

Part 2

Rare and Declining Raptors



Osprey *Pandion haliaetus*

Conveners:

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The Java Hawk Eagle *Spizaetus bartelsi*: Results of recent Research on Distribution Status and Ecology

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ABSTRACT

This is one of the rarest and least known raptor species in the world. In order to dispel some of the mystery surrounding it, a WWGBP expedition visited Java in 1986, the results of which were published in the proceedings of the last World Conference. Since then, further surveys and research have been continued and are here reported and discussed.

INTRODUCTION

The Java Hawk Eagle *Spizaetus bartelsi* (JHE) was first considered as a race of the more widespread *S. nipalensis* (Finsch 1908), but attained specific (endemic) status after more taxonomic research (Amadon 1953). Due to its dependence on primary rainforest in the lowlands and hills of Java, numbers are extremely low and estimates of 50-60 pairs for the total population were made after a WWGBP expedition in search of remaining subpopulations of the species (Thiollay & Meyburg 1988; Meyburg *et al.* 1989). Subsequent surveys by S. van Balen (van Balen 1991) and the Java Hawk Eagle survey project launched in 1990 yielded more information on the species' distribution and ecology. This paper presents an overview of current information and a discussion of the eagle's present known status.

DISTRIBUTIONAL NOTES

A large number of areas were visited during 1990-1993, varying from monsoon to everwet rainforest in the lowlands and hills of west and east Java. In Table 1 all areas visited within the framework of the project are listed and the presence or absence of the Java Hawk Eagle indicated. A number of more recently visited sites have been selected for further discussion below.

Mt Slamet, C Java

A first-year juvenile JHE was photographed by R. Seitre (in litt 1990), in May 1990, at ca. 1,500m a.s.l. near the hot springs above Baturraden, on the south slope of Mt Slamet. The single

bird was rather tame and flew around, calling loudly.

A 15,000ha nature reserve at 1,000-3,410m elevation has been proposed by FAO (1982), covering the larger part of the mountain. Mt Slamet belongs to one of the areas for which surveys have been planned in the JHE project.

This observation by Seitre, who also reported that the mountain was still covered by some extensive forest on the southern slopes above 1,000m, raises the hope for a viable population of JHE in at least one of the few possible places in the province of C Java.

Mt Sindoro, C Java

During a short visit in November 1990 to the south-eastern slope of this mountain, above the village of Kledung, it was soon learned that on this and its twin volcano Mt Sumbing probably too little forest was left for a viable population of JHE. Though observations of a Black Eagle *Ictinaetus malayensis* and some other woodland birds indicated a former rich (sub) montane avifauna, the cultivation of the land (tobacco, corn, timberwood monocultures) on the lower slopes of both mountains, and the heavily disturbed parts higher up, very unlikely leave room for many more large-size forest raptors. However, a more profound survey of the area is needed and planned, with regard to the proposal of a 10,000ha large nature reserve on Mt Sumbing (FAO 1982).

Mt Kawi/Arjuno, E Java

A specimen is stored in the American Museum of Natural History, collected earlier this century on Mt Arjuno, but no further data are available. During surveys in 1992-1993, at four different places throughout the mountain complex, Java Hawk Eagles were seen.

Meru Betiri, E Java

Although previous surveys (e.g. Bartels, pers. comm.; Thiollay *et al.* 1988) already showed the presence of JHE, it was felt useful to keep monitoring the local JHE population. During a week's visit in October 1990, JHE was observed on at least three different localities, illustrating the importance of this area.

Meru Betiri National Park might harbour the largest population of JHE on Java on its 50,000ha of largely undisturbed forest. The enclaves of cocoa, coffee, rubber etc., estates and settlements were reported due to be abandoned in the near future, and negligence of the plantations was already noticeable.

DISCUSSION

Conservation

Two of the recently surveyed areas, i.e. Alas Purwo (see van Balen 1991) and Mt Slamet, harbouring populations of JHE in reasonably large stretches of forest, are new additions to the presently known area of distribution of the species. The last mentioned area, which provides habitat for a number of other threatened Javan wildlife as well, i.e. Javan Gibbon, Javan Leaf-Monkey (Seitre *in litt.* 1990), has been proposed as a nature reserve, but further surveys and information are needed to support these plans. Alas Purwo became a national park after having been a game reserve since 1939; its extremely dry conditions, however, might create a less than optimal habitat for JHE.

Of importance are two areas mentioned in an earlier report on the JHE project, i.e. Ijen crater and Lebakharjo (van Balen *op.cit.*). The latter is now much threatened by plans to develop the area, notwithstanding its high conservation value. The former is a 2,560ha reserve at 1,500-2,800m a.s.l. and includes an important sulphur concession. It however doesn't include much JHE habitat: the forest visited during the survey, where JHE was observed, lay just outside the reserve boundaries. The higher parts (> 1,000m) are managed by the Forestry Department as protected forest, without special conservation status; the lower parts belong to a tea estate, and during the survey some 800ha were being cleared for new plantations. The extension of the reserve to these lower zones of the mountain complex should be seriously considered. A 50,000ha reserve is proposed for Mt Kawi and adjacent Mt Kelud, including two localities where JHEs were seen. The proposed nature reserve (see FAO 1982) of 60,000ha north of Ijen (Maelang) would make up a 130,000ha reserve adjacent to Baluran national park in the north-east and Meru Betiri in the south-west, and be of

utmost interest. A large portion of Java's endangered wildlife would be safeguarded from further deterioration in such an extensive complex of reserves.

