

NATURAL REGENERATION STUDY OF FOUR RHODODENDRON SPECIES IN WESTERN HIMALAYA

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Abstract: Regeneration patterns of species population can address climate change by adaptive evolution or by migrating association to survive in their favorable climate and finally decided to particular forest future. The main aim is to study to know the regeneration status of *R. arboreum*, *R. barbatum*, (2800 masl.) *R. campanulatum*, (3200 masl.) and *R. anthopogon* (3800 masl.) along the altitudinal gradient. In this paper we examined the status of regeneration potential of tree and bushy species in temperate forest, sub-alpine forest, and alpine forest at Kedarnath Wildlife Sanctuary, Tungnath-Chopta in Western Himalaya. To seedling population and distribution, we examine regeneration status in 80 random plots in study area. Total four species of rhododendron genera belonging to Ericaceae family out of which 28 seedlings of *R. arboreum*, 12 seedlings of *R. barbatum*, 23 seedlings of *R. campanulatum* and 33 seedlings of *R. anthopogon* were found in the forest. On the basis of importance value index *R. arboreum* followed by *R. anthopogon* have been found in good regeneration phase in comparison to other two species in the study area. Whereas, *R. barbatum* was found in poor regeneration phase in the study area. *R. campanulatum* and *R. anthopogon* were found above the treeline indicating that the climatic conditions were favourable for their growth. The height, diameter and density of the species differed along the elevational gradient and showed a species specific trend. Regeneration Potential of *R. anthopogon* (33 seedlings) was high in comparison to other three species followed by the second high regeneration potential i.e. *R. arboreum* (28 seedlings). Whereas, regeneration potential of *R. campanulatum* (23 seedlings) was higher in compare to *R. barbatum* (12 seedlings).

Keywords: Kedarnath Wildlife Sanctuary, Regeneration status Treeline, Elevation gradient, Density

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