

SUMMARY

The background, objectives, methods and results of the investigations carried out on "*Plant diversity assessment and its conservation in the Shervarayan hills of Eastern Ghats of Tamil Nadu using Remote Sensing and Geographical Information System*" are summarized herewith. High pressures on land use / cover and habitat fragmentation in the tropical region are the primary causes forever growing rate of depletion of biological diversity. In the assessment and conservation of biodiversity, characteristics of habitat are of prime importance, since they provide knowledge about quality and quantity of vegetation cover. The quality of habitat is seen reflected in the status of vegetation cover and that are brought about. A variety of technologies exists which offer great opportunities for evaluation of general problems of assessment like plant biodiversity and its conservation. The last two decades have seen the extensive use of application of innovative technologies to experimental and operational activities. Remote sensing and Geographical Information Systems have proved indispensable because they integrate a number of technologies and useful in applications like assessment and conservation of plant biodiversity.

The first chapter has presented detailed studies on the status of current vegetation types as revealed in IRS 1C LISS III 1999. Six main vegetation types and other land cover types within the reserved forest regions have been mapped and the corresponding distribution areas have been calculated. The reserved forestland occupies major portion of the Shervarayan hills with 23260.76 ha. (49.50%) followed by others including villages with 17916.73 ha. (38.12%) and forest plantation 5813.202 ha. (12.37%). Woody species diversity, species

richness, stand density and its basal area and diversity indices such as Shannon-Weiner and Simpson diversity index of various vegetation types have been calculated in Chapter II. Abiotic factors like rainfall, slope, altitude, hydrogeomorphology have been mapped and they were associated with different vegetation type (Chapter III) Similarity richness and number of species respectively were compared with rainfall and altitudinal zones. The girth classes of trees have been compared with the slope. From this study is shown that vegetation type/species composition of the Shervarayan hills have been partly determined by the abiotic factors. Chapter IV has dealt with forest cover changes brought about by biotic pressure on the forest cover using Aerial photographs (1980) and IRS 1C LISS III (1999) data have been used. The results shown that drastic decrease of dense and open forest and increase of shrub and forest plantation. Buffer maps of roads, footpaths, and villages were generated and overlaid on the forest cover of above two period (1980 and 1999) and the influence of road network and village was calculated. The study shows that the forest cover affected due to biotic pressure. Assessment of unprotected area has been carried out (Chapter V) in terms of floristic composition, quantification woody vegetation and the impact of environmental and anthropogenic pressure on vegetation. The result displays that it is an endangered ecosystem (mining area) and needs immediate conservation and restoration processes. In Chapter VI (VI.I) models have been generated to prioritize areas for conservation and disturbance risk zones have been delineated using GIS. The second part of this chapter (Chapter VI.II) deals with developmental planning for conservation through people's participation and development. In the process of planning potential zones for reforestation have been modeled with a view to improve

people's livelihood through agroforestry and floriculture. The final section offers recommendations for conservation of natural resources such as soil, water and forest. Agroforestry and reforestation programmes have been highlighted.