NOTES ON THE MIGRATION OF SACRED KINGFISHERS IN INDONESIA

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INTRODUCTION

In Australia the Sacred Kingfisher *Halcyon sancta* is largely a migrant, leaving the colder parts of its breeding range (mainly the southern areas) in late Summer or Autumn and returning in Spring. They winter mainly north of the tropic (especially far northern coasts) and also on islands to the north of Australia from as far west as Sumatra (Bangka Island) and east to New Guinea and the Solomons (Storr 1984; Fry *et al.* 1992). Most migrants appear to leave Queensland (evidently by long flights across the Coral Sea as well as via Torres Strait) but considerable numbers winter in northern coastal mangroves and woodlands, and progressively smaller numbers further south.

In Western Australia birds leave the southern parts of the State between early February and Mid July and return between late August and late October (Storr & Johnstone 1988). In the far north of Western Australia there is a large increase in numbers during the winter (especially in mangroves) when the resident population is augmented by southern visitors.

Kingfishers on passage

On passage Sacred Kingfishers have been recorded on remote islands off north Western Australia, including Browse Island (14°07'S, 123°33'E) and Ashmore Reef(12°15'S, 123°00'E). They are regular visitors to oil rigs in the Timor Sea at 12°S, 125°E, staying up to three days and arriving mainly in the wet season months of October to March (REJ own data).

While on a boat cruise through the eastern part of the Banda sea, off Kur Is, at $4^{\circ}58'S$; $132^{\circ}07'E$, on the evening of 2 May 1994 at 20.10 hrs, a Sacred Kingfisher flew across the boat; somewhat later about twenty birds of this species were flying around the light at the top of the mast for about half an hour. One of the birds was caught by the boatmen and kept in a waste bin until the following morning, when we released it off the coast of Manawoko Island, to which it flew with bold wing strikes. Only the outer tail feathers of this bird were worn, indicating almost completed moult (SvB own obs.).

Wintering period in Indonesia:

Sumatra: dates reported by Van Marle & Voous (1988) for Sumatra are between 2 June and 23 August.

Kalimantan/Borneo: dates reported by Smythies (1981) are between 17 June and 12 September, but see Kalimantan Bird Report (this issue) where dates are between 30 April and September.

Java: recorded mainly between May and September (Hoogerwerf & R. H. Siccama 1938), but has been observed as early as 15 April (SvB own data: Segara Anakan) and as late as mid November (Hoogerwerf & R. H. Siccama (1938).

Bali: van Helvoort (unpublished data) reported dates between 5 April and 28 October On 21 May 1989

more birds than normal were noticed in the Bali Barat national park where, after a night of clear moon, at least eight birds were counted perched at regular intervals in a strip of mangrove which normally would contain only one or two birds (SvB own data). Major concentrations of birds that were presumably on return passage were noted on 20 September 1991, when at least 15 birds were encountered along a stretch of beach in the Bali Barat national park where otherwise at most only a few were seen; some were in full breeding plumage. Being normally strictly solitary, keeping to well defined territories, on 19 20 October 1993 three birds in full breeding plumage were seen together on a branch (SvB own data).

Sulawesi: extreme dates are 28 May (Stresemann 1941) and September (Escott & Holmes 1978). The species appears to be more common here than White & Bruce (1986) suggest (SvB own data).

Lesser Sundas: the species is a regular, common winter visitor arriving during April to June (earliest date 4 April) and departing mainly mid September to mid October (latest date 21 October) (REJ own data).

Moluccas: there are many records between April and October (earliest and latest dates 16 April and 30 October) (REJ own data).

Discussion

Most migrants appear to reach eastern Indonesia during April May. Our data suggest a shift of first arrival dates from the east (Timor to Bali in April) to the west and north (Sumatra in June). The departure from Indonesia back to Australia appears to occur mainly during September to October, which accords with the breeding season in Australia which is October to January. A few individuals may remain in their winter quarters, as suggested for Java by Hoogerwerf & Siccama (1938) and Mees (1949).

Sacred Kingfishers are known to migrate by night, and large numbers cross Torres Straits during March and April (Coates 1985). Migration in the northern direction probably occurs on a broad front as suggested by the lack of concentrations elsewhere (Fry *et al.* 1992). However, the present data suggest the existence of at least a few more concentration points, the importance of which should be further investigated. Perhaps because of its geographic position the Bali Barat national park appears to be an important passage point (both arrival and return), also for a number of northern migrants such as Japanese Sparrow hawk *Accipiter gularis*. Oriental Cuckoo *Cuculus saturatus* and Fork tailed Swift *Apus pacificus* (Ash 1984; SvB own data).

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