

Birds of Gunung Leuser National Park, Northern Sumatra

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Summary. Gunung Leuser National Park (GLNP) in northern Sumatra has over 85% of Sumatra's resident breeding bird species and important populations of globally threatened mammals such as Sumatran orangutan *Pongo abelii* and Sumatran rhinoceros *Dicerorhinus sumatrensis*. Information is here presented on a number of important bird records from GLNP from March 1995 to December 2000. These records include: 23 new species for the park, seven globally threatened species, and several species for which there are few previous records for Sumatra. An appendix lists the 413 species recorded in GLNP comprising records from previous publications (van Marle & Voous 1988; Holmes 1996; Wind 1996a) and the new records included here.

Ringkasan. Burung-burung di Taman Nasional Gunung Leuser (TNGL). Kawasan di Sumatra bagian utara ini dihuni sekitar 85% spesies burung menetap dan berbiak di Sumatra dan juga tempat populasi penting spesies-spesies mamalia yang secara global terancam punah seperti Orang utan sumatra *Pongo abelii* dan Badak sumatra *Dicerorhinus sumatrensis*. Informasi yang disajikan disini mengenai jumlah laporan-laporan penting spesies burung dari TNGL dari bulan Maret 1995 sampai Desember 2000. Laporan ini termasuk: 23 spesies baru untuk kawasan ini, tujuh spesies yang secara global terancam punah dan beberapa spesies yang hanya memiliki sedikit laporan di pulau Sumatra. Dalam lampiran terdaftar 413 spesies yang dilaporkan di TNGL yang juga meliputi berbagai laporan dari publikasi sebelumnya (van Marle & Voous 1988; Holmes 1996; Wind 1996a) dan laporan-laporan baru.

Introduction

Indonesia's Gunung Leuser National Park (GLNP) is one of the largest reserves in tropical Asia, and one of the most important reserves in the Indo-Malayan Realm (MacKinnon & MacKinnon 1986). Encompassing c. 900,000 ha within the provinces of Aceh and Sumatra Utara, in the northern half of the island of Sumatra, GLNP extends from approximately 3° to 4.5° N and 96.5° to 98° E. The reserve boasts a diverse array of habitats along an altitudinal gradient, rising from sandy coastal beaches, freshwater and peat swamps, moist tropical lowland Dipterocarp forest, to montane and subalpine forest. This diversity of habitat types corresponds with an impressively rich but poorly studied avifauna. Nevertheless, as a result of its high biodiversity and the presence of globally threatened, mega-charismatic mammals such as Sumatran orangutan *Pongo abelii*, Sumatran elephant *Elephas maximus sumatrensis*, Sumatran tiger *Panthera tigris sumatrae* and Sumatran rhinoceros *Dicerorhinus sumatrensis*, GLNP has attained international stature with its designation as a Man and the Biosphere reserve (Wind 1996a) and was declared a World Heritage Site by UNESCO in 2004.

The area contained within GLNP has held some form of legal protected status since 1934, when the Gunung Leuser Wildlife Reserve of 416,500 ha was established (Wind 1996a). In 1982, various protected areas were united to form the 802,185 ha Gunung Leuser National Park. Currently, GLNP is contained within the expanded "Leuser Ecosystem," a 1,790,000 ha area established by the Minister of Forestry in 1995 and by Presidential Decree in 1998 (Fig. 1). Despite legal protection and international recognition, illegal logging and settlement by local farmers continue to be major threats to GLNP. Large areas of lowland, alluvial, and swamp forest have been cleared since the late seventies (Wind 1996a). More recently, political instability in Aceh resulted in rampant illegal logging, which reached epidemic proportions in the few protected and biologically very important swamp forests remaining in GLNP (van Schaik *et al.* 2000; Robertson & van Schaik 2001). Another major recent threat is the Ladia Galaska road scheme, which proposes roads cutting through the Leuser Ecosystem in at least nine different places. The resulting habitat fragmentation and destruction is predicted to have a disastrous impact on the overall biodiversity of the area.

During January/May 1937 and February 1939, respectively, the Losir and Vanderbilt expeditions made extensive collections of birds from the Gunung Leuser complex, the Alas Valley area and the Kapi plateau (de Schauensee 1939; de Schauensee & Ripley 1940; Chasen & Hoogerwerf 1941). No extensive collections were made after these two large expeditions. The collections covered only part of the major habitats and did not include important areas such as the swamp forest of Kluet. A preliminary list of bird specimens and sightings was compiled by van Strien (1978). Nearly two decades later, this list was supplemented by records from the many researchers based in the Ketambe Research Station, as well as by birdwatchers visiting the Park (Holmes 1996; Wind 1996b). The birds of the GLNP were listed by Wind (1996b), with subsequent additions by van Marle & Voous (1988) and

In this paper we present data on species previously unreported in GLNP, as well as sightings of birds that are globally threatened or rarely encountered on Sumatra. In addition, we provide confirmation for 77% (291 species) of the species listed by Wind (1996b), 6% (22 species) of which were previously unconfirmed (van Marle & Voous 1988; Holmes 1996).

Study sites and methods

The climate of GLNP has been described by van Beek (1996). The mean daily temperature under the forest cover in the lowlands rarely exceeds 26° C during the day, or drops below 22° C at night. In this climate type, all monthly mean temperatures are over 18° C, except for the highlands, where monthly mean temperatures may be lower. Temperature drops by approximately 0.6° C with each 100 m rise in altitude. Annual rainfall in the park ranges from 1329 to 4875 mm, with one long and one short dry season per year (van Beek 1996). In general, the driest months are February and June-July, the wettest usually March-April and September-October-November. The annual rainfall exceeds the annual evaporation.

Between March 1995 and December 2000 we made observations of birds within GLNP. Observations were made ancillary to primate studies or with the specific purpose of recording birds. Our observations cover both wet and dry seasons and included several

important habitat types, such as lowland alluvial forest, swamp forest, and lower montane forest, all of which were poorly covered by Wind (1996a). Habitat, behaviour, and abundance were recorded while making observations of birds in the field. Four important survey areas are described below (Fig. 1):

Four major study areas were visited, comprising (1) peat-swamp forest, (2) primary Dipterocarp forest and secondary forest, (3) lower montane forest and (4) lowland alluvial forest. The lower montane forest zone along the Alas River Valley was most frequently visited between June 1998 and March 1999, during which period almost five months were spent in this habitat. The lowland alluvial zone at Ketambe was most intensively surveyed as a result of the presence of the research camp in this area. The Dipterocarp and peat-swamp forest sites were visited on several occasions lasting several weeks each.

