

# **Morphological sexing of Grey-crowned Babblers *Pomatostomus temporalis temporalis*: near enough is not quite good enough**

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We investigated sexual dimorphism in Grey-crowned Babblers (*Pomatostomus temporalis temporalis*) focusing on whether morphological measurements can be used as a means to sex individuals in the field. Head-bill length, body mass and wing length data from two separate studies were analysed for sex differences and to determine whether Grey-crowned Babblers differed morphologically between populations. Head-bill length was found to be the most sexually dimorphic measurement. Males were larger in all age classes (excluding first-year birds), although there was some overlap in the range of measurements obtained for males and females. Body mass and wing length showed no significant differences and substantial overlap between the sexes. The best model from a Discriminant Function Analysis found that 87.1 percent of Grey-crowned Babblers could be correctly sexed using head-bill length as a measurement. Size differences between the two study populations were not significant, but as geographic variation in size has been documented in this species we recommend new models be developed for each location, where cost or time constraints preclude definitive molecular-based sexing.

## **Parental time-budgets, breeding behaviour and affinities of the Red Goshawk *Erythrotriorchis radiates***

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The breeding behaviour of the Red Goshawk *Erythrotriorchis radiatus* was studied in Kakadu National Park, Northern Territory, in 1987–89. Two active nests, for all or part of the breeding cycle from courtship and nest-building (April) to the post-fledging period (October), were observed in timed observation sessions. One nest-building male collected sticks at a rate of 0.4–0.6/hour, and the female at 0.1–0.3/hour; this male fed the female 0.1 prey item/hour and copulated 0.3–0.4 times/hour. The female attended the nest for 81 percent of observation time (incubating 50%, shading 31%). In the nestling period, females progressed from brooding, to standing on the nest (often shading the chicks) to perching in the nest area as the chicks grew, and males delivered prey (0.2–0.3 item/hr). Males did not incubate, and spent little time at the nest when females were present. The prior suggestion of bigamy at one of these nests is revised on the available evidence. The behavioural data in this paper, combined with new DNA evidence, are used to evaluate the Red Goshawk's taxonomic status. The Red Goshawk's genetic link with *Accipiter*, and possibly with the harriers *Circus*, matches its behavioural, morphological and ecological characters, rather than those of the other

Australian endemic hawk genera (*Lophoictinia* and *Hamirostra*, which are pernine kites). Lastly, an error in the labelling of Red Goshawk vocalisations in the primary literature is noted.

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