

FINAL PERFORMANCE REPORT



Federal Aid Grant No. F21AP00909 (E-21-R-25)

**Red-cockaded Woodpecker Recovery on the McCurtain County
Wilderness Area**

Oklahoma Department of Wildlife Conservation

April 1, 2021 through September 30, 2022

FINAL PERFORMANCE REPORT

State: Oklahoma

Grant Number: F21AP00909 (E-21-R-25)

Grant Program: Cooperative Endangered Species Conservation Fund, Traditional Conservation Grants Program

Grant Title: Red-cockaded Woodpecker Recovery on the McCurtain County Wilderness Area

Grant Period: April 1, 2021 – September 30, 2022

Principal Investigator: Curtis Tackett, Oklahoma Department of Wildlife Conservation

EXECUTIVE SUMMARY:

*The prior grant in this series (E-21-R-24 / F20AP00049) experienced a variety of delays and was extended through 9/30/21, creating an overlap with this grant E-21-R-25 / F21AP00909. ODWC did not begin charging time to this grant until 10/1/21. Therefore, all activities on this report actually reflect the 12-month reporting period of 10/1/21 through 9/30/22.

Recovery efforts were conducted for the Red-cockaded Woodpecker (*Picoides borealis*, RCW) population on the McCurtain County Wilderness Area (MCWA) in accordance with the 1991 MCWA Management Plan and the U.S. Fish and Wildlife Service's guidelines (USFWS 2003). As of May 2022, the number of active RCW clusters on the MCWA and adjacent Ouachita National Forest (ONF) tract was eighteen (18). Of those active clusters, thirteen (13) clusters attempted nesting and 31 chicks were hatched. Banding efforts began on 5/19/22 and continued through 6/10/22 and a total of 28 chicks were banded. Fledgling checks began on 6/2/22 and continued through 6/16/22 and a total of 20 chicks fledged (10M, 10F). The number of potential breeding groups (PBGs), or those composed of at least one male and one female that attempted nesting was 13 confirmed. Throughout this grant period, cavities (both natural and artificial) were serviced and cleaned to maintain their suitability for RCW occupancy and habitat manipulation was conducted through tree removal and prescribed burning. PBGs were monitored weekly during the nesting season (April 15 – June 15) of 2022.

BACKGROUND:

In Oklahoma, the last known population of Red-cockaded Woodpeckers (RCWs) resides within both the state-owned McCurtain County Wilderness Area (MCWA) and an adjacent tract of the Ouachita National Forest (ONF) that borders the western edge of the MCWA. The narrow range of suitable habitat for this species is limited to mature pine woodlands and savannas. In the Ouachita Mountains, which comprise the northwestern most extension of its range, the RCW is found in mature shortleaf pine woodlands with a grassy understory dominated by bluestem species (*Andropogon* sp.). Over the past century, the RCW population in the Ouachita Mountains has declined as a result of habitat degradation. Widespread logging in the early part of the twentieth century eliminated many of the mature pine stands which supported RCW clusters. Through the rest of the century, the remaining pockets of mature pine habitat declined in quality as a result of fire suppression and the subsequent increase in mid-story vegetation. The population on the MCWA declined from approximately 28 active clusters in 1977 (Wood 1977) to 15 in 1990 (Kelly et al. 1994). Since 1992, the Oklahoma Department of Wildlife Conservation has been implementing a management plan to recover the Red-cockaded Woodpecker population on the

area and the surrounding portions of the Broken Bow Unit of the ONF.

Despite intensive population management and habitat restoration, population growth has been extremely slow and limited in Oklahoma. Throughout its range, several studies have determined that the RCWs require living, mature (> 60 years of age) pine trees infected with Red Heart fungus for cavity excavation (Jones & Ott 1973, Jackson 1977, Conner & O'Halloran 1987). While a sufficient number of suitable trees appear to be present on the MCWA, other constraining factors may exist that limit population growth and expansion. Research is needed to determine the limiting factors acting on this population. In addition to population monitoring and habitat restoration, ODWC is examining how weather variables affect the timing and overall success of nesting in the northwest edge of their occupied range. Results of such analyses could greatly inform management and recovery for this species in the Ouachita Mountains ecoregion.

