

# **Penilaian Sepintas Keragaman Fauna di Pegunungan Dieng**

## **Rapid Assessment of Fauna Diversity in Dieng Mountains**



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## Pendahuluan

Kawasan Pegunungan Dieng di Propinsi Jawa Tengah menopang suatu ekosistem yang unik. Jawa Tengah adalah salah satu propinsi dengan populasi manusia terpadat serta kehancuran hutannya yang paling parah di Indonesia dengan hanya menyisakan 2,47% di seluruh propinsi (Whitten *et al.* 1996). Hingga kini belum terbentuk suatu kawasan teresterial yang luas sebagai cagar alam di propinsi ini dan ketidakteradannya menciptakan suatu jurang pemisah dalam Jaringan Kawasan Pelestarian di Jawa (Nijman & Sözer, 1996). Hutan alam di pegunungan mencakup 255 km<sup>2</sup>, dan merupakan kawasan hutan tersisa yang paling luas di propinsi ini. Berkat luasnya, lokasi dan nilai hayati yang tinggi, Pegunungan Dieng memiliki arti secara internasional bagi pelestarian keanekaragaman hayati dunia.

Hutannya masih dalam kondisi yang relatif baik dan mencakup dataran rendah sampai dataran tinggi dengan kemiringan 300 hingga 2.565 m d.p.l. Di sana terdapat banyak spesies endemik untuk Jawa dan sejumlah mammalia endemik yang terancam punah. Pelestarian hutan di Pegunungan Dieng sangat penting karena mewakili salah satu hutan dataran rendah yang tersisa di Jawa. Bila inipun punah, kehidupan banyak satwa dan spesies tumbuhan akan ada dalam bahaya. Tumbuhan hutan adalah penting untuk mencegah banjir Lumpur di kawasan dataran yang padat penduduk. Pelestarian hutan dapat mencegah erosi dan menstabilisasikan iklim setempat.

Dari sudut konservasi, Pegunungan Dieng merupakan tempat suka bagi sejumlah besar fauna endemik di Jawa Tengah, termasuk mammalia seperti Owa Jawa (*Hylobates moloch*) dan Suili (*Presbytis comata*). Populasi besar kedua spesies ini diketemukan di Pegunungan Dieng tetapi daerah ini tidak dicantumkan dalam laporan PHVA (Supriatna *et al.*, 1994). Populasi penting dari burung Elang Jawa (*Spizaetus bartelsi*), serta sejumlah besar burung di hutan dataran rendah sedang terancam kepunahan. Melihat sedikitnya sisa hutan dataran rendah di Jawa, hampir semua burung hutan terancam kepunahan tanpa perkecualian.

## Introduction

The Dieng Mountains, situated in the Central Java Province, support a unique forest ecosystem. Central Java is one of the most densely populated and most deforested provinces in Indonesia, with only 2,47% of the provincial total remaining (Whitten *et al.*, 1996). Hitherto, no large terrestrial reserve has been established in the province, and its absence creates a significant lacuna in Java's Protected Area Network (Nijman & Sozer, 1996). The natural forest on these mountains totals c. 255 km sq., making it by far the largest remaining forest in the province. By virtue of its size, its location and its high biological value, the Dieng Mountains are of international significance for the conservation of global biodiversity.

The forest is still in relatively good condition and it ranges from lowland to upper montane over an unbroken altitudinal gradient from c. 300 to 2565 m a.s.l. It support many birds species endemic to Java, as well as a number of threatened and/or endemic mammals. Maintenance of the forest in the Dieng Mountains is essential as it represents one of the last remaining lowland forests on Java. When lost, the survival of many animals and plant species will be put a stake. Forest cover is essential in order to prevent mud floods in the densely populated lowland. Locally, maintenance of forest areas controls erosion and stabilizes the local climate.

From a conservation perspective, the Dieng mountains are the easternmost refuge for a great number of threatened 'West Javan endemics'. These include mammals like the Javan gibbon *Hylobates moloch* and the Grizzled leaf monkey *Presbytis comata*. Of both species large populations are found in the Dieng mountains, yet the area was not included in a recent PHVA-report (Supriatna *et al.*, 1994). For the birds important populations of the endangered Javan Hawk-eagle *Spizaetus bartelsi*, as well as a great number of lowland forest birds. Given the tiny amount of lowland forest remaining on Java, these forest birds are almost without exception threatened to some degree.

Mempertimbangkan berbagai fungsi Pegunungan Dieng, hilangnya atau degradasi sisa-sisa hutan akan menimbulkan akibat yang serius. Untuk pelestarian kawasan ini diperlukan suatu rencana strategis, dengan pernyataan kepentingan lokal, regional dan nasional. (Mitra Dieng/KEHATI/GEF-SGP/BirdLife, 1999). Rencana tersebut baru saja dirumuskan dan akan digunakan sebagai referensi untuk perlindungan dan pelestarian hutan di Pegunungan Dieng.

Beberapa lokakarya telah diadakan (Semarang, Oktober 1998; Banjarnegara, Februari 1999), yang ditunjang oleh tidak kurang dari 36 lembaga yang sedikit banyak terlibat dalam pengelolaan Pegunungan Dieng dan dihadiri oleh utusan resmi nasional, pemerintah daerah, organisasi kemasyarakatan, LSM dan para kepala desa. Disepakati perlunya dibentuk suatu program jaringan untuk membina, melaksanakan dan bertanggung jawab bagi perkembangan dan pengelolaan Pegunungan Dieng sebagai kawasan konservasi. Selanjutnya jaringan tersebut didirikan dengan nama MITRA DIENG (Mitra Dieng/KEHATI/GEF-SGP/BirdLife, 1999).

Dalam rencana kegiatan, salah satu prioritas adalah pengumpulan data mengenai keanekaragaman hayati Pegunungan Dieng dengan maksud menguatkan pembenaran kawasan ini diremikan sebagai kawasan pelestarian. Survei pertama diadakan di Kembang langit dan Linggo asri 13 - 17 Februari dan survei kedua di Petungkriyono dan Simego 22 Maret - 2 April 2000, survei ketiga, keempat dan kelima mana?.

Considering the various functions of the Dieng Mountains, loss or degradation of the remaining forests will have far-reaching consequences. In order to preserve the area a strategic plan is required, integrating local, regional, and national needs (Mitra Dieng/KEHATI/GEF-SGP/BirdLife, 1999). This strategic plan has recently been formulated and will be used as a reference to protect and preserve the forests in the Dieng Mountains.

A number of workshops have been held (Semarang, October 1998; Banjarnegara, February 1999), which was supported by no less than 36 institutions who are to a greater or lesser extent involved in the management of Dieng Mountains. It was attended by national and provincial government officials, community based organization, NGOs, and informal leaders. It was agreed that a programme network was needed to develop, to execute and take responsibility for the development and management of the Dieng Mountains as a conservation area. Subsequently, this network has been established as MITRA DIENG (Mitra Dieng/KEHATI/GEF-SGP/BirdLife, 1999).

Within the strategic plan, compiling an inventory of the biological potential of the Dieng mountains was considered as one of the priorities. The objective was formulated so as to collect data on the biological diversity of the Dieng mountains in order to increase the justification of the gazettment of the Dieng Mountains as a conservation area. The first survey was held in Kembang langit and Linggo asri 13 to 17 February and the second survey in Petungkriyono and Simego 22 March to 2 April 2000.



