Short Communication

War and wildlife: a post-conflict assessment of Afghanistan's Wakhan Corridor

Charudutt Mishra and Anthony Fitzherbert

Abstract Prior to the last two decades of conflict, Afghanistan's Wakhan Corridor was considered an important area for conservation of the wildlife of high altitudes. We conducted an assessment of the status of large mammals in Wakhan after 22 years of conflict, and also made a preliminary assessment of wildlife trade in the markets of Kabul, Faizabad and Ishkashem. The survey confirmed the continued occurrence of at least eight species of large mammals in Wakhan, of which the snow leopard *Uncia uncia* and Marco Polo sheep *Ovis ammon* are globally threatened. We found evidence of human-wildlife conflict in Wakhan due to livestock depredation by snow leopard and wolf *Canis lupus*. Large mammals are hunted for meat, sport, fur, and in retaliation against livestock depredation. The fur trade in Kabul is a threat to the snow leopard, wolf, lynx *Lynx lynx* and common leopard *Panthera pardus*.

Keywords Afghanistan, fur trade, human-wildlife conflict, hunting, lynx, Marco Polo sheep, snow leopard, Wakhan, wolf.

Historically, wars and civil strife have sometimes created refuges that have prevented overexploitation of wildlife and its habitat (Martin & Szuter, 1999; McNeely, 2003). However, most wars of the last 5 decades have resulted in detrimental effects on wildlife due to direct losses, habitat destruction, the demands of displaced peoples for food and fuel, encouragement of trade in wildlife, and the establishment of environmentally unsustainable industries in the face of political destabilization (Dudley *et al.*, 2002). Afghanistan has seen war and strife almost continuously over the last 22 years (UNEP, 2003). Recent assessments have recorded evidence of long-term environmental degradation and decimation of wildlife in the country (UNEP, 2003), including pollution and desiccation of wetlands, deforestation due to illegal timber extraction, and heavy hunting pressure on wildlife.

The isolated Wakhan Corridor in north-eastern Afghanistan (Fig. 1) includes the Pamir Mountains (the Big and Small Pamirs), and the Hindukush Range. Wakhan was an area of special interest for the Afghan Government and international organizations prior to the period of conflict because of a trophy hunting programme for Marco Polo sheep *Ovis ammon poli*, begun in 1968 in the Pamir-i-Buzurg (The Big Pamir) Reserve (Petocz, 1978). In September–October 2002 we undertook a survey to assess the current status of large mammals in the Wakhan Corridor and to gather information on wildlife trade.

With an altitudinal range of 3,000 m and above, Wakhan has a cold, arid climate. The fauna of the region is Palaearctic (Mani, 1974), and includes large carnivores such as the snow leopard *Uncia uncia*, wolf *Canis lupus* and brown bear *Ursus arctos*, and the mountain ungulates ibex *Capra ibex siberica* and Marco Polo sheep. The total human population of Wakhan is *c.* 11,000 (UNEP, 2003), of which the majority are Wakhi agro-pastoralists, with a smaller number (*c.* 1,300) of yurt dwelling Kyrghyz in the Pamirs. Wakhan is characterized by chronic poverty and food deficits, a history of opium addiction, and other problems associated with poverty, malnourishment, a harsh climate and isolation.

We travelled in Wakhan from 25 September to 5 October 2002, followed by a survey of markets for wildlife trade. We covered most of the 200 km of the Wakhan Corridor, interviewing villagers and surveying wildlife, and traversed *c.* 100 km in the mountains up to 4,800 m, on horseback and foot, surveying wildlife and documenting human-wildlife conflict. Through informal interviews we attempted to determine whether or not there was a direct link between the fur markets of Kabul and hunting in the Wakhan Corridor, i.e. if

