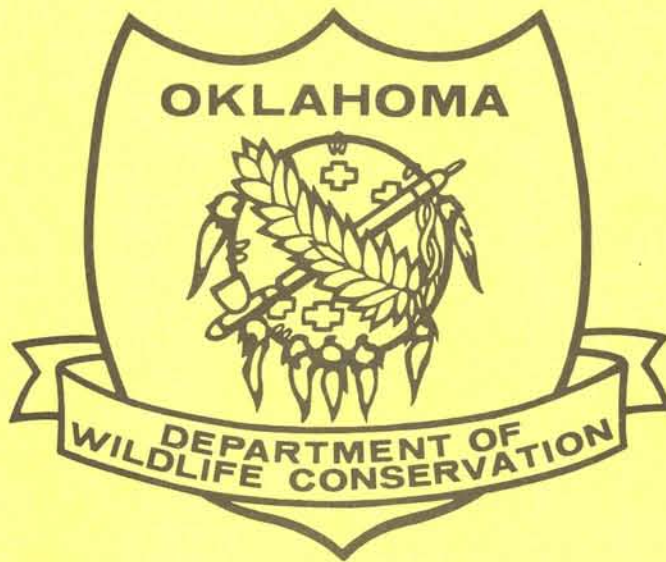


PERFORMANCE REPORT

SECTION 6

ENDANGERED SPECIES ACT



FEDERAL AID PROJECT E-21-4

Red-cockaded Woodpecker (Picoides borealis) Recovery  
on the McCurtain County Wilderness Area (MCWA)

MARCH 1, 1995 - FEBRUARY 29, 1996

## ANNUAL PERFORMANCE REPORT

State: Oklahoma

Project No: E-21-4

**PROJECT TITLE:** Red-cockaded woodpecker (RCW) (*Picoides borealis*) recovery on the McCurtain County Wilderness Area (MCWA)

**I. PROGRAM NARRATIVE OBJECTIVE**

Recover the RCW population on the MCWA to 45 active clusters by implementing procedures outlined in the MCWA Implementation Plan

**II. JOB PROCEDURES****1. Monitoring**

- a. Locate, tag, and map new cavity trees within 300 yards of active clusters.
- b. Determine the status of each cavity tree and cluster, especially during the nesting period.
- c. Band adult and nestlings to obtain data on production, dispersal, and mortality and to aid in identifying single bird clans that would benefit from augmentation.

**2. Cluster Stand Management**

- a. Reduce hardwood midstory and understory trees within 10 acre blocks adjacent to active clusters.
- b. Control the hardwood midstory within clusters by cutting and fire (controlled burns will be done under the Wildlife Restoration Act).

**3. Recruitment Stand Management**

Identify, mark, and control hardwoods within blocks of suitable habitat within 1/2 mile of active clusters.

**4. Corridors**

When needed and feasible, maintain or develop corridors among clusters and recruitment stands.

## 5. Restrictors and Predator Guards

- a. Place restrictors on RCW cavities to prevent enlargement by other woodpeckers and rehabilitate enlarged cavities.
- b. Install predator guards on all active cavity trees.
- c. Place squirrel guards on trees where flying squirrels have taken over cavities.

## 6. Artificial Cavities

Install cavity inserts in active clusters to provide at least 5 usable cavities at each site. Install 3 inserts at recruitment sites. When inserts at recruitment stands are activated, install 2 additional inserts.

## 7. Augmentation

Identify single male clans and move subadult females to the sites.

## III. SUMMARY OF PROGRESS

### 1. Clusters

The number of active clusters increased from 9 to 10 during the reporting period (Table 1.). The new cluster resulted from the activation of an insert tree at R2 by a juvenile male released at R6. However, this cluster and cluster 16 each contained only a single bird.

### 2. Cavity Trees

The status of each cavity tree within active clusters was monitored throughout the year. During the spring nesting period monitoring occurred weekly. During the remainder of the year, the monitoring interval was approximately 4 to 5 weeks. If a cavity appeared inactive, the cavity was inspected for the presence of flying squirrels or other problems. During the year 3 new cavities were located. One natural cavity tree (at 105) was lost due to wind breakage.

