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Status of the Red-cockaded Woodpecker At the Felsenthal National Wildlife Refuge in Arkansas

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ABSTRACT

The Red-cockaded Woodpecker is an endangered species that is endemic to mature pine forests of the southeastern United States. In Arkansas it presently occurs only in pinelands of the Ouachita Province and Gulf Coastal Plain. Cavity trees for nesting and roosting must be mature pines diseased with red-heart fungus. Due to recent forestry practices mature pine stands are disappearing thus reducing numbers of needed cavity trees. The Felsenthal National Wildlife Refuge in southeastern Arkansas contains high densities of Red-cockaded Woodpeckers and because of favorable management priorities there the survival of the woodpecker seems assured. Populations of the species in other areas in southern Arkansas undoubtedly will decline.

INTRODUCTION

The Red-cockaded Woodpecker (*Picoides borealis*) inhabits southeastern pine forests and due to its status has been designated an endangered species by the United States Fish and Wildlife Service (U.S. Dept. Interior, 1973). In Arkansas, the Red-cockaded Woodpecker originally occurred as far north as the Ozark Province (Howell, 1911) but now is limited to the pine forests of the Ouachita Province and the West Gulf Coastal Plain (Jackson, 1971) as shown in Figure 1. Highest concentrations of the woodpecker occur in the pinelands of the southeastern part of the state.

Figure 1 shows a preliminary appraisal of the present county occurrences of the Red-cockaded Woodpeckers in Arkansas. It represents the findings of an ongoing comprehensive survey to determine the distribution of the woodpecker. Information concerning locations of cavity trees of the Red-cockaded Woodpeckers were received from timber companies, state and federal agencies, and several individuals in Arkansas.

The critical habitat factors of the Red-cockaded Woodpecker include adequate cavity trees for nesting and roosting and suitable forest conditions in the home range of the bird. The cavity trees must be live mature pine trees generally averaging 75 years in age or older with red-heart fungus (*Fomes pini*) present in the heart wood (Jackson, 1977a). Due to intensive forest management by wood products companies, mature stands of southern pines are diminishing thus reducing the availability of adequate cavity trees in the range of the woodpecker (Thompson, 1976). These and other practices account for the present endangered status of the Red-cockaded Woodpecker.

Similarly, timber management practices in pinelands in Arkansas are causing a reduction of suitable habitat, especially the availability of mature trees for roosting and nesting. In fact the federal endangered species statutes do not pertain to private holdings. Therefore, even in present centers of distribution, the future of the Red-cockaded Woodpecker on private lands is not bright. However, the federal statutes state that endangered species will be protected and encouraged on federal lands and projects. Thus it is fortunate that a new federal refuge, the Felsenthal National Wildlife Refuge, has been established in southeastern Arkansas. It is equally fortunate that the Red-cockaded Woodpecker is abundant in the pine lands on the refuge. The future existence of the Red-cockaded Woodpecker in southern Arkansas would seem to depend upon the continued presence of the refuge.

FELSENTHAL NATIONAL WILDLIFE REFUGE

The Felsenthal National Wildlife Refuge is located on the forested Gulf Coastal Plain along the Ouachita and Saline Rivers comprising

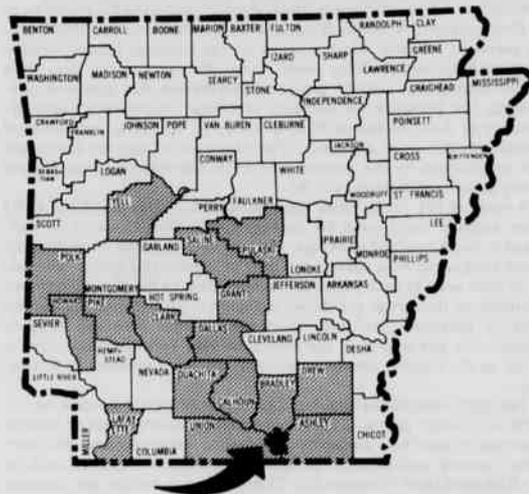


Figure 1. Counties in Arkansas (diagonal lines) where the Red-cockaded Woodpecker recently has been reported. The arrow indicates the location (in black) of the Felsenthal National Wildlife Refuge.

parts of Union, Ashley and Bradley Counties in southeastern Arkansas. It lies within the Felsenthal Basin, a natural physiographic depression that once was a large lake extending southward to the site of Monroe, Louisiana. The refuge area totals 64,975 acres of which 9,482 are pine forests, mainly loblolly pines (*Pinus taeda*) with a scattering of shortleaf pines (*Pinus echinata*). The remaining refuge acreage is primarily various types of hardwood forests (50,493 acres) but also fields (271 acres) and open water (5,000 acres) in the form of an intricate system of rivers, creeks, sloughs, bayous and lakes.

