1989

Red-cockaded Woodpecker Investigations

D. S. Bradshaw
The Center for Conservation Biology

PERFORMANCE REPORT

STATE: VIRGINIA

PROJECT TITLE: NONGAME AND ENDANGERED WILDLIFE INVESTIGATIONS

PROJECT NO: EW-2-1

STUDY TITLE: RED-COCKADED WOODPECKER INVESTIGATIONS

STUDY NO: XIV

JOB TITLE: DEVELOPMENT OF A LAND MANAGEMENT STRATEGY FOR THE CONSERVATION OF THE RED-COCKADED WOODPECKER IN VIRGINIA

JOB NO: XIV:A-C

PERIOD COVERED: JULY 1, 1988 - June 30, 1989

JOB XIV-A OBJECTIVE: Develop a management system from an economic viewpoint and compare the system with the managment plan recommended for the protection of this species.

JOB XIV-B OBJECTIVE: Map and permanently label all cavity trees in active clan sites.

JOB XIV-C OBJECTIVE: Define the essential habitat parameters for the red-cockaded woodpecker in Virginia.

SUMMARY: Prior to the onset of breeding season in 1989 there were 14 adult red-cockaded woodpeckers accounted for in Virginia. Even though two colonies were known to produce young in 1989 a post-breeding survey located only 12 birds total.

The primary landowner of five of the six active sites began work on a comprehensive management plan for these sites with the assistance of private consultants and the Game Department. The landowner of the remaining woodpecker site invited the Department to assist in the surveys and long-term management of this sixth site.

JOB XIV-A - Develop a management system from an economic view-point and compare the system with the management plan recommended for the protection of this species.

In March of 1988 a management plan proposal was submitted to the principal landowner of five active red-cockaded woodpecker sites in Sussex County. This plan was a composite of several years of field work and literature review by Game Department and contract personnel on the actual woodpecker sites that were being addressed. This initial plan was subsequently reviewed and modified for general use in November 1988 by the U.S. Fish and Wildlife Service (Service), in conjunction with VDGIF and Department contract personnel for red-cockaded woodpecker research. A final draft incorporating relevant comments from all involved parties was compiled by the Service and made availabe in January 1989. Guidelines set forth in this document have been adopted by the Game Department and now serve as official Department recommendations for red-cockaded woodpecker management in Virginia. The guidelines are presented in Appendix A following this report.

Concurrently with the review of the Department's recommendations, the principal red-cockaded woodpecker landowners hired a private consultant to generate their own management plan. This approach involved a field crew which surveyed each individual site and assessed the area based on habitat quality, quantity, and status of resident woodpeckers. Each site was to be mapped and labelled for adherence to future timber management guidelines. The management plan derived from this fieldwork was presented to the Department at the end of this reporting period. No data are available from this report at the present time.

The landowners for the single remaining red-cockaded woodpecker site in Virginia enlisted the aid of the Game Department to survey their property for red-cockadeds prior to the scheduling of a timber harvest. A superficial survey in late spring turned up a pair of birds that had not been recorded for several years. This discovery prompted both parties to evaluate the potential impacts of timber harvesting in this area. After several meetings it was agreed that timber harvesting would be postponed for one year, during which time a thorough survey would be done to establish the size of the resident red-cockaded woodpecker population and evaluate the habitat needs of these birds. At the end of one year a long-term management plan would be negotiated to provide future recommendations for the protection of these birds.

JOB XIV-B - Map and permanently label all cavity trees in active clan sites.

A permanent labeling scheme for red-cockaded cavity trees was initiated in Virginia as part of the product of the hired conultant's fieldwork for the principal woodpecker landowner. The consultant implemented a marking techique used widely in the South that involves two painted lines around the trunk of the tree to indicate status of use. The lines can then routinely be painted over to indicate a change in tree status as needed. Usually, a number or other symbol is painted below the lines to distinguish an individual tree from other similarly marked trees. The painted lines are interpreted as follows:

Two white bands - Tree believed to be actively maintained as indicated by fresh pitch flow, recently maintained pitch wells, recent plate maintenance, recent bark scaling resulting in reddish appearance of the trunk.

One white band above one white band with yellow stripes - A start tree with the wood inside of the start hole being a bright yellow color. There may or may not be fresh pitch flow from the hole.

One white band over one yellow band - Tree appears to have been recently abandoned but it could be reoccupied in the near future. No fresh pitch flow present. Old pitch is still white. No sign of recent maintenance. The tree may also be an old start that shows no recent excavation effort.

Two yellow stripes - Tree appears to have been abandoned for a long time. Essentially all of the pitch looks dry and is yellow in color. These trees quite often show signs of extreme cavity enlargement as a result of competing woodpecker species.