## Tujuan survey fauna

Tujuan survei adalah pengumpulan data mengenai keanekaagaman fauna Pegunungan Dieng untuk menyokong usulan penetapan dan pengelolaan Pegunungan Dieng sebagai kawasan pelestarian.

Tujuan survei tersebut mencakup lima hal :

1. Pengumpulan data mengenai bermacam habitat dan identifikasi sebagian besar tipe vegetasinya.
2. Pengumpulan data mengenai keberadaan burung dan menyusun daftar spesies dan perkiraan kelimpahan spesies kunci
3. Pengumpulan data mengenai keberadaan mammalia dan menyusun daftar spesies serta perkiraan kelimpahan spesies kunci.
4. Pencatatan data mengenai luasnya penggunaan hutan, infrastruktur setempat, pemanfaatan satwa liar di/sekitar Pegunungan Dieng.
5. Pelatihan beberapa anggota Mitra Dieng dalam teknik survei fauna sepintas sebagai bagian membangun kapasitas dalam program jaringan Mitra Dieng.

Dalam laporan ini beberapa penemuan dari survei yang telah dilakukan hingga kini akan disampaikan serta garis besar rancangan untuk masa mendatang.

## Aim of the faunal survey

The aim of the rapid faunal survey is to collect information on the faunal diversity of the Dieng mountains to support the establishment and management of a proposed Dieng mountains conservation area.

The aims break down in five discrete items, i.e.:

1. Collect information on the range of habitats in the area and identify major vegetation types.
2. Collect information on the occurrence of birds in the Dieng mountains, thus providing a species list and estimates of abundance of key species.
3. Collect information on the occurrence of mammals in the Dieng mountains, thus providing a species list and estimates of abundance of key species.
4. Record information on the extent of forest encroachment, local infrastructure and use of wildlife in and around the Dieng Mountains.
5. Train a number of members of Mitra Dieng in rapid faunal survey techniques as part of a capacity building programme for the Mitra Dieng network.

In this preliminary report some findings of the survey conducted so far will be given and future plans are outlined



## Metodologi

Pengamatan keragaman mammalia dimulai dengan cara berjalan lambat di hutan dan mencatat semua satwa yang dilihat. Survei-survei ini dilaksanakan di samping survei burung. Keberadaan Owa Jawa diperkirakan berdasarkan suaranya yang diperdengarkan di pagi hari. Surili dan lutung disurvei melalui jalur silang menyilang dan dipetakan dari sudut tempat yang menguntungkan. Semua metode yang dipakai dimaksudkan agar gangguan sedikit mungkin. Tidak ada satwa yang dibiasakan dan tidak ada usaha untuk menangkap (jadi tidak ada penangkapan satwa kecil atau kelelawar). Bila satwa berkelompok, ini dicatat pada pengamatan bebas (Altmann, 1974), dan data secara berkelompok (Martin & Bateson, 1992) dicatat mengenai tipe hutan, urutan gangguan dan ketinggian. Pengambilan contoh pengamatan Ad libitum sebanyak-banyaknya tidak dianjurkan untuk penelitian jangka panjang secara komprehensif (Martin & Bateson, 1992), tetapi adanya sistem jalan rintis, penelitian diadakan dalam waktu relatif singkat, satwa yang diteliti tidak terbiasa dan sulitnya kondisi pengamatan.

Keragaman burung dinilai dengan berjalan lambat dalam hutan dan mencatat semua burung yang dilihat atau didengar. Survei-survei tersebut terutama dilaksanakan dalam beberapa jam di pagi hari, mengikuti rekomendasi Bibby *et al.* (in press). Perhatian khusus diberikan pada tempat di mana spesies kunci berkumpul seperti di pohon ara yang berbuah, telaga kecil di pegunungan dan sepanjang sungai. Burung pemangsa dan burung melayang tinggi disurvei dari tempat yang menguntungkan di hutan atau pinggirannya dan pada waktu yang paling tepat (tengah hari atau siang).

Data mengenai ancaman pada mammalia dan burung dimulai dengan mencatat spesies yang ditangkap dan dijual di kota-kota setempat ditambah dengan hasil wawancara dengan penduduk setempat mengenai pemanfaatan hasil hutan dan satwa liar.

## Methodology

The mammal diversity was assessed by slowly walking in the forest and recording all mammals seen. These surveys were conducted alongside the bird surveys. The presence of Javan gibbons was assessed by means of their early morning vocalization. Grizzled leaf monkeys and Ebony leaf monkeys were surveyed both by means of transect walks and mapping individual groups from vantage points. All methods used were aimed at being as little intrusive as possible. No animals were habituated, and no attempt was made to capture animals (hence no small mammal trapping or mist netting of bats was conducted). When an animal or a group of animals was recorded ad lib observations (Altmann, 1974), and group scans (Martin & Bateson, 1992) were made, and data on forest type, order of disturbance and altitude was collected. Ad libitum sampling is not to be recommended for long-term comprehensive studies but can be useful during preliminary observations (Martin & Bateson, 1992). Ad libitum sampling was used by default because there were no established trail systems in the area, the study covered a relative short time span, the study animals were not habituated, and the observation conditions were relatively difficult.

Bird diversity was assessed by slowly walking in the forest and recording all birds seen and/or heard. These surveys were mainly conducted during the early hours of the day following recommendations given by Bibby *et al.* (in press). Special attention was given to sites where key species congregate, e.g. fruiting fig trees, small mountain lakes and rivers. Raptors and other soaring birds were surveyed from suitable vantage points in the forest or along its borders, and at the most favorable times of the day (mid and late-morning).

For both mammals and birds, data on threats were assessed by recording which species were captured and offered for sale in local villages. This was supplemented by opportunistically conducting semi-structured interviews with the local communities on their use of forest products and wildlife.

## Hasil dan pembahasan

### 1. Mengumpulkan data mengenai bermacam habitat dan identifikasi sebagian besar tipe vegetasinya

Vegetasi Pegunungan Dieng adalah jenis terbasah, hutan dataran rendah dan hutan hujan pegunungan di bawah 100 m dan hutan pegunungan basah hingga 2.400 m d.p.l. (van Steenis 1972). Akibat gangguan manusia dengan/atau kondisi alamiah, padang rumput dengan sedikit pohon menutup bagian atas Gn. Prahu. Hutan dataran rendah yang penting masih ada di sekitar Linggo asri di barat laut Pegunungan Dieng. Hutan menurun sampai 300 m d.p.pl., diteruskan dengan hutan dataran pegunungan di Gn. Lumping (1327 m), dan membentang ke arah timur ke desa Karanganyar. Satu hutan dataran rendah (<1000m d.p.l.) ada dekat desa Doro (lihat peta). Daerah hutan pegunungan yang berarti ditemukan di Gn. Lumping, Gn. Kemulan (altitude cari ketinggian), dan Gn. Prahu (2565 m d.p.l.). Di seluruh hutan dataran rendah dekat Linggo terdiri sebagian dari perkebunan kopi yang menurut keterangan setempat ditinggalkan sekitar tahun 1930.

Hutan sebagian besar dikelilingi oleh perkebunan, seperti perkebunan teh di utara dan selatan, perkebunan pinus di timur dan barat, perkebunan karet di barat laut dan lahan pertanian di tenggara. Di seluruh hutan terdapat daerah enklave kecil dan menengah hingga besar, di mana masyarakat menanam tanaman pertanian seperti padi, dan kubis.

