

THE JAVA HAWK EAGLE *Spizaetus
bartelsi*
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INTRODUCTION

In 1986 a WWGBP team visited Java for a three-week survey of Java Hawk Eagle habitat (Thiollay & Meyburg 1988). Alarmed by the degradation of primary rainforest, on which the species is entirely dependent, plans were made for a programme aimed at the conservation of this raptor species. Habitat surveys and field studies on its breeding biology and ecology form part of this project to be initiated in 1990. Preparations and preliminary surveys have already yielded new information, supplementary to that in Thiollay & Meyburg (*op.cit.*) and Meyburg *et al.* (1989), and presented in the underlying report.

DISTRIBUTIONAL NOTES

Apart from those localities where the Java Hawk Eagle has been known to occur in recent times and formerly (Mt. Salak, Mt. Gede, Iyang Highlands, Ijen Highlands), a number of other forest areas were visited in order to obtain a more complete picture of its distribution. These areas ranged from wet rainforest to drier (semi) deciduous mixed forest. The latter was included in the surveys in an attempt to prove the eagle's preference for the wetter forest types.

Additional information was provided by various ornithologists who visited Java during the last three years.

Mt Gede/Pangrango, W Java

On 28 April 1988, P. Hurrell (*in litt.*) saw a (probably full-grown subadult) bird seizing a lizard in the botanical gardens. After perching for *ca.* two minutes, it flew to the forest. As the prey was carried unconsumed in the bird's talons, the observer suggested the possible presence of a nest. In July 1988 G. and L. Richards (*in litt.*) reported the Java Hawk Eagle from near the waterfalls of Cibereum. On 19 March 1989 J. Gerhart and I heard the typical high-pitched "keekeeHEE" and "keeHEE" calls above Cibodas; on 20 March 1989 one adult was seen flying overhead at *ca.* 2000m, producing a single, loud "keeEE(k)".

Mt Salak, W Java.

Near Sulamantri at the NE slope, at 1000m on 20 September 1987, a juvenile Java Hawk Eagle was twice seen circling about the forest edge. On 28 October 1987 a probable (juvenile) Java Hawk Eagle was observed flying over at the same locality as in the previous month.

Iyang Highlands, E Java

Apart from a possible individual in the early morning near the mountain lake of Taman Hidup at 2000m, no observations were made of raptors that could have been Java Hawk Eagle in July 1989.

Mt Halimun, W Java

A pair of most likely Java Hawk Eagles was seen on 11 August 1989 during a three-day field trip to the reserve with H. Kalisch, H., H. and J. Meiss. A Java Hawk Eagle was seen flying above the teagardens, heading for the forest downhill on 12 August 1989; its conspicuous malar stripe, but faint barring on the underparts, suggested a second/third year bird.

Lebakharjo, E Java

During a four-day survey of this proposed nature reserve along the south coast of Java, a juvenile Java Hawk Eagle was observed on 27 October 1989. The bird was in its first year plumage and perched in a big tree halfway up a forested hill at the edge of a coffee plantation at 100m. It produced continuously a series of five to six "heeheeee" notes, with the second, long-drawn syllable emphasized; the second and following notes normally were broken; the last one (or sometimes two) notes missed the break, but sounded often as a stuttering "heehee(hee)heeeew" (which sometimes formed the first note of a series, when the last one would be a "normal" "heeheeee"). Future surveys of the Lebakharjo forest might confirm its importance as a breeding habitat for the Java Hawk Eagle. Its size of 16,000 ha of largely undisturbed lowland and hill forest might be enough to harbour some 5-8 pairs (taking

20-30 km² as the territory size for a pair of these eagles; see Thiollay & Meyburg 1988). Its proximity to the 57,000 ha national park of Mt Bromo-Tengger may prove to be important after a survey of this mountainous hinterland. The park includes Mt. Semeru, covered by still extensive rainforest of the wettest type, where until now no ornithological survey has been made.

