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## DISTRIBUTION OF HORNBILLS AND IMPORTANT HORNBILL LANDSCAPES – SETTING SITE CONSERVATION PRIORITIES FOR PENINSULAR MALAYSIA

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### ABSTRACT

Malaysia is an important hornbill range country in Asia supporting a total of 10 hornbill species. Malaysia ranks second (collectively with Myanmar and the Philippines) after Thailand and Indonesia (both 13 species respectively) in terms of hornbill diversity per country. Within Malaysia, all 10 species has been recorded in Peninsular Malaysia whereas Sabah and Sarawak have 8 species each. The Great Hornbill *Buceros bicornis* and Plain-pouched Hornbill *Rhyticeros subruficollis* do not occur in Borneo. Despite being iconic tropical forest birds, our understanding of its local distribution status, ecology and biology remains limited. In this paper, we conducted a broad examination of the hornbills' distribution in Peninsular Malaysia based on more recent information gleaned mostly from grey literature e.g. birding trip reports, scientific expedition reports, department annual reports, selected Facebook birding group postings, proceedings, bird databases (MNS Bird-I-Witness) etc. Information from primary literature e.g. local/regional journals were also taken into account where available. The purpose of this exercise is two-fold, (1) to update our knowledge post-Wells (1999) about hornbill distributions in Peninsular Malaysia in light of continuing deforestation and habitat degradation and (2) identify Important Hornbill Landscapes (IHL) in need of protection and conservation to preserve viable hornbill populations.

**Keywords:** hornbills, Peninsular Malaysia, Important Hornbill Landscape (IHL), Belum-Temengor Forest Complex (BTFC), Central Forest Spine (CFS), Important Bird & Biodiversity Area (IBA), forest connectivity



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## Abstract

Malaysia is an important hornbill range country in Asia supporting a total of 10 hornbill species. Malaysia ranks second (collectively with Myanmar and the Philippines) after Thailand and Indonesia (both 13 species respectively) in terms of hornbill diversity per country. Within Malaysia, all 10 species has been recorded in Peninsular Malaysia whereas Sabah and Sarawak have 8 species each. The Great Hornbill *Buceros bicornis* and Plain-pouched Hornbill *Rhyticeros subruficollis* do not occur in Borneo. Despite being iconic tropical forest birds, our understanding of its local distribution status, ecology and biology remains limited. In this paper, we conducted a broad examination of the hornbills' distribution in Peninsular Malaysia based on more recent information gleaned mostly from grey literature e.g. birding trip reports, scientific expedition reports, department annual reports, selected Facebook birding group postings, proceedings, bird databases (MNS Bird-I-Witness) etc. Information from primary literature e.g. local/regional journals were also taken into account where available. The purpose of this exercise is two-fold, (1) to update our knowledge post-Wells (1999) about hornbill distributions in Peninsular Malaysia in light of continuing deforestation and habitat degradation and (2) identify Important Hornbill Landscapes (IHL) in need of protection and conservation to preserve viable hornbill populations.

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**Table 1:** Hornbill diversity and distribution in Malaysia.

Common Name	Scientific Name	Distribution & Status			Protection Status <sup>1</sup>			Global Conservation Status <sup>2</sup>
		SBH	SWK	PM	SBH	SWK	PM	
Oriental Pied Hornbill <sup>3</sup>	<i>Anthracoceros albirostris</i>	R	R	R	P	TP	TP	
Black Hornbill	<i>Anthracoceros malayanus</i>	R	R	R	P	TP	TP	NT
White-crowned Hornbill	<i>Berenicornis comatus</i>	R	R	R	P	TP	TP	NT
Bushy-crested Hornbill	<i>Anorrhinus galeritus</i>	R	R	R	P	TP	TP	
Wrinkled Hornbill	<i>Rhyticeros corrugatus</i>	R	R	R	P	TP	TP	NT
Wreathed Hornbill	<i>Rhyticeros undulatus</i>	R	R	R	P	TP	TP	
Plain-pouched Hornbill	<i>Rhyticeros subruficollis</i>	~	~	R	~	~	TP	VU
Rhinoceros Hornbill <sup>4</sup>	<i>Buceros rhinoceros</i>	R	R	R	P	TP	TP	NT
Great Hornbill	<i>Buceros bicornis</i>	~	~	R	~	~	TP	NT
Helmeted Hornbill	<i>Rhinoplax vigil</i>	R	R	R	P	TP	TP	CR

**Abbreviations**

SBH = Sabah, SWK = Sarawak, PM = Peninsular Malaysia, RDB = Red Data Book, R = Resident, TP = Totally Protected, P = Protected, CR = Critically Endangered, VU = Vulnerable, NT = Near Threatened

**Notes**

<sup>1</sup>The Protection Status follows Wildlife Conservation Enactment 1997 (Sabah), Wild Life Protection Ordinance 1998 (Sarawak) and Wildlife Conservation Act 2010 (Peninsular Malaysia).