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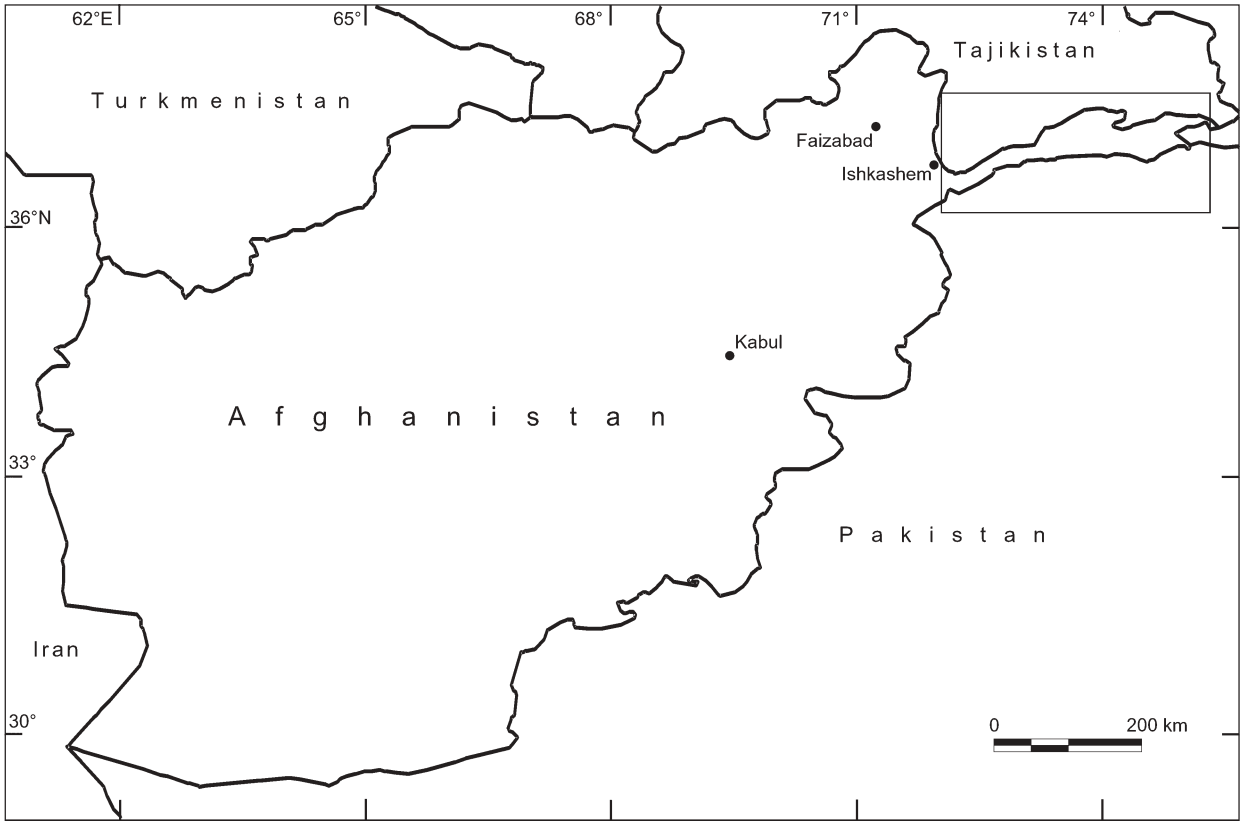

Fig. 1 Map of Afghanistan showing the location of the Wakhan corridor (box).

Wakhis were hunting with the objective of catering to the wildlife trade. We surveyed markets in Ishkashem (the district centre of Wakhan), Faizabad (capital of Badakshan Province, where Wakhan is located) and Kabul for wildlife and wildlife products in trade. We informally interviewed fur traders and recorded the species on display, their prices, their sources, turnover (average number of furs obtained per year), and the process of obtaining the furs. In all we conducted 27 interviews that included four Wakhi hunters, four local traders, four fur traders in Kabul, with the remaining being Wakhi villagers and herders.

Owing to its remote location, and perhaps partly because it was under the control of the Northern Alliance during the US bombings of 2001–2002, Wakhan was spared bombings and landmines. We confirmed the continued occurrence of eight large mammals (Table 1), but did not find any fresh signs of Himalayan lynx *Lynx lynx isabellina*. A pair of urial *Ovis orientalis* horns was seen near a village in the Big Pamir, but the occurrence of the species in the region could not be confirmed. In addition, smaller mammals reported from Wakhan, but not recorded during our survey, include the stone marten *Martes foina*, ermine *Mustela ermina*, common otter *Lutra lutra*, and Pallas' cat *Felis manul* (Habibi 1977; Petocz, 1978).

In the western Big Pamir we found that the wintering areas of the Marco Polo sheep (especially females and young; Petocz *et al.*, 1978) are currently subject to intensive livestock grazing (sheep, goats, yaks, camels and donkeys) throughout summer, with grazing by sheep and goats continuing during the winter. This could potentially result in competition for forage between livestock and Marco Polo sheep (Mishra, 2001). Our visual assessments of pastures indicated that livestock grazing and trampling has caused considerable degradation of the pastures at altitudes of 4,000–4,300 m in this area. Another potential threat to Marco Polo sheep and ibex in Wakhan is the risk of disease. We found incidences of scabies and foot-and-mouth disease in the local livestock.

