Impacts of Invasive Species in Shivapuri Nagarjun National Park

Rubina Karki, Golden Gate International College,
Tribhuvan University, Kathmandu, Nepal

Abstract

In this research, the invasive species distribution has been studied along with its relation with the native plants diversity and soil quality. The study was carried between the altitudinal range of 1409m and 2140m from Sundarijal to Chisapani trekking route. The Importance Value Index (IVI) was also calculated for the native trees within the altitudinal range. Altogether 15 plots were studied using Modified-Whittaker Nested Vegetation Sampling Method with total of 195 subplots.

Thirty-two tree species were recorded with *Pinus roxburghii* as the most dominant tree with the IVI value of 33.69, followed by *Schima wallichii* (IVI=19.12), *Fraxinus floribunda*(IVI=18.90), *Juniperus* sp. (IVI=18.26)and *Pyrus pashia* (17.98). Similarly, nine invasive species were recorded with *Eupatorium adenophorum* having highest average cover percentage of 72.6 followed by *Galinsoga parviflora, Xanthium strumarium, Lantana camara, Oxalis latifolia, Amaranthus spinosus, Solanum viarum* and *Bidens pilosa*.

Relationship of the seedling and sapling diversity with the invasive species coverage was established, both of which showed negative correlation (r = -0.38 and -0.56 respectively). Likewise, in the study area, the highest coverage percentage of invasive species (22.60%) occurred in plots with low trampling and high trampling (15.59%) and minimum in plots with intermediate level of trampling. From this we can infer that intermediate level of disturbance (trampling as an indicator) was important in managing/controlling the invasion. In addition to this, the relationship of invasive species coverage with soil quality namely, pH, bulk density and soil organic matter was established in which all showed negative correlation (r = -0.5, -0.31 and -0.46 respectively).

Image

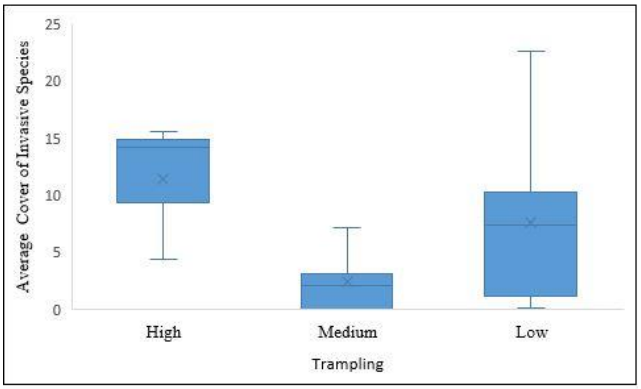


Figure 1Relationship between disturbance (trampling) and invasive species coverage



Biography

Rubina Karki has completed her Bachelor of Science in Envrionmental Science from GoldenGate International College affiliated to Tribhuvan University at the age of 22 years. She has worked on numerous field visits in relation to biodiversity during her bachelor life.

Email: rubinakarki5865@gmail.com

Notes/Comments: