

FEATURE ARTICLES

INVESTMENT IN NESTING ACTIVITIES AND PATTERNS OF EXTRA- AND WITHIN-GROUP GENETIC PATERNITY IN A COOPERATIVELY BREEDING BIRD
DEAN A. WILLIAMS¹ AND AMANDA M. HALE

Department of Biological Sciences, Purdue University, West Lafayette, IN, 47906

Manuscript received 25 January 2007; accepted 20 January 2008.

¹ Present address: Department of Biology, Texas Christian University, TCU Box 298930, Fort Worth, TX 76129. E-mail: dean.williams@tcu.edu

Abstract. Individuals are predicted to direct aid-giving behaviors preferentially to kin. In this study, we examined patterns of investment in nesting activities and compared them to genetic paternity across a three-year period (1994–1996) in cooperatively breeding Brown Jays (*Cyanocorax morio*) in Monteverde, Costa Rica. Brown Jays live in large, territorial groups (mean = 10 individuals) that usually contain a single primary nesting female, her social mate (consort), and helpers of both sexes. Consorts were identified in most but not all nesting female-years; the consort–breeding female relationship was a stable one that often persisted across years, and consorts spent more time with the breeding females than did any other group males during nest building and egg laying. At an individual level, helpers invested little time in the nest area or feeding effort during the prenestling stages, although they provided the majority of feedings (90%) to the breeding female. The breeding pair spent more time in the nest area and had higher nestling feeding rates than the helpers. Consorts did not reduce their investment in nestling feeding in cases where they had not obtained paternity. Within-group extra-pair fathers, on the other hand, tended to provision nestlings less than did other nonbreeding males and were very rarely seen in the nesting areas. Extra-group fathers provided no nestling care. Brown Jay consorts appear to invest less in nesting activities compared to other well-studied New World jays. These findings suggest that mate guarding may be ineffective for consorts, and that both consorts and helper males may invest little in nesting activities because they are pursuing mating or dispersal opportunities outside their social groups.

Key words: Brown Jays, consort behavior, cooperative breeding, *Cyanocorax morio*, New World jays, social birds.