Observations on the breeding biology of Wrinkled Hornbill *Aceros corrugatus* Temminck, 1832 in Bala forest, Narathiwat, Thailand

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Abstract: Wrinkled Hornbills *Aceros corrugatus*, believed to be extinct in Thailand's rainforest, were rediscovered in 2006. This is the first study on the breeding biology of this species in Thailand or elsewhere. A nesting pair of Wrinkled Hornbills was observed in Bala forest, Narathiwat during March-June 2012. The total observation time was 504 hours. The diet consisted of 34% figs, 43% other fruits, 9% invertebrates, 1% vertebrates and 13% unidentified food items. The male started to feed the female on meat in the fourth week. The maximum feeding frequency was 59 times. The period of maximum feeding frequency was during 0800-0959 hours and the lowest frequency was during 1600-1800 hours.

Keywords: Wrinkled Hornbill, *Aceros corrugatus*, observation, breeding biology, Bala forest

INTRODUCTION

The Wrinkled Hornbill *Aceros corrugatus* is a resident of the primary lowland evergreen and swamp forests in the Thai-Malay Peninsula, Sumatra and Borneo. Its current IUCN Red List status is Near Threatened (BirdLife International 2001). The population is rapidly declining because of habitat destruction, especially the primary lowland evergreen forest. The species is believed to be extinct in Thailand as it has not been recorded for a long time (Vidhidharm et al. 1995). This is the first study on breeding biology of the Wrinkled Hornbill in Thailand.

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MATERIALS AND METHODS

The study was conducted from March to June 2012 in Bala forest (5˚48' N, 101˚48' E), a primary rainforest at 200 m asl near Halabala Wildlife Research Station, Narathiwat province, Thailand. Observations were made three times a week during the daylight hours for a total of 504 days over a 10-week period. The time of arrival and departure of each visit of the male and the number and types of food items delivered were noted. Observations were made from a blind on the ground at a distance of 30 m from the nest tree using 20-60x telescopes.

RESULTS

General observations

The nest hole was located in a living tree (Family Dipterocarpaceae) at about 12 m above ground, with the opening slit directed toward the northeast (47^{o}). The nest was found on 28 February 2012 but observations only started on 9 March 2012. The female had already closed the nest more than a week before the nest was found.

Feeding observations

The average frequency of feeding was 7.33 times per day. Before feeding, the male always stayed for a short period on a nearby branch. He passed the food items to the female and chick 2-4 times during each visit. The highest frequency of feeding was in the morning between 0800-0959 hours and the lowest between 1600-1800 hours (Figure 1). The food consisted of 34% figs, 43% other fruits, 9% invertebrates, 1% vertebrates and 13% unidentified food items, of which fruits made up 77% (Figure 2). The male started feeding the female on animal items in the fourth week (Figure 3).

DISCUSSION

The main diet of *A. corrugatus* is fruits, together with some vertebrate and invertebrate prey, similar to that of *A. waldeni*. (Kauth et al. 1998). The male started feeding his family with animal foods in the fourth week as these are an important protein source for the female and the growing chick(s).

The breeding season of *A. corrugatus* in this study was between February and June, which is different from the previous study in 2005 where the breeding season at two nests was reported to be between June

and September (Thong-Aree 2005). Availability of food is suggested as the cause of the different breeding seasons in the two studies. After all, the birds must raise their chicks during periods when most of their fruit plants are fruiting (Poonswad et al. 1999). In 2012, the dry season in this area came early, thus resulting in the early fruiting of these trees and as a consequence the early breeding season.

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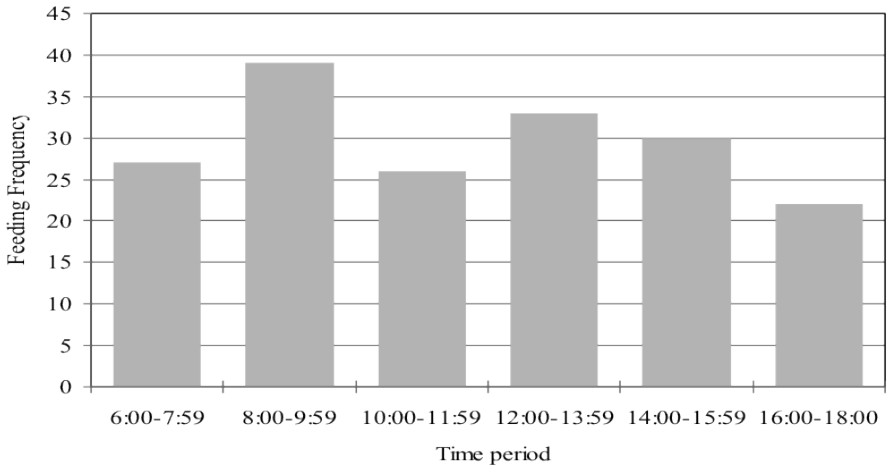

Figure 1. Feeding frequency of male Aceros corrugatus during daylight for the whole observation period.