Interviewees did not report any serious loss of crops to wildlife, or cases of injury by any wild animal. However, villagers throughout the region reported loss of livestock to snow leopards and wolves. Of the 15 interviews of individual herders or groups of herders, 12 reported frequent livestock losses to wild predators. Two groups of herders in the Big Pamir did not report any recent loss, and in one village people admitted to losing livestock occasionally, but did not see predators as a serious problem.

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Table 1 Large mammals of the Wakhan Corridor, Afghanistan with their IUCN Red List status (IUCN, 2002), and number seen or evidence recorded, and any recorded threats.

Large mammals reported from Wakhan by Petocz (1978)	IUCN Red List status	Number seen/evidence recorded during the survey	Threats
Snow leopard *Uncia uncia*	Endangered	Scats, tracks	Livestock depredation and retaliatory killing
Himalayan lynx *Lynx lynx isabellina*	Near Threatened	Not recorded	
Brown bear *Ursus arctos*		Scats, tracks	Hunting
Wolf *Canis lupus*		Scats, tracks	
Red fox *Vulpes vulpes*		Scats, tracks	
Marco Polo sheep *Ovis ammon poli*	Vulnerable	34	Hunting, degradation of winter pasture
Ibex *Capra (ibex) siberica*		51	Hunting
Long tailed marmot *Marmota caudata*	Near Threatened	Burrows	
Cape hare *Lepus capensis*		1	Hunting

Wolves were reported to kill livestock throughout the year, in pastures or near settlements where livestock are penned in the open. Most cases of snow leopard killing livestock were reported in winter, with some instances of leopards entering a corral or stable, often resulting in surplus killing of livestock. Wolves were seen as the main problem carnivore in the Pamirs, while the snow leopard was seen as the main problem in the Hindukush.

Our interviews revealed evidence of hunting in the recent past (Table 1), although all herders and hunters claimed they have now stopped hunting following a recent directive by President Karzai banning hunting. We documented a total of 10 instances of snow leopards being killed, of which the most recent was in 2002 (Table 2). Of the 10 instances, five were killed inside corrals. In two instances, there was no obvious provocation; the animals were shot upon being sighted during hunts.

In the mountains of south and central Asia livestock depredation by large carnivores is a recurring problem, and retaliatory persecution of the snow leopard and other carnivores is one of the most widespread and direct threats to the species (Mishra *et al*., 2003). In Wakhan the use of guard dogs by herders seems to limit livestock losses to carnivores. However, some of the herding practices we observed, such as cows and yaks grazing unattended, and livestock being herded by young children, is poor anti-predator management. Similarly, we found that corrals were poorly constructed. Often, large holes are left in the ceiling to allow for light, providing access for snow leopards.

In all the snow leopard killings that we documented, the hunters skinned the animal and discarded the rest of the body. In most cases the furs were sold to itinerant traders (Table 2), who barter household goods with local people in exchange for livestock, butter and other goods. We found that the trade in furs at the local level in Wakhan was casual; people do not hunt with the specific objective of catering to wildlife trade but rather in retaliation against livestock predation. This was further confirmed by the absence of any wildlife trade in the Ishkashem market. With the exception of the chukar partridge *Alectoris chukar* (a common cage pet, also used for bird-fights), we did not find any evidence of wildlife trade in the larger Faizabad market.

On the other hand, our survey of the market near Tourabas Square in Kabul, popularly called Chicken Street, confirmed the existence of a fur trade. There were

Table 2 Instances of retaliatory killing of snow leopards in the Wakhan Corridor recorded during the present survey. In each instance, one snow leopard was killed, skinned, and the fur later sold or given away.

Year	Village	Location	Sex[1]	Buyer	Amount
2002	Goskhan	Corral		Unknown[2]	Unknown[2]
2000	Qala-i-Panja	Corral	M	Tajik trader	Bartered for oil
2000	Khandud	Corral	F	Tajik trader (Faizabad)	US $60
2000	Qala-i-Panja	Corral	M	Trader	US $140
1999	Khandud	Pastures	M	Pakistani trader (Chitral)	US $15
1999	Qala-i-Panja	Corral	F	Trader	US $140
1998	Khandud	Pastures		Unknown[2]	Unknown[2]
1997	Gorvash	Pastures		Afghan doctor (UN)	Unknown[2]
1992	Khandud	Pastures		Security officer	Unknown[2]
1989	Pugish	Pastures		Trader	US $60

[1]If known

[2]Skin was sold but the price and/or identity of buyer unknown

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six shops in this market that dealt exclusively in wildlife furs, and an equal number that dealt in furs in addition to carpets and handicrafts. Skins of lynx and wolves were most commonly on sale, followed by common leopard and fox *Vulpes* sp.. Amongst large cats, traders reported the highest turnover in lynx skins (10–15 skins per shop annually, quoted price US $100–180 per skin), followed by common leopard (3–10 skins, US $150–1,000) and snow leopard (2–5 skins, US $300). We also saw furs of several other species: striped hyena *Hyaena hyaena*, otter *Lutra* sp., stone marten *Martes foina*, and unidentified small carnivores.

