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Long-Range Dispersal of a Red-cockaded Woodpecker

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The Red-cockaded Woodpecker (*Picoides borealis*) is a federally listed endangered species of limited distribution in Arkansas (James et al., 1981; James and Neal, 1986, 1989) and Oklahoma (Masters et al., 1989). The two populations represented in the shortleaf pine (*Pinus echinata*) forests of the Ouachita Highlands are the Ouachita National Forest (Ouachita NF) population (Neal and Montague, 1991) and the McCurtain County Wilderness Area (McCurtain CWA) population which is managed by the Oklahoma Department of Wildlife Conservation (ODWC, 1991; Kelley et al., 1993). Banding activities necessary to provide information about movements of individual *P. borealis* and relationships between individual *P. borealis* or groups of *P. borealis* began in 1990 on the Ouachita NF and in 1992 in the McCurtain CWA.

A female *P. borealis* was banded as a nestling with a numbered metal band on 14 May 1992 at cluster #109 in the McCurtain CWA. This site (34°18.33'N, 94°42.53'W) is 17.7 km south of Watson, Oklahoma. This woodpecker was recaptured and plastic colored leg bands were attached on 5 November 1992. The 5 November 1992 recapture data was the last time the bird was observed at her natal cavity tree cluster. On 20 August 1993 during routine monitoring activities in compartment 1261/stand 8 (34°48.33'N, 94°10.88'W) of the Ouachita NF, we captured this 15 month-old female where she roosted in a cavity tree cluster with another *P. borealis* pair. She was subsequently observed on 22 November 1993 at a previously inactive cavity tree cluster in compartment 1261/stand 7 (34°48.25'N, 94°11.44'W) 0.9 km northwest of this pair. Extensive resin well work on her roost cavity tree suggested that she had moved into this previously inactive cavity tree cluster well before her presence was detected. This discovery documents a dispersal of 73.6 km for this bird (Fig. 1). All site locations were determined using the global positioning system with an accuracy of +/- 100 m. Sometime prior to 29 December 1993, the female from McCurtain County, Oklahoma, was joined by a male *P. borealis*, which had been released at a site 2.4 km west of this cavity tree cluster on 17 November 1993. He had been captured on the Kisatchie National Forest in Louisiana and was translocated as part of a two-bird group-reinitiation attempt (Montague, unpubl.). This newly formed pair remained together as

recently as 3 March 1994.

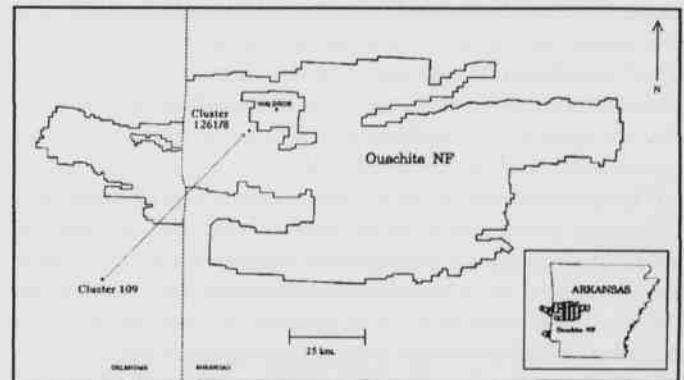


Fig. 1. Seventy-four km dispersal of *P. borealis* from McCurtain County, Oklahoma (cluster 109) to Scott County, Arkansas (Poteau Ranger District cluster 1261/8).

Long distance dispersals of *P. borealis* have been documented in other studies. Such distances include 30.1 km for a male in South Carolina (Jackson, 1990), approximately 80 km for a male in Texas (R.N. Conner, pers. comm.), and 90 km for a female in North Carolina (Walters et al., 1988). Walters (1991) reported maximum dispersal distances of 31.5 km for fledgling females, 21.1 km for fledgling males, and 17.1 km for helper males in the Sandhills of North Carolina. Lay (1973) reported a dispersal of 41.8 km by a helper male in Texas.

Ouachita NF dispersal distances from natal cavity tree clusters of 12.9 km and 15.3 km have been recorded for males, and 8 km, 15.3 km, and 20.2 km have been recorded for females (Ouachita NF unpubl. data). Also documented was a dispersal distance of 13.3 km by a 34-month-old female across the U.S. Highway 71 corridor near Waldron, Arkansas.

The *P. borealis* dispersals we describe here have significant biological and management implications. Dispersal information becomes critical to maintaining sufficient genetic variability within a population (Reed et al., 1988; Haig et al., 1993) and in determining effective population size (Reed et al., 1993). Population viability assessments

of either the Ouachita NF or McCurtain CWA subpopulations necessitate consideration of gene flows from neighboring subpopulations when evaluating potential losses of genetic variability (Reed et al., 1993).

Translocation of individual *P. borealis* identified as surplus to the reproductive needs of their groups of origin is one technique recommended to expedite population growth and to foster increasing genetic variability (Stangel et al., 1992; Haig et al., 1993). Translocations typically involve juvenile females, or juvenile males when at least one helper male would remain with the breeding pair. Such translocations may take place in one of two forms: first, as single-bird augmentations, when single surplus males or females are moved to a cluster with an already established individual of the opposite sex; second, as two-bird group-reinforcements in which male/female pairs of surplus individuals are moved to suitable, unoccupied habitat (Allen et al., 1993).

The occurrence of long distance, natural dispersals of *P. borealis* should help allay fears about the wisdom of future translocations. In this case opportunities to translocate *P. borealis* between the Ouachita NF and McCurtain CWA subpopulations should become a high priority for cooperation between the administering agencies.

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