



**Snow Leopard Conservation Foundation
People's Trust for Endangered Species Interim Report
July 29, 2014**

**Project title: Reducing mass depredation events to increase tolerance for snow leopards
(aka Corral Study)**

- **Project head:** Bayarjargal Agvaantseren
- **Institute:** Snow Leopard Conservation Foundation
- **Country project is based in:** Mongolia
- **Project start and end date:**
 - Start date: September 2013
 - End date: August 2016
- **Date of report: July 29, 2014**
- **Species/ habitat:** Snow leopard/Altay Mountains
- **IUCN conservation action/ research action being undertaken AND/ OR UK BAP target addressing**
 - Conservation action: 6.5 Livelihood, economic & other incentives- Non-monetary value
 - Research action: 7.5 Threats; 7.6 ActionsSpecifically this project seeks to address snow leopard conflicts with local people over livestock depredation.
- **What activities have you undertaken to date**

Background

Devastating livestock losses occur when a snow leopard enters a corral. These events affect families economically and emotionally and generate negative attitudes towards the predators and predator conservation that can directly or indirectly lead to snow leopard persecution. To address this problem, we aim to develop effective and cost effective preventative measures that will help herders in Mongolia reduce mass loss of livestock to snow leopard predation, and to increase tolerance for snow leopards among herder families.

Our objectives are to:

- 1) Identify site-scale correlates of livestock predation by snow leopards at night-time corrals
- 2) Evaluate effectiveness of three types (physical barriers, warning and response deterrence, and passive deterrence) of preventative measures in reducing livestock depredation by snow leopards in night-time corrals
- 3) Understand herder behavior during predator attacks, and examine the influence of the above preventive measures in changing the attitudes of local herders towards the snow leopard
- 4) Examine herders' perceptions of different preventative measures

Activities to date

This project is taking place in the Tost Mountains, South Gobi, which is the site of our long-term ecological study. We should note here that while we use the word 'corral' regularly in order to have an easily understandable point of reference, in reality some of the structures are loose pens, or holding areas and are not fortified structures.

1) Identifying correlates of livestock predation by snow leopards at corrals

As mentioned in our last report, we prepared a survey to determine predation patterns at corrals as well as attitudes towards snow leopards and wolves. A total of 60 household interviews were completed with this form within the Tost community, assisted by Dr. Kulbhushansingh Suryawanshi, Regional Ecologist for Snow Leopard Trust.

We found that herders lost about 0-19% percent of livestock to snow leopards and wolves. Wolves were responsible for greater livestock damage than snow leopards. Snow leopards killed about 41 goats in the pastures and about 44 in the night time corrals over the last one year in Tost. Wolves killed about 235 goats in the pastures and 195 in the night time corrals over the last one year in Tost.

Attitudes of local pastoralist in Tost toward the snow leopard was positive with a mean attitude score of 2 (95% CI 1 to 3) on a scale ranging from -8 to 8 where positive values indicate positive attitudes and negative values indicate negative attitude. This score was comparable to attitude score of pastoralist in India (Spiti) with existing conservation programs (we have a long history of community-based conservation in Tost dating back 10 years). The attitude toward wolves was negative with a mean attitude score of -3 (95% CI -2 to -4). The attitude toward wolves in Tost was more negative than the most negative site in Spiti.

We also collected information about behaviour of the herder during the attack, duration of use of corrals, and control variables including corral material, height, herd size, habitat ruggedness, etc. We are hoping to determine correlates regarding types of corrals, or ways in which livestock are penned, and levels of livestock predation. However, Dr. Suryawanshi reports "A robust analysis of such a pattern has not been done. There is the small complication of one herder having multiple camps which makes such an analysis difficult to do. I will chase this analysis as a next step."

2. Evaluate the effectiveness of three types of preventative measures in reducing livestock depredation by snow leopards at corrals

Our intent is to try physical barriers (fencing), warning and response deterrence (lights, sounds), and passive deterrence (lights, fladry). Regarding the critter gitters, fladry, and the bear bangers - these

are used as complimentary tools and not something we will test separately (i.e. critter gitters are added to the fences to cover spots close to cliffs of similar where there is a risk of the cats jumping the fences and bear bangers are used to scare cats away if awakened by commotion in the middle of the night or similar). In consultation with Dr. Jens Karlsson from the Wildlife Damage Center in Sweden we finalized the design of the fences as of last reporting; then we worked on sourcing all the materials as cost effectively as possible.

Between 4-9 April, 2014, we held a workshop in Tost to launch the study and select 10 participating families. The meeting was attended by about 20 herders, the township governor, and the vice governor for the district. Dr. Karlsson, Dr. Gustaf Samelius (Snow Leopard Trust Assistant Director of Science), and Dr. Suryawanshi were also in attendance. The workshop started with a herder meeting where Chimgee, our Community Conservation Specialists, and Sumbee, SLCF Research Assistant, introduced the study. Dr. Karlsson gave a presentation on different techniques to reduce livestock losses (focusing largely on experiences from Sweden but also other parts of the world), which was very appreciated.

Chimgee and Sumbee then headed the section aimed at selecting families to participate in the study; but the actual selection was completed by the herders themselves. This was a major accomplishment in that, leading up to this workshop, one of our concerns was how to select 10 families to receive deterrent, and how to encourage other herders to sign up as a control group (no deterrents)—and how to do this without control group participants feeling like they ‘got a bad deal.’

