

Phytogeography and Regional Conservation Status of Gymnosperms in Pakistan

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Abstract : In the present study, phytogeography and conservation status of gymnosperms of Pakistan were investigated. 44 gymnosperms species of 18 genera and 9 families were collected from 66 districts of the country. Among the 44 species, 20 species were native (wild) and 24 species were exotic (cultivated). *Ephedra sarocarpa* of Ephedraceae was not collected in this study from its distribution area and most probably it may be Nationally Extinct now from this area. Previously in Gymnosperms Flora of Pakistan 34 species was reported. 12 new gymnosperms species were recorded for the first time. *Pinus wallichiana* (40 districts), *Cedrus deodara* (39 districts) *Pinus roxburghii* (36 districts), *Picea smithiana* (36 districts) and *Abies pindrow* (34 districts) have the maximum ecological amplitude. *Juniperus communis* (17 districts) and *Juniperus excelsa* (14 districts) were the widely distributed among the junipers. *Ephedra foliata* (23 districts), *Ephedra gerardiana* (20 districts) and *Ephedra intermedia* (19 districts) has the widest distribution range. *Taxus fuana* was also wider distribution range and recorded in 19 districts but its population was not very stable. These species was recorded to support local flora and fuana, especially endemics. PCORD version 5 clustered all gymnosperms species into 4 communities and all localities into 5 groups through cluster analyses. The Two Way Cluster Analyses of 66 districts (localities) resulted 4 various plant communities. The Gymnosperms in Pakistan are distributed in 3 floristic regions i.e. Western plains of the country, Northern and Western mountainous regions and Western Himalayas. The assessment of the National conservation status of these species, 10 species were found to be threatened, 6 species were endangered, 4 species were critically endangered and 1 species have become extinct (*Ephedra sarcocarpa*). The population of some species i.e. *Taxus fuana*, *Ephedra gerardiana*, *Ephedra monosperma*, *Picea smithiana* and *Abies spectabilis* is decreasing at an alarming rate.

Keywords : conservation status, gymnosperms, phytogeography, Pakistan

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