



## **Protecting livestock corrals against predators in Wakhan National Park (2015 – 2018)**

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### ***Background***

Livestock predation is an important cause of mortality of snow leopards across their range including in the Wakhan District of Badakhshan Province, Afghanistan (Simms et al. 2011). Most commonly, snow leopards climb into livestock corrals, usually as a result of poor design (e.g. no proper roof, unprotected ventilation holes or gaps in the wall or around the door) and maintenance, killing in a frenzied behaviour many sheep and goats in one time and inflicting to the affected people significant economic loss (Simms et al. 2011). Local people will often respond by killing the snow leopard and selling its parts to the best offering or to a passing trader. Predator proofing of livestock corrals has emerged as an efficient conflict mitigation method across many of the snow leopard countries, by reducing the predation of livestock by snow leopards, as well as wolves (Mohammad et al. 2017).

In Wakhan wolves, and to a lesser extent snow leopards, are responsible of significant livestock loss (Moheb, 2016). The ‘traditional corral’ used commonly by families offers little protection against predators. These low-walled structures have no or incomplete roof, allowing the predator easy access.

Since 2010 the Wildlife Conservation Society program in Afghanistan has implemented thanks to the financial support of three successive donors (USAID, WFP and GEF-UNDP) the construction of 35 predator-proof communal corrals and the protection of 814 existing household corrals in the Wakhan Valley and Pamirs. Here we report about the constructions and maintenance activities carried out between 2015-2018 in the course of the GEF-UNDP-granted project – *Establishing integrated models for protected areas and their co-management in Afghanistan* –.

## ***Results of the action***

### *Constructing predator-proof communal corrals*

Three predator-proof communal corrals have been constructed for the Kyrgyz community in Little Pamir (2) and Big Pamir (1) (Table 1) in 2015 – 2018 (Figs. 1 – 3) (Appendix 1).

**Table 1.** Information on the three communal predator-proof corrals constructed in 2015-2018 in Little and Big Pamir, Wakhan National Park, Afghanistan.

<b>Settlement</b>	<b>Year of construction</b>	<b>Size (m x m)</b>	<b>Location (UTM)</b>	<b>Purpose</b>
<i>Koktoroq</i>	2015 – 2016	15 x 20	462550 – 4131397	Shoats / Summer
<i>Eshkili</i>	2017 – 2018	10 x 20	429902 – 4125501	Shoats / Winter
<i>Tila Bai</i>	2018 – 2019	10 x 20	346903 – 4132469	Shoats / Winter

Because of the remoteness and logistical complexity of these projects (e.g. 10 days of walk to reach *Koktotoq* in Little Pamir) the constructions had to be organized in two phases. The walls were constructed the first year and the roof and door fixed the second year. Hence the walls of the third corral have been erected in summer 2018 (Fig. 3) but the beneficiary will fix the roof and door (delivered in October 2018) only in summer 2019. These constructions protect the livestock of three Kyrgyz settlements (ca. 1,200 sheep and goats).



**Figure 1.** Communal predator-proof corral in *Koktoroq*, Little Pamir. The heavily trampled ground suggests that sheep and goats use this corral intensively during summer, 22 July 2017.



**Figure 2.** Communal predator-proof corral in *Eshkili*, Little Pamir. Top – External view of the walls of the corral. Bottom – Inside view of the corral showing the wide mesh size of the wire-mesh on the roof to avoid snow accumulation and roof collapse, November 2018.



**Figure 3.** Communal predator-proof corral in *Tila Bai*, Big Pamir. A&C – External view of the walls of the corral. B – Wire mesh for the roof and door stored for winter and to be installed in summer 2019. D – Detail of the masonry stone and clay walls, 2 October 2018.

### *Protecting household corrals*

Between 2015 and 2017 doors and ventilation holes of 642 household corrals in the Wakhan Valley have been protected with wire-mesh against the possible intrusion of predators (Fig. 4). This action has contributed to protect 10,000 – 15,000 sheep and goats and occasionally cattle in ca. 45% of Wakhi households in Wakhan National Park (Table 2).

**Table 2.** Location and number of predator-proof household corrals in 2015 – 2018 in the Wakhan Valley of the Wakhan National Park, Afghanistan.

Year	Village name	Number	Year	Village name	Number
2015	<i>Yamit</i>	45	2016	<i>Pakuy</i>	48
	<i>Kret</i>	48		<i>Ish Murg</i>	27
	<i>Kuzget</i>	10		<i>Issik</i>	47
	<i>Baba Tungi</i>	18		<i>Wergund-e Bala</i>	23
2016	<i>Karich</i>	18	2017	<i>Wergund-e Payan</i>	27
	<i>Kandkhun</i>	22		<i>Digargund</i>	20
	<i>Dehghulaman</i>	47		<i>Rochun</i>	25
	<i>Rorong</i>	33		<i>Korkut</i>	14
	<i>Wuzed</i>	28		<i>Neshtkhawr</i>	30
	<i>Goz Khun</i>	27		<i>Nirs</i>	35
	<i>Sarkand</i>	10		<i>Archa</i>	20
	<i>Pak</i>	20		<b>Total</b>	<b>642</b>



**Figure 4.** WCS snow leopard team member, Aziz Beg, fixes a one square-meter wire-meshed wood frame over a ventilation hole of a household corral in *Kret* Village, Wakhan National Park. Snow leopards have been reported to break into corrals through such ventilation holes, when not protected, July 2015.