Seventeen natural cavity trees were active as of February 1, 1996 (Table 1.). In addition to the 17 natural cavity trees, 9 inserts were active.

### 3. Restrictors and Predator Guards

During the project, 31 of the 32 natural cavities have been restricted and 10 squirrel guards (on natural and insert trees) installed in active clusters (Table 1.). When restricted, active

cavities were observed until the RCW entered. During cavity checks, restrictors were routinely adjusted as needed to prevent larger woodpeckers from entering.

#### 4. Population

During the 1995 nesting period, 5 nests (Table 2.) were located. At these nests, 20 eggs were laid, 11 hatched, and 10 nestlings were banded (left leg). Nests were rechecked 2 days subsequent to banding to assure that the procedure had not induced injury or mortality. All banded nestlings were active and unharmed.

The number of RCW's fledged in 1994 was 10. This number was estimated by checking the nests 1 week prior to the fledging date and confirmed by observing the juveniles in the clusters following fledging. Four of the 10 fledglings were recaptured and colored leg bands added.

#### 5. Stand Management

Hardwood sprouts were cut within 50 feet of all cavity trees at active clusters. Approximately 4,200 ac were burned in March 1995. Of this, 3345 ac were on the MCWA and 875 on adjacent Weyerhaeuser and U.S. Corps of Engineer's land.

No cavity trees were lost to southern pine beetles in 1995. Beetle infestations were scattered over the area and one insert tree at cluster 137 was infested. A relatively large beetle outbreak (approximately 10 acres) was located near R3. Cooperative monitoring of the southern pine beetle population with the Oklahoma Division of Forestry, completed in May, 1995, indicated that the beetle population was relatively low and the predator population high. Beetle monitoring will continue in 1996.

Comparisons of woody stem densities in Compartment 1 were made before burning (1990) and following winter burns in 1992 and 1995 (Tables 4, 5 and 6). These analyses indicated that mean hardwood stem densities in the less than 1 meter and the 1 to 3 meter height classes decreased significantly. Shortleaf pine stem densities in these height classes also decreased but not significantly.

#### 6. Artificial Cavities

During the project, 40 inserts have been installed at active clusters. Nine of these are currently active. Fifty eight inserts have been placed in 15 recruitment sites and inactive

clusters. Three to 4 additional recruitment stands will be developed in 1996 if suitable habitat in correct spacings to active clusters can be located.

#### **7. Corridors.**

No additional corridors were constructed during the period.

#### **8. Augmentation**

Two pairs of juvenile RCW's were moved from the Sam Houston NF, TX to the MCWA. The pairs were captured and transported and the release sites prepared according to the procedures outlined by Carrie (1993).

One pair was released at R3 and the other at R6 on the morning of December 1, 1995. Both pair foraged at their respective release site for more than 1 hour before moving off. No RCW's were observed at the site that evening or during subsequent monitoring. The male released at R6 was observed on February 20 at R2 where he had activated an insert. No juvenile female was available to move to this site from the population on the area or from populations in Texas or Louisiana. A juvenile male was released at cluster 16 (a single female cluster) on March 8, 1996.

#### **9. Other Activities**

No road or trail construction occurred on the area. Approximately 8 miles of interior roads were graded. One controlled deer hunt and one controlled turkey hunt were conducted. Monitoring of the clusters in the hunt areas indicated no adverse effects to the RCW's.

#### **IV CONCLUSIONS**

Monitoring of clusters will continue through out the year. If a single bird cluster is found, attempts will be made to move a surplus RCW from a donor population to the site. Establishment of new clusters by translocating juvenile RCW pairs from donor populations will also continue. Translocatons are important in maintaining and increasing not only the population's size but also its genetic diversity.

Although southern pine beetle activity at this time is low to moderate, plans and authority should be developed to deal with future significant outbreaks.

