

# A Bird Survey of Gunung Lumut Protection Forest, East Kalimantan and a Recommendation for its Designation as an Important Bird Area

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**Summary.** We report on a bird survey in and near Gunung Lumut Protection Forest in East Kalimantan, and evaluate our results against the BirdLife International criteria for recognition as an Important Bird Area. Five globally threatened species (Storm's Stork *Ciconia stormi*, Bornean Peacock-pheasant *Polyplectron schleiermacheri*, Large Green Pigeon *Treron capellei*, Short-toed Coucal *Centropus rectunguis* and Blue-headed Pitta *Pitta baudii*) were encountered, as well as 91 species endemic to the Sundaic Lowland Forest biome, and up to 1% of the biogeographic population of the congregatory Storm's Stork. Based on these observations, we recommend Gunung Lumut Protection Forest to be included in Birdlife International's Important Bird Area network.

**Ringkasan.** Kami melaporkan hasil survei burung yang dilaksanakan di sekitar kawasan Hutan Lindung Gunung Lumut Kalimantan Timur, lalu mengevaluasi hasil survei kami dengan kriteria standar yang digunakan BirdLife International untuk menetapkan suatu Kawasan Penting untuk Burung (Important Bird Area - IBA). Lima spesies burung yang secara global terancam punah, yaitu Bangau Storm *Ciconia stormi*, Kuau-kerdil Kalimantan *Polyplectron schleiermacheri*, Punai Besar *Treron capellei*, Bubut Hutan *Centropus rectunguis* dan Paok Kepala-biru *Pitta baudii* dapat dijumpai di kawasan itu termasuk 91 spesies endemik bioma Hutan Dataran Rendah kawasan Sunda serta 1% populasi biogeografis Bangau Storm yang hidup berkelompok. Berdasarkan pada hasil survei itu kami lalu merekomendasikan kawasan Hutan Lindung Gunung Lumut Kalimantan Timur sebagai Kawasan Penting untuk Burung (IBA).

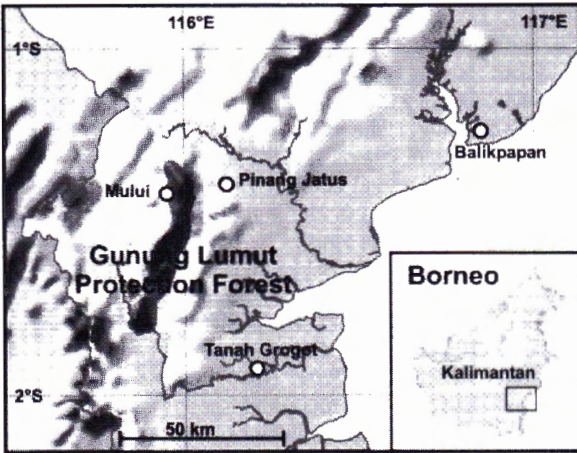
## Introduction

Until recently a disproportionately large amount of published ornithological work on Borneo has been conducted in Sabah, East Malaysia, in the north of the island. Surveys carried out in the Indonesian part of the island were largely restricted to national parks and a few wetland areas (Holmes & Burton 1987; Holmes 1997; Smythies & Davison 1999). Gunung Lumut is situated in the far south of the province of East Kalimantan, Indonesia. There has been no previous ornithological exploration in this region. From January to April 2005 we carried out the first ornithological surveys of Gunung Lumut Protection Forest (GLPF) as part of our postgraduate studies (Pieterse & Wielstra 2005). The study was implemented under the umbrella of cooperation between the Institute of Environmental Sciences Leiden (CML), the Ministry of Forestry - Tropenbos Kalimantan Programme (MTKF) and the Faculty of Forestry at Mulawarman University (UNMUL), as part of the project, entitled "trade-off of

biodiversity values and forest exploitation in selected areas of the Gunung Lumut Untir-Beratus extension area". Here we present a preliminary checklist of birds, and provide details of several interesting observations. We also assess the avian conservation value of GLPF against the criteria used by BirdLife International in their Important Bird Area programme.

## Study area

In 1983, GLPF was assigned the status of *Hutan Lindung* (Protection Forest), which is defined as forest set aside from logging activities to provide specific ecological functions (in this case, a source of water). The area is located c. 100



**Figure 1.** Map showing location of the study area within East Kalimantan (inset), and study sites in Gunung Lumut Protection Forest.

km southwest of the city of Balikpapan, and comprises the rather isolated, northernmost extension of the Meratus Mountain Range (Fig. 1). GLPF stretches out over almost 420 km<sup>2</sup> and comprises one of the largest remaining tracts of rainforest in southeast Kalimantan (Slik *et al.* 2007). The area is surrounded by production forest, oil palm plantations and shifting cultivation (*ladang*) areas.