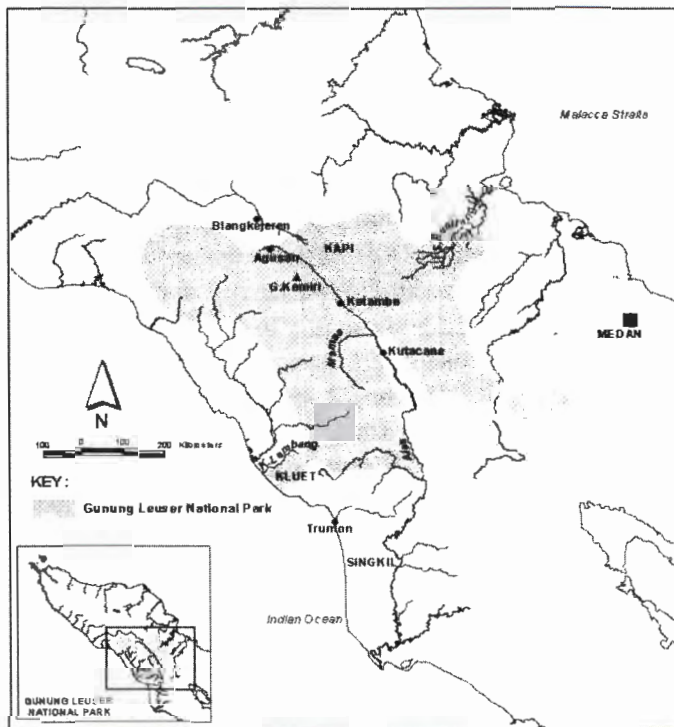


Figure 1. Locations surveyed in Gunung Leuser National Park

Kluet. An extensive area of peat-swamp forest, located in the province of South Aceh in the southwest section of the Park. The area consists of marshy scrub near the coast, with lagoons bordered by *Nypa* palms, or *Hanguana* herbs. Further inland, there is freshwater swamp on riverside levees, which merges into shallow peat-swamp forest. Surveys were conducted primarily in the peat and freshwater swamp forests, where the Suaq Balimbing Research Site was established in 1995 (3°04'N, 97°26'E). These swamp forests have the highest observed bird density in all of northern Sumatra (Wind 1996b), and are home to such globally endangered species as the White-winged Duck *Cairina scutulata* and Storm's Stork *Ciconia stormi*.

Alas River Valley. The forest here represents the lower montane zone (1,000-1,500 m asl), which covers 30% of the Park's total area. The forest is characterised by trees belonging to the families *Fagaceae* and *Lauraceae*, a canopy height of c. 25-30 m, and few lianas and emergent trees, but many epiphytes, mosses, and terrestrial herbs, including ferns and orchids. The understory is sparse although stands of thorny rattans may be locally common. The Kapi Plateau, located in the centre of GLNP, includes an extensive area of lower montane forest.

Sei Besitang River Area. The Besitang River originates on Mt. Nampan and Mt. Pudar in the Park's southeast arm, and flows north-eastward through primary lowland Dipterocarp forest, rich in tree species belonging to *Annonaceae*, *Euphorbiaceae* and *Dipterocarpaceae*, in addition to secondary forest (50-250 m asl).

Ketambe. The forests of the Ketambe Research Station (3°41'N, 97°39'E) are comprised of alluvial lowland forest (>350 m asl), which contains relatively abundant *Ficus* spp., *Annonaceae*, *Meliaceae*, and many species of *Euphorbiaceae*. The forest is characterised by a canopy of c. 30-40 m, with emergents reaching to c. 50 m. The understory is often dense and multi-layered and includes abundant epiphytes and lianas. Various types of terrace forest of different age and fertility can be distinguished floristically, in relation to the different erosion terraces (Rijksen 1978). On the lower terraces, the forest floor has a dense herbaceous ground layer, including *Elatostema* spp. and *Cryptandra* spp.

Results

Our 23 new records for GLNP comprise 22 species observed in lowland areas, 13 of which were recorded in Ketambe, 4 in Kluet, and 9 in the Sei Besitang River Area. One Sumatran endemic (Rusty-breasted Wren-Babbler *Napothera rufipectus*) and one Indonesian Sunda endemic (Large-billed Blue Flycatcher *Cyornis caerulatus*) were added to the GLNP list. Of particular note is that GLNP also harbours 86 *Red Data Book* species listed for Sumatra, including a total of 12 globally threatened species (two endangered and ten vulnerable; Birdlife International 2001).

Of the 14 endemic species found on the Sumatran mainland (including Sumatran Ground-cuckoo *Carpococcyx viridis* and Sumatran Drongo *Dicrurus sumatranus*; van Marle & Voous 1988), eleven have now been recorded in GLNP. Furthermore, 29 of the 38 restricted-range species confined to the Malaysia-Sumatra Endemic Bird Area (E11; Stattersfield *et al.* 1998) have been recorded within GLNP. Of the Park's total list of 413 species, we regard 354 species as resident; 44 species as migrants; and 15 species partly resident and partly migratory. A total of 21 species on the updated list require further confirmation.

The following is an annotated list of new and interesting records. Taxonomy and nomenclature follow Andrew (1992). Where relevant, the Asian Red Data Book (Birdlife International 2001) threat category is included (see Appendix 1). New records for GLNP are indicated with asterisks. We also append an updated list for GLNP (Appendix 1), including the Asian Red Data Book conservation status of each species.

BLACK BITTERN *Ixobrychus flavicollis*

An adult was observed in peat swamp forest, at Suaq Balimbing, Kluet on 25 April 1996. This appears to be the first record for Aceh as well as GLNP. Holmes (1996), *contra* van Marle & Voous (1988), considered this species to be predominantly a locally common winter visitor in Sumatra.

STORM'S STORK *Ciconia stormi* EN

A single bird was observed along the Krueng Lembang River, a slow moving waterbody within peat-swamp forest in the north of Kluet, in 1995 (undated record). First record for GLNP and second for Aceh (see Holmes 1996). Resident on Sumatra (Danielsen *et al.* 1997) where it appears to be declining (see Birdlife International 2001).

