PERFORMANCE REPORT

SECTION 6

ENDANGERED SPECIES ACT

OKLAHOMA
DEPARTMENT OF WILDLIFE CONSERVATION

FEDERAL AID PROJECT E-21-5

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

MARCH 25, 1996 - FEBRUARY 28, 1997

ANNUAL PERFORMANCE REPORT

State: Oklahoma **Project No:** E-21-5

PROJECT 1: 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 clusters 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 (prescribed 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 clusters and move subadult females to the sites.

III. SUMMARY OF PROGRESS

1. Clusters

At the initiation of the project in 1992, 9 clusters were active. Since that time the number has varied between 11 and 9 (Table 1.). Currently 10 clusters are active on the area, but one (cluster 2), has only a single male.

2. Cavity Trees

Cavities at active clusters were checked at intervals of approximately 4 weeks throughout the year and cleaned and repaired as needed. Twenty eight of the cavities at active clusters are natural and 47 are inserts (Table 2.). Since 1992, 9 natural cavity trees have been lost to southern pine beetle infestation and 2 to wind breakage. Three inserts at active clusters have been killed by pine beetles, 3 by lightening, and 1 by wind breakage.

3. Restrictors and Predator Guards

All usable natural cavities, except 1, at active and inactive clusters have been restricted. The 1 unrestricted cavity is in a tree that cannot be safely climbed. All active cavity trees have been fitted with a 5 foot section of aluminum flashing- predator guard. When a cavity tree at a recruitment stand or inactive cluster showed RCW activity, a predator guard was installed.

4. Population

During the 5 year period, the number of nests initiated ranged from a low of 5 in 1995 to a high of 9 in 1994 (Table 1.). An estimated 10 young fledged annually during 1993 to 1995. In 1996, 13 young fledged. No fledging estimate was made in 1992.

At clusters which completed a clutch, most losses occurred shortly before the young were due to fledge. No explanation is apparent for these losses but conceivably were caused by flying squirrels or by an avian species that was able to extract the young birds from the cavities. It is unlikely that a snake could have passed the predator guard.

All known RCW's on the area have been banded (Appendix Table 1.).

5. Stand Management

Hardwoods less than 12 inches dbh were cut in blocks of at least 10 ac at active (Table 2.) and inactive (Table 3.) clusters. Larger hardwoods were generally not cut unless they interfered with the flight path to a cavity. A total of 146.9 ac were thinned at the 10 active clusters.

Recruitment stands were located from .50 to .75 mile from a cluster (Figure 1.). At these sites the thinned blocks were 5 or 10 ac in size. Each recruitment stand and inactive cluster was provisioned with 3 to 5 inserts. A total of 181.7 ac were thinned at recruitment stands and inactive clusters and 84 inserts installed (Table 3.).

All active clusters except one have been prescribed burned at least once (Table 2.). Compartment 1 (Figure 2.) received 2 dormant season burns (Table 4.). Both burns, but especially the one in 1995, were successful at reducing the density of small hardwoods on south and west slopes and ridges. The growing season burn in compartment 6 produced little effect on the forest understory or midstory except on steep south slopes. Despite repeated efforts, north and east slopes did not sustain the fire.

Before burning, eighty permanent plots in each compartment were sampled to obtain estimates of pine and hardwood densities by species, diameter, and height classes (Table 5.). Comparisons of woody stem densities in compartment 1 were made before burning (1990) and following winter burns in 1992 and 1995. 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.

In each compartment 150 shortleaf pines greater than or equal to 12 inches dbh were marked to estimate the rate and cause of mortality. In the period from 1992 to 1994, 12

marked pines in compartment 1 died. Eleven deaths were cause by southern pine beetles and 1 from wind throw. Future vegetative and mortality sampling will occur at 5 year intervals.

