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# Reciprocal Translocation Reestablishes Breeding Status of Mississippi Alluvial Plain Population of Red-cockaded Woodpeckers in Arkansas

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The Red-cockaded Woodpecker (*Picoides borealis*) is a federally listed endangered bird species endemic to the southeastern United States. A habitat specialist that occurs only in mature, open pine woodlands, this species has declined drastically due to loss of habitat. This loss of habitat has been caused by suppression of fire that increases woody encroachment of hardwood trees, logging practices that reduce or eliminate mature pines, and land conversion resulting in habitat loss and/or fragmentation (Conner et al., 2001). A cooperative breeder, Red-cockaded Woodpecker breeding groups have plummeted by 97% following European settlement (U.S. Fish and Wildlife Service, 2000).

In Arkansas Red-cockaded Woodpeckers historically occurred throughout much of the state, with populations in the Upper West Gulf Coastal Plain, Ouachita Mountains (OM), Mississippi Alluvial Plain (MAP), and eastern portions of the Ozark Mountains (James and Neal, 1986). Intensive logging in the Ozarks likely caused the extirpation of this species from that region by the early 1900s (James and Neal, 1986; Smith and Neal, 1991). In addition, large-scale land conversion, primarily for agricultural production, has all but eliminated Red-cockaded Woodpecker habitat in the MAP (Burnside, 1983; James and Neal, 1986).

This loss of habitat nearly resulted in the extirpation of the MAP Red-cockaded Woodpecker population. Indeed, by 2000 the entire MAP population was reduced to one breeding group located at the Pine City Natural Area (PCNA) in southern Monroe County (Arkansas Natural Heritage Commission, 2001). The PCNA, currently 180 ha, supports the largest remaining remnant of high quality loblolly pine (*Pinus taeda*) forest stands remaining in the MAP. Prior to settlement, there were approximately 1,295 sq km, mostly in Monroe County, that supported extensive stands of loblolly pine forests (Sargent, 1884). There are now likely fewer than 4.05 sq km of high quality loblolly pine forests remaining in the MAP, mostly in small, highly-fragmented tracts (Tom Foti, pers. comm.).

By 2001 the breeding female of the PCNA group had vanished and the only remaining female (hatched in summer of 2000) was an offspring of the breeding male. Because males will not pair bond with their offspring, this

group became nonviable as a breeding group. Without human intervention it was likely that this breeding group, and therefore the entire MAP population, would have become extirpated. Therefore on 13 September 2001, a reciprocal augmentation was completed using a 4-month-old female from the OM population, which was swapped with the 16-month-old female from PCNA. Both females were trapped, transported, and released using translocation methods established by DeFazio et al. (1987). All birds were color banded to aid subsequent identification of each individual.

The female translocated to PCNA in September 2001 successfully bred in 2002, producing two offspring. These two offspring were still using the PCNA cavity tree cluster in March of 2003. A cavity tree cluster is an aggregation of trees with cavities previously and currently used and defended by Red-cockaded Woodpeckers for the purpose of roosting and nesting (U.S. Fish and Wildlife Service, 2000). The female moved to the OM also successfully bred in that population. Thus, this reciprocal translocation of Red-cockaded Woodpeckers reestablished the single remaining group of the MAP population as a viable breeding unit and also contributed to recovery efforts for the OM population.

Though the breeding status of the MAP population has been reestablished successfully, the continued persistence of this population is precarious and will require additional conservation measures. To establish a new cavity tree cluster, artificial cavity inserts were placed in five trees at PCNA on 18 September 2002 following methods established by Allen (1991). This new cluster, located approximately 1.9 km west of the reestablished breeding group, was created to support a second breeding group. On 27 March 2003 a second reciprocal augmentation was completed using a 10-month-old female and 10-month-old male from the OM population, which were swapped for a 10-month-old female from PCNA. The pair from the OM was released in the new cluster with the hope that they will accept this site and breed there. The male from the OM was an offspring of the female that had been translocated to the OM from PCNA in 2001.

In addition, ANHC is negotiating to acquire land

adjacent to or nearby PCNA to increase the overall amount of available habitat under protection and management. Once the property is acquired, habitat restoration such as prescribed burning and planting of native loblolly pine will be conducted to create suitable Red-cockaded Woodpecker foraging and breeding habitat (U.S. Fish and Wildlife Service, 2000).

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