

Van Tol, J., E. Gassó Miracle, R. de Jong & E. van Nieuwerkerken. 2007. Results of the invertebrate surveys in the Gunung Lumut Protection Forest. Pp 59-70 in De Jongh H.H., G.A. Persoon & W. Kustiawan (eds). *Options for biodiversity conservation and sustainable use in lowland forests of southeast Borneo: proceedings of a workshop organized on 19 May 2006 in Leiden, The Netherlands*. Institute of Environmental Sciences, Mulawarman University and Tropenbos international.



**Plate 1.** Blyth's Hawk-eagle *Spizaetus alboniger*. 18 January 2005, Pinang Jatus, East Kalimantan.

© Sander M. Pieterse



**Plate 2.** Blue-headed Pitta *Pitta baudii*. 18 March 2005, Pinang Jatus, East Kalimantan.

© Sander M. Pieterse

**Appendix 1.** Bird species observed in Gunung Lumut Protection Forest, East Kalimantan. Nomenclature according to Sukmantoro *et al.* (2007). *Threat level*: EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern (Collar *et al.* 2001; IUCN 2007). *Status*: R, resident species with wider distribution outside of Borneo; B, Borneo-endemic; W, wintering migrant (MacKinnon & Phillipps 1993; Smythies & Davison 1999). *Biome*: AS14, Sundaic lowland forest; AS15, Sundaic montane forest (Chan *et al.* 2004). *Site*: PJ, Pinang Jatus; M, Mului; x, species identified with certainty; ?, identification uncertain.

Scientific name	English name	Threat level	Status	Biome	Site	
					PJ	M
<b>Phalacrocoracidae</b>						
<i>Anhinga melanogaster</i>	Oriental Darter	NT	R		X	
<b>Ardeidae</b>						
<i>Egretta intermedia</i>	Intermediate Egret	LC	R W		X	
<i>Butorides striatus</i>	Striated Heron	LC	R		X	
<b>Ciconiidae</b>						
<i>Ciconia stormi</i>	Storm's Stork	EN	R	AS14	X	X
<b>Accipitridae</b>						
<i>Aviceda jerdoni</i>	Jerdon's Baza	LC	R		X	X
<i>Pernis ptilorhynchus</i>	Oriental Honey-buzzard	LC	R W		X	X
<i>Macheiramphus alcinus</i>	Bat Hawk	LC	R		X	
<i>Elanus caeruleus</i>	Black-winged Kite	LC	R		X	
<i>Ichthyophaga humilis</i>	Lesser Fish-eagle	NT	R		X	
<i>Ichthyophaga ichhyaetus</i>	Grey-headed Fish-eagle	NT	R		X	
<i>Spilornis cheela</i>	Crested Serpent-eagle	LC	R		X	X
<i>Accipiter sp.</i>	Sparrow-hawk sp.	LC	W		X	
<i>Ictinaetus malayensis</i>	Black Eagle	LC	R		X	X
<i>Hieraaetus kienerii</i>	Rufous-bellied Eagle	LC	R		X	
<i>Spizaetus alboniger</i>	Blyth's Hawk-eagle	LC	R	AS14	X	
<b>Falconidae</b>						
<i>Microhierax fringillarius</i>	Black-thighed Falconet	LC	R	AS14	X	
<b>Phasianidae</b>						
<i>Rollulus rouloul</i>	Crested Partridge	NT	R	AS14		X
<i>Lophura ignita</i>	Crested Fireback	NT	R	AS14	X	
<i>Polyplectron schleiermachersi</i>	Bornean Peacock-pheasant	EN	B	AS14	X	