Dari sudut keanekaragaman hayati, hutan dataran rendah dianggap sangat penting, begitu pula zone transisi antara hutan dataran rendah dan pegunungan. Dua-duanya memiliki jumlah besar spesies dan khususnya hutan dataran rendah diabaikan dalam Jaringan Kawasan Pelestriarian di Jawa.

## Results and Discussion

### 1. Collect information on the range of habitats in the area and identify major vegetation types

The vegetation of the Dieng mountains is of the wettest type, i.e. mixed lowland and hill rain forest below c. 100 m and montane ever-wet rain forest to c. 2400 (van Steenis 1972). As a result of human disturbance and/or natural conditions, meadows with few trees cover the upper parts of Mt Prahu. Important lowland forest is still present in the surroundings of Linggo asri in the north-western part of the Dieng mountains. The forest descends down to some 300 m asl, is continuous with montane forest on Mt Lumping (1327 m), and stretches eastwards to the village of Karanganyar. Other important lowland forest (<1000m asl) is present near the village of Doro (see map). Good tracts of montane forest were found on Mt Lumping, Mt Kemulan (altitude cari ketinggian), and Mt Prahu (2565 m asl). Throughout the area some large patches of undisturbed forest remain, but most of the area is somewhat disturbed. The lowland forests near Linggo consist partially of a former coffee plantation which, according to local informants was abandoned in the 1930's.

The forests are largely surrounded by cultivation, i.e. tea plantations in the north and south, pine plantations in the east and west, rubber plantations in the north-west, and by agricultural land in the south-east. Throughout the forests, small and medium to large enclaves are present where people grow crops as such rice and cabbage.

From a biological diversity perspective, the lowland forest are considered of greatest importance, as well as the transition zone between lowland and montane forests. Both have high numbers of species, and especially lowland forest is severely under-represented in the Javan conservation areas network.



## 2. Mengumpulkan data mengenai keberadaan burung dan menyusun daftar spesies dan perkiraan kelimpahan spesies kunci

Hingga kini, kurang lebih 150 spesies burung tercatat di Pegunungan Dieng dan masih ada beberapa spesies tambahan yang masih menunggu konfirmasi. Keadaan ini masih beruntung dibandingkan kawasan lindung lainnya di Jawa, seperti Meru Betiri (>180 spesies), atau Baluran (> 160 spesies) (Mackinnon *et al.*, 1999).

Kami mencatat 20 spesies endemik Fauna Jawa, yang mewakili kurang lebih 67% dari jumlah seluruhnya 30 spesies endemik Jawa (Jalak Bali dibatasi pada ujung barat Bali dan Trulek Jawa sudah hampir punah).

Selanjutnya kami mencatat 24 dari 33 spesies burung sebaran terbatas yang terdapat di Pulau. Spesies sebaran terbatas adalah spesies yang mempunyai daerah perkembangbiakannya < 50.000 km<sup>2</sup> (Sujatnika *et al.* 1995), dan karena wilayah kecil ini dianggap sebagai spesies yang paling tepat untuk mengidentifikasi kawasan prioritas untuk konservasi.

Spesies yang patut dicatat termasuk Elang Jawa (*Spizaetus bartelsi*), Puyuh gongong (*Arborophila javanica*), dan Tepus dada-putih (*Stachyris grammiceps*).

Elang Jawa merupakan endemik Jawa dan terbatas pada daerah hutan yang tersisa. Spesies ini dianggap terancam kepunahan berdasarkan jumlahnya yang kecil, penyebaran yang terbatas, kawasan hutan yang makin berkurang di Jawa dan belakangan adanya perdagangan spesies ini yang makin besar (Collar *et al.*, 1994). Kami menemukan Elang Jawa di beberapa lokasi di Pegunungan Dieng, termasuk Gn. Prah, Gn Kemulan dan dekat Linggo asri. Berdasarkan luasnya hutan yang tersisa, kawasan ini mempunyai populasi terbesar dari spesies ini di Jawa Tengah dan perlindungan kawasan ini dianggap sangat penting untuk konservasi spesies tersebut (Sözer *et al.* 1998).

## 2. Collect information on the occurrence of birds in the Dieng mountains, thus providing a species list and estimates of abundance of a number of key species

Hitherto, some 150 bird species have been recorded in the Dieng mountains, and some additional species await confirmation. This compares very favorably with other (protected) areas on Java, e.g. Meru Betiri (>180 species), or Baluran (> 160 species) (Mackinnon *et al.* 1999).

The complete list of birds recorded will be included in the final report.

We recorded 20 species endemic to the Javan faunal province, which represents some 67 percent of the total number of 30 endemics (of which one Bali Starling is confined to the westernmost part of Bali and another Javan Lapwings almost certainly extinct).

Furthermore we recorded 24 of the 33 Restricted range species present on the island. A restricted range species is a species with a known breeding range < 50.000 km sq (Sujatnika *et al.*, 1995), and, by virtue of its small range, has been considered among those species most suitable for identifying priority areas for conservation.

Noteworthy species include the Javan Hawk-eagle *Spizaetus bartelsi*, Chestnut-bellied partridge *Arborophila javanica*, and White-breasted babbler *Stachyris grammiceps*.

The Javan Hawk-eagle is endemic to Java and is confined to the last remaining forest areas. The species is considered endangered on account of its small population size, its restricted distribution, the ever-decreasing tiny forest left on Java, and more recently because of an increased trade in the species (Collar *et al.*, 1994). We found the Javan Hawk-eagle in a number of localities in the Dieng mountains, including Gn Prah, Gn Kemulan and near Linggo asri. Based on the extent of remaining forest, the area harbors the largest Central Javan population of the species, and protection of the area is considered vital for the conservation of this species (Sozer *et al.*, 1998).



Puyuh gongong diperkirakan terbatas di Jawa Barat dengan populasi terpisah di lokasi yang tersebar di seluruh propinsi di Jawa Tengah, termasuk di Pegunungan Dieng. Kami menemukan dekat Linggo, Gn. Lumping, Gn. Kemulan dan Gn. Prahu. Sepertinya spesies ini lebih suka tempat di pedalaman di atas tepi hutan, meskipun kami mendengar suaranya di beberapa tempat di hutan (sering mengikuti aliran sungai) dekat Gn. Kemulan.

Tepus data-putih adalah endemik di Jawa, penyebaran lokal terdapat di bagian-bagian kecil dalam hutan yang tersisa. Sampai saat ini, spesies tersebut dianggap terancam punah dan diklasifikasi sebagai "rentan" dalam daftar spesies burung yang terancam punah (Collar *et al.*, 1994). Dalam daftar terbaru (N. Collar pers. comm.) spesies ini tidak lagi termasuk daftar tersebut karena penyebarannya lebih luas dan lebih biasadipada diperkirakan semula. Kami mencatatnya beberapa di beberapa lokasi termasuk Linggo dan Gn. Kemulan.

Selain dari itu, sejumlah besar spesies yang sebelumnya diperkirakan terbatas di Jawa Barat, umpamanya Takur butut (*Megalaima corvina*) (endemik Jawa Bawar), Pergam gunung (*Ducula badia*) (sedikit catatan baru dari Jawa Barat); Luntur gunung *Harpactes reinwartii* (endemik Jawa Barat); Cincoang biru (*Cinclidium diana*) (tercatat di timur Gn. Ciremai); Wergan Jawa (*Alcippe pyrrhoptera*) (Jawa Barat); dan Tesia Jawa (*Tesia superciliaris*) (juga tercatat di timur Gn. Ceremai) tercatat di Pegunungan Dieng.