JERDON'S BAZA *Aviceda jerdoni*

A pair was observed building a nest and raising a single chick between 18 January and 15 March 1999. The nest was in a 35 m high tree along the main road from Kutacane to Blangkejeren, on the edge of primary lowland Dipterocarp forest, near the Alas River at 400 m asl. Photographs were obtained of the birds at the nest (Buij 2003). Prior to our observation the status of this species in Sumatra was regarded as uncertain (van Marle & Voous 1988), although Holmes (1996) lists a record of a bird inspecting a tree hole on Pulau Rupa, Riau, suggesting resident status. This appears to be the first breeding record of this little known species for Sumatra (and possibly the only record for South-east Asia) and confirms its status in Sumatra as a breeding species. It represents the first record for GLNP and only the second for Aceh where it was previously reported from Lhokseumawe (van Marle & Voous 1988).

ORIENTAL HONEY-BUZZARD *Pernis ptilorhynchus*

During regular raptor surveys near the Alas River at Ketambe from September 1998 to February 1999 the following numbers were recorded (total monthly counts indicated): September 1998 – 4 individuals; October 1998 – 33 individuals including a highest count of ten on 10 October; November 1998 – 52 individuals including a highest count of 15 on 11 November; December 1998 – 5 individuals; January 1999 – 5 individuals; February 1999 – 6 individuals. In Sumatra, this species is represented by the resident race *torquatus* which has been recorded in Utara but not Aceh (van Marle & Voous 1988). The widespread Palearctic migrant race *orientalis* appears to be widespread on Sumatra, however, our observations suggest that large numbers of this species are crossing the Straits of Malacca from Peninsular Malaysia as early as October, a month earlier than dates indicated by Medway & Wells (1976).

BLACK KITE *Milvus migrans*

An immature was noted foraging at a low altitude over the Alas River on 18 November 1998. This represents the first record for GLNP and Aceh. There are just four previous Sumatran records and only two in the 20th century (Wells 1979; van Marle & Voous 1988).

BRAHMINY KITE *Haliastur indus*

Solitary birds in flight were observed several times, up to approximately 200 m asl along the Sei Besitang River. During October 1999 this species was also observed close to the Alas River near Agusan. These are the first records for GLNP, although the species was reported to be a common resident on Sumatra (van Marle & Voous 1988).

WHITE-BELLIED SEA-EAGLE *Haliaeetus leucogaster*

Frequently seen in the Sei Besitang River Area. There is just one previous record for GLNP, a juvenile along the Mamas River, 29 August 1986 (Holmes 1996).

LESSER FISH-EAGLE *Ichthyophaga humilis* NT

During March 2000 perched individuals were observed three times along the Sei Besitang River. There is just one previous record from Aceh (Alas Valley) and there are few records from Sumatra Utara (van Marle & Voous 1988).

CHINESE GOSHAWK *Accipiter soloensis*

A single individual was seen during a raptor survey near Ketambe on 20 October 1998, and two were seen in the same area on 6 November 1998. Birds were moving south-east along the Alas River Valley. This species was previously unrecorded in GLNP although recorded throughout Sumatra and regarded as an uncommon but probably overlooked winter visitor (van Marle & Voous 1988).

JAPANESE SPARROW-HAWK *Accipiter gularis*

A total of five individuals were identified during raptor surveys near Ketambe during 15 October and 10 November 1998. Previously unrecorded in GLNP, this species is considered to be the commonest sparrowhawk in Sumatra during the northern winter (van Marle & Voous 1988).

RUFIOUS-BELLIED EAGLE *Hieraaetus hienerii*

A pair at Ketambe frequently observed from July 1998 to March 1999. Additional pairs were observed at four separate sites along the Alas River Valley. A juvenile was observed circling together with adult birds above the Ketambe lowland area during September and October 1998. There are no definite breeding records of this species for Sumatra (van Marle & Voous 1988; Holmes 1996), but the regularity of our observations in addition to previous records from Aceh and Utara strongly suggest this species is resident in this part of Sumatra.

BLYTH'S HAWK-EAGLE *Spizaetus alboniger*

A pair was observed in courtship display and carrying nest material above the Ketambe lowland forest and surrounding hill forests at 300 to 750 m asl, between 14 and 21 October 1998. Subsequently, single birds were observed at three other sites along the Alas River Valley, near the villages of Seledok, Gumpang and Batu Dua Ratus. Most observations in the latter areas were between 800 and 1,400 m asl. This observation supplements that in Holmes (1996) of two adults seen in display during August 1986, also at Ketambe.

Although widespread in Sumatra only one nest of this species has so far been reported from the island (Holmes 1996; van Marle & Voous 1988).

WHITE-WINGED DUCK *Cairina scutulata* EN

Observed on two occasions at Suaq Balimbing in 1995 (undated records): an adult female on the slow moving Krueng Lembang River, and a pair in seasonally flooded-levee swamp forest along the border of the river. The forest is comprised largely of high canopy trees dominated by *Neesia* spp., and some large *Ficus* spp. The forest floor has large pools of standing water, and during floods, the pools communicate with the river and have a current. These records compliment the records of C. van Schaik in Holmes (1996).

CRESTED PARTRIDGE *Rollulus rouloul* NT

Groups comprising a single adult-plumaged male with several females was observed on two different occasions in primary lower montane forest on the Kapi Plateau at c.1,200 - 1,250 m, on 7 November 1998 and 22 December 1998. This species is generally considered to be a lowland species, recorded below 800 m asl (van Marle & Voous 1988).

HOOGERWERF'S PHEASANT *Lophura hoogerwerfi* VU Sumatran (Aceh) endemic

A male and two females were seen on a trail in dense undergrowth within lower montane forest in the southeastern part of the Kapi Plateau at c.1,125 m asl on 10 October 1998. This constitutes the first sighting of this species in the wild since Nico van Strien saw and photographed a male and several females in the Mamas Valley in GLNP, Aceh, in the 1970s (van Marle & Voous 1988).

BRONZE-TAILED PEACOCK-PHEASANT *Polyplectron chalcurum*

Apparently absent in most primary lower montane forest sites along the Alas River Valley. Conversely, this species was fairly common at other sites such as the Kapi area and Gunung Kemiri, at elevations of c. 1,000 to 1,300 m. However, the presence of this species is difficult to establish outside the breeding season (vocal activity appeared to be highest from November to January) when birds are generally silent and it may thus have been overlooked.

