

## Project Update: December 2014

During the field work in Tibet from May to August 2014, the project team successfully carried out the bird survey and field interviews in the study area Nyanpo Yutse. We have collected audio records of 650 minutes interviews and three replicates of bird survey for 140 plots. With the matching fund (ca. 1000 euros) from the Graduate School of the University of Freiburg, we used UAVs and got high-resolution ortho-image data for all the sample plots of the study area. From September to December 2014, we mainly worked on audio records transcribing and field data editing. The work is time consuming yet productive. We have already got quite a few qualitative results to describe the process of how the nomadic grazing tradition got lost in the study area. Using the remotely sensed images, we are classifying land-cover types and will analyze configuration patterns of bird habitats as the next step.

Through our interviews, we found that grassland policies seemed to play a driving role in pasture land use changes. Since the start of privatization in 1984, collective grasslands were separated into small pieces and leased to individual households while iron fences were established to designate private pasture boundaries. In the 1990s, permanent settlements were built up and the sedentarization compressed livestock grazing to the vicinity of winter pastures. Here are some quotations from nomad interviews regarding pasture land use and grazing management:

*"During people's commune time, rangelands were not fixed, and herders had different jobs. One family was responsible for herding all male yak and another herding all sheep, females."*

*"(In the summer rangeland) When other's yak graze in my pasture, 'hey, your yak went to my pasture' I would tell the owner, once or twice. But if they don't care or manage, (I will) just leave it like that."*

*"(The Longker village) had once a great number of sheep, and when livestock became privatized, every family kept about 20, 30 sheep. It was difficult to manage. Sheep run away at night... Wolves came at night, and the next day you found 20 sheep killed by wolves. "*

*"Aja, hard to manage sheep, couldn't even sleep at night. 20, 30 sheep in Ximtso, and 20, 30 sheep here, sheep here run to Ximtso. At the beginning, they didn't know each sheep very well, and quarreled, 'Eh, these are my sheep', 'No, they are mine!'"*

The bird survey result editing is still ongoing. From the data we have at hand now, there is an uneven spatial and temporal distribution of bird species. Landscapes with higher heterogeneity tend to have a higher avian richness. The mosaic habitat patterns, especially those with anthropogenic structures, are likely to maintain more bird species than homogeneous habitats. Snow finch species have a high correlation with the occurrence of pika or pika burrows. There were more birds on seasonal pastures when livestock had been moved away. We expect finishing transcribing in March 2015 and delivering further elaboration of the avian distribution patterns before April 2015.

In parallel to the study of land-use change history, we aim to detect land cover changes over the alpine landscape during the past decades. We have chosen Landsat scenes dating back from the 1980s to detect two major land cover changes, namely the degraded area and expansion of shrubs. The land-cover types acquired from ortho-images are used as ground truth information to train the remotely-sensed data. We hypothesise that most degradations occur on winter pastures due to intensified livestock grazing and prolonged usage period.

The next project phase our goal is to synthesize the results of interviews, bird survey and remote-sensing data analysis and produce the draft conservation plan for local communities.



Ortho-image of mosaic bird habitat formed by fencing in Nyanpo Yutse. Photo by Andreas Fritz