GLPF is diverse in elevation, aquatic habitats, and soil types. Geologically, both granite and limestone formations are present (Van Tol *et al.* 2007). Montane areas include peaks up to c. 1200 m, the highest point being Mt Lumut, at 1233 m asl (Time Books 1999). Typical for southeast Borneo, vegetation diversity of GLPF is rich compared to other parts of the island (Slik *et al.* 2007). Part of the area (up to an elevation of 600 m) was selectively logged in the 1970s. This secondary forest seems to have recovered well and is not inferior to the undisturbed forest, at least in terms of vegetation structure, species diversity and species composition (Slik *et al.* 2007).

We conducted surveys in two villages where *Hutan Adat* (forest traditionally owned and exploited sustainably by rural people) overlaps with GLPF (Fig. 1). These villages are Pinang Jatus, located c. 15 km east of the border of GLPF (01°38'S, 116°15'E; c. 100 m asl) and Mului, located on the western border (01°44'S, 115°96'E; c. 600 m asl). Surveys were conducted in Pinang Jatus over 34 days between 18 January and 18 March 2005, and in Mului over 10 days between 24 March to 10 April 2005.

## Methods

Our surveys focussed on the traditional forest, but species encountered in the surrounding (cultivated) area were also noted. We conducted systematic transect counts along forest trails but also recorded incidental observations of birds (Pieterse & Wielstra 2005). Sound recordings, both of choruses and of unknown bird vocalisations, were made for subsequent analysis. Surveys were concentrated during daytime, including dawn and dusk, so nocturnal birds may have been under-recorded. All recorded species were collated into a checklist, which forms the basis of the present article.

## Results

In total, 188 species were observed in GLPF with certainty; 161 around Pinang Jatus (PJ) and 135 around Mului (M), excluding one presumed introduced species (Tree Sparrow *Passer montanus*). Notes on selected species are provided below, along with their status according to IUCN (2007). Bracketed species were not identified with certainty. A detailed checklist is provided in Appendix 1.

### STORM'S STORK *Ciconia stormi* Endangered

A single bird was encountered twice, on 25 and 26 January, circling low above Pinang Jatus and surroundings. On 15 March, two birds were observed together. This pair showed affinity with the traditional forest and eventually landed there. One bird flew close by over Mului on 5 April, suggesting that the western side of GLPF is also utilised by this species.

### BAT HAWK *Macheiramphus alcinus*

On 10 February and 15 March, during twilight, an individual flew by through Pinang Jatus. This rare species is often found in association with limestone outcrops (Smythies & Davison 1999), a habitat represented in GLPF.

### BORNEAN PEACOCK-PHEASANT *Polyplectron schleiermacheri* Endangered, Borneo-endemic

At least one territorial bird was heard 'singing' in the traditional forest at Pinang Jatus (with a probable second territory present). Recordings are available at [www.xeno-canto.org/asia](http://www.xeno-canto.org/asia) under catalogue numbers XC19458 and XC23319. Smythies & Davison (1999) considered this species as extremely rare. Records, especially recent ones, are few (Mann 2008).

### LARGE GREEN PIGEON *Treron capellei* Vulnerable

A pair was encountered on one occasion, on 25 January, along the main road just north of Pinang Jatus. Another pair was seen foraging in the trees along the path which runs through the traditional forest at Mului.

Populations of this species are said to be declining rapidly (Gibbs *et al.* 2001; IUCN 2007).

**BORNEAN GROUND-CUCKOO** *Carpococcyx radiatus* Borneo-endemic

We heard this elusive species calling once on 15 March in the traditional forest at Pinang Jatus. GLPF is a new locality for this species (Long & Collar 2002; Mann 2008).

**SHORT-TOED COUCAL** *Centropus rectunguis* Vulnerable

At least one individual of this little-known species was heard on several occasions in the traditional forest at Pinang Jatus. Another bird was flushed from the main road just north of Mului on 10 April.

**MALAYSIAN HONEYGUIDE** *Indicator archipelagicus*

On 11 and 12 February we obtained excellent views of a very vocal individual in the traditional forest at Pinang Jatus. A recording is available at [www.xeno-canto.org/asia](http://www.xeno-canto.org/asia) under catalogue XC20106. This mysterious species is considered very local and rare, or may often be overlooked (Smythies & Davison 1999; Short & Horne 2001).

**GREAT SLATY WOODPECKER** *Mulleripicus pulverulentus*

An exceptionally large group (see Lammertink 2004a), comprising seven individuals, was encountered in the traditional forest once at Pinang Jatus on 16 March. Although this species is considered of 'Least Concern' (IUCN 2007), there are convincing arguments to elevate its threat status to 'Vulnerable' or even 'Endangered' (Lammertink 2004b).

**GIANT PITTA** *Pitta caerulea*

On 4 February a male landed next to the trail which runs through the traditional forest at Pinang Jatus. A 'big blue bird' flushed from the forest floor a couple of times in the same area (always from quite a distance) is suspected to have concerned the same individual. This shy species is considered rare and few records exist from Kalimantan (Smythies & Davison 1999). Our record represents a considerable southward extension of its range on Borneo as presented in Lambert & Woodcock (1996).