<i>Argusianus argus</i>	Great Argus	NT	R	AS14	X	X
<b>Rallidae</b>						
<i>Amauornis phoenicurus</i>	White-breasted Waterhen	LC	R		X	X
<b>Scolopacidae</b>						
<i>Actitis hypoleucos</i>	Common Sandpiper	LC	W		X	
<b>Columbidae</b>						
<i>Treron capellei</i>	Large Green Pigeon	VU	R	AS14	X	X
<i>Treron curvirostra</i>	Thick-billed Green Pigeon	LC	R		X	
<i>Treron olax</i>	Little Green Pigeon	LC	R	AS14	X	X
<i>Treron vernans</i>	Pink-necked Green Pigeon	LC	R			X
<i>Ducula aenea</i>	Green Imperial Pigeon	LC	R		X	
<i>Ducula badia</i>	Mountain Imperial Pigeon	LC	R			X
<i>Streptopelia chinensis</i>	Spotted Dove	LC	R		X	
<i>Chalcophaps indica</i>	Emerald Dove	LC	R		X	X
<b>Psittacidae</b>						
<i>Psittinus cyanurus</i>	Blue-rumped Parrot	NT	R	AS14	X	X
<i>Loriculus galgulus</i>	Blue-crowned Hanging-parrot	LC	R	AS14	X	X
<b>Cuculidae</b>						
<i>Cuculus micropterus</i>	Indian Cuckoo	LC	R		X	X
<i>Cacomantis sonneratii</i>	Banded Bay Cuckoo	LC	R			X
<i>Cacomantis merulinus</i>	Plaintive Cuckoo	LC	R		X	X
<i>Chrysococcyx xanthorhynchus</i>	Violet Cuckoo	LC	R		X	X
<i>Surniculus lugubris</i>	Drongo Cuckoo	LC	R		X	X
<i>Rhopodytes diardi</i>	Black-bellied Malkoha	NT	R	AS14		X
<i>Rhopodytes sumatranus</i>	Chestnut-bellied Malkoha	NT	R	AS14	X	
<i>Rhinorthis chlorophaea</i>	Raffles's Malkoha	LC	R	AS14	X	X
<i>Zanclostomus javanicus</i>	Red-billed Malkoha	LC	R	AS14	X	
<i>Rhamphococcyx curvirostris</i>	Chestnut-breasted Malkoha	LC	R	AS14	X	X
<i>Carpococcyx radiatus</i>	Bornean Ground-cuckoo	NT	R	AS14	X	
<i>Centropus rectunguis</i>	Short-toed Coucal	VU	R	AS14	X	X
<i>Centropus sinensis</i>	Greater Coucal	LC	R		X	X
<i>Centropus bengalensis</i>	Lesser Coucal	LC	R		X	X
<b>Strigidae</b>						
<i>Ninox scutulata</i>	Brown Boobook	LC	R		X	X
<i>Strix leptogrammica</i>	Brown Wood-owl	LC	R		X	
<b>Apodidae</b>						
<i>Collocalia</i> sp.	Swiftlet sp.	LC	R		X	X

<i>Collocalia esculenta</i>	Glossy Swiftlet	LC	R		X	X
<i>Hirundapus giganteus</i>	Brown-backed Needletail	LC	R W		X	
<i>Rhaphidura leucopygialis</i>	Silver-rumped Swift	LC	R	AS14	X	X
<i>Cypsiurus balasiensis</i>	Asian Palm-swift	LC	R		X	X
<b>Hemiprocnidae</b>						
<i>Hemiprocne longipennis</i>	Grey-rumped Tree-swift	LC	R		X	X
<i>Hemiprocne comata</i>	Whiskered Tree-swift	LC	R		X	X
<b>Trogonidae</b>						
<i>Harpactes kasumba</i>	Red-naped Trogon	NT	R	AS14	X	
<i>Harpactes diardii</i>	Diard's Trogon	NT	R	AS14	X	X
<i>Harpactes duvaucelii</i>	Scarlet-rumped Trogon	NT	R	AS14	X	X
<b>Alcedinidae</b>						
<i>Alcedo meninting</i>	Blue-eared Kingfisher	LC	R		X	
<i>Ceyx erithacus</i>	Oriental Dwarf Kingfisher	LC	R		X	X
<i>Pelargopsis capensis</i>	Stork-billed Kingfisher	LC	R		X	
<b>Meropidae</b>						
<i>Merops viridis</i>	Blue-throated Bee-eater	LC	R		X	X
<i>Nyctornis amictus</i>	Red-bearded Bee-eater	LC	R	AS14		X
<b>Coraciidae</b>						
<i>Eurystomus orientalis</i>	Common Dollarbird	LC	R W		X	
<b>Bucerotidae</b>						
<i>Berenicornis comatus</i>	White-crowned Hornbill	NT	R	AS14	X	
<i>Anorrhinus galeritus</i>	Bushy-crested Hornbill	LC	R	AS14	X	X
<i>Rhyticeros corrugatus</i>	Wrinkled Hornbill	NT	R	AS14	X	X
<i>Rhyticeros undulatus</i>	Wreathed Hornbill	LC	R		X	X
<i>Anthracoceros malayanus</i>	Black Hornbill	NT	R	AS14	X	
<i>Anthracoceros albirostris</i>	Asian Pied Hornbill	LC	R		X	
<i>Buceros rhinoceros</i>	Rhinoceros Hornbill	NT	R	AS14	X	X
<i>Rhinoplax vigil</i>	Helmeted Hornbill	NT	R	AS14	X	X
<b>Capitonidae</b>						
<i>Megalaima chrysopogon</i>	Gold-whiskered Barbet	LC	R	AS14	X	X
<i>Megalaima mystacophanos</i>	Red-throated Barbet	NT	R	AS14	X	X
<i>Megalaima henricii</i>	Yellow-crowned Barbet	NT	R	AS14	X	X
<i>Megalaima australis</i>	Blue-eared Barbet	LC	R		X	X
<i>Calorhamphus fuliginosus</i>	Brown Barbet	LC	R	AS14	X	X
<b>Indicatoridae</b>						
<i>Indicator archipelagicus</i>	Malaysian Honeyguide	NT	R	AS14	X	



