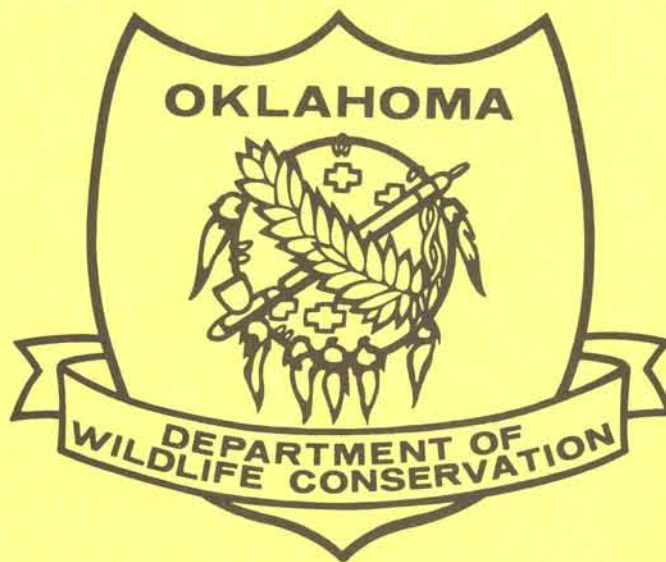


# PERFORMANCE REPORT

## SECTION 6

### ENDANGERED SPECIES ACT



### FEDERAL AID PROJECT E-21-2

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

MARCH 1, 1993 - FEBRUARY 28, 1994

**ANNUAL PERFORMANCE REPORT**

State: Oklahoma

Project No: E-21-2

**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 colonies 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 colonies.
- b. Determine the status of each cavity tree and colony, 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. Colony Stand Management**

- a. Reduce hardwood midstory and understory trees within 10 acre blocks adjacent to active colonies.
- b. Control the hardwood midstory within colonies 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 colonies.

**4. Corridors**

When needed and feasible, maintain or develop corridors among colonies 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 colonies 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. Colonies

The number of active colonies increased from 9 to 11 during the reporting period (Table 1). The 2 new colonies (31 and 105) were at abandoned sites at which inserts were installed and hardwoods controlled in 1992. Three of the 4 birds at these colonies were unbanded and may have moved from unlocated colonies.

### 2. Cavity Trees

The status of each cavity tree within active colonies was monitored throughout the year. During the spring and summer, the monitoring interval ranged from 1 to 2 weeks. During the fall and winter, the interval was approximately 3 weeks. If a cavity appeared inactive, the cavity was inspected for the presence of flying squirrels or other problems. During the year 4 new cavities were located.

Fifteen cavity trees, not including inserts, were active as of March 1, 1994 (Table 1). In addition to the 15 natural cavity trees, 8 inserts were active.

### 3. Restrictors and Predator Guards

Twenty-six of the natural cavities have been restricted and 10 squirrel guards (on natural and insert trees) were installed in active colonies. When restricted, active cavities were observed

until the RCW entered. Only in one case did the bird refuse to enter, and the restrictor was removed.

Predator guards were placed on all active cavity trees and on insert trees when activated.

#### 4. Population

During the 1993 nesting period, eight nests (Table 2) were located and 14 nestlings banded (Table 3) with U.S. Fish and Wildlife Service aluminum bands on the 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.

When first observed, the 1 to 2 day old nestlings (4) at colony 12 appeared abnormally quiet. When checked 1 week later, at the banding date, the nestlings had been removed. No cause of the mortality was apparent.

The number of RCW's fledged in 1993 was approximately 11. This number was estimated by checking the nests 1 week prior to the fledging date. Two unbanded juveniles, 1 at colony 111 and 1 at colony 12, were captured. Since each cavity tree at these 2 colonies were inspected weekly during the nesting period, these birds apparently fledged from nests at an unlocated colony. Seven juveniles were recaptured and each was provided color bands in addition to the aluminum one.

Ten adult male and 9 adult female RCW's were trapped in 1993. Five of these birds were not previously banded. The greatest distance moved was by a female, banded as a subadult in 1992, which was located during the fall of 1993 and spring of 1994 near Waldron, Arkansas.