Kalibaru, E Java

The observation on 13 December 1989 of a subadult Java Hawk Eagle in secondary forest, circling above a scattered coffee plantation along the railroad from Banyuwangi to Surabaya, near Kalibaru (113° 59'E, 8° 18'S), between Meru Betiri and Ijen Highlands, suggests that dispersal abilities are not too much hampered along the almost unbroken stretch of forest (in whatever condition) which runs from the south-east (Meru Betiri) in a north-easterly direction to Ijen and Baluran.

Baluran, E Java

Bishop (1988) reported the observation in Baluran of an immature and an adult Java Hawk Eagle in July and October 1988 respectively. The dry conditions of the park seem to be in contradiction to the presumed preference of the eagles, i.e., everwet rainforest, although immature birds are known to occur in a typical habit (see THREATS). Whether these records refer to straggling individuals, e.g., induced by the extremely long and severe dry season of 1988, or reflect a confusion with other species of eagle (considering, for example, the confusion that exists regarding the juvenile plumage; see Meyburg *et al.* 1989), remains open to question.

Ijen Highlands, E Java

On 26 June 1990 a first-year bird, perched in a tree in the forest edge at 825m was observed. The bird was not at all shy and could be approached to within 25-30m. Tape recordings were made of its continuous calling. On 27 June 1990 an immature Java Hawk Eagle was seen circling above the forest edge at 1000m, a few moments later being charged by an older bird. On 28 June 1990 a subadult eagle was seen circling above the forest at 1000m. The frequent sightings in the area may indicate a healthy population throughout the mountain complex west of Ijen, where in the far south-west corner a possible sighting was made of a juvenile circling above the forest at 1000m on 1 July 1990.

Alas Purwo, E Java

An eight-day visit in May 1990 to this forest area in the driest parts of Java yielded some rather unexpected sightings and sound recordings of the

Java Hawk Eagle. On 14 May 1990 an immature and (sub?) adult bird were seen in hill forest along the east coast of the reserve. On 17 and 19 May the typical calling of the eagle was heard from the forested hills in the central part of Alas Purwo.

Table 1 lists all relevant localities visited since November 1986 mostly within the framework of the Java Hawk Eagle project. They are at least 2000 ha in extent, which is considered to be the minimum critical size of a forest patch in which the Java Hawk Eagle may survive (Thiollay & Meyburg 1988). Localities are shown in Figure 1. Duration of the surveys lasted at least 3 days and in many cases more than one visit was paid to each area. Though the Java Hawk Eagle seems to prefer the wetter forests, especially in the western part of its range, the dry conditions in the eastern reserves, especially Baluran and Alas Purwo, appear to be acceptable. Apart from climatic factors, its habitat selection must be determined by other factors, such as topography (hill slopes, etc.) and perhaps also a certain seasonal variability plays a role in this.

TAXONOMIC NOTES

Observations have been made on two other species, forming a superspecies with *Spizaetus bartelsi*, i.e., *S. alboniger* and *S. lanceolatus* (Amadon 1953). The vocalisations of both first-mentioned species appeared to have many affinities. The description of the call of *S. alboniger* in Smithies (1981) as a "klip-kweeoe" could be applied to *S. bartelsi* as well; during a trip to the Genting Highlands (Malaysia), I heard calls of *S. alboniger*, much like those of its Javan congener; H. Bartels (pers: comm.), who knows the calls of both *S. alboniger* and *S. bartelsi*, confirmed the similarity of the calls (including courtship vocalization) of the two species.

In contrast, calls of *S. lanceolatus* in Sulawesi, where it was found common by B.-U. Meyburg and myself in August 1987 (Meyburg & Van Balen, in prep.) appeared to differ completely from those of *S. bartelsi*. For instance, calls produced by first-year birds were recorded as "a long series of 42-50 kee's in 10-11 seconds with regular pauses in between" for *S. lanceolatus* and were the most common call heard; immature calls of *S. bartelsi* sound essentially as series of keehee's, often broken.

Comparative studies between the apparently closely related species of Hawk Eagle might provide us with more insight into how to preserve them, *S. bartelsi* facing a well-advanced destruction of its natural habitat in Java, and *S. alboniger* occurring in areas with perspectives perhaps even less favourable. Both species show the same habitat preferences: tall rainforest in the hills, whilst immature birds tend to wander about in less typical habitat (Medway & Wells 1976).