<b>Picidae</b>							
<i>Sasia abnormis</i>	Rufous Piculet	LC	R	AS14	X	X	
<i>Celeus brachyurus</i>	Rufous Woodpecker	LC	R				X
<i>Picus puniceus</i>	Crimson-winged Yellownappe	LC	R	AS14	X	X	
<i>Picus miniaceus</i>	Banded Woodpecker	LC	R	AS14	X	X	
<i>Dinopium rafflesii</i>	Olive-backed Woodpecker	NT	R	AS14	X	X	
<i>Meiglyptes tristis</i>	Buff-rumped Woodpecker	LC	R	AS14	X	X	
<i>Meiglyptes tukki</i>	Buff-necked Woodpecker	NT	R	AS14			X
<i>Mulleripicus pulverulentus</i>	Great Slaty Woodpecker	LC	R			X	
<i>Dryocopus javensis</i>	White-bellied Woodpecker	LC	R			X	X
<i>Dendrocopos canicapillus</i>	Grey-capped Woodpecker	LC	R			X	X
<i>Hemicircus concretus</i>	Grey-and-buff Woodpecker	LC	R	AS14	X	X	
<i>Blythipicus rubiginosus</i>	Maroon Woodpecker	LC	R	AS14	X	X	
<i>Reinwardtipicus validus</i>	Orange-backed Woodpecker	LC	R	AS14	X	X	
<b>Eurylaimidae</b>							
<i>Corydon sumatranus</i>	Dusky Broadbill	LC	R			X	X
<i>Cymbirhynchus macrorhynchus</i>	Black-and-red Broadbill	LC	R			X	X
<i>Eurylaimus javanicus</i>	Banded Broadbill	LC	R			X	X
<i>Eurylaimus ochromalus</i>	Black-and-yellow Broadbill	NT	R	AS14	X	X	
<i>Calyptomena viridis</i>	Green Broadbill	NT	R	AS14	X	X	
<b>Pittidae</b>							
<i>Pitta caerulea</i>	Giant Pitta	NT	R	AS14	X		
<i>Pitta guajana</i>	Banded Pitta	LC	R	AS14	X		
<i>Pitta granatina</i>	Garnet Pitta	NT	R	AS14	X		
<i>Pitta baudii</i>	Blue-headed Pitta	VU	B	AS14	X		
<i>Pitta sordida</i>	Hooded Pitta	LC	R			X	X
<b>Hirundinidae</b>							
<i>Hirundo rustica</i>	Barn Swallow	LC	W			X	
<i>Hirundo tahitica</i>	Pacific Swallow	LC	R			X	X
<b>Motacillidae</b>							
<i>Motacilla flava</i>	Yellow Wagtail	LC	W			X	
<i>Motacilla cinerea</i>	Grey Wagtail	LC	W			X	
<b>Campephagidae</b>							
<i>Coracina fimbriata</i>	Lesser Cuckoo-shrike	LC	R	AS14	X	X	
<i>Pericrocotus flammeus</i>	Scarlet Minivet	LC	R			X	X
<i>Hemipus hirundinaceus</i>	Black-winged Hemipus	LC	R	AS14	X	X	
<b>Pycnonotidae</b>							

