



Research Trends in Sri Lankan Mangrove Ecosystems: A Bibliometric Overview

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Mangrove ecosystems are important for coastal protection, biodiversity conservation, carbon storage, and community livelihoods. Although mangrove research in Sri Lanka has expanded over several decades, its thematic development and research gaps have not been systematically mapped. This study provides a bibliometric overview of Sri Lankan mangrove research from 1974 to 2026, moving beyond “what is known” to examine “how knowledge has developed.” Bibliographic records were collected from PubMed, OpenAlex, Dimensions, and Crossref using the search query “mangrove(s) AND Sri Lanka.” A total of 1,438 records were initially retrieved. After duplicate removal and manual relevance screening using Zotero reference manager, 478 publications were retained for analysis. Descriptive bibliometric analysis and keyword co-occurrence mapping were conducted using VOSviewer to identify publication trends, thematic clusters, temporal patterns, and research hotspots. Publication output increased markedly after 2010, with the highest activity recorded between 2020 and 2024. Keyword analysis showed a shift from foundational ecological studies on species composition, vegetation structure, and distribution toward broader themes including conservation, restoration, blue carbon, climate change, ecosystem services, socio-economic dimensions, remote sensing, and bioprospecting. Manual thematic classification showed that socio-economic, livelihood, and ecosystem service studies formed the largest category, with 88 publications (18.4%), followed by conservation, restoration, and governance with 66 publications (13.8%) and biomass, blue carbon, and carbon sequestration with 58 publications (12.1%). Despite this diversification, gaps remain in belowground ecological processes, ecosystem-level microbial ecology, long-term restoration monitoring, and geographically balanced research. This study provides an evidence-based overview of Sri Lankan mangrove research and highlights priority areas for future interdisciplinary studies and coastal management planning.

Keywords: *Mangrove ecosystems, Bibliometric analysis, VOSviewer, Research trends, Climate change*