The pineland habitat utilized by Red-cockaded Woodpeckers occurs on terrain that is higher than the 72 foot contour above mean sea level. This elevation is above the level of the river floodplain and is not subject to frequent flooding.

Federal land acquisition for the Felsenthal National Wildlife Refuge began in the early 1970s. It is an enhancement development in conjunction with the Ouachita and Black Rivers navigational pro-

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ject. A lock and dam facility on the Ouachita River is included that will create a permanent navigational pool in the refuge totalling 15,752 acres at the 65 foot contour line, and a seasonal waterfowl pool totalling 37,686 acres of inundated land to the 70 foot contour level. The refuge lands were acquired from timber companies, private corporations, the State of Arkansas, and private landowners.

RED-COCKADED WOODPECKER POPULATIONS

Before refuge land acquisition began, pine timber was managed by private timber companies for use in production of forest products. Some of the silvicultural practices resulted in mature pine forests with habitat suitable for the Red-cockaded Woodpecker. During federal land acquisition, provisions were made permitting timber companies to harvest 50 percent of all standing timber on their lands. Under these provisions merchantable timber was harvested in alternating 40-acre blocks and understory trees were left. Special efforts were made to locate and mark all cavity trees of Red-cockaded Woodpeckers in timber harvest areas. Care was taken to insure that these cavity trees were left standing following timber harvest activities.

Only the pinelands where refuge personnel have been active during preliminary refuge developmental activities, or areas where timber harvest has occurred, have been thoroughly searched for cavity trees of Red-cockaded Woodpeckers. A considerable area still remains to be surveyed. A map was prepared by the resident refuge forester showing locations of cavity trees. Using this map, cavity sites were visited during the present project. Information was gathered concerning the presence or absence of recent woodpecker activity, number of Red-cockaded Woodpeckers in the area, and general habitat conditions at each site. The existence of current cavity use was determined by the presence of fresh cambial peckings around cavity openings (Jackson, 1977b).

A total of 101 cavity trees were inspected. Of these, 42 (or 42%) were actively being used by Red-cockaded Woodpeckers as indicated by fresh cambial peckings. Only 15 birds actually were seen because they occur near cavity sites only at sunrise and sunset, and few birds were seen at cavity sites through the rest of the day. Cavity tree locations on the refuge are shown in Figure 2. Considering the limited area of pineland available on the Felsenthal National Wildlife Refuge, the population of the Red-cockaded Woodpeckers there is dense as the highest densities presently known elsewhere in Arkansas.

The legal obligations stipulated in the Endangered Species Act of 1973 (U.S. Dept. Interior, 1973) and its amendments direct all federal agencies to use their authority to promote programs that will preserve, restore and enhance designated endangered species such as the Red-cockaded Woodpecker. These agencies further are directed not to adopt policies that will jeopardize the existence of an endangered species nor destroy or modify critical habitats for such species. Therefore, the management of pinelands needed for the Red-cockaded Woodpecker at the Felsenthal National Wildlife Refuge will receive priority over all other considerations.

MANAGEMENT RECOMMENDATIONS

As stated previously, the future of the Red-cockaded Woodpecker in southern Arkansas is uncertain due to recent forestry practices. Therefore, in areas where the bird can receive priority attention, forest management for the woodpecker should be carefully applied. We recommend that this management policy include the following:

1. Annual surveys should be conducted to locate new cavity trees and to determine the status of cavity trees found previously. Special efforts should be made in areas designated for timber harvest.
2. The surveys should employ the standard procedure for determining if cavities are actively in use by Red-cockaded Woodpeckers.