The Chestnut-bellied Partridge was formerly believed to be confined to West Java with an isolated population occurring on Gn. Lawu on the East and Central Javan border. In fact, it occurs in a number of scattered localities throughout the Central Javan province, including the Dieng mountains. We found it present near Linggo, Gn Lumping, Gn Kemulan and Gn Prahu. The species seems to prefer the interior above the edge, although we heard it calling in a number of small forest patches (often following river courses) near Gn Kemulan.

The White-breasted babbler is endemic to Java, where it has a local distribution in remnant forest patches. Until recently, the species was considered threatened with extinction and was classed as Vulnerable in the list of threatened bird species (Collar *et al.*, 1994). In the most recent up-date (N. Collar pers. comm.) the species is no longer listed as its distribution range is larger than previously assumed and it is more common than previously thought. We recorded the species in a number of localities, including Linggo and Gn Kemulan.

Additionally, a large number of bird species previously thought to be confined to West Java, e.g. Brown-throated Barbet *Megalaima corvina* (endemik West Java), Mountain imperial pigeon *Ducula badia* (few recent records from West Java); Blue-tailed Trogon *Harpactes reinwartii* (endemik West Java); Sunda blue robin *Cinclidium diana* (recorded east to Mt Ciremai); Javan fulvetta *Alcippe pyrrhoptera* (West Java); and the Javan Tesia *Tesia superciliaris* (also recorded east to Ceremai) have been recorded in the Dieng mountains.



### 3. Mengumpulkan data mengenai keberadaan mammalia dan menyusun daftar spesies serta perkiraan kelimpahan spesies kunci

Hingga kini lebih kurang lebih 20 spesies mammalia telah didentifikasi. Karena tidak ada jeratan atau penangkapan mammalia kecil, jumlahnya mewakili contoh cukup banyak dari fauna mammalia teresterial di Jawa.

Jumlah spesies endemik yang tercatat, termasuk Lutung (*Trachypithecus auratus*), Surili (*Presbytis comata*) Owa Jawa (*Hylobates moloch*) dan Babi Jawa (*Sus verrucosus*). Spesies lain yang cukup penting adalah macan tutul (*Panthera pardus*) dan the Binturung. Lutung hanya terdapat di Jawa, Bali, dan Lombok (Nijman in press). Karena terbatas pada hutan alami di bagian Indonesia ini, hanya sedikit habitat yang cocok tersisa bagi spesies tersebut. Populasi yang masih ada diketemukan tersebar di pulau-pulau dan banyak daerah hutan yang terencil terlalu kecil untuk memberi tempat hidup untuk suatu populasi. Ini kemudian diakui oleh IUCN dan selanjutnya dalam edisi terakhir dari Red Data Book (IUCN, 1996) spesies ini diberi status "rentan". Lutung diketemukan di seluruh Pegunungan Dieng dan seperti juga lebih banyak dekat kawasan terbuka yang dirusak, sepanjang tepi dan dekat sungai, Akan tetapi diperkebunan karet dan pinus, spesies ini jarang terlihat dan adakala satu kelompok diketemukan di hutan tanaman, tanpa perkecualian di tempat itu terdapat petak-petak hutan dekat sungai kecil yang melintasinya.

Surili adalah endemik di bagian barat Jawa hingga Gn. Lawu di perbatasan dengan Jawa Timur (Nijman, 1997b). Dianjurkan populasi Surili di Jawa Tengah dijadikan suatu spesies baru *Presbytis fredericae* (seperti Brandon-Jones, 1995), namun Nijman (1997a) menunjuk beberapa variasi intraspesifik bersifat alami. Spesies ini terancam sekali terutama karena kerusakan habitat (Eudey, 1987; MacKinnon, 1987; Supriatna *et al.*, 1994). Besarnya populasi dikalkulasi berkisar 8040 ekor (MacKinnon, 1987) hingga 2285 ekor (Supriatna *et al.*, 1994). Surili diklasifikasikan sebagai "terancam" menurut kriteria ancaman IUCN (IUCN, 1996). Selama survei, Surili terlihat di seluruh Pegunungan

### 3. Collect information on the occurrence of mammals in the Dieng mountains, thus providing a species list and estimates of abundance of a number of key species

So far some 20 terrestrial mammal species have been identified. Since no mist netting or small mammal trapping has been carried out (or is intended to be carried out), this represent a fairly large sample of the terrestrial mammal fauna present on the island of Java.

A number of endemic species were recorded, including Ebony leaf monkey *Trachypithecus auratus*, Grizzled leaf monkey *Presbytis comata*, Javan gibbon *Hylobates moloch*, and Javan warty pig *Sus verrucosus*. Other noteworthy species include the Leopard *Panthera pardus* and the Binturung. Ebony leaf monkeys are restricted to the islands of Java, Bali and Lombok (Nijman in press). Being confined to natural forest areas in this part of Indonesia, little suitable habitat remains for the species. The remaining populations are found scattered over the islands, and numerous isolated forest areas are too small to harbour a viable population (Nijman in press). This has been recognized by the IUCN and subsequently in the latest edition of the Red Data Book (IUCN, 1996) the species was merited the Vulnerable status. Ebony leaf monkeys were found throughout the Dieng mountains and seem to be more common near open, disturbed areas, along edges, and near rivers. However, in the extensive rubber and pine plantations, the species was rarely encountered, and in those instances when a group was observed in forest plantations it was without exception in those parts where more natural forest patches were present, e.g. near small rivers dissecting the plantation.

The Grizzled leaf monkey is endemic to the western half of the island of Java, as far as Mt. Lawu on the border with East Java (Nijman, 1997b). The central Javan populations have been proposed as separate species *Presbytis fredericae* (e.g. Brandon-Jones, 1995), but Nijman (1997a) showed some of the alleged differences not to be diagnostic, while some intraspecific variation was of a **clinal** nature. The species is severely threatened mainly due to habitat destruction (Eudey, 1987; MacKinnon, 1987; Supriatna *et al.*, 1994). Population sizes have been calculated and range from 8040 animals (MacKinnon, 1987) to

Dieng, dari hutan bagian barat Linggo pada 300 m d.p.l., dekat Gn. Kemulan, sampai puncak Gn. Prah (2565 m) di bagian timur. Kelihatannya spesies ini lebih suka tinggal di pedalaman daripada di tepi, meskipun karena mudahnya pengamatan primata sepanjang tepi, jumlah kelompok dicatat dalam tipe habitat ini. Bila diperkirakan jumlah populasi yang diberi oleh kelompok pakar primata (Supriatna *et al.* 1994) IUCN mencerminkan keadaan sebenarnya dari status spesies di alam, populasi Surili di Pegunungan Dieng (mungkin ratusan) mewakili bagian cukup besar dari populasi di seluruh dunia. Mungkin satu-satunya kawasan lain di Jawa di mana jumlah Surili sama atau lebih banyak adalah Taman Nasional Halimun di Jawa Barat.

