Indian Journal of Tropical Biodiversity

Review Article

SEASONS AND ALTITUDES MODIFY PLANT RICHNESS AND DIVERSITY IN TIDONG VALLEY, HIMACHAL PRADESH, INDIA

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ABSTRACT: The high Himalayan regions are recognized as outstanding natural laboratories for the exploration of plant diversity in relation to varying local environmental conditions. Our investigation aimed to analyze the distribution of floral diversity across different altitudes and seasonal periods by examining plant communities within the Tidong valley, an area impacted by human activities such as road expansion and hydroelectric projects. The research was structured around altitudinal gradients while considering seasonal fluctuations. The study area was divided into three distinct vegetation zones: Mountain, sub-alpine, and alpine. A total of 120 experimental plots (quadrats) were established to facilitate the observation of plant communities. The results indicated that plant species richness and diversity were notably lower at higher altitudes compared to their lower counterparts, with a reduced number of species identified during the pre-monsoon season (March to May) in contrast to the post-monsoon season (October to December). Additionally, both density and diversity exhibited a decline with increasing altitude. The outcomes of our research suggest that plant communities in the higher Himalayas respond significantly to variations in elevation and seasonal changes.

Keywords: *High altitudes, Seasons, Diversity, Tidong valley, Richness*

Citation: Prasad S, Chauhan DS (2024) Seasons and altitudes modify plant richness and diversity in tidong valley, Himachal Pradesh, India. Indian J Trop Biodiv 32(2): 99-112.

Received on: 20/07/2024; Accepted on: 12/12/2024

INTRODUCTION

There are numerous fluctuations in species richness that are influenced by both the seasons and altitudes. The grouping of different species can persist if they are able to share resources at different times, thus reducing competition between species. The Himalayas offer steep altitudinal gradients and extreme slopes, leading to rapid changes in climatic zones over short distances, resulting in noticeable alterations in forest community structures (Sinha et al., 2018). Altitudinal variances present a significant opportunity for the assembly of specific plant species, influenced by factors such as