

**Creating Required Structural Habitat Diversity in Emergent Wetland Habitat Managed for King Rails on the Freddie Black Choctaw Island WMA Deer Research Area West**

**Project Summary:** Structural diversity in emergent wetlands and the interspersions of open water to emergent vegetation is required by King Rails and will be increased and enhanced for King Rails through the purchase and multi-seasonal use of a cleared roller to thin vegetation, set back succession, and create wetland openings on Freddie Black Choctaw Island WMA Deer Research Area West (Choctaw West). Acquiring a roller to maintain emergent wetlands in the units will address the 2018 AWAP King Rail funding priority to maintain and enhance robust emergent wetland vegetation for King Rails. The use of this roller will maximize the amount of emergent wetland habitat annually available for King Rails on the WMA by lengthening the period of time in which a unit can provide quality emergent habitat and delay the need to drain entire units in order to set back succession. Enhancing emergent wetlands on the WMA will benefit King Rails, directly benefit 5 species of emergent wetland dependent marsh birds designated by the Arkansas Wildlife Action Plan as Species of Greatest Conservation Need (SGCN) and provide habitat for 10 additional species of avian SGCN which have been documented on the WMA.

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**SWG Funding Requested:** \$18,000 (65%)

**Matching Funds:** \$9,692 (35%) will be provided by the Arkansas Game and Fish Commission.

**Total Project Cost:** \$27,692.

**Need:** King Rails and the herbaceous wetlands on which they depend are rare in Arkansas. In 2012, King Rails were detected in only 3 out of 82 wetlands surveyed by the Arkansas Game and Fish Commission and the U.S. Fish and Wildlife Service in the Arkansas Mississippi Alluvial Valley (AMAV) region. In 2017, no King Rails were detected by Dr. David Kremetz, University of Arkansas, during his 63 surveys across 11 wetland complexes in the AMAV (excluding Choctaw West). In 2014, seven emergent wetlands totaling 608 acres on Choctaw West were created with funds from the NRCS Wetland Reserve Program. Surveys for marsh birds were initiated in 2015 using the North American Standardized Marsh Bird Survey Protocol. In 2015, there were 6 detections of King Rails, in 2016, there were 0 detections of King Rails and in 2017 there were 8 detections of King Rails. King Rails were also detected outside of the survey areas during area searches for rails as well as detected incidentally during routine WMA activities. In 2016, 1 King Rail was detected on the WMA off-survey and in 2017 1-2 King Rails were repeatedly detected at each of 5 off survey locations. In the winter of 2017-8, 2 King Rails were detected.

Robust emergent wetlands, also referred to as herbaceous wetlands, were identified by AWAP research and monitoring as a critical habitat. Emergent wetlands used by King Rails and other marshbirds have few to no invading trees and shrubs, and native emergent wetland vegetation such as rushes, sedges and cattails are interspersed with shallow open water with a depth that varies from 4-8 inches during wintering, migrating and breeding periods and a depth that varies from exposed mudflats to no more than 6 inches deep during the brood rearing period. Open water areas are interspersed in the wetlands and ideally the habitats approach a ratio of 50% water to 50% emergent wetland vegetation. Searches for quality emergent wetlands during previous marsh bird surveys across the Arkansas Delta were unable to locate any naturally occurring herbaceous wetlands or managed emergent wetlands larger than 40 acres that did not contain a high percentage of invading trees and shrubs. Herbaceous wetlands that provide quality King Rail habitat lose their value to birds as succession fills open water areas usually within 2 years after the area has reached desired habitat conditions. Woody vegetation usually invades the wetlands in 3-5 years after the wetland reaches desired conditions. Annual management is required to maintain high quality herbaceous wetlands. In 2017, a cleated roller was borrowed for one-time use on Choctaw West. During late winter the roller was used to chop open strips in dense stands of emergent vegetation. The roller created openings needed by King Rails for travel, foraging and brood rearing. During the spring, King Rails were observed using these pathways and openings.