Southern pine beetles remain endemic on the area and annually cause scattered losses of pines. During the period from 1992 to 1997, beetle spots have varied from 1 or 2 trees up to approximately 10 ac. When infestations occurred near active clusters, U.S. Forest Service Forest Health Specialists were consulted. The semiochemical 4-aa was applied to cavity trees at cluster 109 in November 1996. Cooperative monitoring of the southern pine beetle population with the U.S. Forest Service and Oklahoma Division of Forestry indicated the level was low and the predator population high in 1995 and 1996.

6. Corridors

In 1996, 9 corridors totaling approximately 65 ac were developed to improve the flight path and foraging habitat between clusters and/or recruitment stands (Figure 1.). The corridors were 200 feet wide and received the same hard thinning as the cluster sites.

7. Augmentation

During the 5 year period, 21 juvenile RCW's were transported from donor populations in Texas and Louisiana and released on the MCWA (Table 6.). All translocations were completed following the procedures outlined by Carrie (1993). Twelve of these translocations occurred in 1996. Thus far, none of the released RCW's can be accounted for except for a male released in 1995 , which is resident at Cluster 2. Two juvenile females were released at this site after the male activated it. All other releases, except a juvenile male at 16, were 2 bird translocations of a male and a female. One mortality occurred in 1995. A juvenile female was dead in the cavity. Necropsy by the National Wildlife Health Center indicated it died of pulmonary edema and was in poor body condition.

8. Other Activities

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

IV CONCLUSIONS

From 1977 to 1992 the number of clusters on the MCWA declined from 29 to 9. Since 1992 the number has fluctuated between 9 and 11. While the population has not yet begun to increase, the previous rapid decline (averaging 1.3 clusters per year) has halted.

Determining factors that affect the probability of successful translocatons will be vital to recovering this population. These factors will hopefully be identified by future research projects.