MASKED FINFOOT *Heliopais personata* VU

This little known and enigmatic species was regularly observed at Suaq between 1995 and 1997, usually from a boat on the larger rivers in the area. In addition we observed a single bird in the Sei Besitang River area on 14 March 2000. There are a few other records for GLNP including single birds observed at Ketambe in 1974 and 1978 (van Marle & Voous 1988), and undated records from the Kluet area (Holmes 1996).

SUNDA PIN-TAILED PIGEON *Treron oxyura* NT

A male and a female were observed on the Kapi Plateau in lower montane forest at 1,200 m, in November 1998. Other birds were regularly heard during November/December in the same area. Also heard several times in lower montane forest on Gunung Kemiri, at c.1,100 m. The species is considered to be an uncommon resident throughout mainland Sumatra (van Marle & Voous 1988).

JAMBU FRUIT-DOVE *Ptilinopus jambu* NT

Several were observed in the canopy of the primary swamp forest at Suaq in 1995 (undated records). This species is occasionally locally common in primary and secondary forests up to 1,500 m asl (van Marle & Voous 1988).

CHESTNUT-WINGED CUCKOO *Clamator coromandus*

Individuals noted in the Ketambe lowland forest on 26 October 1998 and another one on 10 February 1999 in secondary forest near the village of Batu Dua Ratus, at c. 1,000 m, provide a defined date of arrival in Sumatra and add to the handful of previous records for Aceh (see van Marle & Voous 1988).

HODGSON'S HAWK-CUCKOO *Cuculux fugax*

An individual of the resident race, *c. f. fugax*, was frequently seen and heard in dry hill forest in the Ketambe area at c. 450 m, during October/November 1998 (tape-recorded). The bird was aggressively defending its territory against intruders of comparable body size, such as the Red-bearded Bee-eater *Nyctornis amictus*. This is the first record for GLNP and Aceh (van Marle & Voous 1988).

BANDED BAY CUCKOO *Cacomantis sonneratii*

Despite being widespread and moderately common on Sumatra (van Marle & Voous 1988), our observations of one individual near Ketambe on 21 September 1998 and another individual within primary forest in the Sei Besitang River Area during July 2000 surprisingly represent the first records for GLNP.

ORIENTAL SCOPSOWL *Otus sunia*

We observed an individual, during the day, roosting 2 m above the ground in a low tree within the Ketambe lowland forest area on 2 November 1999. Our attention was first drawn to the bird as a result of the noise and activity created by several other birds, e.g., Orange-breasted Trogon *Harpactes oreskios* and White-rumped Shama *Copsychus malabaricus* that were mobbing it. This observation appears to be the third record of this species for Sumatra (see van Marle & Voous 1988) and the first record for GLNP.

COLLARED OWLET *Glaucidium brodiei*

An adult and a juvenile were seen at c. 1,300 m asl on the south-western part of the Kapi Plateau on 8 October 1998, and another bird was heard calling nearby. Three birds were heard calling in the central part of the Kapi area from 20 to 24 November 1998. Two birds were heard in lower montane forest at c. 1,200 m asl on the slopes of Gunung Kemiri on 4 December 1998. We found an adult on a nest with a single egg at 1200 m asl at Agusan on 9 April 2000. The nest was on a branch (about halfway between the tip and the trunk) of a tree approximately 15 cm dbh, on a steep (40-50°) slope grading up from the Agusan River. Agusan is located in largely undisturbed tropical evergreen rainforest, bordered downstream by approximately 2 ha of disturbed forest from which understory vegetation was cleared for agriculture during 1999-2000 before being abandoned. The nest was a relatively small, nearly perfectly round structure, tightly constructed of small twigs and vegetative matter with a diameter not exceeding 10 cm. A single whitish oval

egg without clear markings was observed when the owlet left the nest. This species is surprisingly poorly known in Sumatra (see van Marle & Voous 1988; Holmes 1996), however, our observations suggest that it is probably overlooked and that it may be fairly widespread and moderately common. This is the first nest record of this species for Sumatra and only the second record for GLNP and Aceh (de Schauensee & Ripley 1940; van Marle & Voous 1988).

GOULD'S FROGMOUTH *Batrachostomus stellatus* NT

We observed one in lowland Dipterocarp forest near Ketambe, perched in low bushes 7 m from the ground in February 1999. This is a poorly known species in Sumatra with only one recent record (van Marle & Voous 1988; Holmes 1996) and there are no previous records from GLNP or Aceh.

BROWN-BACKED NEEDLETAIL *Hirundapus giganteus*

We observed this species in moderate numbers from July 1998 to January 1999, circling in small groups above the hills at Ketambe, usually between c. 600 to 800 m asl, but sometimes lower. Peak counts included: a group of 60 on 6 August 1998; and a group of 40 at Ketambe on 10 January 1999. Although regarded as common in Sumatra (van Marle & Voous 1988) there are actually few definitive records of this species in Sumatra and the only previous record from GLNP and Aceh was regarded as tentative (see van Marle & Voous 1988; Holmes 1996).

ASIAN PALM-SWIFT *Cypsiurus balasiensis*

Observed nesting in *Nypa* palm trees near the villages of Balailutu (c. 17 birds) and Seledok (c. 8 birds), within the boundaries of GLNP on 8 December 1998. The trees were situated in relatively open cultivated areas with rice fields and several small houses; at approximately 300 to 320 m asl. This is the first record for the GLNP area and Aceh (van Marle & Voous 1988).

ORANGE-BREASTED TROGON *Harpactes oreskios*

This species has been recorded only once since 1939, and that record was from Ketambe (van Marle & Voous 1988). However, we observed several individuals and pairs of this species throughout GLNP: a pair in the Ketambe lowland forest, at approximately 370 m asl, mobbing an Oriental Scopsowl on 2 November 1998; a male in the Kapi area, at c. 1,100 m, scanning for insects in tall open lower montane forest on 9 November 1998; a male on the slopes of Gunung Kemiri at c. 1400 m asl on 6 December 1998; a male near the village of Seledok in tall forest at c. 1,200 m on 29 January 1999; a pair foraging for insects on lower branches of tall lowland forest at 800 m asl in the Mamas Valley on 16 February 1999. Our records suggest that this species is more numerous in Sumatra than previously thought and should be looked for in areas of suitable tall lower montane forest.

