https://doi.org/10.61507/SMJ22-2022-9QRH-07



The Sarawak Museum Journal Vol. LXXXV No. 106 December 2022



ISSN: 0375-3050 E-ISSN: 3036-0188

Citation: Magdalina Stephen et. all (2020). Current State of Knowledge on The Orchids of Sarawak's Peat Swamps. The Sarawak Museum Journal, LXXXV (106) : 145-160

Current State of Knowledge on The Orchids of Sarawak's Peat Swamps

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ABSTRACT

Sarawak's peat swamp orchids are considered to be understudied, as most of the related research are favoured to the orchid species from mixed dipterocarp forests. Furthermore, distruptions of their natural habitat caused by various anthropogenic activities have made the orchid assessment studies, especially on the inventory and diversity, to be difficult. Consequently, it widens the knowledge gaps of the orchids' natural history, current conservation status and their future in the peat swamp areas. Therefore, this inventory was conducted to compile and propose a provisional checklist of orchids distributed in the peat swamps of Sarawak. In total, 52 species from 26 genera of orchids were successfully compiled from the peat swamp areas located at lowlands and coastal plains of Betong, Bintulu, Kota Samarahan, Kuching, Limbang, Miri, Mukah, Sarikei, Sibu and Sri Aman districts. From the account, 10 species are endemic to Borneo. Current conservation status of the recorded species was assessed, and the significant roles of peat swamp areas as orchids natural habitat were further discussed. This compilation provides a glimpse on the current state of knowledge on the peat swamp orchids of Sarawak, thus serves as evidence to preserve the areas in their pristine conditions.

Keywords: Borneo, Orchidaceae, checklist, concervation status, peat swamp

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CURRENT STATE OF KNOWLEDGE ON THE ORCHIDS OF SARAWAK'S PEAT SWAMPS

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Sarawak's peat swamp orchids are considered to be understudied, as most of the related research are favoured to the orchid species from mixed dipterocarp forests. Furthermore, distruptions of their natural habitat caused by various anthropogenic activities have made the orchid assessment studies, especially on the inventory and diversity, to be difficult. Consequently, it widens the knowledge gaps of the orchids' natural history, current conservation status and their future in the peat swamp areas. Therefore, this inventory was conducted to compile and propose a provisional checklist of orchids distributed in the peat swamps of Sarawak. In total, 52 species from 26 genera of orchids were successfully compiled from the peat swamp areas located at lowlands and coastal plains of Betong, Bintulu, Kota Samarahan, Kuching, Limbang, Miri, Mukah, Sarikei, Sibu and Sri Aman districts. From the account, 10 species are endemic to Borneo. Current conservation status of the recorded species was assessed, and the significant roles of peat swamp areas as orchids natural habitat were further discussed. This compilation provides a glimpse on the current state of knowledge on the peat swamp orchids of Sarawak, thus serves as evidence to preserve the areas in their pristine conditions.

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INTRODUCTION

Sarawak's peat swamp is a unique ecosystem that covers approximately 1.6 million hectares of land. With such a wide area, it has a huge potential to harbour numerous species of plants, including one of the prominent groups in the ecosystem, the orchids (Orchidaceae). Despite its medicinal, dietary and aromatic usage potential, orchids from the peat swamps of Sarawak are considered as poorly studied, as most of the orchid diversity assessments were mainly concentrated on the mixed dipterocarp forests (Besi et al., 2020 and Go, 2019). This is in accordance with the limited research conducted in the peat swamp areas for the past decades (Beaman et al., 2001; Tawan et al., 2008). In addition, orchid research in the peat swamp areas is observed to be rather challenging, as large areas of Sarawak's peat swamp are subjected to deforestation and have been transformed into agricultural land or settlement areas (Dohong et al., 2017). These anthropogenic activities had caused continuous threats that are inevitable to the orchid species. Thus, it is vital to initiate an immediate approach to assess the current knowledge on the peat swamp orchids of Sarawak, which is the main aim of this paper. Here, we present compiled records from previous studies, and subsequently propose a provisional checklist of orchids in the peat swamp areas of Sarawak. The findings from this inventory will highlight that Sarawak's peat swamps are important habitat for the orchids, and thus contribute to provide relevant information for future studies.

METHODOLOGY

The data on the orchid diversity from the peat swamp areas in Sarawak was compiled from various reliable resources such as Beaman *et al.* (2001), Tawan *et al.* (2008), Meekiong *et al.* (2021) and Raffi *et al.* (Unpublished data). The updated taxonomic classification, habit, and general and local distribution for each species were verified using information provided by the Plants of the World Online (POWO) (https://powo. science.kew.org/). Subsequently, the conservation status of each species was assessed via the IUCN Red List of Threatened Species website (https://www.iucnredlist.org/) and Malaysia Plant Red List (https://www.mybis.gov.my/) website. The species were further classified into five categories of Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC) and Not Evaluated (NE). The collected data was then tabulated as a provisional checklist for the peat swamp orchids of Sarawak.