

Update on Wakhi Livestock Numbers in Big Pamir

(2006-2015)

By

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Scope of the report

This report presents the results of annual livestock counts carried out in September and October 2015 in the west of Big Pamir by WCS Afghanistan's Ecological Monitoring Team. Analysis of livestock count results categorized according to settlements / grazing areas were not included in this report, but will have added significance after several more years of monitoring. The observed demographic trends since 2006 have already been discussed in previous reports in the frame of sustainable rural livelihoods and landscape conservation (Ostrowski et al. 2013, Ostrowski and Rajabi 2014). The present report briefly discusses results collected in 2015 and compares them with previous census results.

Background

Accurately estimating numbers and demographic trends of livestock in the fragile habitat of Big Pamir is central to understanding grazing pressures, the extent of competition with wild herbivores for range use, and the risk of disease spill-over from livestock to wildlife. WCS has been monitoring livestock numbers in western Big Pamir since 2006 as a faster and cheaper alternative to carrying out thorough assessments of the state of the rangeland. The western side of Big Pamir is used by Wakhis to feed their livestock during the summer months. They remain here until early October when most withdraw to the Wakhan Valley for the winter.

In March 2014 the Government of Afghanistan declared the Wakhan District a National Park. Prior to this important development, Wakhi communities proposed to protect a significant portion of the western Big Pamir. The Big Pamir Wildlife Reserve (BPWR) and its associated buffer zone cover 1,542 km² of fragile Pamir landscape, with the aim to ensure the protection of key Marco Polo sheep habitat, and promote sustainable livelihood practices. Counting livestock in the Big Pamir is therefore an important monitoring activity, generating baseline information that aims to inform the management of BPWR.

There have been two estimates of livestock numbers in the western Big Pamir in 2006 based on differing methodologies (Mock et al. 2007; Ostrowski 2007). In 2007, Ostrowski et al. (2007) reconciled discrepancies of these two estimates in light of the results of an additional survey, and proposed an adjusted estimate for livestock numbers in the area in 2006 (Table 1). After this initial estimate, livestock censuses were discontinued for the following three years. In 2010, WCS's veterinary team developed a standardized protocol and measured livestock numbers from direct counts at the end of the summer grazing season, each year between 2010 and 2015 (Table 1). The present report summarizes census results made between September 27th and October 11th, 2015 and updates our knowledge on livestock trends since 2006.

Results

Table 1. Results of livestock counts in the western Big Pamir between 2006 and 2015, Wakhan District, Badakhshan Province, Afghanistan.

Year	Month of census	Sheep and goats	Yaks	Total livestock ¹	Rate of growth ²
2006 ³	Jul-Aug	8,749	740	9,489	-
2010	Jul	12,377	930	13,307	+40.2%
2011	Sept	14,559	1,171	15,730	+18.2%
2012	Sept	14,388	1,058	15,446	-1.8%
2013	Sept	19,467	1,298	20,765	+34.4%
2014	Sept	19,075	1,108	20,183	-2.6%
2015	Sept-Oct	19,135	1,188	20,323	+0.7%

¹Excluding cattle usually not present in Big Pamir after mid September. ²Since the previous count. ³The survey in 2006 combined two different methods; direct counts (75%) and questionnaire surveys (25%); therefore true numbers of livestock might have been underestimated by 5-10%