V. DEVIATIONS

None

VI. Prepared by: John Skeen

John Skeen, Biologist

VII. Date: February 24, 1995

VIII. Approved by: Harold E. Namminga

Harold E. Namminga,  
Federal Aid/ Research Coordinator

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Cluster	M	A	R	Total
101	0	0	0	0
102	2	1	0	3
103	1	0	0	1
104	3	4	0	7
105	1	0	0	1
106	4	5	1	10
107	3	2	0	5
108	2	0	0	2
109	1	0	0	1
110	0	0	0	0
111	0	0	0	0
112	0	0	0	0
113	0	0	0	0
114	0	0	0	0
115	0	0	0	0
116	0	0	0	0
117	0	0	0	0
118	0	0	0	0
119	0	0	0	0
120	0	0	0	0
121	0	0	0	0
122	0	0	0	0
123	0	0	0	0
124	0	0	0	0
125	0	0	0	0
126	0	0	0	0
127	0	0	0	0
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141	0	0	0	0
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191	0	0	0	0
192	0	0	0	0
193	0	0	0	0
194	0	0	0	0
195	0	0	0	0
196	0	0	0	0
197	0	0	0	0
198	0	0	0	0
199	0	0	0	0
200	0	0	0	0

M. Number of cavities  
 A. Number of active cavities  
 R. Number of restricted cavities

Table 1. Status of Cavities at Active Clusters

Cluster	Natural Cavities			Inserts		All Cavities	
	N	A	R	N	A	N	A
137	3	2	3	4	0	7	2
111	5	2	5	4	0	9	2
109	3	2	3	4	2	7	4
2	0	0	0	3	1	3	1
16	2	1	2	4	0	6	1
105	1	0	0	5	2	6	2
107	3	2	3	4	2	7	4
31	4	2	4	5	1	9	3
32	5	3	5	3	1	8	4
12	6	3	6	4	0	10	3
Total	32	17	31	40	9	72	26

N: Number of cavities

A: Number of active cavities

R: Number of restricted cavities

Table 2. Nesting and Fledging in 1995

Cluster	Nest Initiation*	No. Eggs	No Hatched	Nestlings Banded	Nestlings Fledged	Juveniles Banded**
137	-----	0	0	0	0	0
111	5/5	4	3	2	2	1
109	4/24	4	2	2	2	1
16	-----	0	0	0	0	0
105	5/1	4	2	2	2	1
107	-----	0	0	0	0	0
31	5/1	4	2	2	2	0
32	4/25	4	2	2	2	1
12	-----	0	0	0	0	0
Total		20	11	10	10	4

\*: Date eggs first observed

\*\* : Color banded



Table 3. RCW'S Translocated to MCWA During Segment

Band Number	Band Colors	Source	Age	Sex	Release Date	Release Site	Observations
8081-84405	BO MA	SHNF*	J	M	12/1/95	R3	1
8081-32493	MA BL	SHNF	J	F	12/1/95	R3	1
8081-32467	BY MA	SHNF	J	M	12/1/95	R6	1
8081-84430	MA BW	SHNF	J	F	12/1/95	R6	1 Using cavity at R2 2/20/96
8081-84427	YY MA	SHNF	J	M	3/8/96	16	2

\*: Sam Houston National Forest

1: Birds foraged at release site for over 1 hour

2: Bird left release site after 5 minutes

Table 4. Comparison of understory and midstory woody stem density (stems/ac) of stems less than 4.5 inches DBH following a winter burn in 1992 and 1995 on McCurtain County Wilderness Area Compartment 1.<sup>a</sup>

Height class <sup>b</sup>	YEAR						P > F
	1990		1992		1995		
	$\bar{X}$	SE	$\bar{X}$	SE	$\bar{X}$	SE	
<1 M	3171A	596	5375AB	888	5986B	1072	0.083
>1 M							
1-3 M	398A	114	319AB	118	54B	12	0.048
Suppressed	333	94	187	51	142	30	0.119
Intermediate	12	8	3	2	4	4	0.420
Total >1 M	742A	192	509AB	147	199B	37	0.045

<sup>a</sup>Column means with different letters were significantly different, those without letters were not statistically different. Based on Kruskal-Wallis test and LSD (Least Significant Difference) test at  $P = 0.10$ .

