

Title: Monitoring Marsh Bird Use at Frog Bayou Wildlife Management Area

Project Summary: Many marsh birds occur in emergent wetlands throughout Arkansas. Management for marsh birds is not well understood. Recent work funded by the State Wildlife Grant (SWG) Program indicates that wetlands with tall emergent plant communities are selected by marsh birds. Current wetland management at some AGFC WMAs with large marshes is designed for annual wetland plants. We propose to investigate whether AGFC wetlands managed using techniques promoting annual wetland plants are used by marsh birds.

Project Leaders: David G. Krementz¹, Unit Leader;
Brian Infield², Field Biologist

Affiliation: ¹USGS Arkansas Cooperative Fish & Wildlife Research Unit; ²AGFC

Email: Krementz@uark.edu, binfield@agfc.state.ar.us

Mailing Address: Arkansas Coop Unit, Department of Biological Sciences, SCEN 632, 1 University of Arkansas, Fayetteville, AR 72701; AGFC, P.O. Box 23669, Barling, AR 72923

Telephone and FAX Numbers: DGK - 479.575.7560, 479.575.3330; BAI – 877.478.1043

Project Partners: Richard Johnson, Wetlands Program Coordinator, AGFC, rwjohnson@agfc.state.ar.us, 501.223.6471
Andrew James, Easement Programs Coordinator, Arkansas NRCS, Andrew.James@ar.usda.gov, 501.301.3114

Total Amount of Project Cost: \$80,430

Total Amount of SWG Requested: \$32,680

Amount and Source of Matching Funds or In-kind Services: \$46,750. Funding for wetland management practices on Frog Bayou WMA state lands will be provided by AGFC. Such funding will include manpower, equipment expenses, chemical purchase, and water pumping. The Arkansas Coop Unit will provide a graduate student, summer salary for the student, a vehicle and equipment for surveying marsh birds. The University of Arkansas will cover tuition costs for the student.

Funding priorities addressed:

- Project that addresses the needs of species of greatest conservation need including the king rail, American bittern, common moorhen, least bittern, pied-billed grebe, and purple gallinule
- Project that addresses the need to protect, re-establish, and restore emergent wetlands
- Projects that address an emerging priority which is based on new data gathered by previous SWG monitoring and research projects.
- On-the-ground stewardship or restoration projects that both implement the priorities of the Arkansas Wildlife Action Plan and can serve as demonstration projects that may be replicated in other places.
- Research projects that lead to on-the-ground conservation.

Objective: The primary goal of this study will be to monitor marsh bird use of wetlands managed for annual plant communities.

Expected Results and Benefits to Species of Concern: Responses by marsh birds to wetland management will be evaluated and recommendations for improved management methods for marsh birds will be formulated. Peer-reviewed scientific journal articles are anticipated to result from this study. A graduate student will be mentored and trained as part of this study.

Approach: Monitoring marsh bird use at Frog Bayou WMA during 2011 and 2012 will be conducted by a Master's Student using occupancy rate survey methods (McKenzie et al. 2005). Such surveys involve play-back recordings and repeated visits (~3 visits) to each site. Previous SWG surveys for marsh birds both in the Mississippi Alluvial Valley and Arkansas River Valley have reported good results using this approach (Budd 2007, DGK, unpublished results). Survey points will be randomly located in all management units and in unmanaged wetlands on the WMA. These latter wetlands will act as controls. We recognize that play-back survey methods are not effective later in the breeding season so we will augment our play-back surveys with systematic searches of wetlands by both systematically searching the wetlands with multiple observers and by observing foraging areas within the wetlands during fall migration (Darrah 2008). Management for wetlands will involve chemical, biological and/or physical disturbance. The Frog Bayou Management Plan (see attached) explicitly lays out the management practiced to date and management to be implemented over the next two growing seasons. Vegetation measurements will be made both at the beginning of the growing season and in early fall. Measurements collected will include water depth, vegetation-water interspersion, percent cover by annual and perennial emergent plants, by woody plants, and by undesirable plants. Management practices used and vegetation measurements will be used as covariates in explaining marsh bird use. Modeling will be conducted using program MARK.

Location of Work: Arkansas River Valley – Frog Bayou Wildlife Management Area

Budget:

Total amount of project cost:		\$80,430
	Salary/benefits -	\$22,680
	Operating expenses –	\$10,000
	Capital expenses -	\$0
	UA Overhead ^a	\$0
Total amount of SWG money requested:		\$32,680

^aAs per cooperative agreement between UA, USGS Arkansas Coop Unit and AGFC, AGFC will pay no overhead on this project.

Amount and source of matching funds:	UA tuition	\$12,000
	Student summer salary	\$ 8,500
	AGFC management costs	<u>\$26,250</u>
	Total Match	\$46,750

Principle Investigators

David G. Krementz, Unit Leader USGS Cooperative Wildlife Research Unit

Dr. Krementz has worked on migratory bird population biology and habitat use for 20 years. Over the past 5 years he has focused on marsh bird survey methodology, population biology and habitat management in the Mississippi Flyway. These efforts included a survey of marsh birds in the Arkansas Delta and western Arkansas River under the SWG program as well as 2 projects on distribution and habitat use of king rails in the Midwest. This recent focus on marsh birds was in part a consequence of his being the Chairman of the Webless Bird Committee of the Mississippi Flyway Technical Section. That committee is charged with approving state webless game bird harvest regulations which are in part based on research findings and population monitoring.

Brian Infield, Field Biologist Arkansas Game & Fish Commission

Brian Infield is the manager of Frog Bayou and has been doing so since 2004. He has been experimenting with several basic habitat manipulations in order to better understand how to achieve his habitat goals. The current management plan for Frog Bayou WMA runs through FY 2012 when it will be re-evaluated. In fall 2008 and spring 2009, king rails were detected at Frog Bayou which was quite noteworthy.

Project Partners

Richard Johnson, Wetlands Program Coordinator, AGFC, wetland management expertise;

Andrew James, Easement Programs Coordinator, Arkansas NRCS, wetland management expertise