Seperti juga Surili, Owa Jawa adalah endemik di bagian barat Jawa. Sebagian besar populasi ditemukan di propinsi Jawa Barat (Kappeler, 1984), tetapi sedikit masih ada di propinsi Jawa Tengah (Nijman and Sözer, 1995; Nijman, 1995). Perkiraan populasi terbaru, berdasarkan ekstrapolasi dari habitat yang tersedia berkisar antara 2000 ekor (Supriatna *et al.*, 1994) hingga 3000 ekor (Asquith *et al.*, 1995). Spesies ini diberi tingkat prioritas konservasi yang tertinggi untuk primata di Asia (Eudey, 1987), dan baru-baru ini termasuk dalam kategori terancam kepunahan menurut IUCN (IUCN, 1996). Spesies ini terdapat di hutan basah di Jawa Barat dan terbatas pada hutan dengan kanopi tertutup hingga  $\pm 1600$  m d.p.l., suatu tipe habitat yang makin jarang. Survei menemukan Owa Jawa di seluruh hutan Linggo hingga ke timur sampai Gn. Kumajan, dan dengan populasi yang terpisah pada bagian selatan desa Kalibening. Berdasarkan hasil itu, daerah penyebaran yang tersimpul diperkirakan bahwa ada sisa populasi terdiri dari beberapa ratus individu, dengan demikian menjadi populasi terbesar di luar Jaringan Kawasan Pelestarian.

Di hutan barat laut Linggo jejak jenis kucing besar terlihat pada ketinggian  $\pm 500$  d.p.l., Tahun 1995, jejak yang masih bari ditemukan di tebing barat laut Gn. Lumping, dekat puncaknya. Jejak ini diambil untuk dianalisa selanjutnya dan mengandung rambut dan kuku binturong (*Arctictus binturung*), dan kuku kijang (*Muntiacus muntjak*). Kedua tanda diperkirakan dari macan tutul yang dikenal baik oleh banyak orang yang sering masuk hutan, meskipun beberapa laporan tidak mengecualikan jenis kucing lainnya, bahkan

2285 animals (Supriatna *et al.*, 1994). Grizzled leaf monkeys have been classified as Endangered according to the IUCN threat criteria (IUCN, 1996). During the survey, Grizzled leaf monkeys were observed throughout the Dieng mountains, from the forest west of Linggo at c. 300 m asl, near Mt. Kemulan, to the summit of Mt Prah (2565 m) in the east. The species seems to prefer the interior above the edge, although, probably owing to the ease of observing primates along edges, a fair number of groups were recorded in this habitat type. If the estimates of population numbers presented by the IUCN primate specialist group (Supriatna *et al.* 1994) are a true reflection of the species' status in the wild, the population of Grizzled leaf monkeys in the Dieng mountains (which must number in the hundreds) represents a considerable proportion of the world population. Probably the only other area in Java that harbours similar or greater numbers of Grizzled leaf monkeys is Halimun National Park in West Java.

Like the Grizzled leaf monkey, the Javan gibbon is endemic to the western half of Java. Most populations can be found in the western province (Kappeler, 1984), but few remain in the central Javan province (Nijman and Sozer, 1995; Nijman, 1995). The most recent population estimates, based on extrapolation of the available habitat, range from 2000 animals (Supriatna *et al.*, 1994) to 3000 animals (Asquith *et al.*, 1995). The species is merited the highest conservation priority rating for Asian primates (Eudey, 1987), and has recently been included in the Critically Endangered category according to the IUCN threat criteria (IUCN, 1996). The species occurs in the ever wet rainforests of western Java. It is confined to closed canopy forests up to c. 1600 m asl, a habitat type that is becoming increasingly rare. The survey found the Javan gibbon to be present throughout the forests near Linggo, as far east as Mt Kumajan, and with an isolated population occurring south of the village of Kalibening. Based on these results, the inferred distribution range suggests a remaining population of several hundred of individuals, making it one of, if not the, largest populations outside the protected area net work.

In the forest north-west of Linggo, at an altitude of c. 500 m asl, footprints of a large feline were observed. In 1995, a fresh scat was found on the

mammalia lain. Macan tutul adalah mammalia pemangsa terbesar yang tersisa di Pegunungan Dieng, selain manusia. Daerah rendah dari hutan di Pegunungan Dieng merupakan tempat tinggal sejumlah besar spesies mangsanya seperti babi, lutung, pelanduk dan kijang.

Babi sering diketemukan di hutan tetapi jejak dan kubangannya lebih umum diketemukan. Dilaporkan babi sering masuk sawah, kebun dan pertanaman dan menyebabkan kerusakan besar. Mereka sering diburu, kadang-kadang oleh orang luar. Perburuan dilakukan oleh sekelompok orang (5-6) dan sejumlah ekor anjing, daging dijual pada orang Tingkok atau orang di Pekalongan. Laporan masyarakat setempat menunjukkan bahwa ada tipe babi yang berbeda; yang agak kecil dan yang lebih besar *S. verruscus* memperlihatkan dimorfisme seksual yang jelas, dengan betina yang besarnya setengah dari yang jantan (c. 45 kg; 90 kg), sedangkan besarnya dimorfisme tidak terdapat pada *S. scrofa* (jantan dan betina beratnya 90 kg) (Blouch, 1983). Blouch's (1983) kajian dari *S. verruscus* menunjukkan bahwa di Jawa *S. scrofa* lebih banyak hidup dikawasan di atas 800 m d.p.l., sedang *S. verruscus* lebih banyak hidup di daerah hutan sekunder fataran rendah, termasuk hutan jati, dan padang rumput alang-alang *Imperata cylindrical*. Meskipun tidak pasti, boleh disimpulkan bahwa kedua spesies hidup di kawasan rendah Pegunungan Dieng.

Kesimpulan, Pegunungan Dieng adalah habitat bagi sebagian besar spesies mammalia yang dapat diperkirakan keberadaannya. Sejumlah spesies endemik di Jawa Barat terdapat di sana. Sedikit pekerjaan lapangan telah dilakukan mengenai penyebaran dan status keelawar dan tikus di Jawa dan banyak spesies endemik diketahui dari kelompok kecil individu hanya dari jumlah kecil di lapangan (survei tipelokasi) (Whitten *et al.*, 1996).



north-western slope of Mt Lumping, near its summit. It was collected for further analysis and contained hairs and nails of a binturong *Arctictus binturung*, and the hooves of a Barking deer *Muntiacus muntjak*. Both signs are considered to belong to Leopards. Leopards are well known to a large number of people who frequently enter the forest, although some of the reports do not exclude other felids or indeed other mammals. The leopard is the largest remaining mammalian predator in the Dieng mountains, apart from humans. The forest in the lower parts of the Dieng mountains are home to a relative large number of potential prey species, e.g. pigs, leaf monkeys, barking deer and mouse deer.

Pigs were encountered occasionally in the forest, but their tracks and wallows were commonly encountered. Pigs are reported to enter rice fields, gardens and orchards, where they can cause considerable damage when raiding crops. Pigs are frequently hunted in the area, sometimes by outside people. Mostly hunting is done with a group of people (c. 5-6) and an equal number of dogs. The meat is sold to either Chinese or people in the city of Pekalongan. Reports by local people indicate that there are two different types of pigs; a smaller and a larger one. *S. verruscus* shows a clear sexual dimorphism, with the females being about half the size of the males (c. 45 kg vs. 90 kg), whereas this size-dimorphism is absent in *S. scrofa* (both males and females weigh c. 90 kg) (Blouch, 1983). Blouch's (1983) study of *S. verruscus* indicates that, on Java, *S. scrofa* occurs more often in mountainous areas above some 800 m asl, whereas *S. verruscus* occurs more in the lowland secondary areas, including teak plantations, and alang-alang *Imperata cylindrical* grasslands. Although not conclusive, it is tentatively concluded that both species occur in the lowland areas of the Dieng mountains.

