



Ari Shavit took this photo of an adult Red-headed Woodpecker in Illinois on 25 August 2010.

were quantified using taxidermically prepared models of male Red-headed and Red-bellied Woodpeckers. Male Yellow-bellied Sapsucker (*Sphyrapicus varius*) mounts served as the control because they do not breed in the same habitat nor compete for food resources with Red-headed Woodpeckers (Walters et al. 2002).

Orians and Willson (1964) found that the two most limiting resources for cavity nesters are nesting sites and food. We used bird feeders filled with shelled peanuts as the focal object for aggressive behavior. The feeders were placed between two trees located in the territory of the Red-headed Woodpecker pair of interest. The following day each model type was placed on the feeder in random order for 10 minutes with a 10 minute interval between model types. We recorded alarm calls, food attentiveness, fly-by investigation, individual attack with physical contact, and two or more individuals making physical contact with the mount. A Kruskal-Wallis test was used to determine if there were significant differences between the aggressive actions displayed by Red-headed Woodpecker toward the three different species. P-values were considered to significant at a level of 0.05.

Results

Breeding Behavior – During 2007 there were 11 breeding territories and three floaters. One territory had three birds consisting of an individual with a white color-band and two unbanded individuals. All three birds

defended the territory, but only the color-banded bird and one unbanded bird tended the nest. During 2008 there were 10 breeding territories and one floater. One of the territories had three individuals, again with the white-banded bird, an unbanded adult that retained some juvenile traits, and a third unbanded individual. All three were observed defending the territory and tending the nest.

Aggressive Behavior. In both 2007 and 2008 Red-headed Woodpeckers demonstrated no significant differences in their responses toward the models (Table 1). Only five aggressive behaviors were observed in 2007, including alarm calls ($n = 2$), food attentiveness ($n = 1$), fly-by investigation ($n = 7$), and individual attack ($n = 10$). Thirty-two responses were recorded in 2008, with 30 alarm calls and two fly-by investigations.

Conclusions

Red-headed Woodpeckers at Spring Lake Park exhibited a low level of cooperative breeding. The common link between the two cooperatively breeding territories was the Red-headed Woodpecker with the white color band. Helpers are usually individuals that, due to lack of resources such as mates or nesting sites, forgo breeding and instead assist a breeding pair (Koenig and Mumme 1987). The question that needs to be answered is why individuals helped the white-banded bird and its mate. One possible explanation is that the helpers were related to “white.” Although not all helpers are related to the breeding pair they assist, they typically help relatives (Conrad et al. 1998). Another possibility is that “white” breeds on high-quality territories and the helper may inherit the territory in the future (Woolfenden and Fitzpatrick 1978). The cooperative breeding at Spring Lake Park along with Short’s (1982) observations of three adult Red-headed Woodpeckers at a nest suggests that this alternative breeding strategy occurs at least occasionally in this species.

Several studies have found that Red-headed Woodpeckers are aggressive toward inter- and intraspe-