

**VEGETATION COMPOSITION AND REGENERATION OF
SCHIMA- CASTANOPSIS FOREST IN SURYABINAYAK
BHAKTAPUR, NEPAL.**

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ABSTRACT

A quantitative vegetation study was undertaken in Suryavinayak Community forest of Bhaktapur district, Central, Nepal. The objective of the study was to study the natural regeneration patterns of two dominant species *Schima wallichii* and *Castanopsis tribuloides* and to study community composition (Tree and Shrub) and soil properties of east, west, north and south facing slopes. Regeneration and community composition (Tree and Shrub) of dominant species were studied in randomly placed 10m×10m quadrat (for tree), 5m×5m (for shrub/sapling and seedling). All the tree species were divided into different size classes based on diameter at breast height of 10cm intervals. Soil samples were collected from each quadrat. The forest was divided into four different facing slopes and ten quadrats were sampled in each slope for both vegetation and soil.

Total tree density and basal area ranged from 640 to 1115 pl/ha and 14 to 70 m²/ha, respectively. Total shrub/sapling density ranged from 3275 to 7904 pl/ha. Shrub/sapling density was highest in west facing slope and highest tree density in north facing slope (1115pl/ha). Highest species diversity for tree and shrub/sapling was found in north facing slope (7904pl/ha). Highest similarity index for both tree and shrub/sapling layers were found between east and north facing slope (69.23% and 56% respectively).β-Diversity for tree layer was highest between east and west facing slope and for shrub/sapling layer between west and north facing slope.

The soil was acidic with pH ranged from 4.01 to 4.20. The distinct variation in soil parameters were not observed in different slopes. The regeneration of dominant tree species was accessed by size class distribution. The size class distribution of *Schima wallichii* showed relatively good regeneration in the study area but the regeneration of *Castanopsis tribuloides* was relatively poor. The number of seedlings and saplings of dominant species (i.e. recruits <10cm DBH) were analyzed. There was lack of large sized tree in all four slopes. The large numbers of seedlings and sapling of both species were found in north facing slopes and lesser number of seedlings and saplings was found in west facing slope.

There was great variation in vegetation composition and regeneration of *Schima wallichii* and *Castanopsis tribuloides* in all slopes however the present study could not detect a single factor, which brought that great variation.

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ABBREVIATIONS AND ACRONYMS

°C	Degree Centigrade
BA	Basal Area
CBH	Circumference at Breast Height
CDB	Central Department of Botany
Cm	Centimeter
D	Density
DBH	Diameter at Breast Height
DFRS	Department of Forest and Resource Service.
F	Frequency
Ft	Feet
HMG	His Majesty's Government
S	Shrub
IVI	Importance Value Index
Kg/ha	Kilogram per Hectare
Km	Kilometer
M	Meter
M ² /ha	Meter square per Hectare
Mm	Millimeter
MOPE	Ministry of Population and Environment
NPK	Nitrogen, Phosphorus and Potassium
OM	Organic Matter
PCARR	Philippine council for Agriculture and Resource Research
Pl/ha	Plant per Hectare
RC	Relative Coverage
RD	Relative Density
RF	Relative Frequency
Sq/km	Square per kilometer
T	Tree
T.U.	Tribhuvan University
TUCH	Tribhuvan University Central Herbarium
VDC	Village Development Committee
WHC	Water holding capacity
S	Shrub
T	Tree