The Game Department recognizes the value in this marking technique and will adopt it for future use where permission is granted. At the remaining woodpecker site, where Department personnel were invited to survey, a nest tree was eventually discovered with at least two young present. Unfortunatley, both the nest tree and the remaining roost tree were being regularly enlarged by pileated woodpeckers. In a trial attempt for Virginia, Game Department personnel placed cavity restrictors around each cavity in an effort to limit the continuing enlargement of the cavities. Although the birds eventually abandoned the site, this effort was viewed as somewhat successful in that they readily accepted the artificial structures around the cavities. Also, abandonment did not occur until after the young had fledged.

JOB XIV-C - Define the essential habitat parameters for the red-cockaded woodpecker in Virginia.

Department personnel provided assistance to the hired consultant during the location and assessment of the various woodpecker colonies and habitats. In the course of this fieldwork, several new cavity trees and one new clan site was discovered. However, even with these encouraging signs, the population seems to be hovering ever closer to the brink of extinction in Virginia. Monthly surveys were not conducted throughout the study period due to the previous year's unfortunate reduction in research personnel. However, surveys conducted just prior to, during, and one month after breeding season did not reflect favorable results. Results are presented in Table 1.

Table 1 - Red-cockaded Woodpecker Status and Productivity - 1989

SITE #	TOPO QUAD	LOCATION	MAY SURVEY	YOUNG PROD.	JUNE TOTALS
1	MANRY	Rt. 460	1	0	1
2	MANRY	604/606	3	?	2
3	SEBRELL	608	3	?	2
4	YALE	635	2	2	2
5	SUSSEX	Rt. 40	3	?	2
6	MANRY	620/622 NW	2	2	2
1989 TOTALS -			14	4	11

Cavity trees were not climbed to assess productivity this year. However active nest trees are usually conspicuous enough to determine if a cavity is in use for brood rearing purposes. Sites 4 and 6 were found to have active nest trees in which at least two young were distinctly heard food-begging. Surprisingly, not one of the clan sites with 3 adults present yielded an active nest tree that this researcher could ascertain. All known cavity trees were monitored and each entire clan site was under observation for several hours on different occasions when attentive parents would be readily seen or heard. Even more disturbing

was the finding that each of these sites that began with 3 birds at the start of breeding season had dropped to 2 individuals by the end of June. In addition, none of the young known to have been produced at the other sites could be accounted for one month after the estimated fledging date.

In an effort to understand more about the population dynamics of these local colonies, Game Department personnel will investigate the feasibility of a red-cockaded woodpecker banding project for the coming year. It is becoming increasingly important to know the sex and ages of these birds where possible if management plans are going to try to address the long-term needs of this species.

TARGET DATE FOR COMPLETION: Project Continuing

STATUS OF PROGRESS: Progress is on schedule now that tangible management plans are present and approaching implementation.

SIGNIFICANT DEVIATIONS IN PROGRESS: Inadequate monitoring of active sites may have compromised baseline data for plan implementation.

RECOMMENDATIONS: Pursue implementation of management plans. Coordinate equitable long-term strategies for all landowners involved.

COST THIS SEGMENT: Federal $15,779 State $4,371 Total $20,150

PREPARED BY: Dana Bradshaw

APPROVED BY: Jack W. Raybourne
Director, Wildlife Div

Robert W. Duncan
P.R. Coordinator

APPENDIX A

Recommendations for Red-cockaded Woodpecker Management in Virginia

Identification and Monitoring of Active Colony Sites

- Location and boundaries of active colony sites should be delineated on USGS quad maps, recent aerial photographs, and timber stand record maps. Current copies of these maps and photos should be maintained in the files of the property owner, the Department of Game and Inland Fisheries (VDGIF), and the U.S. Fish and Wildlife Service, Gloucester Field Office (USFWS).

- External boundaries of colony sites should be marked with signs, paint, or other permanent markers. The boundary markers should be maintained and/or re-aligned as necessary.

- Cavity trees should be marked with individual identification plates or aluminum tags. To the extent possible, the number and location of marked trees should be designated on the colony site maps and photos.

- Each clan should be monitored on an annual basis to determine clan activity, composition (i.e. breeding pair or single adult, number of helpers), and reproductive success.

- Aerial photos should be taken to document habitat conditions prior to plan implementation and after each substantial habitat modification.

Colony Site Management

- The defined colony site should encompass all active and adjacent abandoned cavity trees, as well as all adjacent starts, and should include a 200 ft wide buffer around this aggregate of cavity trees.

- Initially reduce hardwood stocking within the colony site to less than 20 sq.ft./acre basal area through mechanical thinning, herbicidal treatment, or controlled burning. Of highest priority is the removal of all woody stems greater than one inch DBH located

within 50 feet of an active cavity tree. Snags should be retained, but crowns that may block cavities should be removed. Perform control activities ouside the nesting season (i.e. no work between March 1 and July 31).