<i>Pycnonotus melanoleucos</i>	Black-and-white Bulbul	NT	R	AS14		X
<i>Pycnonotus atriceps</i>	Black-headed Bulbul	LC	R		X	X
<i>Pycnonotus eutilotus</i>	Puff-backed Bulbul	NT	R	AS14	X	X
<i>Pycnonotus goiavier</i>	Yellow-vented Bulbul	LC	R		X	X
<i>Pycnonotus plumosus</i>	Olive-winged Bulbul	LC	R	AS14	X	X
<i>Pycnonotus simplex</i>	Cream-vented Bulbul	LC	R	AS14		X
<i>Pycnonotus brunneus</i>	Red-eyed Bulbul	LC	R	AS14	X	X
<i>Pycnonotus erythroptalmos</i>	Spectacled Bulbul	LC	R	AS14	X	X
<i>Criniger bres</i>	Grey-cheeked Bulbul	LC	R	AS14	X	X
<i>Criniger phaeocephalus</i>	Yellow-bellied Bulbul	LC	R	AS14	X	
<i>Hypsipetes charlottae</i>	Buff-vented Bulbul	NT	R	AS14	X	X
<b>Chloropseidae</b>						
<i>Aegithina tiphia</i>	Common Iora	LC	R		X	
<i>Aegithina viridissima</i>	Green Iora	NT	R	AS14	X	X
<i>Chloropsis sonnerati</i>	Greater Green Leafbird	LC	R	AS14	X	X
<i>Chloropsis cyanopogon</i>	Lesser Green Leafbird	NT	R	AS14	X	X
<i>Chloropsis cochinchinensis</i>	Blue-winged Leafbird	LC	R		X	X
<i>Irena puella</i>	Asian Fairy Bluebird	LC	R		X	X
<b>Laniidae</b>						
<i>Lanius cristatus</i>	Brown Shrike	LC	W			X
<i>Lanius schach</i>	Long-tailed Shrike	LC	R		X	
<b>Turdidae</b>						
<i>Copsychus saularis</i>	Oriental Magpie-robin	LC	R		X	X
<i>Copsychus malabaricus</i>	White-rumped Shama	LC	R		X	X
<i>Enicurus leschenaulti</i>	White-crowned Forktail	LC	R	AS14	X	
<b>Timaliidae</b>						
<i>Pellorneum capistratum</i>	Black-capped Babbler	LC	R	AS14	X	X
<i>Trichastoma malaccense</i>	Short-tailed Babbler	NT	R	AS14	X	X
<i>Trichastoma rostratum</i>	White-chested Babbler	NT	R	AS14		X
<i>Trichastoma bicolor</i>	Ferruginous Babbler	LC	R	AS14	X	X
<i>Malacopteron affine</i>	Sooty-capped Babbler	NT	R	AS14	X	X
<i>Malacopteron cinereum</i>	Scaly-crowned Babbler	LC	R		X	
<i>Malacopteron magnum</i>	Rufous-crowned Babbler	NT	R	AS14	X	X
<i>Pomatorhinus montanus</i>	Chestnut-backed Scimitar-babbler	LC	R	AS14		X
<i>Napothera atrigularis</i>	Black-throated Wren-babbler	NT	B	AS14		X
<i>Stachyris poliocephala</i>	Grey-headed Babbler	LC	R	AS14		X
<i>Stachyris maculata</i>	Chestnut-rumped Babbler	NT	R	AS14	X	X