Ecology

At this stage of the project it is unclear what the correlation is between the habitat preferences and distribution of JHE. Certain characters, e.g. high topographic relief in relation to foraging behaviour (cf. Janes 1985) may play a more important role, and without exception the birds were observed in rugged hilly areas. However, in west Java especially there seems to be some dependency on lush rainforest, more pronounced than in east Java.

Population status

With the new data obtained on the species' distribution, it must now be possible to re-evaluate previous population estimates by Meyburg *et al.* 1989, i.e. 50-60 pairs. In Table 1 the areas surveyed of 2,000ha and more (the minimum area to support one pair of JHE, see Thiollay & Meyburg 1988) are listed. Using the same criteria of one pair of JHE per 2-3,000ha, a total number of pairs can be calculated. However, some areas (e.g. Alas Purwo) are only partly suitable, others (e.g. Ijen) only partly cover the available JHE habitat. Table 2 lists the areas with known JHE populations and their estimated numbers of pairs, totalling 52-61 pairs, of which 39-45 are secured in nature reserves. More pairs may be found in areas not yet surveyed, especially the hills and mountains in the surroundings of Bandung, adding an additional 15-20 pairs. Furthermore an unknown proportion of the JHE population consists of immature birds, that are prone to straggle outside the better forest areas, making themselves vulnerable.

Table 1. Distribution of the Java Hawk Eagle across Java (from west to east); climate types from dry (1) to wet (3) (see van Steenis 1972); lw = lowland forest, m = montane forest; + = present, - = absent; * = only superficially surveyed, ** = a few short visits, * = intensively surveyed during several periods of at least 4-5 days. [] = areas without JHE observed; () = areas with JHE reported before World War II; after Bishop 1988, Meyburg *et al.* 1989, van Balen 1989.**

	Climate	Forest Type	Presence	Search Intensity	Area (x1,000ha)
Ujung Kulon	2	lw	-	***	[76]
Mt Asepun	2	lw	-	***	[2.5]
Mt Halimun	3	lw/m	+	***	40
Mt Salak	3	m	+	***	2.5
Mt Gede/Pangrango	3	m	+	***	14
Cikepuh	2	lw	-	**	[8.5]
Mt Sanggabuana	2	lw	-	*	[2.5]
Mt Patuha	2/3	m	(+)	*	
Mt Tangkuban Perahu	3	m	-	*	
Mt Tilu	3	m	-	*	[8]
Mt Papandayan	3	m	+	***	7
Leuweung Sancang	3	lw	-	**	[2]
Mt Slamet	3	m	+	*	15
Mt Sindoro/Sumbing	3	m	-	*	[10]
Mt Lawu	2	m	-	***	[21]
Mt Kawi/Arjuno	2	m	(+)	***	50
Mt Tengger/Bromo	2/3	m	-	**	[57]
Yang Highlands	2/3	m	(+)	**	14
Lebakharjo	2/3	lw	+	**	16
Meru Betiri	2	lw	+	***	50
Ijen	3	m	+	**	2.5
Baluran	1	lw	+?	***	[25]
Alas Purwo	1	lw	+	***	62

Table 2. Localities with recent observations of Java Hawk Eagle. (* = estimate by Thiollay & Meyburg 1988). () = proposed; NP = national park; nr = nature reserve; pf = protected forest.

	Area (x 1,000ha)	Status	Number of JHE pairs
Mt Halimun	40	NP	10*
Mt Gede/Pangrango/Salak	14	NP/pf	9*
Mt Papandayan	7	nr	2-3
Mt Slamet	15	(nr)	5
Mt Kawi/Kalud	50	(nr)	5-6
Lebakharjo	16	(nr)	5
Meru Betiri	50	NP	11-16*
Ijen	25	nr + ()	2-3
Alas Purwo	62	NP	4-5

Threats

The destruction and fragmentation of the little remaining rainforest still forms an immediate threat to the survival of the Java Hawk Eagle, and every effort should be undertaken to save what is left. The proposed nature reserves cover a good deal of the present area of distribution and, though not continuous, the vagrant character of JHE juvenile and immatures enhances dispersal amongst the patches and thus gene exchange. The finding of JHE in C Java shows that the western and eastern populations are less isolated than was previously supposed.

Raptors play an increasing role as status symbols, and high prices are paid by bird fanciers. On local bird markets the sight of a chained JHE was not among the extreme rarities. (P. Andrew, *in litt.* 1992). But recently, amendments in 1990 to the environmental laws allow much heavier sanctions against breakers of the law on protected species (which includes all diurnal birds of prey), resulting in a stricter control of the trade at local markets. The use of guns forms another threat. It is encouraging that the Indonesian Government is now working on a total ban on weapons (including air rifles), which will certainly have a positive impact on the JHE's survival.

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