V. DEVIATIONS

None

VI. Prepared by John Skeen, Biologist

VII. Date: April 17, 1997

VIII. Approved by: _____
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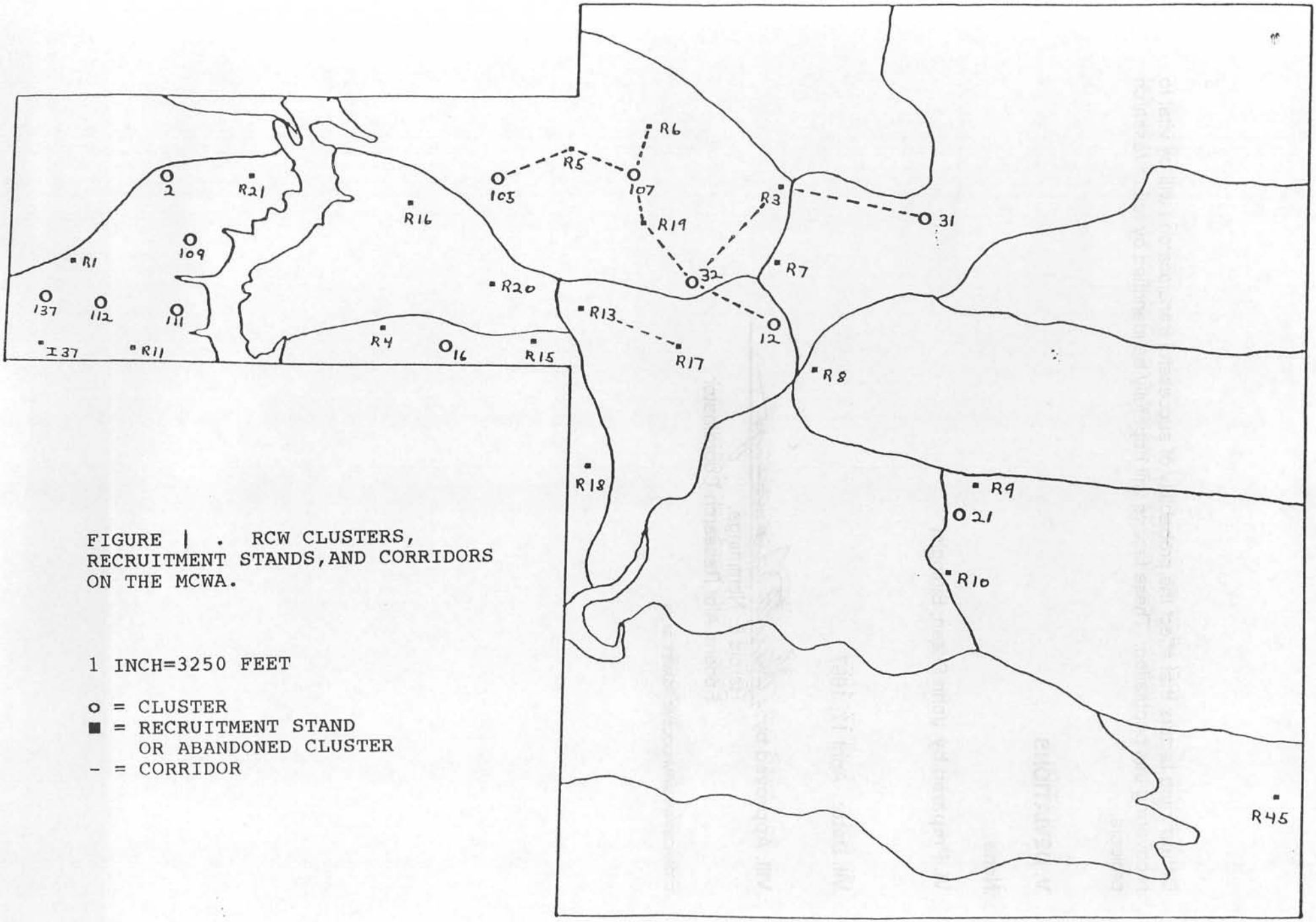

FIGURE 1 . RCW CLUSTERS, RECRUITMENT STANDS, AND CORRIDORS ON THE MCWA.