Fur traders indicated that the main buyers were foreigners, mainly the soldiers of the international security forces but also employees of aid agencies. Furs are obtained from Badakshan, Panjsher, Nuristan and Herat, either directly by the shopkeeper or his buyer, or purchased from visiting traders. Both furs and fur products, such as coats, bedspreads and hats, were on sale.

Afghanistan has a history of fur trade, which expanded in the 1960s to supply the local markets and those of Europe and the US (Rodenburg, 1977). Following a recommendation by Petocz (1973) the government issued a ban, in 1973, on the sale of furs from carnivores. Although almost all the markets in the provincial centres of Afghanistan, not only Kabul, were trading in fur in 1974 (A. Fitzherbert, pers. obs.) this had apparently declined. The recent influx of foreigners, however, has provided a boost to the trade. With this renewed demand there is an immediate threat of commercial hunting starting in Wakhan. As it lies at the border with three countries, the area could also become a conduit for illicit cross-boundary wildlife trade.

Twenty-five years ago wolf and fox fur were the main species in trade in Kabul, with only a limited number of common leopard, lynx, and snow leopard skins being traded (Rodenburg, 1977). The market seems to have now expanded, with furs of lynx and common leopard being the main species for sale. The Afghani market for wildlife furs appears to be only in Kabul, and so far there does not appear to be a link with the Chinese market for wildlife products. Curtailing the fur trade in Afghanistan needs to become a priority for conservation of these several species of global importance.

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References

Dudley, J.P., Ginsberg, J.R., Plumptre, J.A., Hart, A.J. & Campos, L.C. (2002) Effects of war and civil strife on wildlife and wildlife habitats. *Conservation Biology*, **16**, 319–329.

Habibi, K. (1977) *The Mammals of Afghanistan: Their Distribution and Status*. United Nations Development Program, Food and Agriculture Organization of the United Nations, and Ministry of Agriculture, Afghanistan.

IUCN (2002) *2002 IUCN Red List of Threatened Species*. IUCN, Gland, Switzerland [http://www.redlist.org, accessed 21 October 2003].

Mani, M.S. (1974) *Ecology and Biogeography of India*. Dr. W. Junk Publishers, The Hague, The Netherlands.

Martin, P.S. & Szuter, C.R. (1999) War zones and game sinks in Lewis and Clark's west. *Conservation Biology*, **13**, 36–45.

McNeely, J. (2003) Conserving biodiversity in times of violent conflict. *Oryx*, **37**, 142–152.

Mishra, C. (2001) *High altitude survival: conflicts between pastoralism and wildlife in the Trans-Himalaya*. PhD thesis, Wageningen University, The Netherlands.

Mishra, C., Allen, P., McCarthy, T., Madhusudan, M.D., Bayarjargal, A. & Prins, H.H.T. (2003) The role of incentive programs in conserving the snow leopard *Uncia uncia*. *Conservation Biology*, in press.

Petocz, R.G. (1973) *Marco Polo Sheep (*Ovis ammon poli*) of the Afghan Pamir: A Report of Biological Investigations in 1972–1973*. Unpublished Report to the Government of Afghanistan.

Petocz, R.G. (1978) *Report on the Afghan Pamir. Part 1: Ecological Reconnaissance*. Food and Agricultural Organization of the United Nations, Kabul, Afghanistan.

Petocz, R.G., Habibi, K., Jamil, A. & Wassey, A. (1978) *Report on the Afghan Pamir. Part 2: Biology of Marco Polo Sheep (*Ovis ammon poli*)*. Food and Agricultural Organization of the United Nations, Kabul, Afghanistan.

Rodenburg, W.F. (1977) *The Trade in Wild Animal Furs in Afghanistan*. FAO Field Document (FO:DP/AFG/74/016). Food and Agricultural Organization of the United Nations, Kabul, Afghanistan.

UNEP (2003) *Afghanistan: Post-conflict Environmental Assessment*. United Nations Environment Program, Nairobi, Kenya.

Biographical sketches

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