In the end, there was little real cause for concern as the workshop attendees gained a good understanding of the study method. One criteria for selecting families to participate was high losses in the past. We found it interesting that herders even suggested families that were not present at the meeting. We originally considered forming a control group during this workshop, but realized this wasn’t a high priority as we can potentially obtain information on losses from unfenced corrals by using data regularly collected through our Livestock Insurance Program (a community-based program active in Tost and also supported by PTES).

The district governor was very happy with the meeting and the study and expressed his hopes to see our collaboration expand even more in the future.

After the workshop, Dr. Karlsson, Dr. Samelius, and Dr. Suryawanshi helped the SLCF team over the course of 5 days towards preparing the material for the first fences (largely cutting and preparing of poles for the fences) and building the first fences (one each) at two family settlements (Daowa and Burun). The fences are two meters tall with a live wire at the top. Our team enjoyed building the fences and we have since heard that Daowa and Burun were happy with them and think that they will be good for reducing livestock losses. The remaining eight fences will be built by the SLCF team in late summer or early fall this year.

- **Are you on target – e.g. achieving sample size, reaching target audience**

We initially planned for a sample size of 50 for the surveys, and exceeded this by completing 60 interviews. We are also pleased to report that we are on target with our audience, having the backing of the community and the district governor. We originally planned to build 15 fences, but have adjusted and are on target towards a revised goal of building 10 fences (see “Have you encountered any difficulties” below for how we had to change the size and shape of the fences which affected how many fences we can build). We believe these shifts should not affect the outcomes of the study.

We would also like to mention that there is a slight shift in our study from how it was described in our original proposal, and we are not using the bear bangers, critter gitters and fladry as separate forms of deterrents. Through further discussion amongst our team, we have determined that these would not be enough by themselves: animals would very likely get used to the fladry and critter gitters (noise and lights)—and quite quickly—and bear bangers (loud noisemakers) are used only when a herder sees or hears that an animal is there. We are finding these are more effectively used as ‘compliments’ to the fencing, e.g. critter gitters can be added to the fences to cover spots close to cliffs of similar where there is a risk of the cats jumping the fences and bear bangers can be used to scare cats away if awakened by commotion in the middle of the night. Therefore we are primarily focusing on testing the effectiveness of installing fences versus no fences, and looking at ways to optimize the fences.

○ **Have you achieved any outcomes to date? What are they? E.g. produced survey booklet, radio-tagged six animals, arranged three community workshops**

- Baseline attitude and predation surveys completed, data analysed
- Launch/introduction workshop held, study participants and control group selected
- Two new fence/deterrent systems installed

○ **Is your project on target to achieve the sustainable measures outlined in your application?**

We believe the sustainability of this project and its results rests on the understanding and expectations of the community. Therefore we started the workshop in April by first making sure that the herders (especially those who will not receive deterrent support during this study) understood that this is only the pilot phase of the program and that, ultimately, we will be working with all of them to apply the results from this study to help reduce livestock losses. During the initial meeting of the workshop, we also discussed that depredation instances can be managed and reduced but not eliminated which is important to stress not to set herder expectations too high or promise too much. Over the long-term, we will also need to devise ways to work with herders to install deterrents in a cost-effective—and potentially cost-sharing—way. We are currently discussing these issues internally and hope to discuss further with the community.

○ **Have you started disseminating any results – e.g. giving talks, preparing papers, producing management guidelines, submitting evidence to change government policy, getting media interest?**

We have not disseminated results since last reporting period.

○ **Have you encountered any difficulties or setbacks and how have you overcome them?**

Although not a major setback, we had to change the design of the fences somewhat: we had planned to make the fences round and build them very tight to any existing fences, but it turned out that making them round causes them to be significantly weaker (the corners are important structures, which therefore had to be reinforced with additional crossbars). We also learned that

quite a few of the herders have increased their stock so that not all of them fit inside the corrals as originally estimated. For this project it is important that 100% of livestock fit within the corrals. We have therefore adjusted to build larger corrals than anticipated and reduced the numbers of corrals we will build from 15 to 10.

We have also encountered a small delay trying to ship the Bear Bangers from the US into Mongolia as they qualify under US postal codes as 'dangerous good.' We therefore could not get them in time for the workshop.

- **Please indicate if the income or expenditure for your project differs significantly from that stated in your original application.**

The income has not changed.

Overall, we remain largely on budget for our expenditures, however costs have shifted. Our field equipment costs are thus far lower than anticipated, primarily due to being able to source heavy supplies, like the chain link for the fencing, locally. Our travel/subsistence line items are higher because we have built a larger international team than originally planned.

Our field equipment costs were originally budgeted for £15,988 and we are currently estimating around £11,360 (difference of £4,628). If acceptable, we would like to shift differences in field equipment to cover differences in travel and subsistence, where our costs have thus far risen from £2,823, as originally estimated, to £5,980 (difference of £3,157).

Report contacts:

Please note that Bayara is on an extended visit to the United States. She will be working out of the offices of the Snow Leopard Trust part of her time there. She is best reached via email. You can also call the Snow Leopard Trust main line, listed below.

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