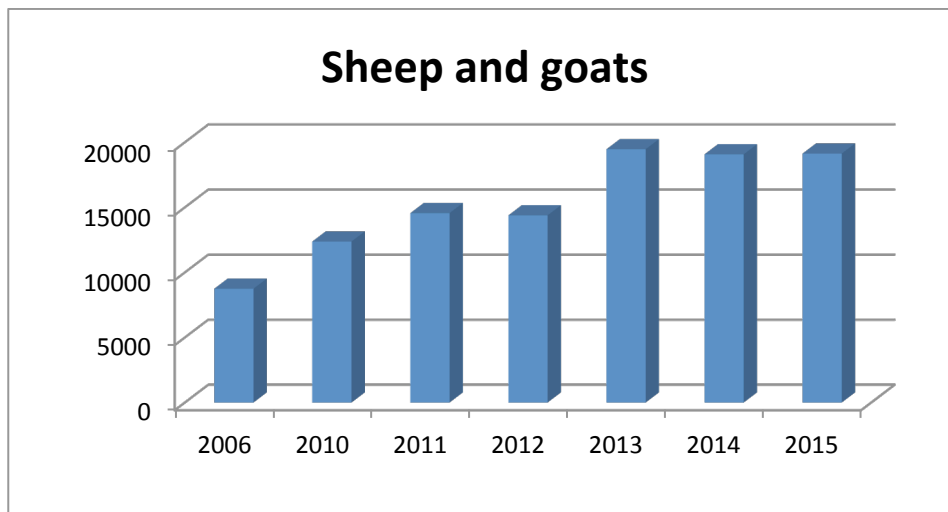


Figure 1. Annual estimates of sheep and goat numbers in the western Big Pamir between 2006 and 2015, Wakhan District, Badakhshan Province, Afghanistan.

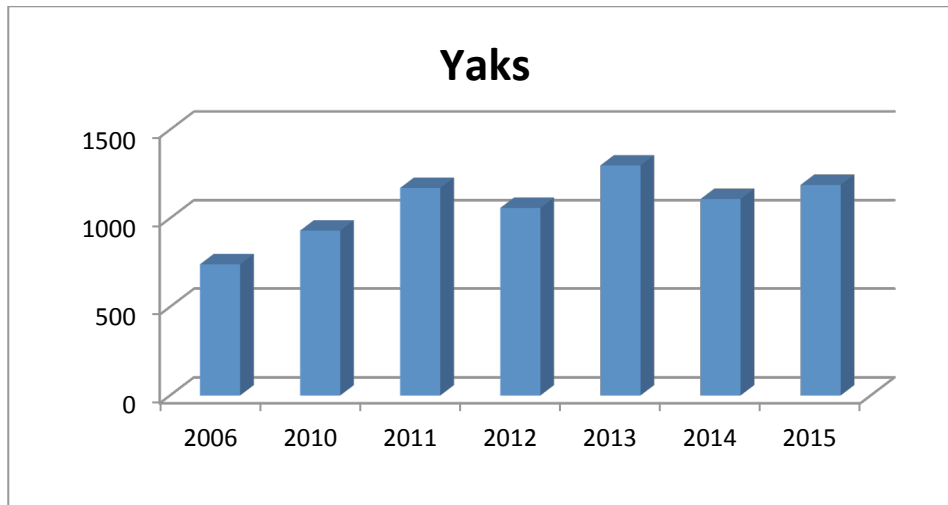


Figure 2. Annual estimates of domestic yak numbers in the western Big Pamir between 2006 and 2015, Wakhan District, Badakhshan Province, Afghanistan.

Discussion

The livestock population growth in western Big Pamir between 2006 and 2013 has been dramatic, at +118.8%, or an annual average growth rate of 16.9% (Table 1). This demographic increase was reported in all livestock species; sheep, goats (Fig. 1), yaks (Fig. 2) and probably cattle as well, but those have not been accounted for in the surveys because they remain in the Pamirs for only a short period of time (early July-early September). We think that concomitant to this increase in numbers, Big Pamir also supported locally increased densities (Ostrowski et al. 2013). Livestock range-use surveys carried out between 2006 and 2008 suggested that Wakhi people already maximized the use of available pastures for their livestock (Ostrowski 2009). In such circumstances an increase in livestock numbers should inevitably translate into an increase in livestock densities. Using GPS data collected by herders Ostrowski (2009) found that the average home range of eight of these herds, totalling nearly 5,000 sheep and goats, was 30.2 animals/km² in grazing areas, resulting in an average global density of 20.8 animals/km² for Big Pamir. In the worst case scenario a two-fold increase in livestock numbers, as measured for the last nine years, could translate in 2015 to a maximum average density of ca. 60 animals/km² in grazing areas.