OBJECTIVES:

The following goals have been outlined for this segment:

- 1) Throughout the 2021 – 2022 seasons, continue to monitor the number of active RCW clusters within the Oklahoma population, including accounting for group composition and size, reproductive activity, nesting success, and cluster (stand) use on both the MCWA and adjacent Ouachita National Forest with the eventual goal of reaching the long-term goal 45 active clusters across the entire MCWA. Particular emphasis will be placed on the northwest portion of the MCWA where the majority of active territories exist.
- 2) Coordinate with the U.S. Fish and Wildlife Service, U.S. Forest Service, and other agencies participating in the Western Range Translocation Cooperative (WRTC) to continue to remain eligible for future augmentations from donor populations on USFS lands. Release sites for the establishment of translocated sub-adult birds will be selected based upon their close proximity to currently active RCW territories to maximize the chances of success.
- 3) Attempt to determine the factors that influence both habitat selection and reproductive success of Red-cockaded Woodpecker in the Ouachita Mountains using a combination of datasets, with the ultimate goal of understanding the limiting factors acting upon this species in the northwest periphery of its range.
- 4) Continue to maintain and restore the shortleaf pine-bluestem woodlands on the MCWA through the use of mechanical thinning (midstory tree removal, including stump re-sprouts, and dense stands of small pines) on areas in and around active RCW cavity trees and recruitment stands as a supplement to the currently implemented 3-year prescribed fire return interval that has been in place since 1991.

METHODS:

Population Monitoring

Red-cockaded Woodpecker (RCW) Potential Breeding Groups are usually checked on (or close to) April 20th to determine if nests have been initiated (determined by day first egg is laid). RCW nestlings are banded to obtain data on production changes, dispersal, and mortality and to aid in identification of single bird clusters that may be suitable for future augmentations. Nestlings are typically leg-banded at seven (7) days of age with a U.S. Geological Survey metal band and a combination of colored plastic bands on both legs. At day 26 of nestling age, brood checks are made at nesting clusters to determine how many have successfully fledged.

Cluster Stand Management

New cavity trees, when located, are tagged and mapped. The status of cavity trees and clusters are determined at least twice annually, including immediately prior to each nesting period. The density of hardwood mid-story and understory trees is reduced as needed within a 10-acre block surrounding each active cluster. Hardwood mid-story trees within each cluster stand are controlled by both mechanical cutting and prescribed fire (prescribed burns were conducted under a separate grant funded through the Wildlife Restoration Act program).

Recruitment Stand Management

Recruitment clusters are developed and maintained in portions of the Wilderness Area within 1/4 mile to one mile of active clusters, and each recruitment stand is provisioned with at least three artificial cavity inserts. Recruitment stand locations are in areas where the habitat within and surrounding each recruitment stand is as similar as possible to the habitat found at the active clusters.

Corridors

Where needed and feasible, corridors are developed and maintained between clusters and recruitment stands.

Restrictors and Predator Guards

Restrictor plates are placed on RCW cavities to prevent enlargement by other woodpecker species (e.g. Pileated) and to rehabilitate previously enlarged cavities. Predator guards are installed and maintained on all active cavity trees. Southern Flying Squirrels (*Glaucomys volans*) and other species that may usurp RCW cavities are removed as they are discovered during bi-monthly cavity checks.

Artificial Cavities

Cavity inserts are installed in active cluster stands to provide at least five usable cavities at each site. Each recruitment cluster contains a minimum of three artificial inserts; upon activation by dispersing RCWs, two or three additional inserts are installed.

Population Augmentation via Translocations

Through the multi-agency group called the RCW Western Range Translocation Cooperative (WRTC), translocations are implemented to both help bolster small populations of Red-cockaded Woodpeckers and maintain genetic diversity. The WRTC held the annual meeting on 8/16/22 and ODWC staff attended virtually and provided an OK update. Within the network, “donor” populations give hatch year RCWs to “recipient” populations to increase small and isolated population numbers. Birds to be translocated are identified within donor populations for several weeks prior to capture and are typically hatch year birds that are “floaters”, or young birds that have left their natal cluster but have not yet established themselves into a territory. Males and females are then paired up by the recipient and released into recruitment stands outfitted with artificial cavity inserts. In addition to releasing pre-paired RCWs, single bird clusters (usually a single male on territory) are identified and females from donor populations may be translocated in an effort to complete pairs at those clusters.

