

## DISCOVERY OF WATERBIRD COLONIES IN NORTH LAMPUNG, SUMATRA

By

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### Summary

The Tulang Bawang river with its backswamps, in Lampung province, Sumatra, is identified as a habitat of major importance to waterbirds. There are at least two breeding colonies, one of which may prove to be the largest heronry so far discovered in Indonesia, with between 5,000 and 33,000 pairs of herons and egrets. The most abundant species is Javan Pond-heron *Ardeola speciosa*, and this is only the second breeding colony of this species to be discovered in Sumatra; it may rank as the largest in Indonesia. It is the third colony to be discovered in Sumatra of Great Egret *Casmerodius albus*. The first breeding records in Sumatra of Night-heron *Nycticorax nycticorax* were obtained from one colony, and of Oriental Darter *Anhinga melanogaster* at the second. The region is also probably the most important in Sumatra, if not in the Sundaic region, for Bronze-winged Jacana *Metopidius indicus*. Recommendations have been made for Nature Reserve status to be designated at the sites of the two colonies, and for a Game Reserve to cover a much wider area of the feeding grounds and fisheries.

It is feared that there has been a major decline in population of both the White-winged Duck *Cairina scutulata* and the Cotton Pygmy Goose *Nettapus coromandelianus*, and it is proposed that the latter species should also now be classified as threatened in Indonesia.

### Introduction

The Way (river) Tulang Bawang in North Lampung, southern Sumatra, from the confluence above the town of Menggala of the Way Kanan and Way Kiri until it reaches the sea, is the largest river in the province (see Figure 1). The zone of deepest flooding along the river lies just above and below Menggala, together with the seasonal lagoons of the Tenuk tributary. At one time, the alluvium would have been covered with freshwater swamp forest, with a dominance of Rengas trees *Gluta renghas*, but only remnants of this very rich habitat now remain. One such remnant lies just below Bawang (lake) Lambu Purus, on the left bank above Menggala. Major fires in a prolonged drought in the early 1960s are said to have destroyed much of this forest. The deep water zone is now a herbaceous swamp, extensively used for fisheries. Further downstream, below Gedung Haji, a secondary climax forest dominated by *Melaleuca cajuputi* has replaced the native vegetation, and this forms a monotonous and impoverished habitat, where it has not been cleared for swamp reclamation schemes and settlements.

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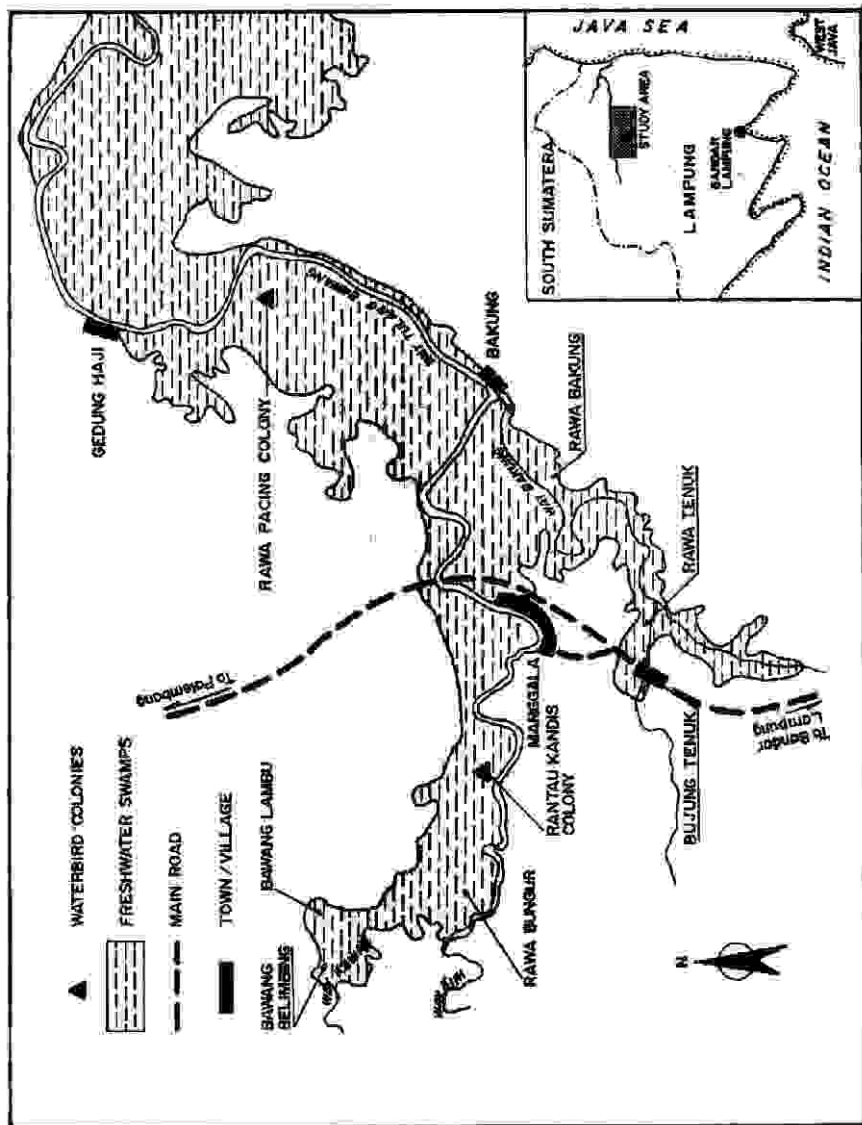
He first author visited the Menggala area in November 1976, when engaged in a reconnaissance survey of the White-winged Duck *Cairina scutulata*. This species was widely distributed in the region at that time. The Bronze-winged Jacana *Metopidius indicus* was also found to be a common bird in the region. Although herons and egrets were common at Menggala, no attempt was made at that time to travel along the river, the target species being sufficiently plentiful close to the town.