Each colony was monitored during the fall and winter and no single bird clans were identified.

#### 5. Stand Management

Fourteen recruitment stands were located in suitable habitat and within .5 mile of an active colony. Three inserts were installed at each stand. At 12 stands, hardwoods were thinned within a 5-acre block containing the insert trees. At 1 stand, hardwoods were thinned within a 10-acre block because the site was active during the late summer and fall. No thinning was done at 1 stand since it was sufficiently open without the cutting. A total of 70 acres were thinned.

On March 26, 1993 compartment 6 comprising approximately 900 acres was control burned. No mortality of surveyed pines (> 12 inches dbh) resulted from the fire (Table 4). In compartment 1 (burned in 1992) an additional 6 pines had died (southern pine beetle (SPB) infestation) when resampled in 1993, increasing the mortality rate from 4 to 8 %.

After the outbreak in February 1993, southern pine beetle activity has been very low. No cavity trees were lost to beetles after February 1993, and no SPB spots have since been observed on the area.

Preliminary analyses of the vegetative data collected pre- and post-burn indicate that the fire in compartment 1 caused a significant increase of the stem density (< 4.5 inches dbh) in the height class of 1 meter or less and a significant decrease in the suppressed height class (Table 5). The density of small stems in the height classes of 1 to 3 meters and intermediate were not significantly affected.

The density of large stems (> 4.5 inches dbh) (Table 6) and the density of hardwood and pine snags (Table 7) were also not significantly influenced by the controlled burn.

These data compiled over time will be used to evaluate the response of the plant community to the treatment and to fine-tune the burning regime. Burning was accomplished using Wildlife Restoration Act funds rather than Section 6 grant funds.

#### **6. Artificial Cavities**

Fifty-two inserts have been installed in active colonies. Eight of these are currently active. Forty-eight inserts have been placed in 14 recruitment sites. Two inserts at colony 37 were active during the late summer and fall, but these are now inactive.

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

No corridors have been established. Next year hardwoods will be thinned between selected colonies and between colonies and recruitment stands to facilitate RCW movements.

#### **8. Augmentation**

No single bird clans were identified, and no augmentation occurred.

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

No road or trail construction occurred on the area. Approximately 8 miles of interior roads were graded. One controlled deer hunt

was conducted. No adverse effects to the RCW's were apparent.

#### IV CONCLUSIONS

The RCW population on the MCWA steadily declined from 1977 to 1991, with an average loss of 1 to 2 colonies per year. After initiation of the recovery efforts in 1992, 2 new colonies have been established. The RCW seems to be responding positively to the hardwood treatments, cavity protection, artificial cavities, and other recovery activities. Since recruitment stands are available in suitable habitat, 2 bird augmentations should be attempted at 1 or 2 sites. Sources of donor birds for augmentation should be determined and plans finalized the procedure.

Although southern pine beetle activity at this time is low, plans and permits to use verbenone should be secured in anticipation of renewed outbreaks. Monitoring, cavity checks and other colony-related procedures were accomplished during the period because a temporary assistant was employed for 1 year. Employment of another competent, temporary assistant will be attempted.

#### V. DEVIATIONS

No controlled burning was accomplished in 1994 because weather conditions were unfavorable through much of the spring burning season.

VI. Prepared by; \_\_\_\_\_

John Skeen, Biologist

VII. Date: March 14, 1994

VIII. Approved by: Harold E. Namminga  
Harold E. Namminga,  
Federal Aid/ Research Coordinator

Table 1. Cavities at Active Colonies

Colony	Natural Cavities			Inserts	
	T	A	R	T	A
137	2	1	2	5	1
112	4	2	3	7	0
111	4	2	4	4	0
109	3	2	2	4	1
16	2	2	2	4	0
105	2	1	0	4	1
107	2	0	2	4	2
31	4	1	4	5	1
32	3	2	2	4	0
12	4	2	4	5	0
21	1	0	1	6	2
<b>Total</b>	<b>31</b>	<b>15</b>	<b>26</b>	<b>52</b>	<b>8</b>