1 INCH=3250 FEET

o = CLUSTER
■ = RECRUITMENT STAND OR ABANDONED CLUSTER
- = CORRIDOR

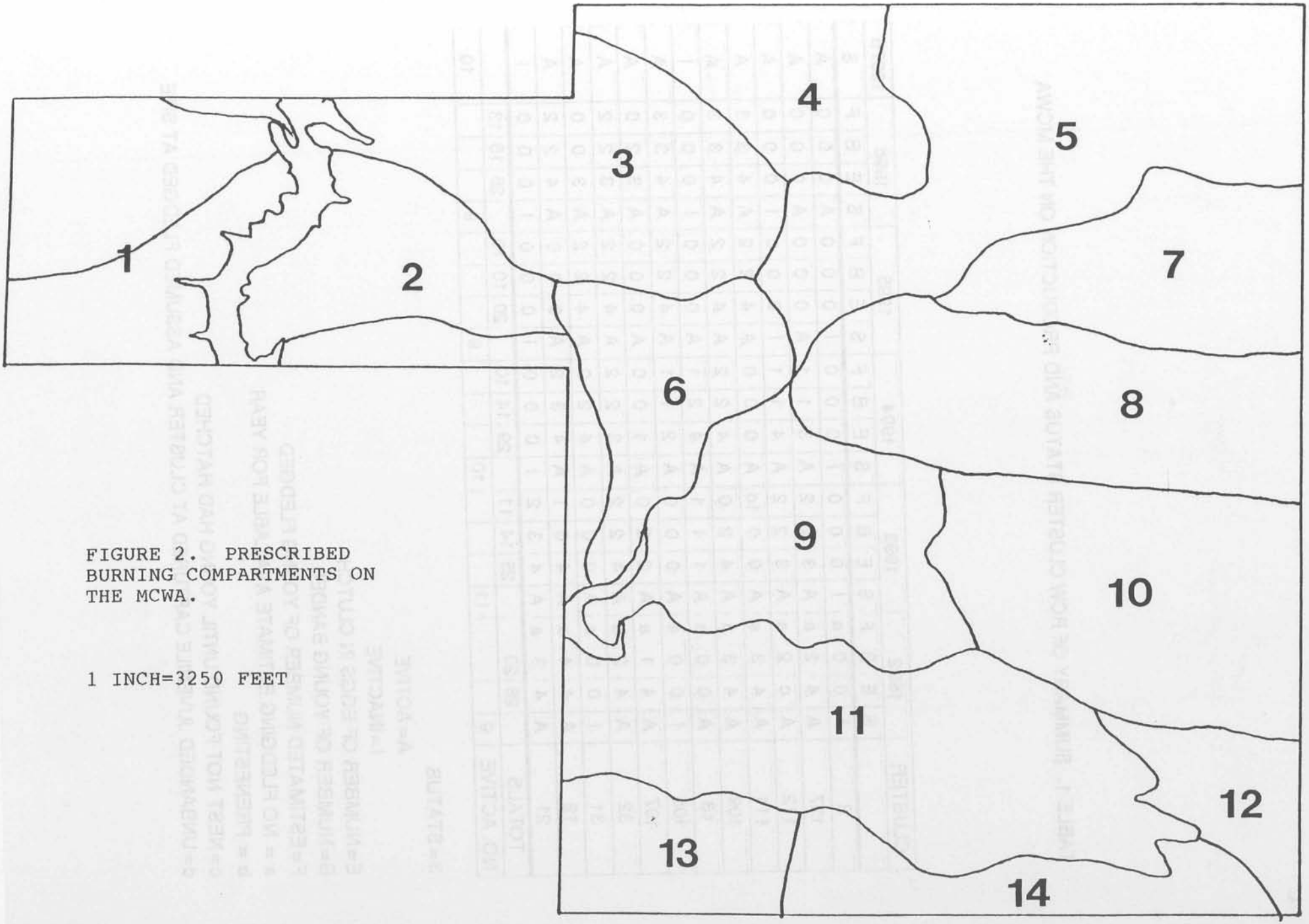

FIGURE 2. PRESCRIBED BURNING COMPARTMENTS ON THE MCWA.

1 INCH=3250 FEET

TABLE 1. SUMMARY OF RCW CLUSTER STATUS AND PRODUCTION ON THE MCWA

CLUSTER	1992				1993				1994				1995				1996				1997b
	S	E	B	F	S	E	B	F	S	E	B	F	S	E	B	F	S	E	B	F	S
2	I	0	0	a	I	0	0	0	I	0	0	0	I	0	0	0	A	0	0	0	A
137	A	4	2	a	A	3	2	2	A	3	1	1	A	0	0	0	A	0	0	0	A
112	A	c	2	a	A	3	2	2	A	4	1	1	I	0	0	0	I	0	0	0	A
111	A	4	3	a	A	0	0	1d	A	0	0	0	A	4	2	2	A	4	3	3	A
109	A	4	3	a	A	4	2	0	A	4	2	2	A	4	2	2	A	4	3	3	A
16	A	0	0	a	A	1	1	1	A	4	2	1	A	0	0	0	I	0	0	0	I
105	I	0	0	a	A	0	0	0	A	2	1	1	A	4	2	2	A	4	3	3	A
107	A	4	1	a	A	2	2	0	A	1	0	0	A	0	0	0	A	3	2	0	A
32	A	4	2	a	A	4	2	2	A	3	2	2	A	4	2	2	A	3	2	2	A
31	I	0	0	a	A	0	0	0	A	4	2	0	A	4	2	2	A	3	0	0	A
12	A	4	4	a	A	4	0	1	A	4	3	2	A	0	0	0	A	4	2	2	A
21	A	4	3	a	A	4	3	2	I	0	0	0	I	0	0	0	I	0	0	0	I
TOTALS		28	20			25	14	11		29	14	10		20	10	10		25	15	13	
NO. ACTIVE	9				11				10				9				9				10