The first author next visited the region in 1992-94, in his role as land use planner and environmentalist on the Tulang Bawang Irrigation Feasibility Studies. Although the current scarcity, and possible absence, of the White-winged Duck is a major source of concern, the Bronze-winged Jacana was found to be as common as it was in 1976. In view of the scarcity of the latter species from apparently suitable habitat in South Sumatra (see Verheugt *et al.* 1993, and Lambert 1988), this was very satisfying. In addition, on 6 June 1993, a large egret colony was discovered at Rawa (swamp) Pacing. Although it was impossible to reach the site at that stage of water level, it was immediately recognized that the colony was of major significance. There was also circumstantial evidence of the Black-crowned Night-heron *Nycticorax nycticorax* breeding in Sumatra (a captive bird near the colony produced an egg). Subsequently, roosting flights of tens of Oriental Darter *Anhinga melanogaster* upstream from Menggala were also indicative of important wetland habitats.

Accordingly, an addendum to the study contract was applied for and approved which enabled the Asian Wetland Bureau - Indonesia to undertake a more detailed investigation, leading to recommendations for conservation and management as appropriate. The second author was the ornithologist on this team and carried out surveys during 19-24 March and 11-18 May 1994. The authors visited Rawa Pacing and Rawa Tenuk together during the March survey.

### **The Rawa Pacing colony**

The Rawa Pacing colony occupies 45 ha of reed beds *Phragmites* sp. lying some 900 m from the river, in an open herbaceous swamp of wild rice *Oryza rufipogon* and other grasses *Paspalum* and *Sacciolepis*. The reed beds are very difficult to penetrate, and it is impossible to get an estimate of the size of the colony. Several counts were carried out of birds flying out of and into the colony at dawn and dusk, but these are assumed to enumerate only a percentage of the total number of birds (many remain on the nest, and many more make their flights in darkness). An estimate of the total number of nests was made by extrapolation of the nest density from the small area of the colony that could be studied, which was 3 nests per 4 sq. m. of reed bed. The maximum count of birds was 10,244, but the estimate of total number of nests was 33,750. It is acknowledged that the maximum number of nests provides only a guide. By this method, all that can be assumed is that the number of birds of each breeding species lies somewhere between the minimum (highest number counted) and maximum (hypothetical number of birds based on nest density) in Table 1 below. Clearly it would be unwise to make assumptions about the total population based on the present evidence.



		Max. no of birds	
		(count)	(estimate)
Javan Pond-heron	<i>Ardeola speciosa</i>	9,208	60,676
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	509	3,354
Great Egret	<i>Casmerodius albus</i>	365	2,403
Purple Heron	<i>Ardea purpurea</i>	60	398
IntenneuLate Ej^ret	<i>Egretta intermedia</i>	43	284
Cattle Egret	<i>Bubulcus ibis</i>	17	114
Little Egret	<i>Egretta garzetta</i>	16	108

Apart from being the first breeding record in Sumatra of the Black-crowned Night-heron, this is only the second site for the Javan Pond-heron (see Verheugt *et al.* 1993) and the third for the Great Egret (see Danielsen *et al.* 1991 and Giesen & Sukotjo 1991), as well as being the largest in Sumatra for both species. It must be emphasized that breeding of neither Cattle Egret nor Little Egret was confirmed, although birds in breeding plumage were observed entering the colony.

