Ferns and lycophytes are effectively conserved in protected areas of Xishuangbanna

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Xishuangbanna is highly renowned as the most biodiverse region in tropical China. To conserve this extraordinary rich biodiversity, more

than 20% of Xishuangbanna's land has been protected in protected areas (PAs). However, the conservation effectiveness of PAs in this region still requires further investigation.

In a study published in the *Journal for Nature Conservation*, researchers from the Xishuangbanna Tropical Botanical Garden (XTBG) of the Chinese Academy of Sciences explored the ferns and lycophytes' diversity in Xishuangbanna with special emphasis on conservation efforts provided by the currently established protected areas (PAs).

The researchers compiled a dataset of historical records of ferns and lycophytes in Xishuangbanna, from digitalized herbarium vouchers and publications being explored with special attention on the temporal and spatial dimensions of collecting efforts.

They identified hotspots of ferns and lycophytes' diversity, by utilizing the indices of species richness, weighed endemism, corrected weighted endemism, and beta diversity.

According to the researchers, there was a long history of collecting ferns and lycophytes in Xishuangbanna. A considerable number of historical records covering 20.2 % of Chinese and 3.6% of global fern diversity have been accumulated in Xishuangbanna.

In addition, uneven distribution of ferns and lycophytes coincided with heterogenous geographic and climatic conditions in Xishuangbanna. The spatial distribution of ferns and lycophytes in Xishuangbanna was characterized by a concentration of species richness in southern valleys and endemism in western and northern mountains.

The researchers further found that the existing PAs in Xishuangbanna have demonstrated their effectiveness in the protection of ferns and lycophytes with nearly 90% of total species occurring in 21% of the

prefecture's total land area.

"Our study highlighted the importance of continuing efforts to maintain and expand natural history collections for the assessment of diversity hotspots and conservation gaps in Xishuangbanna," said Harald Schneider of XTBG.

More information: Ke Chen et al, Historical plant records enlighten the conservation efforts of ferns and Lycophytes' diversity in tropical China, *Journal for Nature Conservation* (2022). DOI: 10.1016/j.jnc.2022.126197

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