Concluding, the Dieng mountains seem to contain a large proportion of the mammal species that can be expected to be present. A number of 'west Javan' endemics are present in the area, and it would be worthwhile to set up a small-mammal and bat-trapping programme to establish whether or not more endemic species are present. Little field work has been conducted on the distribution and status of bats and rats on Java, and many of the endemics are known from a small series of individuals from a small number of sites (often the type locality) only (Whitten *et al.*, 1996).

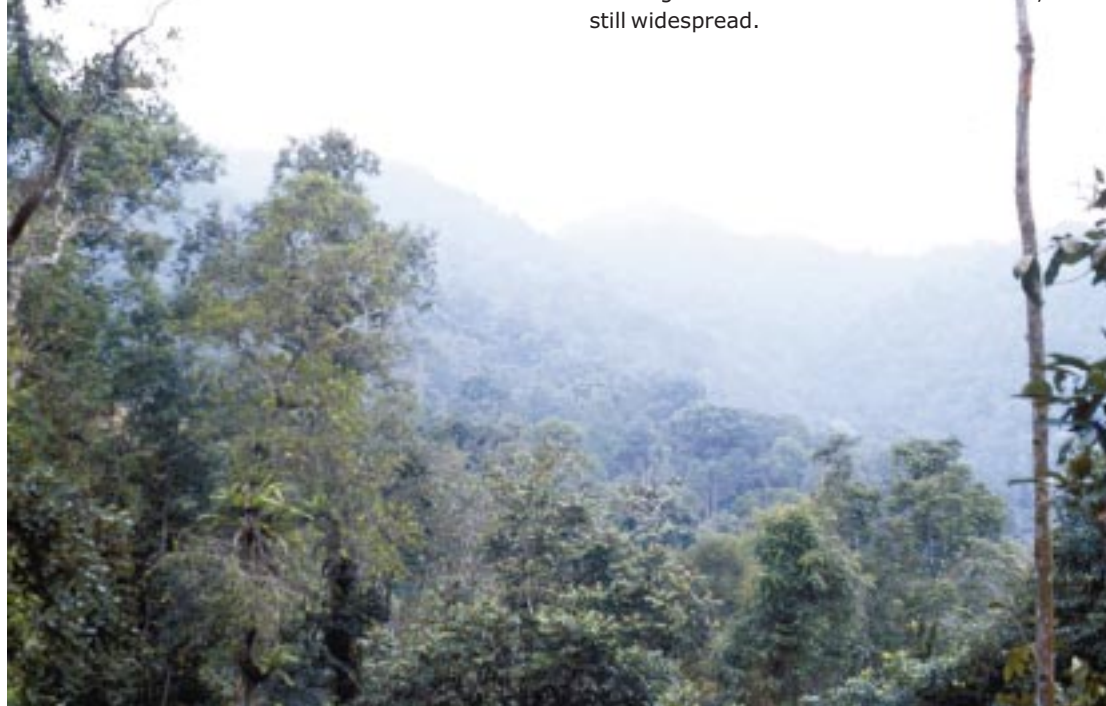
#### 4. Mencatat data mengenai luasnya penggunaan hutan, infrastuktur setempat, pemanfaatan satwa liar di/sekitar Pegunungan Dieng

Data mengenai bagian ini dari survei masih harus dianalisis secara terperinci, tetapi beberapa pendapat dapat disimpulkan pada tahap ini.

Sebagian besar kawasan hutan di Pegunungan Dieng terfragmentasi dan sering hutan yang baik hanya ada di bukit, lereng curam atau sepanjang aliran sungai. Hutan yang baik masih terdapat di sekitar Gn. Lumping dan pada lereng-lereng bagian timur Pegunungan Dieng.

Ada beberapa jalan di daerah ini, sebagian besar di daerah utara-selatan. Jalan dari Kajen melalui Linggo dan Paninggaran ke Kalibening sering dipakai, sedangkan yang dari Kembang Langit ke Bandar hanya untuk penggunaan local.

Cara yang paling biasa memanfaatkan satwa liar adalah penangkapan burung, yang dijual kepada pedagang burung (umpamanya di Linggo dan Kajen). Mereka membawanya ke pasar burung yang lebih besar seperti di Jakarta. Perburuan satwa hutan berkurang, tetapi masih terjadi di mana-mana..



#### 4. Record information on the extent of forest encroachment, local infrastructure and use of wildlife, in and around the Dieng Mountains

Data on this part of the survey still has to be analysed in greater detail, but a few remarks can be made at this stage.

In a great number of localities the forests on the Dieng mountains are fragmented, and often good forest is only present on ridges, on steep slopes, or following river courses. Good forest is still present in the surroundings of Gn Lumping and on the upper slopes of the eastern part of the Dieng mountains.

Several roads are present in the area, mostly running in a north-south direction. The road from Kajen via Linggo and Paninggaran to Kalibening is frequently used, whereas for instance the road from Kembang Langgit to Bantur seems to be for local use only.

The most common use of wild life is trapping of birds. These birds are mostly sold locally to bird traders (e.g. in Linggo and Kajen) who transport them to larger bird markets in e.g. Jakarta. Hunting of forest animals is less common, but is still widespread.

**5. Melatih beberapa anggota Mitra Dieng dalam teknik survei fauna sepintas sebagai bagian membangun kapasitas dalam program jaringan Mitra Dieng.**

Dalam rangka kerjasama dengan Mitra Dieng, 8 anggota dari 6 LSM lokal yang berbeda dipilih untuk pelatihan teknik survei fauna dan pengumpulan data mengenai ancaman terhadap keberlangsungan hidup satwa liar. Para peserta mempunyai latar belakang yang berbeda, dari bidang teknik dan biologi. Pada umumnya pengetahuan dasar sangat terbatas, maka kami bermaksud menambah tingkat perhatian pada masalah-masalah konservasi satwa liar di Pegunungan Dieng. Teknik survei terfokus pada identifikasi jumlah terbatas spesies kunci burung dan mamalia, termasuk burung pergam, rangkong, burung pemangsa dan primata. Setiap malam diadakan evaluasi untuk menilai kemajuan.

Selain kedelapan peserta ini, ada tambahan sepuluh anggota Mitra Dieng di lapangan. Mereka berusaha untuk menimbulkan minat pada konservasi hutan dan satwa lainnya di Pegunungan Dieng melalui (kepadala desa, kepala adat dan sebagainya) dan penyebaran bahan penyadartahuan (poster dan leaflet) di sekolah-sekolah dasar.

Ada 6 anggota yang telah melalui seleksi untuk mengikuti survey, termasuk sejumlah partisipan lainnya.