The breeding season commences in March, at which time the swamp is still deeply flooded. The floods progressively dry out during the succeeding months until about October when rains begin to increase.

### The Rantau Kandis colony

This colony lies about 100 m from the river on the left bank, some 7 km upstream from Menggala, and was discovered in May 1994. A Rengas tree held 48 nests of the Oriental Darter, and a second tree held nine nests of Grey Heron *Ardea cinerea*. At least 70 adult Darters and nine chicks were observed in late May. This is the first documented evidence of breeding of the Darter in Sumatra. It was reported that the breeding season lasts from November-December to June, which corresponds to the period of the year with high water levels.

It is noted that the dusk roosting flights of tens of Darters, observed the previous February by the first author, had been in a north-westward direction towards Bawang Lambu and Bawang Belimbing, away from the breeding colony, and it is recommended that further surveys are undertaken in the dense swamp vegetation between these lakes and the river. The present colony has been established only recently, following destruction of a much bigger colony nearby ("hundreds of Darter's nests"), so the total population is clearly substantially bigger than indicated in the previous paragraph.

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## Other Bird Species

### Cormorants

Two Little Black Cormorant *Phalacrocorax sulcirostris* were observed near Rawa Pacing in June 1993 and March 1994, but there is no evidence of breeding in the area.

### Bitterns

Both Yellow and Black Bitterns *Ixobrychus sinensis* and *I. flavicollis* were notably common at Rawa Pacing in February and March 1994, birds being flushed every minute or two. Numbers were much reduced by May, and with a lack of indications of breeding, all are assumed to be migrants during the northern winter.

### Storks

The Milky Stork *Mycteria cinerea* is the most frequently encountered species, often in parties in overhead flight; the largest number observed was a total of 53 over Rawa Pacing on 13 May 1994. On present evidence, these are assumed to be visitors from a colony or colonies unknown near the coast, rather than local breeders. However, two birds were seen carrying nesting material at the Rantau Kandis site. In June 1993, a party of seven was encountered as far inland as some 30 km upstream from Menggala.

Lesser Adjutants *Leptoptilos javanicus* are seen regularly, and local fishermen state that they breed in the area. The largest party seen was of six birds feeding on ploughed uplands near Bawang Lambu Purus in February 1993.

White-necked Storks *Ciconia episcopus* are seen occasionally, but there is believed to be little habitat remaining in the Menggala region that is suitable for Storm's Stork *C. Stormi*.

### Raptors

Raptors encountered in the area include particularly the Grey-headed Fish-eagle *Ichthyophaga ichthyaetus*, which is moderately common. One was observed on a nest opposite Menggala on 28 Sep 1993, and there were at least four birds heard calling in wooded swamp near Bawang Lambu Purus the following day. A second nest was observed near the Rantau Kandis colony on 15 May 1994. The species was also observed in Rawa Tenuk south of Menggala.

Lesser Fish-eagle *I. humilis* was observed once, and a pair of White-bellied Sea-eagles *Haliaeetus leucogaster* was seen at the nest near Menggala in March 1994.

Several Changeable Hawk-eagles *Spizaetus cirrhatus* were observed, and it is notable that the majority were dark morph birds. Finally, an eagle seen by both authors below Menggala on 25 March 1994 was suspected of being a Spotted Eagle *Aquila clanga* but no confirmation was possible.

### Duck

Neither author was able to obtain first-hand confirmation that the White-winged Duck is still extant along the valley. Many of the local people apparently know the species, and stated that it still occurs, but searches by the first author at apparently suitable habitat at dawn and dusk on various dates through the year were all negative. It should be emphasized that the first author was responsible for identifying the region's importance for this species in 1976-77, at which time it was almost guaranteed that flying birds would be heard calling wherever the terrain seemed suitable. There seems to be a very real danger that the population of this species has "crashed", and that the bird's apparent adaptability to habitat degradation and human population pressures in Sumatra was an incorrect assumption.

It is recommended that a repeat survey is now conducted, similar to that made by Lambert (1988), to monitor the population changes that are taking place. If the conclusions made here are correct, then the population in Way Kambas may now be effectively isolated.

The Lesser Whistling-duck *Dendrocygna javanica* is moderately common, with over 200, for example, on Rawa Tenuk in June 1993, but the Wandering Whistling-duck *D. arcuata* has not been reconfirmed in Lampung.