T- total cavities, A- active cavities, R- restricted cavities

Table 2. Nesting and Fledging in 1993

Colony	Nest <sup>a</sup> Initiation	No. Eggs	Nestlings Banded	Nestlings Fledged	Juveniles Banded
137	5/13	3	2	2	1
112	5/10	3	2	2	1
111	—	0	0	1 <sup>b</sup>	1 <sup>b</sup>
109	5/10	4	2	0	0
16	5/11	1	1	1	1
105	—	0	0	0	0
107	5/11	2	2	0	0
31	—	0	0	0	0
32	5/6	4	2	2	0
12	5/11	4	0 <sup>c</sup>	1 <sup>b</sup>	1 <sup>b</sup>
21	5/4	4	3	2	2
Total		25	14	11	7

a Date eggs first observed

b Unbanded juvenile from unlocated nest(s)

c Four nestlings died in nest 5/21



Table 3. Adult RCW's Observed in 1993

Band Number	Sex	Year Banded	Age Banded	Colony Banded	Recent Observation
206	F	92	J	109	ARKANSAS
209	F	92	J	21	*16
211	F	92	J	21	107
220	F	92	J	112	112
221	M	92	A	137	137
222	F	92	A	137	137
223	M	92	A	112	112
224	M	92	A	111	12
225	M	92	A	111	111
228	M	92	A	32	32
229	M	92	A	12	16
231	F	92	A	32	32
233	M	92	A	107	105
234	M	92	A	107	107
253	M	93	A	21	21
254	F	93	A	21	21
255	F	93	A	105	105
256	F	93	A	31	31
257	M	93	A	31	31

\* Colony number

Table 4. Pine Mortality Survey

Compartment	Number Sampled	Date Burned	Date Sampled	Cumulative Mortality	
				No.	%
1	150	3/14/92	9/3/92	6	4.0
			6/18/93	12	8.0
6	150	3/26/93	6/21/93	0	0.0

Table 5. Comparison of understory and midstory woody stems (stems/acre) less than 4.5 in. dbh following a winter burn in March 1992 .

Height class	1990 Preburn			1992 Postburn			Prob >  T
	N	X	SE	N	X	SE	
<1 M	76	3247b	386	75	5599a	503	0.0003
>1 M							
1-3 M	76	480	56	75	383	62	0.2455
Supp	76	342a	44	75	213b	33	0.0209
Inter	76	7	4	75	5	3	0.8057
Total >1 M	76	828a	80	75	599b	70	0.0322

Column means with different letters were significantly different; those without letters were not.

< 1M = between 0-1 M in height; 1-3 M = between 1-3M; Supp = suppressed trees > 3 M but completely overtopped by canopy trees; Inter = intermediate trees with poorly developed crowns that extend into lower portion of canopy.

**Table 6. Comparison of tree density (stems/acre) of stems greater than 4.5 in. dbh following a winter burn in March 1992.**

Height class	1990 Preburn			1992 Postburn			Prob >  T
	N	X	SE	N	X	SE	
1-3M	76	1.0	1.0	77	2.6	1.5	0.3087
Supp	76	33.3	5.6	77	34.9	5.3	0.8341
Inter	76	56.0	7.9	77	49.9	7.9	0.5674
Codom	76	37.3	4.1	77	35.1	3.8	0.7029
Dom	76	8.5	1.0	77	9.8	1.1	0.3394
Total > 1 M	76	136.0	10.1	77	132.5	10.1	0.8096

Column means with different letters were significantly different; those without letters were not.

1-3 M = between 1-3M; Supp = suppressed trees > 3 M but completely overtopped by canopy trees; Inter = intermediate trees with poorly developed crowns that extend into lower portion of canopy; Codom = codominant tree that is at average canopy height; Dom = dominant tree that extends somewhat above canopy height with large dominant crown.

**Table 7. Comparison of hardwood and pine snag density (stems/acre) >4.5 in dbh following a winter burn in March 1992.**

Group	1990 Preburn			1992 Postburn			Prob >  T
	N	X	SE	N	X	SE	
Hardwood	76	2.1	1.6	77	1.2	1.0	0.5894
Pine	76	2.7	0.8	77	2.1	0.8	0.5917
Total snags	76	4.8	1.8	77	3.3	1.6	0.5357

Column means with different letters were significantly different; those without letters were not.