S=STATUS

A=ACTIVE

I=INACTIVE

E=NUMBER OF EGGS IN CLUTCH

B=NUMBER OF YOUNG BANDED

F=ESTIMATED NUMBER OF YOUNG FLEDGED

a = NO FLEDGING ESTIMATE AVAILABLE FOR YEAR

b = PRENESTING

c=NEST NOT FOUND UNTIL YOUNG HAD HATCHED

d=UNBANDED JUVENILE CAPTURED AT CLUSTER AND ASSUMED FLEDGED AT SITE

TABLE 2. ACTIVE CLUSTERS ON THE MCWA, 1997

	CLUSTER	ACRES THINNE	NATURAL CAVITIES	INSERTS	YEAR BURNED
	2	10.0	0	5	92-95
	137	13.4	4	5	92-95
	112	12.8	3	6	92-95
	111	18.7	3	4	92-95
	109	15.9	2	4	92-95
	105	11.8	2	5	95
	107	13.9	3	4	95
	31	18.7	4	5	**
	32	14.0	2	5	95
	12	17.7	5	4	93-96
TOTALS	N=10	146.9	28	47	

TABLE 3. RCW RECRUITMENT STADS AND INACTIVE CLUSTERS ON THE MCWA, 1997

	STAND	ACRES THINNED	INSERTS	YEAR BURNED
1	R1	10.0	3	92-95
1	R3	10.0	5	95
1	R4	5.0	3	95
1	R5	10.0	4	95
1	R6	10.0	5	95
1	R7	5.0	3	**
1	R8	5.0	3	**
1	R9	0.0	3	**
1	R10	5.0	3	**
1	R11	5.0	3	92-95
1	R13	5.0	3	93
1	R15	5.0	4	95
1	R16	10.0	3	93
1	R17	10.0	5	95
1	R18	10.0	4	95
1	R19	10.0	4	93
1	R20	10.0	4	96
1	R21	10.0	4	96
1	I16	14.6	5	95
1	I21	12.1	6	**
1	I37	10.0	4	92-95
1	I45	10.0	3	**
22	TOTALS N=22	181.7	84	

TABLE 4. PRESCRIBED BURNS ON THE MCWA

COMPARTMENT	ACRES	DATE
1	1229	3/14/92
1	"	3/31/95
2	964	3/33/95
3	1156	3/22/95
6	653	3/26/93
6	"	9/15/96

TABLE 5. VEGETATION AND MORTALITY SAMPLING COMPLETED ON THE MCWA

COMP	YEAR				
	92	93	94	95	96
1	V,M	M	M	V	
2		V,M			
3		V,M	M		
4					
5			M	V	
6	V,M	M			
7					V,M
8					V,M
9			M	V	
10			M	V	
11					M
12					
13					
14					