The WRTC maintains a translocation schedule and recipients usually wait in a “rotation” to receive birds from donor populations. However, this is contingent upon both the availability of suitable birds in donor populations and U.S. Fish and Wildlife Service approval. Juvenile pairs

may also be translocated to the MCWA when population conditions (such as population declines) warrant and when RCWs are available to move from donor populations. The two primary donor populations for Oklahoma include the Sam Houston National Forest in Texas and the Kisatchie National Forest in Louisiana.

SUMMARY OF PROGRESS:

Population Monitoring

Population monitoring was conducted during spring and early summer of 2022. Below is the nesting data compiled by the MCWA manager.

Cluster	Nest Initiation	Clutch Complete	Projected Hatch	Actual Hatch AH	Banding Date-AH + 7 days	Fledge Check-AH + 19 days	Number Fledged M & F	Comments
300	4-25-22	4-29-22	5-10-22	5-12-22 (4)	5-19-22 (4)	6-2-22	1 & 1	
2	No Nest							
205	4-26-22	5-1-22	5-12-22	5-12-22 (3)	5-19-22 (3)	6-3-22	1 & 1	
109	No Nest							
25	5-25-22	Laid 1						Never Hatched
112	4-30-22	5-2-22	5-13-22					Clutch Gone
111	5-25-22	5-29-22	6-10-22	6-3-22 (1)	6-10-22 (1)	6-24-22	1 M	
37	No Nest							
FS East	No Nest							
FS 1	4-26-22	4-29-22	5-10-22	5-25-22 (1)	6-2-22 (1)	6-16-22	1 M	1 st clutch lost
Single Bird	5-9-22	5-9-22	5-20-22	5-12-22 (3)	5-19-22 (2)	6-3-22	1 & 1	Banded 2 of 3
Eagle Nest	5-1-22	5-4-22	5-15-22	5-13-22 (3)	5-20-22 (3)	6-2-22	3 F's	
5	5-1-22	5-4-22	5-15-22	5-13-22 (3)	5-20-22 (3)	6-2-22	3 M's	
202	5-1-22	5-4-22	5-15-22	5-13-22 (4)	5-19-22 (2)	6-2-22	1 & 1	
20	5-1-22	5-4-22	5-15-22	5-13-22 (3)	5-19-22 (3)	6-2-22	2 F's	
16	5-5-22	5-9-22	5-20-22	5-13-22 (3)	5-19-22 (3)	6-2-22		Clutch Gone
210	No Nest							
1201	5-1-22	5-4-22	5-15-22	5-13-22 (3)	5-20-22 (3)	6-2-22	1 & 1	
Totals	13 of 18 Attempted nesting			31 Hatched	28 banded		10 M 10 F (20)	May be 13 of 17; pending on C2 /single bird status

Corresponding information regarding non-nesting clusters:

Cluster 2 – no nesting was documented, this may now be a single bird cluster

Cluster 109 – no nesting or eggs were documented, this cluster may have a new cavity tree nearby
Cluster 25 – female laid one egg in the new cavity but the egg was not viable and it never hatched
Cluster 112 – clutch observed in nesting season but was gone when monitored, possibly predation
Cluster 37 – no nesting or eggs were documented, the cluster may have a new cavity tree nearby
Cluster FS East – no nesting or eggs were documented
Cluster 16 – clutch was gone when observed on 6/2, possibly predation
Cluster 210 – no nesting or eggs were documented, the cluster may have a new cavity tree

Cluster Stand Management

During March, the management crew began conducting cluster stand management and maintenance to cavity trees. Most of the cavity trees were checked for debris and flying squirrels as well as maintaining flashing and ensuring artificial inserts were intact. The peeper camera was also used to determine the nesting status.