Although the demographic trend over the past eight years indicates a significant rise in livestock numbers, the inter-annual growth rate was uneven; an aggregated 40.2% estimated between 2006 and 2010 followed by an increase of c. 18% in 2010-2011, and an “explosion” at ca. 34% growth in 2012-2013 (Fig 1). The significant population increase between 2012 and 2013 raised concerns regarding the sustainability of current grazing practices by Wakhi herders in Big Pamir (Ostrowski et al. 2013).

In Ostrowski et al. 2013, we predicted that livestock populations might have reached maximum numbers in the area, which were likely to decrease in the future because of considerably degraded pastures. Aligned with our predictions, livestock numbers in 2014 and 2015 seemed to have levelled off with a modest (and probably genuine) decrease of 2.6% in 2014 compared to 2013 followed by an increase of 0.7% in 2015 compared to 2014. Interviews with herders in September 2014 confirmed that pastures were forage-depleted by the end of August; one and half month ahead of the usual end-of-grazing period. Most herders put the blame on low precipitation during the past winter, while others assigned fault to the increasing stocking rates and added grazing pressures caused over the past decade. In 2015 pastures were also forage-depleted by the end of August, despite relatively good precipitations (in the form of snow) in February-April, pointing out on the overstocking situation as the main cause for rangeland low productivity. Despite the alleged situation of chronic forage depletion likely due to intense grazing, the livestock population has still not been affected by significant winter losses, possibly because of the relatively mild weather conditions that prevailed in Wakhan for the last winters. It is also possible that livestock were not in significantly poorer fattening stage compared to previous years (hence disputing the assumption that pastures were prematurely depleted) and could still withstand the demanding winter conditions. A useful indicator for future monitoring would be to measure livestock body conditions before and after summer grazing in addition to counts.

Of additional concern is the presence of cattle in Big Pamir during the 2014 and 2015 autumn surveys; a large-size grazer that was not reported in this area at this time of the year between 2010 and 2013. In Wakhan cattle are usually moved by early September to the main valley, where farmers use them as draft animals for agriculture. Without an observed increase of agriculture mechanization in the area, the presence of 239 and 111 cattle in Big Pamir in late September 2014 and 2015, respectively, tend to suggest that cattle are left in Big Pamir for increasingly longer periods of time. They constitute an additional grazing burden on already heavily utilized rangelands.

Over the past four years local people have claimed that weather conditions in the Wakhan Valley, where most livestock are taken over the winter, have been fairly mild and were followed by significant increases in livestock numbers the following summers. Interestingly the mild winter conditions in 2013-2014 and 2014-2015 did not translate into a significant increase in livestock numbers brought to Big Pamir in summer 2015. Although not openly admitting the problem of overstocking, communities may have acknowledged the issue and did not increase the stocking rate above summer 2013 levels, as in 2014. Whether this community-initiated management decision will be upheld for the next years remains to be seen.

The lack of long term (>10 years) continuous monitoring of livestock in Wakhan does not rule out a possible “boom-and-bust” livestock demographic hypothesis. The current observed trend could be part of a longer term (possibly even cyclic) fluctuation of livestock numbers across Wakhan, which will be followed by a decrease as a result of consecutive winter mass mortality of livestock. In the meantime however, we believe that immediate consequences on the Big Pamir range quality are substantial.

In 2006 and 2007, an exhaustive rangeland study of Big Pamir showed that the sedge meadow / wet meadow, Alpine grass, and Artemisia steppe vegetation covers, which are the most significant to wild and domestic grazers, suffered from the effects of heavy, long-term grazing, which significantly reduced the standing crop (Bedunah 2009). With the doubling of the livestock population grazing this landscape seven years later, and sustained high stocking rates for the last three years, an even higher level of degradation on this fragile vegetation cover, which is essential to wildlife, is likely. It could be the case that the increased livestock numbers may threaten the entire ecosystem, exposing populations of wild and domestic herbivores to food shortages.