V = VEGETATION SAMPLING
M = MORTALITY SAMPLING

TABLE 6. RCW'S TRANSLOCATED TO THE MCWA, 1992-1997

	BAND #	BAND COLORS		SEX	RECRT YEAR	SOURCE	RELEASE SITE	RELEASE DATE	COMMENTS
		L	R						
1	8071-37767	A		f	94	SHNF	R3	1/19/95	DEAD IN CAVITY
2	8081-00768	OB	PA	m	94	SHNF	R3	1/19/95	
3	8071-37744	PA	YB	f	94	SHNF	R3	1/27/95	SIGHTED PM AT R3 1/28/96
4	8071-37796	LgB	PA	m	94	SHNF	R3	1/27/95	
5	8081-32493	MA	BLb	f	95	SHNF	R3	12/1/95	
6	8081-84405	BO	MA	m	95	SHNF	R3	12/1/95	
7	8081-84430	MA	BW	f	95	SHNF	R6	12/1/95	
8	8081-32467	BY	MA	m	95	SHNF	R6	12/1/95	RESIDENT AT R2
9	8081-84427	YY	MA	f	95	SHNF	16	3/18/96	
10	8081-32545	LbY	OA	m	96	VNF	16	10/9/96	
11	8081-32571	LbW	OA	m	96	VNF	R3	10/9/96	
12	8081-32564	LbP	OA	m	96	VNF	R5	10/9/96	
13	8101-26370	LbO	OA	m	96	VNF	112	10/9/96	COOPER'S HAWK AT SITE
14	8081-32569	LbLg	OA	m	96	VNF	R6	10/9/96	
15	8081-84821	LbA	YY	f	96	SHNF	R2	10/9/96	3RD RCW LEFT WITH FEMALE
16	8081-84869	LbA	YW	f	96	SHNF	16	10/9/96	
17	8081-84872	LbA	YP	f	96	SHNF	R3	10/9/96	
18	8081-00793	LbA	YO	f	96	SHNF	R3	10/9/96	
19	8081-84834	LbA	YLg	f	96	SHNF	112	10/9/96	COOPER'S HAWK AT SITE
20	8081-32584	LbA	YLb	f	96	SHNF	R6	10/9/96	
21	8101-26385	LbA	YDg	f	96	VNF	R2	2/20/97	RES. RCW AGGRESSIVE TO FEMALE

SHNF = SAM HOUSTON NATIONAL FOREST, TEXAS
VNF = VERNON NATIONAL FOREST, LOUISIANA

APPENDIX TABLE 1. BANDING RECORDS OF RCW'S ON THE MCWA 1992-1996

BAND #	BAND COLORS		SEX	RECRT YEAR	LOCATION BANDED	COMMENTS
	L	R				
49201			n	92	137	
49202			n	92	137	
49203			n	92	111	
49204			n	92	109	
49205			n	92	109	
49206	LgA	OP	f	92	109	93, TRAPPED IN AR
49207			n	92	111	
49208			n	92	111	
49209	LgA	WO	f	92	21	93, 16; 94, 109
49210			n	92	21	
49211	LgA	PDg	f	92	21	93, 107
49212			n	92	107	
49213			n	92	12	
49214	YA	PLg	f	92	12	96, 107
49215			n	92	12	
49216			n	92	12	
49217			n	92	32	
49218			n	92	32	
49219			n	92	112	
49220	LgA	LgW	f	92	112	93, 112
49221	YY	YA	m	x92	137	93, 137; 96, 137
49222	YA	YP	f	x92	137	93, 137
49223	LgO	LgA	m	x92	112	93, 112
49224	PW	PA	m	x92	111	93, 12
49225	PY	PA	m	x92	111	93, 111
49226	PP	PA	m	x92	111	
49227	PA	PY	f	x92	111	
49228	DgW	PA	m	x92	32	93, 32
49229	PY	YA	m	x92	12	93, 16
49230	YA	PW	f	x92	12	
49231	PA	DgO	f	x92	32	
49232	LgA	WY	f	x92	16	93, 32
49233	PO	LgA	m	x92	107	93, 105
49234	PP	LgA	m	x92	107	93, 107
49235	LgA	LgY	f	x92	112	
49236	YDg	YA	m	x92	137	
49237	LgA	OO	f	x92	109	
49238	LgP	LgA	m	x92	109	
49239			n	93	111	
49240	PA	ODg	f	93	21	
49241	PA	WY	f	93	21	
49242			n	93	32	
49243			n	93	32	