Habitat Management

- *Hardwood Mid-story Thinning and Corridors*
The management crew conducted trial tree removal efforts with a new rotary cutter skid steer attachment and opened up approximately half an acre within one cluster and provided a connectivity corridor to an old recruitment stand nearby. Chainsaw crews were not contracted during this grant report period.
- *Prescribed Burning*
The ODWC conducted the annual cooperative prescribed burn with the U.S. Forest Service. The burn rotation for 2022 encompassed the entire western portion of the MCWA and as well as a large tract of U.S. Forest Service land and some small tracts of private land. The burn acreages were as follows: MCWA 1,384 acres, USFS 1,446 acres, Private 678, for a total of 3,508 acres. There are 10 active cluster locations within this burn unit and several recruitment stands on both the USFS and the MCWA. Burn preparations consisted of visiting each cluster location and using backpack blowers to clear all fuels from the bases of all cavity trees within each cluster. Efforts were also made to clear fuels from any nearby “cat-faced” pines as the openings in these tree bases often invite fire and can kill potential roost trees (cat-faced trees often have Red Heart fungus and could become cavity trees). We prepared all cavity trees on the west side and conducted the prescribed burn on March 22, 2022. The fire traveled well and management goals were achieved at acceptable levels. Management efforts are generally aimed at burning approximately 1/3 of the MCWA each year. The 2022 cooperative prescribed burn rotation also included a portion of the NE corner of the east side of the MCWA on March 4, 2022. The March 4th burn acres were as follows: MCWA 3,608, USFS 1,591 for a total of 5,199 acres. No active clusters or recruitment stands were included in this burn compartment, but these burns help create suitable RCW habitat across the other portions of the area.

Translocation

No Translocations were conducted during this reporting period but Oklahoma is scheduled to receive donor birds during 2023.

Adult Bird Observations

At the end of May and the first part of June Wildlife Diversity program staff and the area managers conducted bird observations while adult birds were feeding chicks at the cavity trees.

The goal of this effort was to identify individual birds by observing bands and updating our list of adult birds and corresponding clusters. This was done by staying at a safe distance from the cavity trees as not to disturb the birds and using spotting scopes to observe and identify birds and their respective leg band colors and arrangements. Observations were completed at every active cluster both on the East side of the area and on the West side of the area. Compiling this information will help guide ODWC's future banding efforts and we plan to conduct these observations each year to maintain proper records of adult birds and their corresponding clusters. Data from 2021 and 2022 observations reside on a shared drive for MCWA and Wildlife Diversity staff.

Other Information

The management crew visited active cluster locations to look at active cavity tree status and to determine cavity tree losses. There were 53-55 active cavity trees/cavities and we lost at least 5 cavity trees to unknown causes at 4 different locations. The west side MCWA loss count was as follows; cluster 2 lost 1 natural cavity tree, cluster 112 lost 1 natural cavity tree, and cluster 37 lost 1 natural cavity tree. The east side count was limited to cluster 210 where 1 natural cavity tree and 1 insert cavity tree was lost. Notable findings were that we have more active trees per cluster than previously recorded. There were several clusters with at least 4 active cavity trees and we found 7 clusters with new natural cavity trees/ cavities developed.

The area management staff are scheduled to install 2-4 new recruitment stands on the West side of the area as well as 2-3 on the East side of the area prior to the 2023 nesting season.

The 2023 prescribed burning season will incorporate all of the active clusters on the East side of the area. An effort will be made to burn in and around the clusters prior to the larger area burn to attempt to gain better protection of the cavity trees.

RECOMMENDATIONS:

Due to the high ODWC prioritization of recovery efforts for Red-cockaded Woodpeckers, this project will continue beyond the current grant segment until such time as the population attains the MCWA management plan goal of 45 active clusters. Even if the population goal of 45 territories is achieved, continued habitat management and population monitoring will be required in perpetuity if RCWs are to persist on the MCWA and surrounding Oklahoma Ranger District of the Ouachita National Forest. We also recommend that further research be conducted to better understand factors that are limiting overall population growth. Types of projects could include bird movement studies, understanding male bird turnover, food availability research, various habitat manipulation trials and other research topics.

SIGNIFICANT DEVIATIONS:

No significant deviations.

EQUIPMENT:

No equipment was purchased.

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