**5. Train a number of members of Mitra Dieng in rapid faunal survey techniques and capacity building of the Mitra Dieng network**

In cooperation with Mitra Dieng, eight members of six different local NGOs were selected for training in rapid faunal survey techniques and collection of data on threats to the survival of wildlife. The participants had various backgrounds, ranging from engineering and management to biology. In general biological background knowledge was limited and therefore we aimed at increasing the level of interest in the problems facing conservation of wildlife in the Dieng mountains. Faunal survey techniques concentrated on identifying a limited number of key bird and mammal species, including fruit doves, hornbills, raptors and primates. Each evening an evaluation was held to assess the progress made so far.

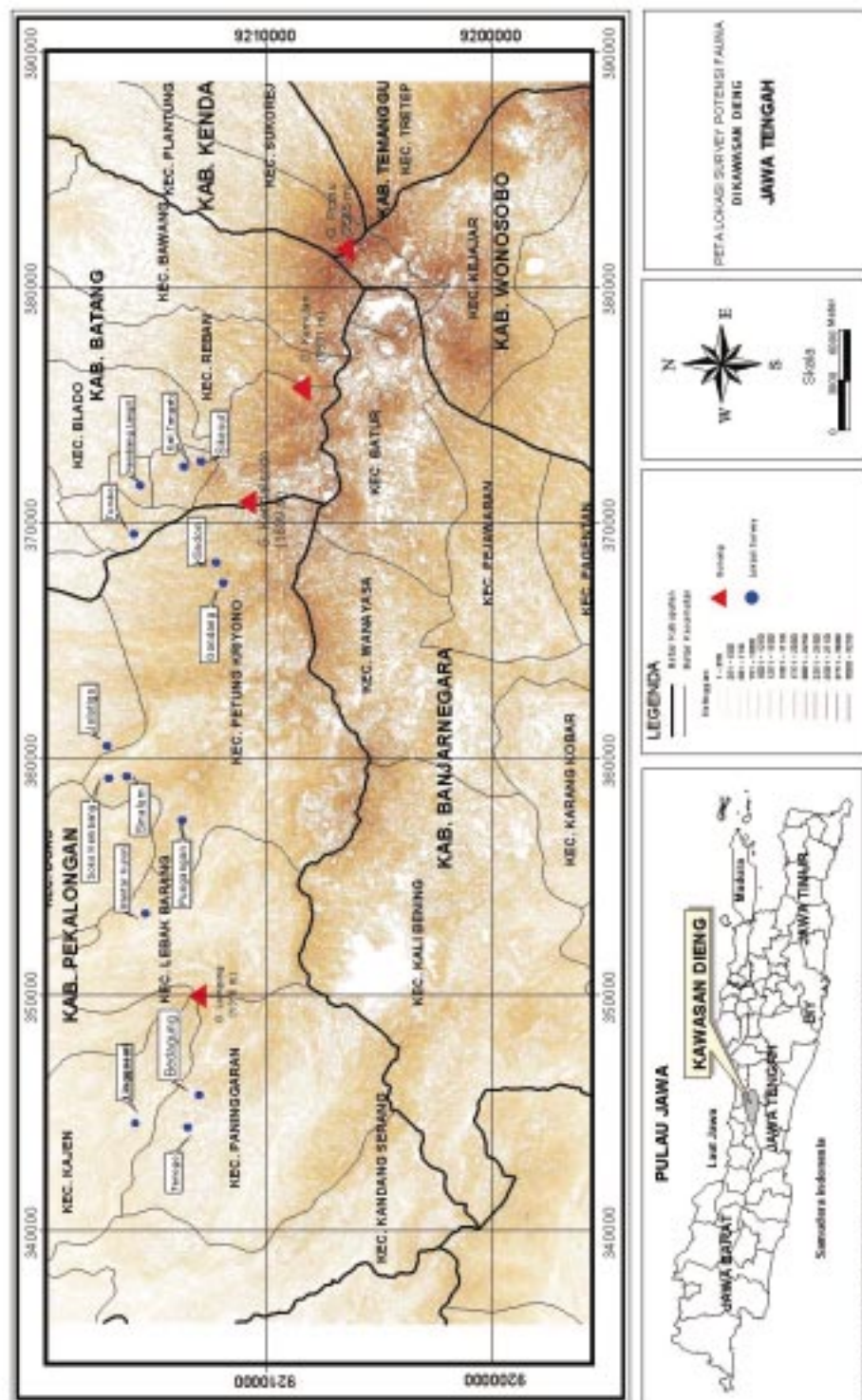
Apart from the eight participants, up to ten additional members of Mitra Dieng were present in the field. They tried to raise awareness for the conservation of forest and its wildlife in the Dieng mountains through discussions with significant persons in the different villages (kepala desa, kepala adat, etc.) and by distributing awareness material (posters, leaflets) at primary schools.

For the follow-up surveys six members have been selected, including a number of the previous participants.



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## Lampiran 1 Appendix I

Mammalia endemik, terancam punah dan dilindungi yang tercatat di kawasan Pegunungan Dieng (IUCN, 1996, Corbet & Hill, 1992)

*Endemic, endangered and protected mammals recorded in the Dieng mountains (IUCN, 1996, Corbet & Hill, 1992)*

No	Family/Scientific Name	English Name	Local Name	Status	KL	LA	SN	SK	BK	LR	BD	TB	KT
	Mammals												
1	<i>Hylobates moloch</i>	Javan Gibbon	Owa			+	+	+	+	+	+	+	
2	<i>Presbytis comata</i>	Grizzled leaf monkey	Surili				+	+	+		+		
3	<i>Trachypithecus auratus</i>	Ebony leaf Monkey	Lutung				+	+	+	+		+	+
4	<i>Macaca fascicularis</i>		Kera		+		+	+	+				
5	<i>Callosciurus sp</i>		Tupai				+	+	+				
6	<i>Muntiacus muntjak</i>		Kijang				+						+
7	<i>Sus verrucosus</i>	Javan warty pig	Babi hutan				+	+		+	+	+	+
8	<i>Ratufa bicolor</i>	Giant Squirrel	Jelarang				+	+	+				
9	<i>Pteropus vampirus</i>		Kelelawar			+			+				
10			Kalong buah				+						
11			Garangan				+						
12			Berang-berang						+			+	
13	<i>Phantera pardus</i>												
14													
	Reptils												
1			Ular hijau					+					
2	<i>Varanus salvator</i>		Kadal		+	+	+	+	+				
3													

Keterangan/Note:

EN=Endangered/ Gending; VU=Vulnerable/ Rentan; R-r=Restricted-range/Sebaran terbatas  
 KL= Kembang langit; LA= Linggo Asri; SN=Sinalum; SK=Sokokembang; BK= Bantar Kulon;  
 LR=Laren; BD= Bedagung; TB= Tombo; KT= Kali Tengah