BAND #	BAND COLORS		SEX	RECRT YEAR	LOCATION BANDED	COMMENTS
	L	R				
49244			n	93	109	
49245			n	93	109	
49246	LgA	LgB	f	93	112	
49247			n	93	112	
49248			n	93	107	
49249			n	93	107	
49250			n	93	137	
49251	OA	OB	f	93	137	93, I37
49252	LgA	WP	f	93	16	
49253	WB	PA	m	x93	21	
49254	PA	WLg	f	x93	21	94, 16
49255	YA	PY	f	x93	105	UNBANDED ADULT, NEW CLUSTER 93
49256	LgA	YB	f	x93	31	UNBANDED ADULT, NEW CLUSTER 93
49257	LgO	YA	m	x93	31	UNBANDED ADULT, NEW CLUSTER 93
49258	PDg	PA	m	93	111	
49259	YA	PO	f	x93	12	UNBANDED IN OCT
49260	O	A	m	94	16	
49261			n	94	16	
49262			n	94	31	DISAPPEARED FROM NEST
49263			n	94	31	DISAPPEARED FROM NEST
49264			n	94	137	
49265			n	94	112	
49266	A	Lb	f	94	112	
49267	O	A	m	94	105	
49268			n	94	12	
49269			n	94	12	
49270			n	94	12	
49271	A	Lb	f	94	109	
49272			n	94	109	
49273	A	Lb	f	94	32	
49274			n	94	32	
49275			n	95	109	
49276	LgPu	LgA	m	95	109	
49277	PA	DgY	f	95	32	
49278			n	95	32	
49279			n	95	31	
49280			n	95	31	
49281	PO	YA	m	95	105	
49282			n	95	105	
49283			n	95	111	
49284	PuO	PuA	m	95	111	
49285	OW	YA	m	96	109	
49286			n	96	109	
49287			n	96	109	
49288	PA	LbY	f	96	105	
49289			n	96	105	

	BAND #	BAND COLORS		SEX	RECRT YEAR	LOCATION BANDED	COMMENTS
		L	R				
	49290			n	96	105	
	49291			n	96	111	
	49292			n	96	111	
	49293			n	96	111	
	49294			n	96	12	
	49295			n	96	12	
	49296			n	96	107	DISAPPEARED FROM CAVITY
	49297			n	96	107	DISAPPEARED FROM CAVITY
	49298			n	96	32	
	49299	OLb	YA	m	96	32	
	49300	OO	YA	m	96	107	UNBANDED ADULT
1	8071-37767	A		f	94	TX	rel 1/19/95 a DEAD IN CAVITY
2	8081-00768	OB	PA	m	94	TX	rel 1/19/95 at R3
3	8071-37744	PA	YB	f	94	TX	rel 1/27/95 a SIGHTED PM AT R3 1/28/96
4	8071-37796	LgB	PA	m	94	TX	rel 1/27/95 at R3
5	8081-32493	MA	BLb	f	95	TX	rel 12/1/95 at R3
6	8081-84405	BO	MA	m	95	TX	rel 12/1/95 at R3
7	8081-84430	MA	BW	f	95	TX	rel 12/1/95 at R6
8	8081-32467	BY	MA	m	95	TX	rel 12/1/95 a RESIDENT AT R2
9	8081-84427	YY	MA	f	95	TX	rel 3/18/96 at 16
10	8081-32545	LbY	OA	m	96	LA	rel 10/9/96 at 16
11	8081-32571	LbW	OA	m	96	LA	rel 10/9/96 at R3
12	8081-32564	LbP	OA	m	96	LA	rel 10/9/96 at R5
13	8101-26370	LbO	OA	m	96	LA	rel 10/9/96 at 112
14	8081-32569	LbLg	OA	m	96	LA	rel 10/9/96 at R6
15	8081-84821	LbA	YY	f	96	TX	rel 10/9/96 at R2
16	8081-84869	LbA	YW	f	96	TX	rel 10/9/96 at 16
17	8081-84872	LbA	YP	f	96	TX	rel 10/9/96 at R3
18	8081-00793	LbA	YO	f	96	TX	rel 10/9/96 at R3
19	8081-84834	LbA	YLg	f	96	TX	rel 10/9/96 at 112
20	8081-32584	LbA	YLb	f	96	TX	rel 10/9/96 at R6
21	8101-26385	LbA	YDg	f	96	LA	rel 2/20/97 at r2

x= BANDED AS ADULT IN THE YEAR