RUDDY KINGFISHER *Halcyon coromanda*

Undated record. One perched c.10 m from a very small stream within thick tall secondary forest in the Sei Besitang River Area (C. Sheperd, unpubl. data). There appear to be few

records of this species away from the coast, see van Marle & Voous (1988) and just one previous record from GLNP (Holmes 1996).

WRINKLED HORNBILL *Rhyticeros corrugatus* NT

At least one was observed at Suaq Balimbing in 1995 (undated record). We observed a group of two males and five females in the Ketambe Lowland Area at 370 m asl on 7 February 1999 (photographed). The birds were observed feeding on the fruits of a large fig tree *Ficus* spp. for approximately 15 min at 25 m above the ground. Despite conspicuous behaviour and special attention to their calls the birds were only observed on this one occasion in the Ketambe area.

BLACK HORNBILL *Anthracoceros malayanus* NT

Recorded at Suaq in 1995 (undated record). This species is apparently uncommon at Ketambe, where only one individual was observed between July 1998 and March 1999.

HELMETED HORNBILL *Rhinoplax vigil* NT

We found this species fairly common and observed it at many primary lowland forest sites, e.g. Ketambe, Sei Besitang River Area and Kluet. We also recorded it within undisturbed lower montane forest up to c. 1,300 m asl on the Kapi Plateau, Gunung Kemiri, and near the villages of Seledok and Batu Dua Ratus. Several birds were observed in large, isolated fruiting trees, in partially degraded forest near Seledok. Our records indicate that this species is still common and widespread throughout GLNP, and extend the documented elevation by c. 300 m asl (van Marle & Voous 1988).

GREY-FACED WOODPECKER *Picus canus*

We observed a female of the endemic Sumatran race *dedemi* in lower montane forest at c. 1,550 m asl near the village of Batu Dua Ratus on 11 February 1999. This species is regarded as probably rare in Sumatra (van Marle & Voous 1988; Holmes 1996).

OLIVE-BACKED WOODPECKER *Dinopium rafflesii* NT

We observed an adult foraging in trees in lowland peat swamp forest at Suaq Balimbing on 29 January 1996. This species is uncommon throughout its entire range and there are few recent records from Sumatra (van Marle & Voous 1988; Holmes 1996).

GARNET PITTA *Pitta granatina* NT

We observed one individual in primary lowland Dipterocarp forest in the Sei Besitang River Area (Sumatra Utara) during March 2000. Several other individuals were regularly seen in tall secondary forest in the same area. These constitute the first records for GLNP; there are only three previous records from North Sumatra (van Marle & Voous 1988; Holmes 1996).

HOODED PITTA *Pitta sordida*

We observed a single bird in the Ketambe Lowland Area near the Alas River on 28 November 1998 and probably the same individual again in the same area on 20 December 1998. Subsequently, we observed other individuals in the Ketambe Lowland Area including

one on 12 January 1999, and another one on 14 February 1999. Presumably these observations relate to the migrant race *cucullata*. We also recorded this species in primary forest in the Sei Besitang River Area on 17 June 2000. Although confirmation is needed, the latter record may be referable to the resident race *muelleri*. There are few recent records of this species from mainland Sumatra (van Marle & Voous 1988; Holmes 1996).

ASIAN MARTIN *Delichon dasypus*

A flock of 20 over hills at c. 1,450 m asl, near the village of Batu Dua Ratus on 10 February 1999. These birds were travelling together with a group of c. 60 Barn Swallows *Hirundo rustica*. Surprisingly, this appears to be the first published record for Aceh (van Marle & Voous 1988; Holmes 1996).

YELLOW WAGTAIL *Motacilla flava*

Although this species was reported to be common throughout Sumatra by van Marle & Voous (1988), a bird (*M. f. simillima*) seen at 350 m asl in an open grassy area at Ketambe in October 1999 constitutes the first record for GLNP.

ASHY MINIVET *Pericrocotus divaricatus*

Two females and one male observed in secondary forest in the Sei Besitang River Area on 18 March 2000. There are few previous records of this Palearctic winter visitor (*divaricatus*) from Sumatra Utara (van Marle & Voous 1988; Holmes 1996).

FIERY MINIVET *Pericrocotus igneus* NT

Several individuals were observed at Suaq Balimbing during 1995. We observed one male and two females with a mixed species flock in the Sei Besitang River Area on 18 March 2000. An additional female was later seen foraging alone in the same area. Although these appear to be the first records for GLNP it is reported to be relatively common on Sumatra (van Marle & Voous 1988).

STRAW-HEADED BULBUL *Pycnonotus zeylanicus* VU

A single bird was observed and recorded singing near Ketambe at the edge of a patch of secondary forest bordering the Alas River on 6 October 1998. Notably, it is not recorded in the Sei Besitang River Area, which constitutes ideal habitat for the species. This species was previously fairly common along the Alas River, but has likely suffered a drastic decline throughout Sumatra over last two decades due to trapping for the pet trade (van Marle & Voous 1988; Holmes 1996).

CREAM-STRIPED BULBUL *Pycnonotus leucogrammicus* Sumatran endemic

Fairly common in primary lower montane forest at 1,000-1,500 m asl along the Alas River Valley; not recorded in secondary forest above 1,000 m asl, although said to occur in dense secondary forest (van Marle & Voous 1988).

SPOT-NECKED BULBUL *Pycnonotus tympanistrigus* NT Sumatran endemic

Four birds observed foraging in secondary forest bordering a small river at 1,250 m asl on the Kapi Plateau on 23 November 1998. Species generally thought to occur between 600 and 900 m asl or even lower (van Marle & Voous 1988).

SCALY-BREASTED BULBUL *Pycnonotus squamatus* NT

Seven birds were seen at c. 750 m asl in secondary riverine vegetation near forest edge, foraging on figs *Ficus* spp. near the village of Marpunga on 28 September 1998. We also observed two individuals in a small fruiting tree bordering a river in the Ketambe lowland at c. 400 m asl on 17 January 1999. Generally considered rare on Sumatra (van Marle & Voous 1988), with few previous records for GLNP (Chasen & Hoogerwerf 1941, Schauensee & Ripley 1940).

