

Seminar on

# BIODIVERSITY CHALLENGES AND THREATS; CURRENT SCENARIO

## Focal Themes

- Challenges of Conservation and Restoration of Biodiversity
- Conservation of Endemic/ RET Species
- Environment pollution
- Biodiversity related to Ethnic communities
- Biodiversity of flora and fauna

## ABSTRACTS OF CONTRIBUTORY PAPERS

21<sup>st</sup> & 22<sup>nd</sup> DEC. 2022



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**SREE NARAYANA COLLEGE**

Kollam-691001

(AFFILIATED TO THE UNIVERSITY OF KERALA)

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## IUCN RED LIST ASSESSMENT, NICHE MODELLING AND PROFILING CONTRIBUTING FOR NICHE SPECIFIC RESTORATION OF THREATENED ANGIOSPERMS IN THE WESTERN GHATS.

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### ABSTRACT

Niche adaptability and niche specificity are the important reasons for the restricted distribution of paleo and neo endemic species. Their population structure and dynamism in relation to interaction with environment and other species in their habitat are crucial in defining their conservation status, future planning and ecorestoration. IUCN threatened status assessment for 25 species has been done using Species Information System (SIS) provided by IUCN, incorporating population and phytosociological data after careful scrutiny of taxonomic and distribution records. Out of submitted 25 species, nine were published in the official IUCN red list and others completed the review and awaiting publication. Maxent based niche models of 12 threatened trees having differential distribution patterns and profiles were used here for the identification of niche specific potential conservation and restoration sites. We used modified species distribution model incorporating spatial information on factors such as terrain, altitude and present land use in the QGIS platform for better prediction accuracy. The phytosociological data and field level plot maps were used to generate two and three dimensional niche profile of the representing habitat of the threatened taxa. This illustrate the spatial species composition as an explanation of Eltonian niche factors and were used successfully in preparation of ecological restoration plans. The niche-based conservation and restoration plans were integrated to forest conservation plans, biodiversity strategy action plans and plans of Biodiversity Management Committee. The successfully germinated threatened trees and associates suitable for low elevation forest, sacred grove and coastal habitat were used for multi stakeholder involved ecorestoration including MGNREGA and women.



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