



Interim report for project:

**Consumer control and vegetation response: the fire-vegetation-
grazing dynamics in the Western Himalayan landscape**

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Project so far

The proposed study period is from June 2011 to August 2012. The field work is spread across three seasons; pre-monsoon (April-June), post-monsoon (October-November), and spring (March-April).

The study is divided into two phases. The first phase involves reconnaissance survey to identify traditional grazing and fire management practices and grazing and fire gradients across the landscape. Second phase involves sampling for ground vegetation, mainly for species composition, abundance and demography, in areas with different fire-frequencies and grazing-intensities using vegetation transects.

As per the proposed timeframe, we had planned to conduct reconnaissance survey in the first two months of study, June and July 2011, followed by data analysis and developing of maps (from August to September 2011), before starting field sampling for ground vegetation. However, we could start our study only in August as funds were received only in the first week of August. Due to heavy rains, the work was interrupted several times, and we had to extend the survey till late September. As a result, we could not sample vegetation during October and November months (November onwards it's a snow period, and vegetation undergoes dormancy till mid February), as we had to analyze the data and prepare fire and grazing maps. Hence, so far, we are able to complete only the first phase of our study.

Various activities carried out in the first phase

1. Meeting with Forest Department and local NGO and explaining the project. – We had discussed our project with Forest Department and local women self-help groups (BTCA) to get their support and involvement in the project. So far, we have got a good response from both sides and we are confident about their involvement in carrying out the project successfully.
2. Employing local people and carrying out informative questionnaire surveys. –We were able to employ people from the local NGO BTCA as our field assistants, and the village group leaders of women self-help group offered their help in the survey. We had covered more than 25 villages distributed across the landscape during our questionnaire survey.

We documented traditional and current grazing and burning practices by the local people in the study area. We mapped the local grazing grounds and collected information on the intensity of use of these grazing grounds by various villages. The information on changes brought in the lifestyle of local people by the declaration of Protected Area and the restrictions imposed on grazing practices was also collected. We further tried to document their observations on changes in vegetation brought by restrictions as well as over grazing and burning. Further, we tried to collect information on local people attitude and perception towards wild animals and their conservation.

3. Developing grazing intensity and fire frequency maps. – We obtained MODIS active fire products and burned area maps from January 2001 to May 2011. We developed

composite maps using both the products and identified areas with different fire frequencies. We developed grazing intensity maps based on the data collected through questionnaire surveys. By overlaying both maps, we developed the final map showing spatial extent of fire and grazing, and their intensity/frequency and overlap.

4. Sharing of maps with the Forest Department. – Soon we will be sharing the hard-copy of the map with the forest department.

Key results

Fire information for the area: Fire maps developed using remotely sensed data suggested that fire was mainly concentrated along the PA boundary and the north-eastern part, characterized by inaccessible rocky terrain, was free from any fire. The maximum fire frequency observed was 12, suggesting the presence of annual fires. Although fire was restricted in its distribution, the frequencies observed were much higher than that reported for similar ecosystems from other parts of the world.

During questionnaire survey, 75% of the villages accepted that they burn grasslands adjacent to them every year in order to remove dry and dead material and allow the growth of new, more nutritious grasses. The burning season was November to December and February to March. 25% of villages said that they have stopped burning for the last 5-6 years; the main reason being the loss of shrubs in grasslands which increased the falling risk for shepherds and grass-cutters on these steep terrains.

Grazing information for the area: Grazing in this landscape is characterized by seasonal migration. Livestock is grazed in high altitude alpine meadows, called *thatches*, from summer (April) till the beginning of winter (October). Livestock are brought back to villages during October, and the whole winter is spent in the village grazing grounds called *ghasnis*. Every village has its own *ghasnis* as well as favourite *thatches*. Since the formation of Great Himalayan National Park, many of these villages are restricted from entering their favourite grazing grounds. As a result, livestock from these villages are now forced to graze in *thatches* belonging to other villages. This has resulted in few *thatches* with very high density of livestock. Villagers expressed a concern over such kind of grazing, as they believed that it has resulted in over-grazing of these sites resulting in deterioration of vegetation.

Map Showing the distribution and frequency of fire between 2000 and 2011 and distribution of alpine pastures in Great Himalayan National Park Conservation Area (GHNPCA)

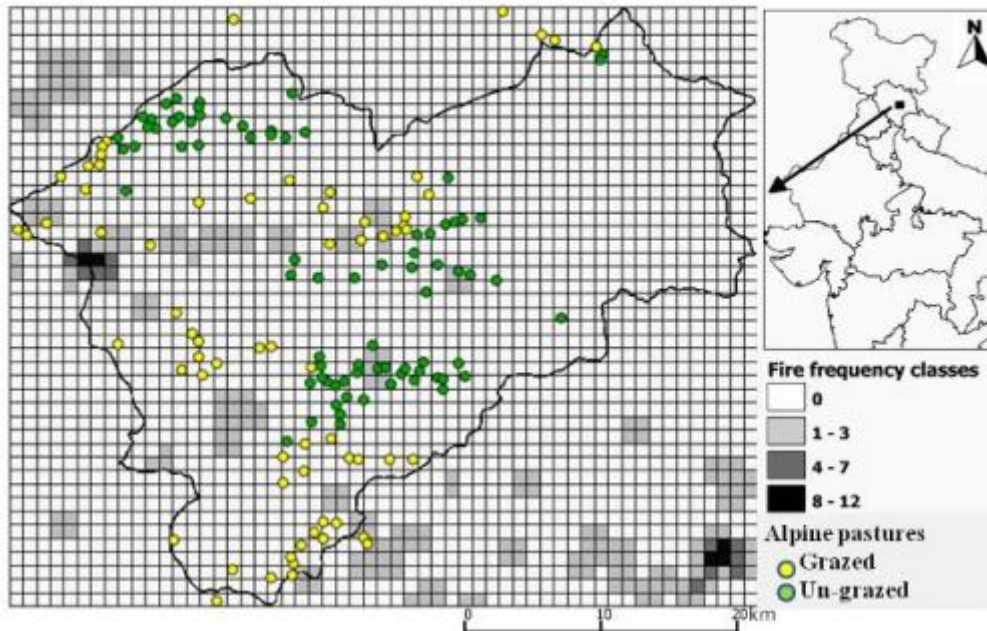


Figure 1. A 1x1 km grid showing fire frequency at each cell in the study area. Points indicate the distribution of alpine pastures (*thatches*).

Although we are behind on our timeframe, we have achieved a very satisfactory data on grassland use, traditional grazing and fire management practices, and intensity of grazing and distribution of fire in the landscape. We were able to establish a good contact with local people and gain their faith, which will help us in initiating long-term conservation activities in the study area. We are confident that the next phase of the project (March to June) will lead to important results that will provide essential information for the conservation of this landscape. However, as we could not sample the vegetation in October and November months (post-monsoon), we would like to extend the project period till December (proposed period was till August 2012) so as to capture any seasonal variations in vegetation patterns.

Statement of accounts updated to 31st December 2011

Contribution received on 2nd August'11. (in GBP @INR 71.81)	Expenses as of 31st Dec 11 (in GBP)	Cash in Bank (in GBP)
6000	1,821	4179