Project Update: December 2015

The second round of data collection was conducted from 1st June to 30th July 2015. The sampling design, number of transects, survey protocol remain same as to that of first round of data collection.

Blue sheep survey for summer season in the central part of Jigme Dorji National Park, Bhutan is complete and findings are as follows.

In a 60-day field survey, a total of 2,042 blue sheep belonging to 39 groups (or herds) were sighted by the first observer. The second observer counted 2,064 individuals belonging to 38 groups. The mean group size of blue sheep was 52.05 (*SE* ±4.28). There was a very high variability of group size, ranging from 3 to 167 (Fig. 1). Using the abundance estimation method employed by Forsyth and Hickling (1997) for double-observer regime, the total number of blue sheep in the study area was estimated at 2,097 (SE ±171). This estimate was found to be highly reliable with the detection probability of 97% and 95% by first and second observers respectively (Table 1).

The density of blue sheep in the study was estimated at 3.43 individuals per km^2 which is based on the total area of habitat available for blue sheep.

Using the observations of the first observer (i.e., the author), only 1996 of 2,042 blue sheep were categorised according to sex and age group (Fig. 2; Table 2). Forty-six individuals of blue sheep could not be identified due to observations at long distance, ambiguous identification features and very shy nature of the species.

The number of observations indicated that habitat utilization did not differ much with respect to type of vegetation coverage (*H* (2) = .829, *p* = 0.66). Although there was no significant difference in the habitat utilizations, slightly higher sightings were recorded in alpine grasslands between 4,501 to 5,000 m.

The detailed report on seasonal (winter and summer season) population abundance, structure and habitat use of blue sheep in central part of Jigme Dorji National Park, Bhutan will be published soon for public access.

TABLES

Table 1. Abundance estimates for blue sheep in central part of Jigme Dorji National Park, 2015 using the double observer survey method.

Variable	Value	
B	37	
S1	2	
S2	1	
G	40.05	
Var(G)	0.06	

μ	52.05
Var(μ)	18.33
N	2097
Var(N)	29556.10
SE (N)	171.92
SE (μ)	4.28
p1	0.97
p2	0.95

Table 2. Population structure of blue sheep in study area during summer season

	Sex and age class	Number of individuals observed	Percent of individuals observed
Young	Lamb	289	18.96
	Yearling	314	20.60
Female	Female	627	41.14
Male	Young Male	219	14.37
	Medium Male	230	15.09
	Big Male	317	20.80
	Total	**n=1996**	**100.00%**

ILLUSTRATIONS

Figure 2. A flock of lambs following their mothers

Figure 3. A female blue sheep scanning for predators

Figure 4. The adult male blue sheep searching his herd

Figure 5. Some members of the herd scanning for the predators while some are grazing

Presentation of Study Results:

The results of the study were presented to the group of researchers from various agencies, lecturers and trainees of College of Natural Resources and park officials from Jigme Dorji National Park, in different occasions. The question answer session has created a platform to both researcher and audience to provide critiques and suggestions to improve the study and make more science based.

This presentation is organised to disseminate the study results, especially on importance of having blue sheep in the northern region of the country and how to sustain the existing population in the face of mounting threats to the species and its predators.