**BANDED PITTA** *Pitta guajana*

Two territories were present in the traditional forest at Pinang Jatus. A pair with two fledglings was observed on 27 February. This species is considered rare in Borneo, and its distribution is poorly documented (Lambert & Woodcock 1996).

**BLUE-HEADED PITTA** *Pitta baudii* Vulnerable, Borneo-endemic

We estimate at least three territories to have been present in the traditional forest at Pinang Jatus. We also encountered an immature bird.

**NARCISSUS FLYCATCHER** *Ficedula narcissina*

A male (possibly the same individual) was encountered twice (26 March and 8 April) along the trail through the traditional forest at Mului. On the first occasion, the bird was singing softly. Although Smythies & Davison (1999) state that this species has never been observed in East Kalimantan, our record, combined with other recent records (e.g. M. Lammertink pers. comm.), suggest it is probably an occasional visitor.

**[BORNEAN BLUE FLYCATCHER** *Cyornis superbus*] Borneo-endemic

We suspect two male blue flycatchers (*Cyornis* sp.) encountered at Pinang Jatus to have been Bornean Blue Flycatchers (*Cyornis superbus*). This is an endemic species restricted to biome "AS15 Sundaic montane forest" (Chan *et al.* 2004).

**[WHITE-EYE sp.** *Zosterops* sp.]

A group of white-eyes was encountered on several occasions along the road just south of Pinang Jatus. As we could not distinguish a yellow band across the bellies of these birds, they may have been Oriental White-eyes *Z. palpebrosus*, although the Everett's White-eye *Z. everetti* seems more likely based on (known) distribution (Smythies & Davison 1999).

**Discussion**

Whilst additional surveys in the area will undoubtedly add many more species (e.g. nocturnal species), our surveys within a relatively small study area establish that GLPF sustains a rich avifauna, including groups that are traditionally considered vulnerable. All species (8) of hornbills (Bucerotidae) occurring on Borneo were represented, as well as no fewer than 13 species of woodpeckers (Picidae), ten (but probably more) species of raptors (Accipitridae), five species of pittas (Pittidae), three species of trogon (Trogonidae), and at least four species of pheasant (Phasianidae).

GLPF meets three of the four criteria formulated by BirdLife International to identify potential Important Bird Areas (IBAs) for the conservation of global avian diversity (Chan *et al.* 2004), having (1) globally threatened species, (2) biome-restricted assemblages and (3) globally important congregations. Firstly, it hosts five globally threatened species (Collar *et al.* 2001; IUCN 2007), two of which are classified as 'Endangered' (Storm's Stork *Ciconia stormi* and Bornean Peacock-pheasant *Polyplectron schleirmacheri*) and three as 'Vulnerable' (Large Green Pigeon *Treron capellei*, Short-toed Coucal *Centropus rectunguis*, and Blue-headed Pitta *Pitta baudii*). These species were found in numbers, which indicate viable populations to be present. Secondly, a total of 91 AS14 biome-restricted species were encountered (Appendix 1). Most of the surface of GLPF is situated below 1,000 m asl and is therefore ascribed to the biome "AS14 Sundaic Lowland Forest" (Chan *et al.* 2004). These species represent 53% of the total of 171 AS14 biome-restricted species, and 60% of the 151 such species

occurring on Borneo. Thirdly, we believe that the population of Storm's Storks at GLPF constitutes a globally important congregation, which is defined as "1% of the biogeographic population" (Chan *et al.* 2004). For Storm's Stork, this percentage corresponds to four individuals. Although only three individuals of the species were encountered during our surveys, preliminary data from a 2007 survey (Boorsma pers. comm.) revealed at least four birds present.

Part of GLPF surpasses 500 m asl, and therefore is covered by the Endemic Bird Area '157 Bornean Mountains' (Stattersfield *et al.* 1998). The area situated over 1,000 m asl is covered by biome "AS15 Sundaic montane forest" (Chan *et al.* 2004). As no restricted-range species confined to EBA 157 were encountered, the restricted-range species criterion for IBAs is not met. Of the 40 AS15 biome-restricted species occurring on Borneo, one (Bornean Blue Flycatcher *Cyornis superbus*) is probably present in GLPF, but could not be identified with certainty. An obvious explanation for our lack of records of EBA 157 and AS15 species is that no surveys were conducted above *c.* 600 m asl. Future surveys in the higher parts of GLPF could shed light on the presence of these species.

## Conclusion

We propose the recognition of GLPF as an IBA: the area would make a valuable addition to the network of IBAs in Kalimantan. GLPF is one of the last remaining large tracts of relatively undisturbed forest in southeast Borneo, and contains a representative sample of the forest types in this region. The area sustains a rich avifauna and meets three criteria for an area to qualify as an IBA. Moreover, Kalimantan is at present relatively poorly covered by IBAs (Chan *et al.* 2004). Including GLPF in the IBA network would partially fill the void between IBA Gunung Beratus to the north and IBA Meratus Hulu to the south. The fact that GLPF is already designated as a protection forest may facilitate management of the area.

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