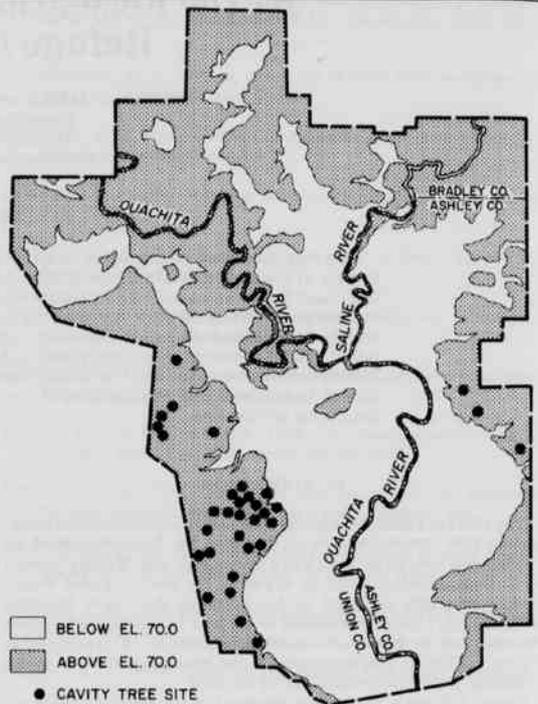


Figure 2. Felsenthal National Wildlife Refuge showing land elevations and cavity tree sites of the Red-cockaded Woodpecker. Pinelands occur in the upland areas (stippled).

3. To avoid harvest of cavity trees, such trees should be marked conspicuously with a broad ring of bright color. Dead cavity trees should not be harvested for several years to permit excavation of new cavities by resident woodpeckers.
4. Timber harvest operations should be terminated during the breeding season of the Red-cockaded Woodpecker. This applies to any area being managed for the species.
5. Pineland management units should be at least 200 acres to conform to the known home range size of the woodpeckers.
6. To insure an available supply of large trees for cavity construction, a 100-year cutting rotation of pines should be employed.
7. Timber cutting plans should be adopted that result in all age timber stands in woodpecker home ranges. If total harvesting of tracts of timber is unavoidable, the areas of harvest should be small, 30 acres or less, and adapted to the physiographic contours of the area resulting in long narrow patches, not circular or square ones.
8. Cavity trees should be isolated in the center of 12-acre plots in which selective cutting should be practiced, and where hardwood understory should be controlled. Ground litter should be removed from the bases of cavity trees before controlled burning to lessen the chance of igniting the cavity trees.
9. Timber cutting patterns should be designated so as not to force two clans to use the same foraging area. Thus each woodpecker clan should have its own 200-acre management unit.
10. To keep understory low and foraging space optimal, a 3 to 4 year cycle of controlled burning should be employed in woodpecker territories.

11. Since most of the information concerning proper management was obtained elsewhere, studies of the Red-cockaded Woodpecker should be made at the Felsenthal National Wildlife Refuge to determine if special management policies are needed there. This pertains particularly to studies of home range size and habitat preference.

ACKNOWLEDGEMENTS

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LITERATURE CITED

- HOWELL, A. H. 1911. Birds of Arkansas. Gov. Printing Office, Wash., D.C., pp. 1-100.
- JACKSON, J. A. 1971. The evolution, taxonomy, distribution, past populations and current status of the Red-cockaded Woodpecker. IN: *The Ecology and Management of the Red-cockaded Woodpecker*, R. L. Thompson, Editor. Proceeding of a Symposium on the Red-cockaded Woodpecker. Bur. Sport Fisheries and Wildl., U.S.D.I. and Tall Timbers Research Station, Tallahassee, Fl., pp. 4-29.
- JACKSON, J. A. 1977a. Red-cockaded Woodpeckers and pine red heart disease. *Auk* 94:160-163.
- JACKSON, J. A. 1977b. Determination of the status of Red-cockaded Woodpecker colonies. *J. Wildlf. Mgmt.* 41:448-452.
- THOMPSON, R. L. 1976. Change in status of Red-cockaded Woodpecker colonies. *Wilson Bull.* 88:491-492.
- U. S. DEPARTMENT OF THE INTERIOR. 1973. Threatened wildlife of the United States. Bur. Sport Fisheries and Wildl., Resource Publ. no. 114, pp. 1-289.