<sup>2</sup>The global conservation status follows the IUCN Red List for Birds (BirdLife International 2017).

<sup>3</sup>Two species can be found in Malaysia; *A.a.albirostris* and *A.a.convexus*. The former is confined to northern Peninsular Malaysia.

<sup>4</sup>Two species exist in Malaysia; *B.r.rhinoceros* in Peninsular Malaysia and *B.r.borneoensis* in Sabah and Sarawak.

## INTRODUCTION

Not many people are aware that Malaysia is an important hornbill range country in Asia. Among the 19 Asian hornbill countries, Malaysia ranks second with Myanmar and the Philippines with a total of 10 species respectively. This figure is one-third of the total hornbill diversity in Asia (32 species) to date. Within Malaysia, Sabah and Sarawak supports 8 species each, while Peninsular Malaysia supports the full diversity of hornbills (10) (Table 1) (Poonswad *et al.* 2013).

Hornbills are generally forest-dependent birds although some species such as the Oriental Pied Hornbill can persist in semi-urban/rural areas. BirdLife International (2017) identified (forest) habitat loss and degradation, poaching and hunting as the main threats to Asian hornbills. In Peninsular Malaysia, a total of 3.7 million ha of forested land have been converted to different land uses since 1954<sup>1</sup> i.e. a loss of 39% forest cover. The severity of poaching is also taking a heavy toll on populations especially the Helmeted Hornbill whose global conservation status was upgraded recently to Critically Endangered from Near Threatened. This is the single highest 'jump' for any hornbill species. The Helmeted Hornbill crisis that is impacting Indonesian populations could possibly spread to remaining range countries (Malaysia, Thailand, Brunei, Myanmar) if not tackled in early stages. The combination of these threats poses significant challenges to hornbill conservation in Peninsular Malaysia.

Fundamental research and monitoring specifically on hornbills in Peninsular Malaysia (nationwide generally) are still lacking. To date, the MNS Hornbill Conservation Project based in the Belum-Temengor Forest Complex (Yeap *et al.* 2016), HUTAN's Kinabatangan hornbill project in Sabah (Ravinder & Ancrenaz 2016) and Sarawak Forestry Corporation (Borneo Post 2012 & 2015) are investing long-term actions to address this gap. Government forestry/wildlife agencies undertake surveys and inventories from time to time. Local institutions of higher learning have yet to move into this area of research or if do, in *ad hoc* manner.

### **Hornbills and national spatial planning policies**

Although hornbills are mentioned in national policies, programmes and plans (PPP), its conservation strategies have not been given detailed treatment to date unlike the Malayan tiger (see DWNP 2008) and Asian elephant (see

DWNP 2013). However, some of the conservation actions outlined for these mammals would also indirectly benefit hornbills especially where forest habitats concerned.

In 2005, the National Physical Plan (NPP1) was published after a series of stakeholder consultations and development by the Federal Town and Country Planning Department (FTCPD 2005). It was the first macro spatial planning document for Peninsular Malaysia. The refinement at the micro-level is done through respective State Structure and Local Plans. In the NPP1, two key concepts were introduced that have repercussions that would shape wildlife conservation (including hornbills) from that point onwards i.e. Environmentally Sensitive Areas (ESA)<sup>2</sup> and Central Forest Spine (CFS)<sup>3</sup>. Five years later, the National Physical Plan 2 (NPP2) was launched (FTCPD 2010). The NPP2 is a revision of NPP1 and concepts were further refined and elaborated.

The Central Forest Spine was detailed into a Masterplan covering a total area of 5.3 million ha in Peninsular Malaysia (JPBD & JPSM 2010). The NPP identified forest fragmentation as a “major threat to biodiversity” hence CFS<sup>4</sup> was aimed at identifying connectivity between forest blocks (or complexes). A total of 17 Primary Linkages (PL) and 20 Secondary Linkages (SL) were identified (Appendix 1). PLs were designed based on movements of large mammals such as the Malayan tiger and Asian elephant as they required linear (forest) corridors. Birds (including hornbills) and small mammals are assumed to use “stepping stones” corridors hence SLs.

### **There are hornbills in Peninsular Malaysia?**

The most recent species summaries on Malayan birds (including hornbills) were published by Wells (1999) and updated Wells (2009). Prior to this, Medway and Wells (1976) provided the first of such summaries. Following this, Chong (1993) and Siti Hawa Yatim (1993) attempted to provide overviews on hornbill distributions from an NGO and government perspectives respectively in the 1<sup>st</sup> International Workshop on the Conservation of Asian Hornbills and their Habitats in Thailand. Chong (1998) later provided an updated overview in a follow up workshop. Ahmad Khusaini *et al.* (2015) summarised 20 years (1994-2014) of hornbill distribution data collected by the Department of Wildlife and National Parks Peninsular Malaysia (PERHILITAN) via wildlife inventories.

Understanding current hornbill distributions and abundances against the backdrop of a more fragmented forest landscapes in Peninsular Malaysia is