



# The 8th International Hornbill Conference

22<sup>nd</sup> to 24<sup>th</sup> May 2023  
Faculty of Forestry, Kasetsart University,  
Bangkok, Thailand

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Happy Hornbills,  
Healthy Forests

# 8<sup>th</sup> INTERNATIONAL HORNBILL CONFERENCE

<hybrid conference>



22<sup>nd</sup> to 24<sup>th</sup> May 2023

at

Faculty of Forestry, Kasetsart University,  
Bangkok, Thailand



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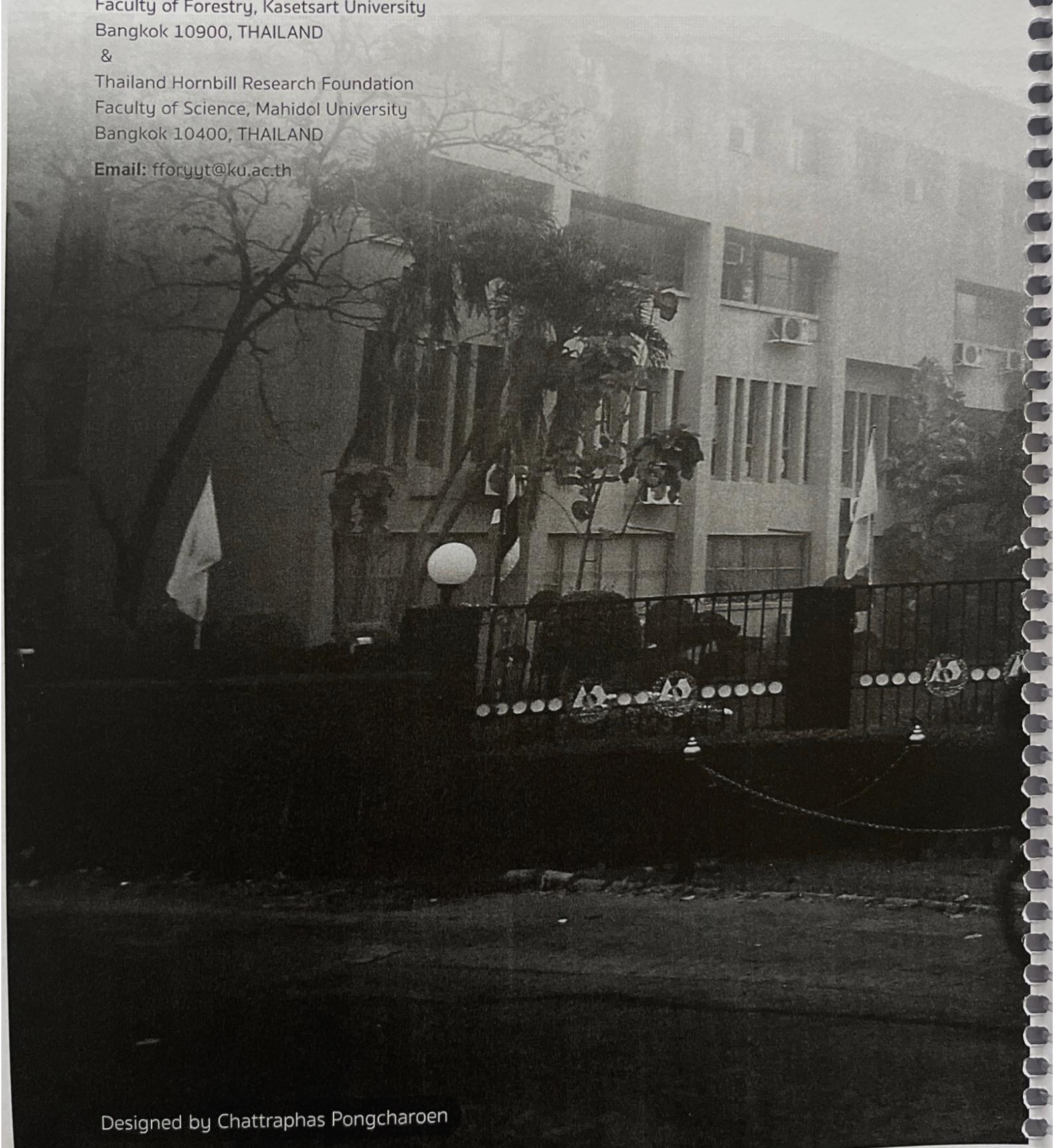
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# Sessional Programs

## Impacts of Climate Change on Hornbills (Part 1/2)

Room: Sa-nга Suppasri, 3<sup>rd</sup> Floor, 60 Years Building

Time: Monday, 22<sup>nd</sup> May 2023 / 11:00 – 12:00

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11:20 – 12:40	<b>Perception of the current and future distribution of hornbills in Sri Lanka through ecological niche modeling</b> <i>Iresha Lakmali Wijerathne</i>	22
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# Sessional Programs

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# Niche specificity of the Malabar Pied Hornbill and the conservation of Endangered low elevation riparian forest ecosystems in the Western Ghats

Devika M. Anilkumar <sup>1</sup>, and Amitha Bachan K.H. <sup>1</sup>

Low elevation tropical moist forests have been the most degraded and diverted tropical moist forest biome. These areas represent important human habituated zones where the remnants of primary vegetation occur in severely fragmented patches where humans have traditional access. Large areas are converted either for large scale Agro-forestry plantations or for developmental purposes. The scattered and patchy distribution of the Malabar Pied Hornbill, *Anthracoceros coronatus* from the Satpuda Hills of Maharashtra in Central India to the low elevation areas of Northern to Southern Western Ghats were niche-modelled to understand the bioclimatic suitability and also to predict the potential habitats across the range. The study indicates the Malabar Pied Hornbills are distributed in eight ecoregions where most of the areas are associated with river valleys and riparian habitats of very low elevation. The Maxent-based niche-modelling provided predictions for potential areas of suitable habitat. Eleven of the 19 bioclimatic variables considered contributed to the bioclimate of Malabar Pied Hornbills, with the most significant being: "precipitation during the driest and wettest months" (positive), "Temperature seasonality", and "minimum temperature of coldest month" (negative). The model showed significant overlap with actual and potential distribution of the Endangered low elevation Tropical Riparian moist forest habitats and other riparian forest types. The Maxent-based niche-modelling and the contributing bioclimatic parameters of the WorldClim database defines the Grinnellian niche of the Malabar Pied Hornbill. The correlation with riparian forest and similarity in the riparian forest composition and Malabar Pied Hornbill nesting habitats throws light on Eltonian niche factors where the linear riparian low elevation habitat less in extent are significant and vulnerable. Malabar Pied Hornbills can be considered flagship species of the low elevation riparian or valley forests habitats, which need conscious conservation and restoration efforts. This can be used for the conservation and restoration of Malabar Pied Hornbills and their threatened habitat.

**Keywords:** Niche modelling, Bioclimate, Maxent, Riparian

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**80**

80<sup>th</sup> Anniversary  
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