Protection and vegetation recovery is a main conservation priority in the western Big Pamir. Unfortunately solutions to tackle the summer high stocking situation in Big Pamir are few. They all require a community-driven effort to introduce more sustainable grazing practices and limit livestock numbers and the extent of them grazing ‘most valuable areas’. In theory specified grazing periods, durations, and rotations among livestock owners could be proposed and an increased destocking effort in the autumn, primarily via sales could be developed. Restrictions imposed on usage of Pamir pastures by non-Wakhi herders will also have to be taken into consideration. Such management practices will however be very difficult to implement considering the role livestock production plays in the subsistence of the Wakhi, and the local economy in general. It is currently the only large-scale profitable activity in the district.

We suggest starting implementing more efficiently a no grazing policy within the Big Pamir Wildlife Reserve, using the community ranger teams and according to the management plan endorsed by representatives of the local communities. The most valuable (and sensitive) areas in the buffer zone of the reserve will have to be identified and rehabilitation processes initiated. Erecting exclosure plots within the reserve, in the buffer zone and in non protected rangelands will help monitor the quality and speed of rehabilitation processes and provide to the communities a visual and quantifiable indicator of the benefits of sustainable grazing practices.

In anticipation of a quantitative update on rangeland conditions across Wakhan, livestock monitoring provides a good proxy of the annual level of grazing pressure on Pamir rangelands in Afghanistan. Although the WCS monitoring effort focuses only on livestock in western Big Pamir, this area receives in summer at least half of the livestock population owned by the ca. 1,400 Wakhi households, who composed in 2014 nearly

90% of the human population of the district (Ostrowski, pers. obs.). In 2016 WCS aims to measure fattening indices of livestock brought to Big Pamir during summer, along with numbers monitoring.

Conclusion

In recent years Wakhi people have increased livestock numbers in Big Pamir to possibly unsustainable levels. Although this increase seems to be controlled it is unknown whether it is a new phenomenon resulting from new economic incentives, societal modifications, or part of a long-term and possibly cyclic increase in livestock numbers, likely followed by a decrease as a result of harsh, successive winters. It does however justify continuing efforts with monitoring livestock. Livestock number measurements carried out by WCS in western Big Pamir since 2006 are accessible in a unique database available with the WCS Afghanistan's Monitoring and Evaluation Department in Kabul.

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Literature Cited

Bedunah, D.J. 2009. Description of Wakhan Corridor vegetation land classes delineated in the supervised land classification. Unpubl. Rpt., Wildlife Conservation Society, Kabul, 48 pp.

Mock, J.,K. O'Neil and I. Ali. 2007. Socioeconomic survey & range use survey of Wakhi households using the Afghan Pamir, Wakhan District, Badakhshan Province, Afghanistan. Unpubl. Rpt., Wildlife Conservation Society, Kabul, 100 pp.

Ostrowski, S. 2007. Wakhi livestock in Big Pamir in 2006. Unpubl. Rpt., Wildlife Conservation Society, New York, 60 pp.

Ostrowski, S., A.M. Rajabi, and H. Noori. 2007. Kirghiz and Wakhi livestock in the Afghan Pamirs in 2007. Unpubl. Rpt., Wildlife Conservation Society, New York, 91 pp.

Ostrowski, S., A.M. Rajabi, and H. Noori. 2009. Livestock and Marco Polo sheep: assessing the risk of health conflicts in the Afghan Big Pamir, Asia. Unpubl. Rpt., Wildlife Conservation Society, New York, 56 pp.

Ostrowski, S., and A.M. Rajabi, 2013. Wakhi livestock in Big Pamir. Numbers and demographic trends (2006-2013). Unpubl. Rpt., Wildlife Conservation Society, New York, 6 pp.

Ostrowski, S., and A.M. Rajabi. 2014. Update on Wakhi livestock in Big Pamir (2006-2014). Unpubl. Rpt., Wildlife Conservation Society, Kabul, 6 pp.

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