GREY-BELLIED BULBUL *Pycnonotus cyaniventris* NT

Four individuals were observed in low trees of primary dry hill forest near Ketambe on 13 November 1998. A pair and one individual were observed foraging with a mixed flock in open secondary lowland Dipterocarp forest in the Sei Besitang River Area on 25 March 2000. Another individual was subsequently observed in a low flowering tree in the same area. These records constitute the first for GLNP. Few other records are available for mainland Sumatra (Kloss 1931).

SUNDA STREAKED BULBUL *Hypsipetes virescens*

Endemic to Sumatra. Common in several lower montane forest sites, e.g. Kapi, near Batu Dua Ratus. Few recent records are available for Aceh and Sumatra (van Marle & Voous 1988).

BLUE-MASKED LEAFBIRD *Chloropsis venusta* NT

Three birds were observed in low trees on the slopes of Gunung Kemiri at 1,200 m asl on 24 November 1998. Five males and two females were observed in red-flowering trees on the Kapi Plateau at 1,300 m asl on 6 December 1998. This locally common species (van Marle & Voous 1988) was previously recorded at only two other sites in Aceh, near Takengon (Snouckaert 1922) and Blangkejeren (van der Schot *in* van Marle & Voous 1988).

GREEN IORA *Aegithina viridissima* NT

Individuals were regularly observed along forest edges in lowlands, especially along the Alas River Valley. One pair was observed foraging with a mixed species flock in secondary forest in the Sei Besitang River Area on 26 May 2000. The birds were foraging in relatively low trees and remained close together. Other birds were observed several times in May 2000 in primary forest bordering the Sei Besitang River, both singly and in pairs, usually in mixed species flocks. This bird was reported to be common on Sumatra (van Marle & Voous 1988), although this represents the first record for GLNP.

SIBERIAN BLUE ROBIN *Luscinia cyane*

An adult male and an adult female were observed foraging on the forest floor in the Kapi area, in dense submontane forest at 1,200 m on 9 November 1998. Two first-winter birds were observed in the Ketambe Lowland Area, in the dark undergrowth of tall riverine forest on 28 and 29 November 1998. Another first-winter bird was observed in lower montane forest near Batu Dua Ratus, in the southeast of GLNP on 10 February 1999. All records were from primary forests. These records constitute the first for GLNP.

and Aceh. Four other records are available for Sumatra, from Jambi, Riau and Lampung (Holmes 1996; Bishop in van Marle & Voous 1988; Robinson & Kloss 1918).

SHINY WHISTLING-THRUSH *Myophonus melanurus* Sumatran endemic

This species is only rarely found in the lower montane forest zone along the Alas River Valley, although it is said to commonly occur in primary forests between 800 and 3300 m asl (van Marle & Voous 1988). Four birds were encountered on Gunung Kemiri from 2,500 to 3,300 m asl, in lower and upper montane forest on 4 March 1999. One bird was seen at c. 1,300 m asl in dense undergrowth of lower montane hill forest at Ketambe on 26 July 1998.

SUNDA WHISTLING-THRUSH *Myophonus glaucinus*

Single birds were observed on 22 and 24 December 1998 in lower montane forest in the northern Kapi area, near the village of Kedah on 23 March 1999 and near Agusan on 27 July 1998, between 1,000 to 1,500 m asl. One individual was observed at c. 600 m asl hopping among river stones in the Ketambe River on 25 November 1998. It appears always to be associated with small watercourses through dense primary forest. Generally considered rare on Sumatra; included in *M. glaucinus* by Delacour (1942), but suggested by some authors to be separate species *M. castaneus* (Ramsay 1880; van Oort 1911).

ORANGE-HEADED THRUSH *Zoothera citrina*

An adult *Z.c. innotata* seen foraging on the Ketambe forest floor on 21 March 1999, and still present in the area four days later, constitutes the first records for GLNP and Aceh, and the third record for mainland Sumatra (van Marle & Voous 1988).

WHITE-CHESTED BABBLER *Trichastoma rostratum* NT

An individual was seen hopping among low shrubs along the edge of the Sei Besitang River on two different occasions on 20 March 2000. This constitutes the first record for GLNP; there are few other records for Sumatra Utara (van Marle & Voous 1988). It is said to be uncommon in mangrove swamps and understories of forest along rivers in the lowlands (van Marle & Voous 1988).

STRIPED WREN-BABBLER *Kenopia striata* NT

An individual was seen moving between perches at 1-2 m in lowland primary Dipterocarp forest in the Sei Besitang River Area on 22 March 2000. This represents the first record for GLNP; there are very few records on Sumatra from Sumatra Utara and Aceh, and none are recent (van Marle & Voous 1988).

RUSTY-BREASTED WREN-BABBLER *Napothera rufipectus* Sumatra endemic

One individual was seen foraging among dead leaves in dense undergrowth of primary lower montane forest at 1400 m asl near Kedah in the northwestern part of GLNP, on 24 March 1999. No previous confirmed records are available for GLNP, although this species is reported to be locally common throughout the Sumatran mountain ranges (van Marle & Voous 1988; Holmes 1996).

WHITE-BELLIED YUHINA *Yuhina zantholeuca*

A group of three was observed foraging in low trees in dry hill forest in the Ketambe area at c.1,000 m asl on 13 November 1998. A group of five was recorded in lower montane forest on slopes of Gunung Kemiri, at c. 1,100 m asl on 4 December 1998. Only two previous records exist for Aceh: one from Pendeng, Gayo Highlands, in primary forest between 550 and 800 m; and an undated record from forest above Ketambe (see van Marle & Voous 1988; Holmes 1996).

BAR-WINGED PRINIA *Prinia familiaris*

Several individuals were observed in low secondary growth along the Alas River Valley, e.g., Ketambe, Seledok. Although this species was much less frequently encountered than Yellow-bellied Prinia *Prinia flaviventris*, regular observations indicate that it is fairly common. Extensive clearance of lowland forest for agricultural purposes has probably been beneficial for this species, since few previous records exist for Aceh and GLNP (van Marle & Voous 1988; Holmes 1996).

EASTERN CROWNED LEAF-WARBLER *Phylloscopus coronatus*

A single bird observed in a mixed flock in lower montane forest at c. 1,600 m asl on a slope of Gunung Kemiri on 3 March 1999 constitutes only the second record for Aceh and the eighth for Sumatra (van Marle & Voous 1988; Holmes 1996).