The Sunda Teal *Anas gibberifrons* occurs in very small numbers, although there was only one confirmed record: a party of five in deep swamp near Bawang Lambu Purus on 5 June 1993, which was believed to include three free-flying immatures. It is suggested that this species becomes dispersed along the river valleys to breed during the wet season, with populations becoming concentrated in coastal swamps during the dry season (see Verheugt *et al.* 1993).

Two Garganey *Anas querquedula* were flushed at Rawa Pacing on 7 February 1994, constituting the first record for Lampung province (Marle & Voous 1988).

Finally, the Cotton Pygmy Goose *Nettapus coromandeliamis* occurs in very small numbers. In 1994, there were three sightings of single birds at Rawa Pacing on 9 February and three sightings totalling twelve birds in the Bakung region on 25 March, and four at Rawa Pacing on 27 March. This species was found to be common in suitable terrain in North and Central Lampung in 1976-77, and it is feared that the population of this also may have "crashed". It should now be classified as a threatened species in Indonesia.

### Rails

The rather few species of rails identified reflects the lack of attention that could be given to this group. A nest was found at Rawa Pacing in May; it was identified as probably White-browed Crane *Poliolimnas cinerea* on the basis of photographs.

Watercock *Gallix cinerea* is a common winter visitor, but there were three or four males in breeding plumage at Rawa Tenuk on 9 Jun. It is not known whether some stay to breed.

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Purple Swampphen *Porphyrio porphyrio* is moderately common, but Common Moorhen *Gallinula chloropus* was recorded only at Rawa Tenuk.

### Jacanas

It may be significant to note that no Pheasant-tailed Jacana *Hydrophasianus chinrgus* were recorded in the current surveys, although the first author recorded the species as "common generally, with 30 or more at each swamp visited", on 10 January 1976. If Menggala is formerly an important wintering ground for the species, it seems possible that the population of this northern migrant has also declined.

At least the Bronze-winged Jacana remains as common now as it was in 1976-77. Rawa Tenuk appears to be the main stronghold, and the area of the causeway on the main road to Menggala is probably as good a location as anywhere to observe them. On 9 June 1993, there were between 30 and 50 birds seen in total, of which perhaps 30% were in immature plumage. Similar numbers were present on 29 August, but much fewer were seen in February and March. However, scattered individuals were seen at this time elsewhere in the swamps. The assumption was made, both now and in 1977, that the birds become more widely dispersed in the wet season (November - March), when Rawa Tenuk is deeply flooded, but return to this swamp, presumably to breed, when the floods recede in April or May. Definitive breeding evidence is still required, however.

### Others

A pair of White-headed Stilt *Himantopus leucocephalus* was seen at Rawa Pacing and one at Rantau Kandis in May 1994.

### Human Pressures and Conservation Recommendations

The Asian Wetland Bureau report (Rusila *et al.* 1994) records that there is a very heavy harvest of eggs from the main colony, and that the Darter colony has also shifted location as a result of human disturbance. The latter colony at its present location is rather inaccessible during the breeding season. There was some evidence of another egret colony on the right bank of the river, downstream from Rawa Pacing, but the site is inaccessible and time did not permit an attempt to reach it. It was also reported verbally that a large colony (or colonies) of waterbirds on the coast was totally and deliberately destroyed when a major brackish-water fish pond concession was developed.

It seems that the position is somewhat volatile, with the colonies ready to shift sites when the pressures become intense. It is also evident that the population of waterbirds has declined. The Lampung plains are undergoing very intensive development, and very soon there will be no remaining "wild lands" outside Way Kambas National Park in either the drylands, nor the wetlands wherever these can be reclaimed. However, the deep water flood zone of the Tulang Bawang plain around Menggala presents major problems in reclamation, and it has been recommended that these swamps remain to perform their present role as a flood reservoir and for fisheries. Regular dry season burning is probably beneficial to the waterbird population generally.

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The site meets the criteria of the Ramsar Convention, and the proposal to gazette some 12,000 ha as a Game Reserve would accord with the present function and utilization. The two colonies are proposed as Strict Nature Reserves, with a gross area of 1500 ha, and hopefully the collection of eggs and birds from these sites will be discouraged and eventually discontinued.

The recommendations may have been made just in time to protect one of the most important but hitherto undiscovered wetland sites in western Indonesia. The local government has expressed keen interest in promoting the recommendations that have been made.

### Acknowledgements

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