No	Family/Scientific Name	English Name	Indonesian Name	Status	KL	LA	SN	SK	BK	LR	BD	TB	KT	KL	GD	
	CORVIDAE															
80	<i>Platylophus galericulatus</i>	Crested Jay	Tangkar Ongklet													
81	<i>Corvus enca</i>	Slender-billed Crow	Gagak Hutan													
	AEGHIALIDAE															
82	<i>Psaltria exilis</i>	Pygmy Tit	Ceracet Jawa	R-r												
	PARIDAE															
83	<i>Parus major</i>	Great Tit	Gelatik batu Kelabu													
	SITTIDAE															
84	<i>Sitta frontalis</i>	Velvet-fronted Nuthatch	Munqok Beledu													
85	<i>Sitta azurea</i>	Blue Nuthatch	Munqok Loreng													
	TIMALIIDAE															
86	<i>Pellorneum pyrogenys</i>	Temminck's Babbler	Pelanduk Bukit													
87	<i>Pomatorhinus montanus</i>	Chesnut-backed Scimitar Babbler	Cica Kopi Melayu													
88	<i>Malaccocincla sepiarum</i>	Horsfield's Babbler	Pelanduk Semak													
89	<i>Napothera epilepidota</i>	Eye-browed Wren-Babbler	Berencet Berkening													
90	<i>Pnoepyga pusilla</i>	Pygmy Wren Babbler	Berencet Kerdil													
91	<i>Stachyris grammiceps</i>	White-breasted Babbler	Tepus Dada Putih	VU/R-r												
92	<i>Stachyris melanothorax</i>	Crescent-chested Babbler	Tepus Pipi Perak	R-r												
93	<i>Pteruthius aenobarbus</i>	Chesnut-fronted Shrike Babbler	Ciu Kuyit													
	TURDIDAE															
94	<i>Brachypteryx leucophrys</i>	Lesser Shortwing	Cingcoang Coklat													
95	<i>Brachypteryx montana</i>	White-browed Shortwing	Cingcoang Biru													
96	<i>Enicurus velatus</i>	Lesser Forktail	Meninting Kecil	R-r												
97	<i>Enicurus leschenaulti</i>	White-crowned Forktail	Meninting Besar													
99	<i>Myiophonus caeruleus</i>	Blue Whistling-Thrush	Ciung Batu Siul													
100	<i>Zoothera sibirica</i>	Siberian Thrush	Anis Siberia													
	SYLVIIDAE															
101	<i>Gerygone sulphurea</i>	Golden-bellied Gerygone	Remetuk Laut													
102	<i>Seisericus aramiceps</i>	Sunda Warbler	Cikrak Muda	R-r												
103	<i>Aproscopus superciliaris</i>	Yellow-bellied Warbler	Cikrak Bambu													
104	<i>Phylloscopus borealis</i>	Arctic Warbler	Cikrak Kutub													
105	<i>Phylloscopus trivirgatus</i>	Mountain Leaf-Warbler	Cikrak Daun													
106	<i>Megalurur polustris</i>	Striated Grassbird	Cica Koreng Jawa													
107	<i>Orthotomus sepium</i>	Olive-backed Tailorbird	Cinene Jawa													
108	<i>Prinia familiaris</i>	Bar-winged Prinia	Perenjak Jawa													
109	<i>Prinia polychroa</i>	Brown Prinia	Perenjak Coklat													
110	<i>Tesia superciliaris</i>	Javan Tesia	Tesia Jawa													
	MUSCICAPIDAE															
112	<i>Eumyas indigo</i>	Indigo Flycatcher	Sikatan Ninon													
113	<i>Ficedula mugimaki</i>	Mugimaki Flycatcher	Sikatan Mugimaki													
114	<i>Ficedula westermanni</i>	Little Pied Flycatcher	Sikatan Belang													
115	<i>Ficedula zanthopygia</i>	Yellow-rumped Flycatcher	Sikatan Emas													
116	<i>Cyanoptila cyanomelana</i>	Blue-and-White Flycatcher	Sikatan Biru Putih													
117	<i>Cyornis unicolor</i>	Pale Blue-Flycatcher	Sikatan Biru Muda													
118	<i>Cyornis banyumas</i>	Hill Blue-Flycatcher	Sikatan Cacing													
119	<i>Culicicapa ceylonensis</i>	Grey-headed Flycatcher	Sikatan Kepala Kelabu													
120	<i>Rhipidura phoenicura</i>	Rufous-tailed Fantail	Kipasan Ekor Merah	R-r												
121	<i>Rhipidura javanica</i>	Pied Fantail	Kipasan Belang													
122	<i>Hypothymis azurea</i>	Black-naped Monarch														
	MOTACILLIDAE															
123	<i>Motacilla cinerea</i>	Grey Wagtail	Kicuit Batu													
	ARTAMIDAE															
124	<i>Artamus leucorhynchus</i>	White-breasted Wood-swallow	Kekep Babi													
	LANIIDAE															
125	<i>Lanius schach</i>	Long-tailed Shrike	Bentet Kelabu													
	STURNIDAE															
126	<i>Aplonis panavensis</i>	Asian Glossy Starling	Perling Kumpang													
	NECTARINIIDAE															
127	<i>Anthreptes malacensis</i>	Plain throated Sunbird	Burung Madu Kelapa													
128	<i>Anthreptes singalensis</i>	Ruby-cheeked Sunbird	Burung Madu Belukar													
129	<i>Nectarinia jugularis</i>	Olive-backed Sunbird	Burung Madu Srigati													
130	<i>Aethopyga eximia</i>	White-flanked Sunbird	Burung Madu Gunung	R-r												
131	<i>Aethopyga siparaja</i>	Crimson Sunbird	Burung madu Sepah Raja													
132	<i>Aethopyga mystacalis</i>	Scarlet Sunbird	Burung-Madu Jawa													
133	<i>Arachnothera longirostra</i>	Little Spiderhunter	Piantung Kecil													
134	<i>Arachnothera affinis</i>	Grey-breasted Spiderhunter	Piantung Gunung													
	DICAIDAE															
135	<i>Prianochilus percussus</i>	Crimson-breasted Flowerpecker	Pentis Pelangi													
136	<i>Dicaeum trigonostigma</i>	Orange-bellied Flowerpecker	Cabai Bunga Api													
137	<i>Dicaeum sanguinolentum</i>	Blood-breasted Flowerpecker	Cabai Gunung													
138	<i>Dicaeum trochileum</i>	Scarlet-headed Flowerpecker	Cabai Jawa													
	ZOSTEROPIIDAE															
139	<i>Zosterops palpebrosus</i>	Oriental White-eye	Kacamata Biasa													
140	<i>Lophozosterops javanicus</i>	Javan Grey-throated White-eye	Opor Jawa	R-r												
	PLOCEIDAE															
141	<i>Erythrura prasina</i>	Pin-tailed Parrotfinch	Bondol Hijau Binglis													
142	<i>Lonchura leuco-gastroides</i>	Javan Munia	Bondol Jawa													
		<b>Jumlah</b>			66	54	58	61	57	50	50	66	58			

Keterangan:

EN=Endangered/ Genting; VU=Vulnerable/ Rentan; R-r=Restricted-range/Sebaran terbatas

KL= Kembang langit; LA= Linggo Asri; SN=Sinalum; SK=Sokokembang; BK= Bantar Kulon; LR=Laren; BD= Bedagung; TB= Tombo; KT= Kali Tengah

KL= Klindon; GD= Gondang

Ket: | = dijumpai pada waktu survey.

P = dilindungi sistem perundangan Indonesia; V = *vulnerable* (rentan) menurut IUCN dalam *Red Data Book*



**Y P A L**  
(Yayasan Pribumi Alam Lestari)

adalah LSM yang bergerak dalam pelestarian dan pemanfaatan sumber daya alam berkelanjutan di Indonesia. Tujuannya untuk 1). Meningkatkan kualitas sumber daya manusia terhadap lingkungan dan konservasi, serta 2). Memaksimalkan pelestarian dan pemanfaatan sumber daya yang berkelanjutan yang didasarkan pada konservasi burung dan hidupan liar.



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