CHESTNUT-CROWNED WARBLER *Seicercus castaniceps muelleri* Sumatran endemic subspecies

Six individuals were observed at separate localities in primary lower montane forest at 1,250 m asl on the Kapi Plateau on 22 November 1998. Most birds were observed in mixed species flocks. Another individual was seen in primary lower montane forest at 1,350 m asl near the village of Batu Dua Ratus in the southeastern part of the Alas River Valley, on 10 February 1999. Birds were seen in lower and middle stories of the forest, actively foraging for small insects. These records constitute the first for Aceh, while several individuals were previously reported from Brestagi in the southeastern corner of the park (van Marle & Voous 1988; Holmes 1996).

FERRUGINOUS FLYCATCHER *Muscicapa ferruginea*

One was seen foraging in a tree fall gap in primary hill forest in Ketambe on 30 September 1998. Subsequent records in lower montane forest on the Kapi Plateau at 1,100-1,300 m asl: one on 8 October 1998, two on 26 November 1998 and two on 26 December 1998. This scarce winter visitor was previously only recorded twice in Aceh (van Marle & Voous 1988).

YELLOW-RUMPED FLYCATCHER *Ficedula zanthopygia*

An undated 1997 record of a male in peat swamp at Suaq represents the first for GLNP (I. Singleton, unpubl. data). Several birds previously recorded throughout Sumatra during northern winter (van Marle & Voous 1988).

BLUE-AND-WHITE FLYCATCHER *Cyanoptila cyanomelana*

A male was observed hunting insects in primary lower montane forest on the Kapi Plateau at approximately 1,200 m asl on 26 December 1998. This is the first record for Aceh of this rare winter visitor, which has previously been reported from Brestagi only (van Marle & Voous 1988; Holmes 1996).

LARGE-BILLED BLUE FLYCATCHER *Cyornis caerulatus* VU

C.c. albiventer was observed on several occasions perched 2-10 m in primary Dipterocarp forest bordering the Sei Besitang River on 20 March 2000. Also observed once in primary forest interior. This is the first record for GLNP of this uncommon or overlooked Sumatran resident (van Marle & Voous 1988; Holmes 1996).

MALAYSIAN BLUE FLYCATCHER *Cyornis turcosus* NT

A female was observed in the Sei Besitang River Area on 17 March 2000. Only few previous records exist for Sumatra Utara (van Marle & Voous 1988).

SCARLET-BREADED FLOWERPECKER *Prionochilus thoracicus* NT

A single adult-plumaged male was observed attending a small flowering tree within peat-swamp forest at Suaq Balimbing in 1995 (undated). During 1999 and 2000 we regularly observed this species in the Sei Besitang River Area. In addition to being the first records for GLNP our observations are significant because this is a poorly known uncommon or rare species throughout its entire range, including Sumatra (van Marle & Voous 1988; Robson 2000).

THICK-BILLED SPIDERHUNTER *Arachnothera crassirostris*

One individual was seen foraging in a white-flowering tree within primary Dipterocarp forest in the Sei Besitang River Area on 21 March 2000. There are few records of this poorly known species for Sumatra (van Marle & Voous 1988; Holmes 1996).

PIN-TAILED PARROT-FINCH *Erythrura prasina*

A group of c. 30 including 8 adult males and at least 10 adult females was observed perching in low shrubby vegetation at the edge of a ripening rice field, near the forest edge adjacent to the village of Balailutu at c. 800 m asl on 23 October 1998. The parrot-finches formed part of a mixed flock together with c. 50 White-headed Munias *Lonchura maja*, 5 Scaly-breasted Munias *L. punctulata* and 10 White-rumped Munias *L. striata*. There appear to be few records of this species from Sumatra, especially in recent years (see van Marle & Voous 1988; Holmes 1996).

SUMATRAN DRONGO *Dicrurus sumatranus* NT Sumatran endemic

We found this species to be fairly common in several lower montane forest sites along the Alas River Valley, especially in the Kapi area, from c. 1,000 to 1,350 m asl. It was previously reported to be very common in the Mamas Valley (van Strien in van Marle & Voous 1988). For a preliminary discussion of the taxonomic status of *D. sumatranus* see Vaurie (1962) and White & Bruce (1987).

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Appendix 1. Bird species recorded in Gunung Leuser National Park.

Species names in bold, restricted-range; asterisks (*), endemic to Sumatra. *Red Data Book* category (BirdLife 2001): EN, Endangered; VU, Vulnerable; NT, Near-threatened. *Status*: R, Resident; M, Migrant. *Occurrence in the park*: +, recorded this study and previously recorded (van Marle & Voous 1988; Holmes 1996); +n, recorded this study and new species for GLNP; +nc, listed by Wind (1996a) and newly confirmed this study; MV, not seen this study but listed by van Marle & Voous (1988); H, not seen this study but listed by Holmes (1996); coll., not seen this study but collected in the park (see Wind 1996a); W, bird species listed by Wind (1996a) but requiring confirmation (? refers to doubt by the author with regard to species occurrence).