- Thereafter maintain hardwood stocking at less than 20 sq.ft./acre basal area, and limit fuel accumulation, through a regular controlled burning program conducted at three year intervals. Initial burns may require special protective measures suggested by Connor and Locke (1979) and Stamps et al. (1983). Subsequent burns will still require raking of fuel from around the base of cavity trees. Burning should be performed outside the nesting season and should be conducted only by experienced personnel. A burning schedule and standard operating procedures should be included in the colony site management plan.

- Maintain a spacing of 20 to 25 feet between trees within colony sites to minimize the potential for southern bark beetle infestation and spread. Exercise particular care in cutting and removing any merchantable timber to avoid damage to remaining trees

- If not provided by the thinnings for hardwood control and spacing, additional thinning should be conducted to limit colony site stocking to no more than 90 sq.ft./acre BA.

Replacement Stand Management

- Replacement stands should be at least 10 acres in size, should be located within one-half mile of the target active colony (the closer the better), and should be connected to the colony site by a band of contiguous foraging habitat.

- Designated replacement stands should be mapped on timber stand maps and standard USGS quad maps, as well as located on recent aerial photographs. Copies of these maps and photographs should be maintained in the files of the property owner, VDGIF, and USFWS.

- Replacement stands should be managed (i.e. burned, thinned) in the same manner and with the same objectives as active colony sites.

- Replacement stands should consist of pine or mixed pine-hardwood stands with pines comprising at least 70 percent of the basal area and averaging at least 60 years of age.

- If a replacement stand is occupied due to movement of a clan from a previously active colony site, or if the replacement stand is lost due to fire, disease, or insect damage, a new replacement stand should be identified, mapped, and managed in a like fashion.

- Alternate replacement stands should be identified and brought into management if current replacement stands approach the age of senescence and decline (approximately 150 to 170 yrs for loblolly).

Foraging Habitat

- Preferred scenario would be to designate as foraging habitat 200 acres of pine or mixed pine-hardwood (at least 50% BA in pine) contiguous with the colony site and replacement stand. This foraging habitat should be managed on at least an 80 year rotation, with 125 acres or more being at least 30 years of age and 75 acres or more being at least 60 years of age at any one point in time. The 200 contiguous acres should not extend more than 0.5 mile away from the colony site. Foraging habitat should be stocked at 60 to 90 sq.ft./acre BA and should contain at least 24 pines per acre with a DBH of 10 inches or more.

- Alternative proposals should be evaluated against the standard of providing 21,250 pine stems with a total BA of 8,490 sq. ft. and 6,350 pine stems at least 10 inches DBH. The judgement on equivalent acreage should be based on the foraging habitat requirement (stem density, total basal area, or density of large stems) most lacking in Virginia red-cockaded woodpecker habitats.

- Seed tree or shelterwood regeneration systems preferred throughout, and should be required for cuts adjacent to the colony site.

- Stand boundaries, cutting schedules, site preparation, and regeneration techniques should be specified in the RCW management plan. Foraging habitat and stand boundaries should be delineated on timber stand maps, standard USGS quads, and recent aerial photos.

- Thinning operations to remove merchantable pulpwood and maintain required species composition and stocking levels may be both economic and necessary to maintain habitat quality. Additional mechanical thinning, herbicidal treatment, or controlled burning may be necessary to control hardwood encroachment or reduce fuel accumulation.

Southern Pine Beetle Control Measures

- In the event that southern pine beetles infest designated colony sites, replacement stands, or foraging habitat, the property owner should consult with VDGIF and/or USFWS biologists to determine a response consistent with the following general guidelines:

  a) Protection of active colony sites should be afforded the highest priority when designing and implementing southern pine beetle control activities.

  b) Chemical treatment should only be used as a last resort. In no case should standing trees in or near the colony be chemically treated.

  c) Trees vacated by southern pine beetle should not be cut or chemically treated.

  d) Inactive or relict cavity trees, if infested or within a designated treatment buffer zone, may be cut to protect a RCW colony from further infestation provided that the cutting is reviewed and approved by a qualified biologist.

  e) Uninfested trees within the colony should not be cut unless necessary to prevent infestation of active cavity trees.

  f) Disturbance in the colony site should be kept to a minimum, particularly during the nesting season. Control activities between March 1 to July 31 should be limited to the felling of trees and/or chemical treatment necessary to protect the colony site. Salvage operations should be conducted only during the period from August 1 through February 28.

Literature Cited

Connor, R.N. and B.A. Locke. 1979. Effects of a prescribed burn on cavity trees of red-cockaded woodpeckers. Wildlife Soc. Bull. 7(4):291-293.

Stamps, R.T., J.H. Carter III, T.L. Sharpe, P.D. Doerr, and N.J. Lantz. 1983. Effects of prescribed burning on red-cockaded woodpecker colonies during the breeding season in North Carolina. Pp. 78-80 in Proc. Red-cockaded Woodpecker Symp. II (D.A. Wood, ed.), Florida Game and Freshwater Fish Comm. and U.S. fish and Wildlife Service.