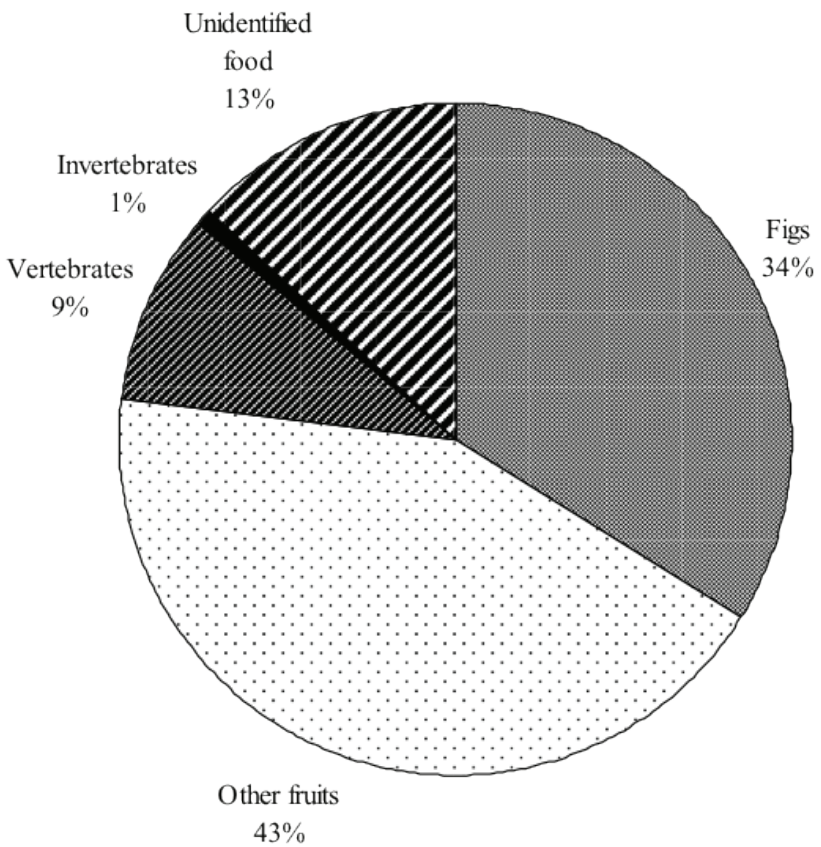

Figure 2. Diet of Aceros corrugatus as delivered at the nest.

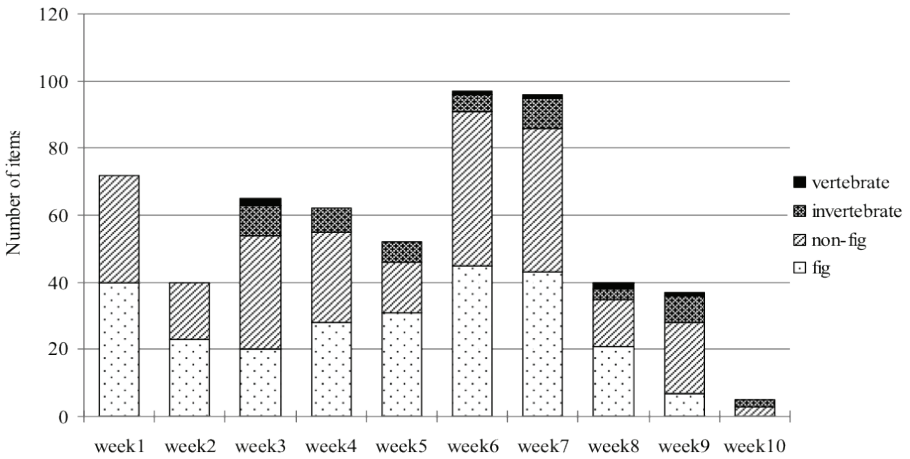

Figure 3. Food items that the male delivered to the nest in each week.