Latin Name	English Name	Red Data Book Category	Status	Occurrence in GLNP
<i>Ardea purpurea</i>	Purple Heron		R	+
<i>Bubulcus ibis</i>	Cattle Egret		R	+
<i>Butorides striatus</i>	Striated Heron		R,M?	+nc
<i>Gorsachius melanolophus</i>	Malayan Night-heron		M	MV
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron		M	MV
<i>Ixobrychus cinnamomeus</i>	Cinnamon Bittern		R	+
<i>Ixobrychus flavicollis</i>	Black Bittern		R?,M	+n
<i>Ciconia stormi</i>	Storm's Stork	EN	R?	+n
<i>Aviceda jerdoni</i>	Jerdon's Baza		R	+n
<i>Peris ptilorhynchus</i>	Oriental Honey-buzzard		R,M	+nc
<i>Macheiramphus alcinus</i>	Bat Hawk		R	+
<i>Milvus migrans</i>	Black Kite		M	+n
<i>Haliastur indus</i>	Brahminy Kite		R	+n
<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle		R	+
<i>Ichthyophaga humilis</i>	Lesser Fish-eagle	NT	R	+
<i>Spilornis cheela</i>	Crested Serpent-eagle		R	+
<i>Ichthyophaga ichthyaetus</i>	Grey-headed Fish-eagle	NT	R	W
<i>Accipiter trivirgatus</i>	Crested Goshawk		R	+nc
<i>Accipiter soloensis</i>	Chinese Goshawk		M	+n
<i>Accipiter gularis</i>	Japanese Sparrow-hawk		M	+n
<i>Accipiter virgatus</i>	Besra		R	MV
<i>Ictinaetus malayensis</i>	Black Eagle		R	+
<i>Hieraaetus kienerii</i>	Rufous-bellied Eagle		R	+
<i>Spizaetus cirrhatas</i>	Changeable Hawk-eagle		R	+
<i>Spizaetus alboniger</i>	Blyth's Hawk-eagle		R	+
<i>Spizaetus nanus</i>	Wallace's Hawk-eagle	VU	R	H
<i>Microhierax fringillarius</i>	Black-thighed Falconet		R	+
<i>Falco peregrinus</i>	Peregrine Falcon		R	MV
<i>Dendrocygna javanica</i>	Lesser Whistling-duck		R	+
<i>Melanoperdix nigra</i>	Black Partridge	VU	R	W
<i>Cairina scutulata</i>	White-winged Duck	EN	R	+
<i>Coturnix chinensis</i>	Blue-breasted Quail		R	MV
<i>Arborophila orientalis</i>	Grey-breasted Partridge		R	MV, H
*Arborophila rubrirostris	Red-billed Partridge		R	+
<i>Rhizothera longirostris</i>	Long-billed Partridge	NT	R	H
<i>Caloperdix ocella</i>	Ferruginous Partridge	NT	R	H
<i>Rollulus rouloul</i>	Crested Partridge	NT	R	+
*Lophura hoogerwerfi	Hoogerwerf's Pheasant	VU	R	+
<i>Lophura ignita</i>	Crested Fireback	NT	R	MV
<i>Gallus gallus</i>	Red Junglefowl		R	+nc
*Polyplectron chalcurom	Bronze-tailed Peacock-pheasant		R	+

<i>Argusianus argus</i>	Great Argus	NT	R	+
<i>Turnix suscitator</i>	Barred Button-quail		R	+
<i>Porzana pusilla</i>	Baillon's Crake		R,M	MV
<i>Amauornis phoenicurus</i>	White-breasted Waterhen		R,M	+
<i>Gallinula chloropus</i>	Common Moorhen		R	W
<i>Heliopais personata</i>	Masked Finfoot	VU	M?	+
<i>Rostratula benghalensis</i>	Greater Painted Snipe		R	MV
<i>Actitis hypoleucos</i>	Common Sandpiper		M	+
<i>Gallinago stenura</i>	Pintail Snipe		M	MV
<i>Scolopax saturata</i>	Horsfield's Woodcock		R	MV
<i>Treron oxyura</i>	Sunda Pin-tailed Pigeon	NT	R	+
<i>Treron sphenura</i>	Wedge-tailed Pigeon		R	MV
<i>Treron capellei</i>	Large Green Pigeon	VU	R	MV
<i>Treron curvirostra</i>	Thick-billed Green Pigeon		R	Coll.
<i>Treron fulvicollis</i>	Cinnamon-headed Green Pigeon	NT	R	MV
<i>Treron olax</i>	Little Green Pigeon		R	MV
<i>Treron vernans</i>	Pink-necked Green Pigeon		R	Coll.
<i>Ptilinopus jambu</i>	Jambu Fruit-dove	NT	R	+nc
<i>Ducula aenea</i>	Green Imperial Pigeon		R	+
<i>Ducula badia</i>	Mountain Imperial Pigeon		R	+
<i>Macropygia unchall</i>	Barred Cuckoo-dove		R	+
<i>Macropygia ruficeps</i>	Little Cuckoo-dove		R	+
<i>Streptopelia chinensis</i>	Spotted Dove		R	MV
<i>Geopelia striata</i>	Zebra Dove		R	W
<i>Chalcophaps indica</i>	Emerald Dove		R	+
<i>Psittacula longicauda</i>	Long-tailed Parakeet	NT	R	W
<i>Psittinus cyanurus</i>	Blue-rumped Parrot	NT	R	W
<i>Loriculus galgulus</i>	Blue-crowned Hanging-parrot		R	+
<i>Clamator coromandus</i>	Chestnut-winged Cuckoo		M	+
<i>Cuculus sparverioides</i>	Large Hawk-cuckoo		R,M	+
<i>Cuculus vagans</i>	Moustached Hawk-cuckoo	NT	R?	MV
<i>Cuculus fugax</i>	Hodgson's Hawk-cuckoo		R	+n
<i>Cuculus micropterus</i>	Indian Cuckoo		R,M	+
<i>Cuculus saturatus</i>	Oriental Cuckoo		R,M	+
<i>Cacomantis sonneratii</i>	Banded Bay Cuckoo		R	+n
<i>Cacomantis sepulcralis</i>	Rusty-breasted Cuckoo		R	H
<i>Cacomantis merulinus</i>	Plaintive Cuckoo		R	+
<i>Chrysococcyx xanthorhynchus</i>	Violet Cuckoo		R	MV
<i>Chrysococcyx minutillus</i>	Little Bronze Cuckoo		R	MV,H
<i>Surniculus lugubris</i>	Drongo Cuckoo		R,M	+
<i>Eudynamis scolopacea</i>	Asian Koel		R	W
<i>Rhopodytes diardi</i>	Black-bellied Malkoha	NT	R	+
<i>Rhopodytes sumatranus</i>	Chestnut-bellied Malkoha	NT	R	+
<i>Rhopodytes tristis</i>	Green-billed Malkoha		R	+
<i>Rhinortha chlorophaea</i>	Raffless Malkoha		R	+
<i>Zanclostomus javanicus</i>	Red-billed Malkoha		R	+
<i>Rhamphococcyx curvirostris</i>	Chestnut-breasted Malkoha		R	+
<i>Centropus sinensis</i>	Greater Coucal		R	+
<i>Centropus bengalensis</i>	Lesser Coucal		R	+
<i>Phodilus badius</i>	Oriental Bay Owl		R	MV
<i>Otus spilocephalus</i>	Mountain Scopsowl		R	+
<i>Otus sunia</i>	Oriental Scopsowl		M	+n
<i>Otus lempiji</i>	Collared Scopsowl		R	W
<i>Otus brookii</i>	Rajah's Scopsowl		R	MV,H
<i>Bubo sumatranus</i>	Barred Eagle-owl		R	+