



Research paper

Guardians of Diversity: Conservation of Native Orchids in Changing Ecosystems at Wayanad, Western Ghats

Sabu V. U. ^a

^a Vayalarikil (H), Kalathuvayal (PO) Ambalavayal, 673593, India

ARTICLE INFO	ABSTRACT
Keywords Western Ghats Orchid diversity Wayanad Conservation Biodiversity hotspot Habitat degradation Climate change Ecosystem stability	The Western Ghats, recognized as a UNESCO World Heritage Site, is renowned for its extraordinary biodiversity, particularly its rich assemblage of native orchid species. Wayanad, a district within this mountainous region, is an especially significant area for orchids due to its diverse habitats and microclimates that foster a wide range of species, many of which are endemic to the Ghats. Orchids in Wayanad not only contribute to the area's biodiversity but also serve as critical bio indicators, reflecting the health and stability of the ecosystem. This study investigates the current diversity of orchid species in Wayanad, assesses ecological challenges threatening their survival, and reviews ongoing conservation efforts. The native orchid populations in Wayanad are increasingly at risk due to habitat degradation, changes in climate, and pressures from human activity, including land use changes, agricultural expansion, and unregulated collection. These pressures disrupt the delicate balance of the orchid habitats, threatening the survival of both common and rare species. Through field surveys and ecological assessments, this study documents the orchid species present in Wayanad, providing valuable insights into their distribution, habitat requirements, and conservation status. In response to these challenges, this paper discusses adaptive strategies, such as habitat preservation, ex-situ conservation through botanical gardens, and community-based conservation initiatives. Engaging local communities is highlighted as a vital approach, fostering sustainable practices and conservation awareness. Policy recommendations are presented to reinforce orchid conservation at regional and national levels, with broader implications for safeguarding biodiversity within the Western Ghats and similar ecosystems worldwide. This study aims to support effective conservation strategies to protect these floral treasures and preserve the ecological integrity of the Western Ghats.
 DOI 10.5281/ib-862924 Corresponding author Sabu V. U.  Email sabuvayalarikil@gmail.com 	

1. Introduction

The Western Ghats, one of the world's eight hottest biodiversity hotspots and a UNESCO World Heritage Site, stretches along the western coast of India and boasts a rich tapestry of unique flora and fauna. Covering a range of ecosystems, from tropical rainforests to montane forests, the Western Ghats support an astonishing number of endemic species, contributing immensely to global biodiversity. Among these, orchids stand out not only for their striking beauty and ecological importance but also as key

indicators of environmental stability and ecosystem health. Orchids are especially sensitive to subtle changes in their environment, making them valuable markers for tracking ecosystem resilience and ecological degradation. However, these plants face significant threats, particularly in regions like Wayanad, Kerala, where both human activity and environmental factors have disrupted native orchid populations.

Wayanad, located within the Western Ghats, is a district known for its diverse ecosystems, which