A summer 2017, a habitat review by AGFC personnel identified areas that needed to be thinned using chemical or mechanical methods and also noted there needed to be an increase of the ratio of water to emergent vegetation. Unlike a cleated roller, use of chemicals to remove vegetation does not create the immediate result of vegetation removal. Because water is kept on the units year around as required by King Rails, completely draining and disking a unit removes that unit from the amount of total acreage of emergent habitat available for 1-2 years. Use of a roller does not require draining of the unit and does not impact that amount of quality habitat available. Choctaw West is the only known area in AMAV that provides year 'round quality robust emergent vegetation in herbaceous wetlands with water levels managed specifically for King Rails. It is the only location in the AMAV where King Rails have been observed during spring,

summer, fall and winter in 2017. Use of a cleated roller to maximize the habitat on the WMA will directly benefit 6 avian SGCN and provide habitat used by an additional 10 avian SGCN.

**Funding Priority:** This project addresses the 2018 Arkansas Wildlife Action Plan funding priority for birds “King Rail: Restore herbaceous wetlands”.

**Purpose and Objectives:** The goal of this project is to increase structural diversity of emergent wetland vegetation, increase the amount and interspersion of open water to vegetation, and maximize the amount of quality wetland habitat available annually to King Rails, as well as other priority wetland dependent birds on 608 acres at Choctaw West. The project will be completed in the required 2 years, however the emergent wetland habitat enhancement and use of the cleated roller will continue for the lifetime of the WMA’s NRCS WRP easement.

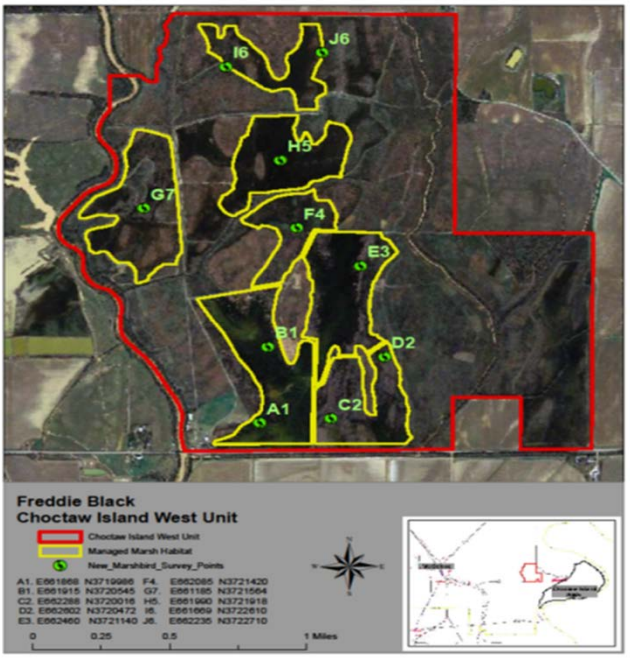
Proposal Objectives:

1. Purchase a cleated roller which should take no more than 6 months after funding approval. A cleated roller is an 18 ft. wide metal cylinder with protruding metal strips/cleats. The roller is pulled through the wetland and the cleats break the stems of the plants and slightly churn the soil.
2. Use the cleated roller to set back succession and create a 50:50 ratio of water to emergent wetland vegetation on units and areas identified in need of thinning or an increase in the ratio of open water to emergent habitat. Rolling will be conducted in late summer/early fall and late winter/and early spring and will not be used during mid-April through mid- July.
3. The project leader and partners will identify units in need of rolling twice a year. Units will be reviewed in June using the habitat evaluation portion of the bird surveys and in November upon review of past year’s monthly moist soil unit reports. There are no other practical quantifiable surveys or other evaluation tools used by emergent wetland managers or researchers in the U.S. for determining the quantity and quality of emergent wetland vegetation, and the ratio of open water to vegetation in emergent wetland units.
4. Conduct 3 annual marsh bird surveys at each of the established 10 points on Choctaw West between April 1 and June 1, and conduct a 4th survey during the last two weeks of March in 2018 and 2019 to evaluate early spring marsh bird response. Surveys and associated habitat evaluations follow the standardized North American Marsh Bird Monitoring Protocol. The survey also requires the estimation of several habitat parameters at each survey point.
5. Conduct 10 King Rail area searches from March through June.

**Approach:** Objective 1 will be accomplished during the first 6 months of the grant period; 2 and 3, will be conducted twice a year; 4 and 5 will occur during the spring. After the end of the grant period, these objectives will continue to be implemented because this area is under a NRCS WRP permanent easement and the units were funded by the WRP program for the management of emergent wetlands for King Rails and marsh birds.

