approximately 90 km<sup>2</sup> and represents

approximately 6% of the total reserve area. This means that in Wadi Mut'im (Fig.2) more animals were encountered than in all other parts of the reserve (Fig.3). Out of a total of 76 survey months this trend was observed in 41 months. Our results emphasize the importance of the Wadi Mut'im system for the ibex population in the Ibex Reserve. This becomes particularly relevant considering the fact that in the year 2008 due to pressure from the local community adjacent to this wadi, has increased by questioning the proposed reserve boundary and shifting it 7km upstream for their own disposition.

Clearly, conservation measures already implemented need to be enforced by the NCWCD. This means the position of NCWCD needs to be strengthened by other governmental organizations and recognised by the public in general. This is a long-term task which requires intensified launching of education programs in the school system, in an effort to enlighten the public (in particular adolescents) about the merits of conservation, and the role wildlife plays in the stability of fragile ecosystems.

[This report is part of a project of the Zoological Society of London (King Khalid Wildlife Research Centre) in cooperation with the National Commission for Wildlife Conservation and Development (NCWCD), Kingdom of Saudi Arabia.]

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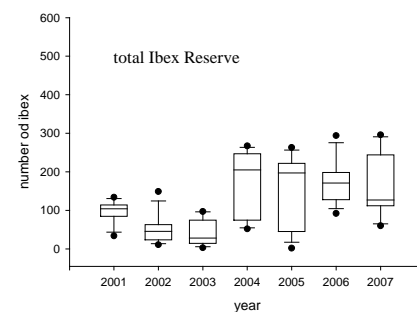
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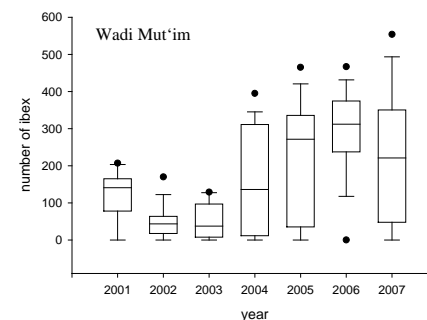
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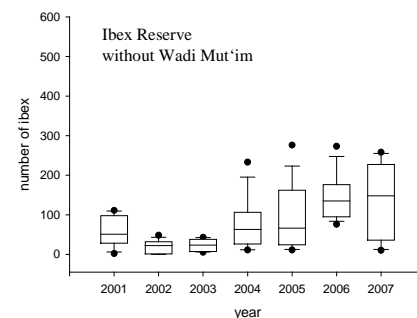
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**Figure 1.** Development of the Nubian ibex population in the Ibex Reserve during the last 7 years. Box plots showing the median (middle line), the inter-quartile range (box), the 5% and 95% values (whiskers) and the extreme values (dots).



**Figure 2.** Development of the Nubian ibex population in Wadi Mut'im during the last 7 years. Box plots as in Figure 1.



**Figure 3.** Development of the Nubian ibex population in the Ibex Reserve (excluding Wadi Mut'im) during the last 7 years. Box plots as in Figure 1.

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## Abstracts & recent publications

### Determining trophy harvest quotas through a status survey of urial (*Ovis orientalis*) in the Kalabagh Game Reserve, Punjab Province, Pakistan.

Frisina, M. R., G. Ali Awan, and M. H. Woodford.

**Abstract.** In April 2001, a population survey of urial (*Ovis orientalis*) was conducted in the Kalabagh Game Reserve, in northwest Pakistan, to determine its suitability for sustainable use management. During the survey, 259 Urial were observed (143 females, 20 lambs, 96 males). The 96 males were classified as 30, 19, 19, and 28; Class I, Class II, Class III, and Class IV rams, respectively. The number of lambs observed was low (7.7%) because the survey was conducted at or near the peak of lambing, when observing lambs is difficult. However, the high frequency of lambing activity we observed during the survey and proportion of Class I rams (male lambs of the previous year) indicates a productive population. An overall density of 13 Urial per sq. km was observed on the Reserve, but ranged from 7-23 per sq. km among sectors. Urial were abundant with good survival of lambs and yearling rams during recent years, and good survival of rams into older age classes. An initial conservative harvest quota of 5 Class IV rams could be established without negative consequences. Specific recommendations for sustainable use management are provided.

### Journal of the Bombay Natural History Society 104:35-39.

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Harris, R.B. 2006. Attempted predation on blue sheep *Pseudois nayaur* by dholes *Cuon alpinus*. **Journal of the Bombay Natural History Society 103: 95-96.**

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Submissions of articles, including **research reports, conservation news, recent publications, etc., on wild or feral Caprinae**, are welcome from any professional biologist. A potential author does not have to be a member of the Caprinae Specialist Group. Please send submissions to the Editor for consideration, preferably via e-mail attachment – to:  
[shac@interchange.ubc.ca](mailto:shac@interchange.ubc.ca).

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## CSG Web Site

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## Editorial Note

Views expressed in the articles in this newsletter, do not necessarily reflect those of the Caprinae Specialist Group

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