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Evidence of plural breeding by Red-cockaded Woodpeckers.—The endangered Red-cockaded Woodpecker (*Picoides borealis*) is a cooperatively breeding picid associated with mature pine forests of the southeastern United States (USFWS 1985, Walters 1990). Family groups typically consist of a monogamous breeding pair with one or more of their adult offspring serving as helpers (Ligon 1970, Lennartz et al. 1987, Walters et al. 1988). Helpers, which are almost exclusively male (Walters et al. 1988, Walters 1990), assist with incubation and feeding of nestlings (Lennartz and Harlow 1979). Breeding females typically produce a single clutch of 3–4 eggs (range 1–5) (Ligon 1970, Carter et al. 1983, Walters et al. 1988), although they will often renest if the eggs are lost to predation (Walters 1990). The nest usually is in the roost cavity of the breeding male (Ligon 1970, Walters et al. 1988).

We here report on some unusual nesting behavior exhibited by a group of Red-cockaded

Woodpeckers on Fort Bragg Military Installation in the Sandhills region of south-central North Carolina. During the 1993 breeding season, we observed one group that had two nests as well as an unrelated female helper. To our knowledge, plural nesting behavior has not previously been documented in Red-cockaded Woodpeckers. Immigrant females regularly attach themselves to groups as helpers or floaters (Walters et al. 1988, Walters 1990) but normally do not participate in breeding. The family group exhibiting the unusual behavior consisted of three banded birds: a seven-year-old male, a five-year-old female, and their two-year-old son. There also was an unbanded female of unknown age which we are confident was not related to any member of the group, as birds have been banded annually at this and adjacent sites since 1986. We captured and confirmed the sex of the unbanded female on 24 June.

The first nest, containing four eggs, was discovered on 3 May at 13:05 h during a routine nest survey. Prior to discovery of the nest, cavity trees were checked every seven days beginning 19 April. A bird flushed from the nest cavity on 26 April, but there were no eggs present at that time. We estimate the beginning laying date to be 27 April. This nest produced three nestlings. The second nest, containing three eggs, was discovered seven days after the first nest on 10 May in a lower cavity of the same tree. We presumed that this nest was being incubated, since a bird flushed from the cavity on 10 May at 12:15 h and on 13 May at 06:10 h. Later observations on 17 May and 20 May, however, revealed that incubation was no longer occurring, and the eggs in this nest never hatched. We suspected that the unbanded female produced the second clutch of eggs, because one female probably would not produce clutches of eggs in two cavities in such a short period of time. The cavity entrance of the second nest was slightly enlarged, but there were no other species of woodpeckers observed in the area during any of the observation periods. We did not retrieve the eggs, so we do not know whether the eggs were infertile or contained dead embryos.

In order to determine the role of the unbanded female in the family group, we made detailed observations of the birds on 17 May between 11:30 and 14:50 h. During this period, the nestlings were fed by all the birds in the group, although in disproportionate amounts. During the first hour, the nestlings were fed five times by the breeding female, four times by the unbanded female, three times by the helper male, and two times by the breeding male. There also were five times when we were unable to identify the bird feeding the nestlings. In addition, there was apparent conflict between the two females. For example, the breeding female blocked the cavity entrance for 20 min and aggressively deterred the unbanded female from feeding the nestlings.

The conflict between the two females did not cause the first nest to be unsuccessful. We banded three nestlings on 17 May. On 8 June, we observed that all three nestlings had successfully fledged (1M, 2F) and that the unbanded female was actively feeding all three fledglings, with no apparent conflicts between any of the adult birds.

We hypothesize that the unusual plural breeding behavior exhibited by the unbanded female may have occurred in response to limited breeding opportunities for young female Red-cockaded Woodpeckers on Fort Bragg. This observation supports Walters (1991) who reported that Red-cockaded Woodpeckers compete for breeding vacancies in existing groups, rather than form new groups. We also suggest that this type of adaptive breeding behavior may be how plural breeding originates in cooperative breeding systems.

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Wing-flashing in mockingbirds of the Galápagos Islands.—Wing-flashing is a conspicuous, stereotyped behavioral pattern of Northern Mockingbirds (*Mimus polyglottos*) that is used during foraging (Hailman 1960) and in the presence of potential predators (Hicks 1955, Selander and Hunter 1960). Its evolution and function are unclear, but study of the behavior among related species may suggest answers. In addition to the Northern Mockingbird, wing-flashing has been reported for the Gray Catbird (*Dumetella carolinensis*; Batts 1962, Michael 1970), Tropical Mockingbird (*M. gilvus*; Haverschmidt 1953, Whitaker 1957), Bahama Mockingbird (*M. gundlachii,* Aldridge 1984), Long-tailed Mockingbird (*M. longicaudatus,* Bowman and Carter 1971), Patagonian Mockingbird (*M. saturninus,* Halle 1948), the mockingbirds (*Nesomimus* spp.) of the Galápagos Islands (Hundley 1963, Bowman and Carter 1971), Socorro Mockingbird (*Mimodes graysoni*; Curry and Martínez-Gómez, pers. comm.), and Brown Thrasher (*Toxostoma rufum*; Laskey in Sutton 1946, Tomkins 1950, Thomas in Whitaker 1957, Michael 1970). Unfortunately, these reports are often incomplete and frequently fail to mention the context in which the behavior occurred. We describe two incidents of wing-flashing in the Hood Island Mockingbird (*Nesomimus macdonaldi*) of the Galápagos Islands.

On 23 May 1990 at 09:40 on Isla Genovesa (Hood Island) in the Galápagos Islands, Burtt, Porter, and Waterhouse noticed a snake (*Dromicus biserialis*) lying in an opening