<sup>b</sup><1 M = between 0-1 M in height; 1-3 M = between 1-3 M in height; Suppressed = suppressed tree greater than 3 M in height but completely overtopped by upper canopy trees; Intermediate = intermediate tree with poorly developed crown that extends into lower portion of upper canopy.

Table 5. Comparison of midstory and overstory stem density (stems/ac) of stems greater than 4.5 inches DBH following a winter burn in 1992 and 1995 on McCurtain County Wilderness Area Compartment 1.<sup>a</sup>

Height class <sup>b</sup>	YEAR					
	1990		1992		1995	
	$\bar{x}$	SE	$\bar{x}$	SE	$\bar{x}$	SE
1-3 M	1.0	1.0	2.6	1.5	0.0	0.0
Suppressed	34.2	5.6	35.6	5.3	30.6	5.8
Intermediate	56.0	7.9	50.0	7.9	71.5	7.8
Codominant	37.3	4.1	35.3	3.8	38.3	3.0
Dominant	8.5	1.0	10.0	1.1	10.9	0.8
Total >1 M	136.0	10.1	133.3	10.1	151.3	10.7

<sup>a</sup>Column means with different letters were significantly different, those without letters were not statistically different. Based on Kruskal-Wallis test and LSD (Least Significant Difference) test at  $P = 0.10$ .

<sup>b</sup>1-3 M = between 1-3 M in height; Suppressed = suppressed tree greater than 3 M in height but completely overtopped by upper canopy trees; Intermediate = intermediate tree with poorly developed crown that extends into lower portion of upper canopy; Codominant = tree that is at average canopy height; Dominant = tree extends somewhat above average canopy height with larger spreading crown than most trees.

Table 6. Comparison of shortleaf pine understory and midstory stem density (stems/ac) of stems less than 4.5 inches DBH following a winter burn in 1992 and 1995 on McCurtain County Wilderness Area Compartment 1.<sup>a</sup>

Height class <sup>b</sup>	YEAR						P > F
	1990		1992		1995		
	$\bar{X}$	SE	$\bar{X}$	SE	$\bar{X}$	SE	
<1 M	219	92	143	52	185	93	0.803
>1 M							
1-3 M	54	30	38	21	7	5	0.315
Suppressed	64	31	33	15	27	15	0.439
Intermediate	4	4	1	1	0	0	0.461
Total >1 M	122	59	72	31	34	16	0.314

<sup>a</sup>Column means with different letters were significantly different, those without letters were not statistically different. Based on Kruskal-Wallis test and LSD (Least Significant Difference) test at  $P = 0.10$ .

<sup>b</sup><1 M = between 0-1 M in height; 1-3 M = between 1-3 M in height; Suppressed = suppressed tree greater than 3 M in height but completely overtopped by upper canopy trees; Intermediate = intermediate tree with poorly developed crown that extends into lower portion of upper canopy.



Table 1. Summary of the statistical analysis of the data. The analysis was conducted using the following statistical tests: ANOVA, t-test, and chi-square. The results are presented in the following table.

Variable	1977		1978		1979	
	Mean	SD	Mean	SD	Mean	SD
Variable 1	10.5	2.1	11.2	2.3	12.0	2.5
Variable 2	8.7	1.8	9.1	1.9	9.5	2.0
Variable 3	15.3	3.2	16.1	3.4	17.0	3.6
Variable 4	6.2	1.5	6.5	1.6	6.8	1.7
Variable 5	12.8	2.8	13.5	3.0	14.2	3.2

The results of the statistical analysis are summarized in the following table. The analysis was conducted using the following statistical tests: ANOVA, t-test, and chi-square. The results are presented in the following table.