**Location:** Freddie Black Choctaw Island WMA Deer Research Area West’s emergent wetland management units and marsh bird survey points. The WMA is located in Desha County, in

southeast Arkansas. This WMA is in the Mississippi Alluvial Plain Ecoregion.



**Expected Results and Benefits:** Use of a cleated roller at Choctaw West will ) enhance the structural diversity of emergent wetland vegetation preferred by King Rails, 2) create and maintain the 50:50 ratio of water to herbaceous vegetation preferred by King Rails, 3) and maximize the annual acreage of herbaceous wetlands required by King Rails on Choctaw West by delaying both succession and the need to completely drain and disk a unit (which removes marsh bird habitat for 1-2 years) and 4) provide high quality habitat for the only known site in the AMAV where King Rails have been detected in the spring migration period, breeding season, and the summer, fall migration and wintering periods. In addition to benefiting King Rails, this project will directly benefit the following SGCN marsh birds that depend on emergent wetlands and have been documented on Choctaw West: Purple Gallinule, Common Gallinule, Least Bittern, American Bittern, and Sedge Wren. In addition, 10 other species of avian SGCN have been documented on Choctaw West according to eBird.org. A cleated roller is considered a piece of capital equipment and expected life of this item is 35 years. The roller will be kept at Choctaw West and will not be used at other WMAs.

<b>Budget:</b>	Total	SWG amount	AGFC amount *
Cleated Roller	\$18,000	\$18,000	0
Habitat Management – Use of Roller		0	\$10,665
Bird Surveys, Area Searches		0	\$11,766
Habitat Eval. Reports		0	\$3,504
Subtotal		18,000	\$25,935
<b>State Match Needed</b>			<b>\$9,692</b>
<b>TOTAL</b>	<b>\$27,692</b>	<b>\$18,000</b>	<b>\$9,692</b>

\* Salary, benefits and indirect costs. The approved FY19 Indirect Rates for Wildlife is 44.03%

## **Qualifications:**

**Project Leader:** Karen Rowe is the Arkansas Game and Fish Commission's Nongame Bird Program Coordinator and has served in this position for 28 years. Prior to working in the Wildlife Management Division, she served as the agency's Nongame and Endangered Species Biologist in the Federal Coordination Division. She has been employed by the Commission since July 1983. She graduated from The Ohio State University with a B.S degree in Wildlife Management and worked for 2 years as a Private Lands Biologist for the Ohio Division of Wildlife. Karen is a Certified Wildlife Biologist and a member of The Wildlife Society and the Arkansas Chapter of The Wildlife Society. She has a strong interest in secretive marsh birds and is a member of the Midwest Marshbird Working Group. Her interest in marsh birds was ignited when she accompanied a UA Coop Unit Student on his 2005 and 2006 AWAP SWG marshbird surveys and realized the rarity of marsh birds and the habitat upon which they depend.

**Project Partner:** Jason McCallie has a B.S. in Wildlife Management from University of Arkansas at Monticello and has been employed by the Arkansas Game and Fish Commission for 7 years. He currently serves as the Region 3 Field Biologist and previously served as the region's Habitat Biologist working in forest management. Jason is stationed at Choctaw West and has a very keen interest in marsh birds and their habitats and has taken the only photographs of King Rails on the WMA. He is responsible for almost all of the actual habitat and water management on Choctaw West and due to his active involvement in management of the area, he has made almost all of the actual sightings of King Rails on the WMA. Jason worked for a short time as a Marine Fisheries Biologist for Louisiana Department of Wildlife and Fisheries where he worked in the brackish and salt marshes of Terrebonne Bay in South Louisiana. It was here that he developed a fondness of marsh ecosystems along with the birds and animals that inhabit them. Jason states that he has found that same thrill in managing the fresh water marsh at Choctaw Island West Unit WMA.

**Project Partner:** Jason Jackson is the Arkansas Game and Fish Commission Wetlands Program Coordinator and has worked for AGFC for 9 years. He received a Wildlife Management and Ecology degree from Arkansas State University. Previous to his work with AGFC, Jason served as a waterfowl biologist position with 5 Oaks Wildlife Services for 2 years, where he was deeply involved with wetland construction/consultation. Jason "Buck" Jackson states that "wetland management in all forms is in my blood" and has created 2 emergent wetland marsh bird units in 1 previous AWAP SWG project and also had oversight of the creation of the 7 marshbird units on Choctaw West.