#### *Maintaining predator-proof communal corrals*

In 2018 WCS has repaired five communal predator-proof corrals constructed in 2010 – 2014. This action has contributed to enhance the protection of livestock against predators in five villages of Wakhan National Park (Table 3; Fig. 5).

**Table 3.** Information on the maintenance of communal predator-proof corrals in 2018 in the Wakhan Valley, Wakhan National Park, Afghanistan

<b>Village name</b>	<b>Construction</b>	<b>Date of repair</b>	<b>Repairs</b>
<i>Avgarch</i>	2011	14 November	Changed one broken roof timber, door repaired in summer 2018.
<i>Goz Khun</i>	2013	15 November	Re-built a segment of wall and fixed two broken roof timbers.
<i>Kuzget</i>	2014	16 November	Changed three broken roof timbers.
<i>Ish Murg</i>	2010	17 November	Changed two timbers and repaired a pillar.
<i>Kret</i>	2011	19 November	Changed one broken timber.



**Figure 5.** Maintenance work carried out on the communal corral of *Kuzget* Village on 16 November 2018. A&C – Broken timber before and after change. B&D – WCS team changes broken timbers in Kuzget corral. *Note* – Because the beneficiaries have added dry vegetation on the wire-mesh roof, which has not been designed to withstand the weight of snow, winter snow weights heavily on the roof structure, explaining the premature breakage of timbers.

### ***Discussion and conclusions***

Demand for more corrals is high among the communities in Wakhan and especially in Pamirs where good predator-proof corrals are both a protection against predators and inclement weather. The built predator-proof communal corrals in 2015-2018 have thick and high stonewalls (3), a wire mesh roof (3), and are plastered with clay (2). They prevent snow leopards and wolves gaining access and also offer a good refuge to livestock in the event of bad weather conditions.

To date no cases of predators breaking into communal predator-proof corrals has been reported to WCS. One case of intrusion of a snow leopard into a protected household corral, resulting in the killing of 22 sheep and goats and injuries to another eight out of a flock of 35, was recently reported to us. It happened during the night of 28-29 October 2018 in the village *Qila-e Wusi* in upper Wakhan. Investigations carried out by the WCS Snow Leopard Team showed that part of the roof had collapsed and had been repaired only with layers of dry vegetation. Obviously this ‘light’ repair was ineffective against predators and the protected ventilation hole on the remaining part of the roof was no longer of any use to prevent intrusions. Although the family did not seem very poor, it is believed that this predation has been the result of improper maintenance of the corral either because of lack of financial resources, material or out of ignorance or laziness.

Protection on household corrals is obviously inefficient if the corral suffers some structural damages that allow predators to break in.

One of the biggest challenges in corral predator-proofing operations is the maintenance of the corrals over time. As predator-proof corrals age and parts, such as doors or roof timbers require replacement (or are stolen), the risk is that people may neglect to perform repairs, causing the corral to cease being protective against predators. The case of the recent predation in *Qila-e Wust* Village described in the previous paragraph illustrates this challenge. People must understand that once the product is delivered to them the maintenance of the corrals should be their responsibility. In Wakhan we have experienced a wide range of engagement depending on beneficiaries. Our impression is that Kyrgyz people who are strict pastoralists are more in demand of communal corrals than Wakhi agro-pastoralists and as such may be more proactive at maintaining them. Within the Wakhi communities we have observed a vast disparity of behaviours and understanding, from keen engagement to complete disinterest. With these considerations in mind, any future demand for a predator-proof corral will have to be carefully reviewed and beneficiary engagement evaluated before any implementation is granted, bearing in mind that in Wakhan written, signed, agreements are rarely valued by local communities as committing documents.

It is also very important to monitor accurately the number of predation events in the Wakhan National Park, as a proxy indicator of the condition of wild prey populations. An increasing number of predations cases on livestock would indicate a decline of main natural prey species of wolves and snow leopards (i.e. Himalayan ibex and urial in the Hindu Kush part of the Wakhan), which then shift to livestock as the only alternative food source, especially in winter. Re-establishing a healthy prey base would then be of greater ecological and sustainability value than protecting endlessly corrals.

Predator proofing corrals remains one of the most effective actions to mitigate the risk of conflicts between predators and humans in Wakhan National Park. With the successive supports of three main donors WCS has contributed to limit the risk of such conflicts. More corrals are still needed, especially in the Pamirs, and the continuing support of GEF-UNDP through the project – *Conservation of snow leopards and their critical ecosystem in Afghanistan* – will help to build safer corrals for livestock, resulting in fewer conflicts with their occasional predators.

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## ***References***

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**Appendix 1.** A map of corral predator proofing activities carried out by WCS in the Wakhan National Park between 2015 and 2018. Red triangles are locations of newly built communal predator-proof corrals, green triangles are locations of repaired communal predator-proof corrals, and blue dots are locations of villages that received protection of household corrals (numbers shown).