Table 1. Localities, climate characteristics and presence of Java Hawk Eagle *Spizaetus bartelsi* in Java.

Locality	*Climate type	Number of survey days	**Presence
Ujung Kulon	2	14	-
Mt Aseupen	2	3	-
Mt Tukunggede	2	7	-
Mt Halimun	3	3	+
Mt Salak	3	16	+
Cikepuh	2	3	-
Mt Gede	3	10	+
Mt Patuha	3	1	-
Mt Lawu	2	5	-
Iyang Highlands	(2-)3	4	(+)
Lebakharjo	(2-)3	4	+
Baluran	1	5	-
Alas Purwo	1	3	-

* After Van Steenis & Schippers-Lammertse (1965)

1: 0-20 rainy days during the first four driest consecutive months of the year.

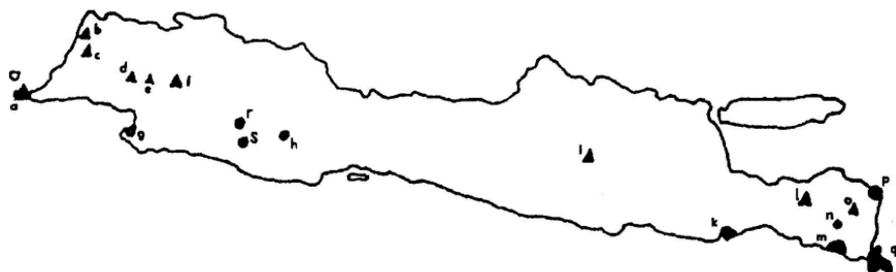
2: 20-40 rainy days as above.

3: 40-80 rainy days as above.

** See text, however,

+ : present; - : not present

Figure 1. Localities mentioned in the text.



a: Ujung Kulon; b: Mt Tukunggede; c: Mt Aseupen; d: Mt Halimun;
 e: Mt Salak; f: Mt Gede/Pangrango; g: Cikepuh; h: Cikajang; i: Mt Lawu;
 k: Lebakharjo; l: Iyang Highlands; m: Meru Betiri; n: Kalibaru; o: Ijen;
 p: Baluran; q: Alas Purwo; r: Ciwidey; s Mt Patuha..

THREATS

The continuing fragmentation of primary forest and the intensification of land use in the areas between the forest fragments, endangers the survival of the Java Hawk Eagle. Mobility of the birds in their first years* may ameliorate the danger of isolation, but puts them in jeopardy because of increasing hunting pressure around their birthplaces. The Java Hawk Eagle must be any easy bird to hunt, as suggested by the apparent tameness especially of the juvenile birds observed, and the finding of two birds during a visit by H. Bartels (pers. comm.) to Meru Betiri in 1975: an adult with a gaping (shot?) wound and a dead juvenile, that may have been caught or shot. In Java birds of prey are rather popular with bird fanciers and the Java Hawk Eagle is regularly offered for sale at the bird markets in the capital, Jakarta (P. Andrew 1985, in Thiollay & Meyburg 1988; A. van de Berg *in litt.* 1989). Moreover young birds give themselves away by their continuous loud calling, thus becoming an easy prey to hunters.

Within most reserves, encroachment (often because of unclear boundaries), illegal hunting, and understaffing (e.g., only one permanent warden with two assistants had charge of the 40,000 ha reserve of Mt. Halimun in Aug 1989) etc., are still obstacles in the way of conservation measures being taken.

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* As illustrated by the locality of the Kalibaru bird (see text); furthermore a juvenile Java Hawk Eagle, shot on a tennis lawn near Ciwidey in May 1928 is preserved in the Zoological Museum at Bogor; another juvenile Java Hawk Eagle erroneously described by Sody (1920) as the Changeable Hawk Eagle *Spizaetus cirrhatus* (see Becking 1989), was caught under a village house at Cikajang (Garut, W Java.)

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**Java Hawk Eagle *Spizaetus bartelsi*, captive bird, bird market Jakarta, July 1989.
From a photograph by A. van den Berg.**