<i>Stachyris nigricollis</i>	Black-throated Babbler	NT	R	AS14	X	X
<i>Stachyris erythroptera</i>	Chestnut-winged Babbler	LC	R	AS14	X	X
<i>Macronous gularis</i>	Striped Tit-babbler	LC	R		X	X
<i>Macronous pilosus</i>	Fluffy-backed Tit-babbler	NT	R	AS14	X	X
<i>Alcippe brunneicauda</i>	Brown Fulvetta	NT	R	AS14		X
<b>Sylviidae</b>						
<i>Prinia flaviventris</i>	Yellow-bellied Prinia	LC	R		X	X
<i>Orthotomus atrogularis</i>	Dark-necked Tailorbird	LC	R		X	
<i>Orthotomus sericeus</i>	Rufous-tailed Tailorbird	LC	R		X	X
<i>Orthotomus ruficeps</i>	Ashy Tailorbird	LC	R		X	X
<i>Phylloscopus borealis</i>	Arctic Leaf-warbler	LC	W			X
<i>Abroscopus superciliaris</i>	Yellow-bellied Warbler	LC	R			X
<b>Muscicapidae</b>						
<i>Rhinomyias umbratilis</i>	Grey-chested Rhinomyias	NT	R	AS14	X	
<i>Muscicapa sibirica</i>	Dark-sided Flycatcher	LC	W			?
<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	LC	R W		X	X
<i>Eumyias thalassina</i>	Verditer Flycatcher	LC	R			X
<i>Ficedula narcissina</i>	Narcissus Flycatcher	LC	W			X
<i>Cyanoptila cyanomelana</i>	Blue-and-white Flycatcher	LC	W			X
<i>Cyornis concretus</i>	Dark Blue Flycatcher	LC	R			?
<i>Cyornis superbus</i>	Bornean Blue Flycatcher	LC	B	AS15	?	
<i>Cyornis turcosus</i>	Malaysian Blue Flycatcher	NT	R	AS14	X	
<b>Acanthizidae</b>						
<i>Gerygone sulphurea</i>	Flyeater	LC	R		X	
<b>Monarchidae</b>						
<i>Philentoma pyrhopterum</i>	Rufous-winged Philentoma	LC	R	AS14	X	X
<i>Hypothymis azurea</i>	Black-naped Monarch	LC	R		X	X
<i>Terpsiphone paradisi</i>	Asian Paradise-flycatcher	LC	R		X	X
<i>Rhipidura javanica</i>	Pied Fantail	LC	R		X	
<i>Rhipidura perlata</i>	Spotted Fantail	LC	R	AS14		X
<b>Sittidae</b>						
<i>Sitta frontalis</i>	Velvet-fronted Nuthatch	LC	R		X	
<b>Dicaeidae</b>						
<i>Prionochilus maculatus</i>	Yellow-breasted Flowerpecker	LC	R	AS14	X	X
<i>Prionochilus xanthopygius</i>	Yellow-rumped Flowerpecker	LC	B	AS14	X	X
<i>Dicaeum trigonostigma</i>	Orange-bellied Flowerpecker	LC	R		X	X
<b>Nectariniidae</b>						
<i>Anthreptes simplex</i>	Plain Sunbird	LC	R	AS14	X	X

<i>Anthreptes malacensis</i>	Brown-throated Sunbird	LC	R		X	X
<i>Anthreptes singalensis</i>	Ruby-cheeked Sunbird	LC	R		X	X
<i>Hypogramma hypogrammicum</i>	Purple-naped Sunbird	LC	R		X	X
<i>Nectarinia sperata</i>	Purple-throated Sunbird	LC	R		X	
<i>Aethopyga siparaja</i>	Crimson Sunbird	LC	R		X	
<i>Arachnothera longirostra</i>	Little Spiderhunter	LC	R		X	X
<i>Arachnothera flavigaster</i>	Spectacled Spiderhunter	LC	R	AS14	X	X
<i>Arachnothera chrysogenys</i>	Yellow-eared Spiderhunter	LC	R	AS14	?	X
<i>Arachnothera affinis</i>	Grey-breasted Spiderhunter	LC	R	AS14	?	X
<b>Zosteropidae</b>						
<i>Zosterops</i> sp.	White-eye sp.	LC	R		X	
<b>Estrildidae</b>						
<i>Erythrura prasina</i>	Pin-tailed Parrot-finch	LC	R			X
<i>Lonchura fuscans</i>	Dusky Munia	LC	B		X	X
<i>Lonchura leucogastra</i>	White-bellied Munia	LC	R		X	
<i>Lonchura malacca</i>	Chestnut Munia	LC	R		X	X
<b>Sturnidae</b>						
<i>Aplonis panayensis</i>	Asian Glossy Starling	LC	R		X	
<i>Gracula religiosa</i>	Hill Myna	LC	R		X	X
<b>Oriolidae</b>						
<i>Oriolus xanthonotus</i>	Dark-throated Oriole	NT	R	AS14	X	X
<b>Dicruridae</b>						
<i>Dicrurus aeneus</i>	Bronzed Drongo	LC	R			X
<i>Dicrurus paradiseus</i>	Greater Racquet-tailed Drongo	LC	R		X	X
<b>Corvidae</b>						
<i>Platylophus galericulatus</i>	Crested Jay	NT	R	AS14		X
<i>Platysmurus leucopterus</i>	Black Magpie	NT	R	AS14	X	
<i>Corvus enca</i>	Slender-billed Crow	LC	R		X	X