

Macro-Biota Variation Under Human Protection in Desert Ecosystem of Cholistan (Pakistan)

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ABSTRACT Overexploitation is frequently believed to seriously affect the simpler ecosystem, like, deserts, and protection has been a suggested remedy without sufficient data. This attempt tries to provide some supportive data in this direction. Sand dunes and flats from Cholistan desert (Punjab, Pakistan) were sampled from five different protection levels, i.e., intensively protected enclosure, long protected (since 1972), newly protected (since 1984), unprotected and overgrazed, using quadrat method (plants = layer by layer analysis, mammals and birds = 10 – 15 km²), capture along transect line (reptiles), indirect evidences and pit fall trap (nocturnal animals and walking insects), snap trapping (small rodents) and sweep nets (flying insects). The ANOVA and linear regression equation suggest a significant difference in the species diversity under different protections and that each protection level adds 6.2 species. The species diversity and relative abundance exhibits a direct linear correlation ($r = 0.85$) under increasing protection. There have been different patterns in changing density/ relative abundance of different species under different protections, which is expected under the habitat requirements and palatability of each species, but generally the species abundance has increased with increasing protection. This effect is more pronounced in sand dunes as compared with saline flats. Species composition has also changed with protection. Generally low values of association chi-square appear between faunal compositions of different localities, except that between newly protected and unprotected localities, suggesting independence of each locality.