

Feeding observations on Scarlet Macaw *Ara macao* in Costa Rica

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Observamos un grupo familiar de cuatro individuos, dos adultos y dos jóvenes, de Lapa Roja *Ara macao* alimentándose de los frutos de dos especies de árboles. Los adultos consumían los frutos de la Palma Royal *Scheelea rostrata*. Los dos juveniles, aparentemente carentes de habilidad para alimentarse de éstos, consumían al mismo tiempo los frutos del Jobo *Spondias mombin*. La disponibilidad de diferentes recursos alimentarios puede incrementar la supervivencia de juveniles, los cuales aún no han perfeccionado sus diferentes técnicas de alimentación.

On 7 September 1995, from approximately 14h00–14h15, four Scarlet Macaws *Ara macao* were observed feeding near the Carara National Park guard station, Costa Rica (09°47'N 84°35'W). They were feeding on the edge of partially deforested pasture, along the Costañera highway. Two adults and their two juveniles were concurrently feeding on two different tree species, both common in the region. The two adults were eating from a Royal Palm *Scheelea rostrata*, of approximately 30–35 m height, which contained large bunches of mature palm nuts. *S. rostrata* has been observed with abundant nut clusters at various times throughout the year, and is also common in seasonally inundated areas in central Pacific Costa Rica (pers. obs.)². *Scheelea rostrata* is a well-known, abundant food source for *A. macao* in the region, and is high in nutritional value^{2,3}. The nuts hang inverted from the

top of the tree, and must be removed by *A. macao* in mid-air. Within the same flight, the nuts are carried to a nearby tree for consumption. Therefore, the removal of palm nuts requires advanced skills, probably still under-developed in the two juveniles (estimated at 3–4 months old).

The juveniles were feeding c.20 m off the ground in a nearby Jobo *Spondias mombin*, which provided many perches as well as nuts surrounded by visible, yellow fruits³. The base of the *Spondias mombin* tree was within 10–20 m of the *Scheelea rostrata*, and all four birds vocalised throughout the observation; the juveniles emitted soft, single-syllable calls while the adults shrieked loudly. We have observed both juvenile and adult *A. macao* consuming *Spondias mombin* at various times throughout the year. The adults flew repeatedly to the *Scheelea rostrata* to remove fruits swiftly from the tree,

immediately landing in nearby trees to consume portions of the nuts before intentionally dropping them. Simultaneously, the juveniles remained in the same *Spondias mombin*, walking among its branches in an uncoordinated fashion, often appearing to lose their balance, resulting in dropped fruits.

Although it has been suggested that skill variation among conspecifics, including juveniles versus adults, may affect survival¹, there appears to be a variety of food sources available to *A. macao* throughout the year (CV unpubl. data). These available food sources would enhance the survival rate of juveniles, which have not yet perfected various feeding techniques. Further, it has been suggested that adult *A. macao* lack the strength to access all parts of the palm fruit, and *Scheelea rostrata* may not be an essential part of their diet (S. Matola pers. comm.). However, in our study, *Scheelea rostrata* comprised a significant portion of feeding observations (38 of 163, or 23.3%), which included 43 different plant species (CV unpubl. data). Little has been published about the Central Pacific population of *A. macao*, which is one of two significant populations remaining in Costa Rica^{4,5}.

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