

## Project Update: December 2012

### Research Permit:

The research permit in order to conduct the research was obtained in last week of September 2012 from Manaslu Conservation Area Project, Gorkha, Nepal.

### Field Survey

An extensive field survey in the study area was conducted during October and November 2012. The entire three valleys in the study site namely Tsum, Nubri and Kutung were sampled. A total of 45 permanent transects were laid subjectively, 15 in each valley from 3600 m to 4000m asl. Five populations of target species were chosen from each valley. Three belt transects (200 m long and 20 m wide) was laid in each population from 3600 m to 4000 m asl. The four corners of each 1m x 1m plot were permanently marked with stakes and GPS. Number of individuals of all the species as well as grazing pressure and distance from settlements was recorded from each quadrat.

### Findings

On the basis of field visit and observable grazing pressure, all the three valleys in the study site fall within the category of unprotected area but the grazing pressure remains different. The grazing pressure was high in Tsum valley followed by Kutung valley. The least grazing pressure was observed in Nubri valley. The density of *D. hatagirea* was higher in Nubri valley than the other two valleys, whereas the relative RD of the species follows the reverse trend. The density of *D. hatagirea* (2.18 ind./m<sup>2</sup>) in Nubri valley was significantly higher ( $p < 0.05$ ) than that of Kutung (1.2 ind./m<sup>2</sup>) and Tsum valley (0.7 ind./m<sup>2</sup>). The dominant associated species recorded in all the population in Nubri valley were *Anemone tetrasepala* (21.33 %); *Geranium pratense* (21.27 %); *Heracleum* sp. (15.02 %); *Morina nepalensis* (11.23 %) whereas the dominant associates in Kutung valley were *A. tetrasepala* (23.04 %), *Geranium pratense* (23.01 %), *Allium wallichii* (14.18 %), *Habenaria pectinata* (12.44%) and in the Tsum valley *Morina polyphyla* (23.54 %), *Anaphalis triplinervis* (17.17 %); *Primula* sp. (13.23 %) and *Potentilla atrosanguinea* (10.83 %).



Left: Habitat of *D. hatagirea*. Right: Making 1x1 plot by researcher.



Left: Marking permanent plot by stake. Right: Tuber of *D. hatagirea*.