

Project Title: Habitat Restoration in the Beaver Lake Watershed

Project Summary: An effort to restore wildlife habitat in the Beaver Lake Watershed through providing informational resources, cost-share, and technical assistance to landowners to support conservation practice implementation on private lands.

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Project Partners: Hobbs State Park, Withrow Springs State Park, Watershed Conservation Resource Center, United States Army Corps of Engineers (note all partners listed work with BWA on a regular basis and have ongoing wildlife habitat improvement projects and partnerships)

Project Budget: SWG: \$40,000 BWA: \$25,257 Total: \$65,257

Need

A variety of ecosystem disturbances on public and private lands have led to the disappearance and decline of many wildlife species from historic record in the Beaver Lake Watershed, which lies in portions of both the Ozark Highland and Boston Mountain ecoregions and contains 132 species of greatest conservation need (SGCN). Urbanization and limited conservation management in the watershed have contributed to the decline of forest, riparian, prairie, wetland, small stream, aquatic, and glade habitats. In working to maintain and promote long term water quality in the Beaver Lake Watershed, the Beaver Watershed Alliance needs resources to meet landowner demand and assist landowners with conservation practice implementation to increase, improve, and maintain wildlife habitat on their property.

Purpose and Objectives

The purpose of the Habitat Restoration in the Beaver Lake Watershed project is to improve wildlife habitat in the Beaver Lake Watershed (BLW). Many water quality issues in the BLW can be addressed through increased wildlife habitat management on private lands. For example, riparian establishment can serve as both a protective buffer for streambanks and provide quality wildlife habitat areas for aquatic and terrestrial wildlife of greatest concern. Educating landowners about the benefits of conservation management on their property for wildlife and water quality and engaging them to take initiative to implement conservation practices will help sustain wildlife habitat and water quality improvements. A recent study conducted by BWA showed that 97% of watershed stakeholders agree that protecting wildlife habitat is important. Educational programming provided by the BWA, along with our partners, has informed landowners about the importance of their conservation management for wildlife and motivated them to begin or increase conservation practice implementation to increase, improve, or maintain wildlife habitat on their property. This project will provide funding necessary to address habitat restoration through continuing education about the importance of private land management to benefit birds, insects, mammals, fish, mussels, and reptiles, and help bridge the funding gap which is limiting conservation progress. The objectives are to create or enhance riparian buffer along 6 miles of riparian area, improve management on 15 acres of prairies and native grasslands, 1,280 acres of woodlands, 2 acres of wetlands, small streams, glade, karst, and aquatic habitat.

Location

The project will take place in the Boston Mountains and Ozark Highlands Ecoregions of the Beaver Lake Watershed, which lies in portions of Franklin, Crawford, Benton, Washington, Carroll, and Madison Counties. Targeted habitats include prairies and native grasslands, woodlands, wetlands, small stream, aquatic habitats, glade and karst.

Approach

Quarterly newsletters produced by Beaver Watershed Alliance are currently reaching 18,000 landowning residences in the Beaver Lake Watershed (BLW) who own approximately 75 percent of the private lands within the watershed. Newsletters contain catered education and

current information about the BLW, water quality best management practices, educational programs, and management of land for conservation purposes. Newsletters have successfully engaged property owners and BWA has been able to gain personal access to over one hundred thousand acres and achieve voluntary implementation of over 1,000 conservation practices within three years. The BWA will provide 8 wildlife habitat improvement workshops and/or field days for landowners to learn more about specific habitat needs for species of greatest conservation need and recommendations to encourage landowners to improve conservation management and implement best practices such as controlled burns, removal of cedar trees and establish native forbs and grasses to benefit wildlife. Mini-grants will be offered to landowners to assist with facilitating conservation implementation.

Expected Results and Benefits

Expected results are increased conservation practice implementation in the Beaver Lake Watershed along 6 miles of riparian area, 15 acres of prairies and native grasslands, 1,280 acres of woodlands, 2 acres of wetlands, small streams, glade, karst, and aquatic habitat that will benefit at least 132 SGCN. Practices to be implemented will be prescribed fire, wildlife management plans, forest management plans, forest thinning, riparian buffer creation, riparian buffer enhancement, reforestation, glade restoration, and additional practices recommended by AGFC. SGCN that will benefit include the following:

Amphibians - Ringed Salamander - *Ambystoma annulatum*, Eastern Tiger Salamander - *Ambystoma tigrinum tigrinum*

Birds - Henslow's Sparrow - *Ammodramus henslowii*, LeConte's Sparrow - *Ammodramus leconteii*, Grasshopper Sparrow - *Ammodramus savannarum*, Northern Pintail - *Anas acuta*, Short-eared Owl - *Asio flammeus*, Upland Sandpiper - *Bartramia longicauda*, Smith's Longspur - *Calcarius pictus*, Sanderling - *Alidris alba*, Dunlin - *Calidris alpina*, Chuck-will's-widow - *Caprimulgus carolinensis*, Whip-poor-will - *Caprimulgus vociferus*, Chimney Swift - *Chaetura pelagica*, Northern Harrier - *Circus cyaneus*, Sedge Wren - *Cistothorus platensis*, Yellow-billed Cuckoo - *Coccyzus americanus*, Northern Bobwhite - *Colinus virginianus*, , Cerulean Warbler - *Dendroica cerulea*, Prairie Warbler - *Dendroica discolor*, Yellow Warbler - *Dendroica petechia*, Little Blue Heron - *Egretta caerulea*, Snowy Egret - *Egretta thula*, Willow Flycatcher - *Empidonax traillii*, , Bald Eagle - *Haliaeetus leucocephalus*, Worm-eating Warbler - *Helmitheros vermivorus*, Wood Thrush - *Hylocichala mustelina*, Mississippi Kite - *Ictinia mississippiensis*, , Migrant Loggerhead Shrike - *Lanius Idovicianus migrans*, , Red-headed Woodpecker - *Melanerpes erythrocephalus*, , Kentucky Warbler - *Oporonis formosus*, Wilson's Phalarope - *Phalaropus tricolor*, Eastern Towhee - *Pipilo erythrophthalmus*, , Blue-winged Warbler - *Vermivora pinus*, Bell's Vireo - *Vireo bellii*, Hooded Warbler - *Wilsonia citrina*

Crayfish - Midget Crayfish, *Orconectes nana*, William's Crayfish - *Orconectes williamsi*.

Fish - Crystal Darter - *Crystallaria asprella*, , Least Darter *Etheostoma microperca*, Spotfin Shiner - *Cyprinella spiloptera*, Ozark Chub - *Ermystax harryi*, Ozark Shiner - *Notropis ozarcanus*, Longnose Darter - *Percina nasuta*

Insects - Monarch - *Danaus plexippus*, Arkansas agapetus caddisfly - *Agapetus medicus*, Winter stonefly - *Allocapnia ozarkana*, Winter stonefly - *Allocapnia warreni*, Ozark Clubtail Dragonfly -

Gomphus ozarkensis, Predaceous diving beetle - *Heterosternuta phoebeae*, , Contorted ochrotrician microcaddisfly - *Ochrotrichia contorta*, Ozark Snaketail Dragonfly - *Ophiogomphus westfalli*, Lace-winged Roadside Skipper - *Amblysirtes aesculapius*, Carolina Roadside Skipper - *Amblyscirtes carolina*, Linda's Roadside Skipper - *Amblyscirtes linda*, Swamp Metalmark - *Calephelis muticum*, Meske's Skipper - *Hesperia meskei*, Baltimore Checkerspot - *Euphydryas phaeton ozarkae*, Diana - *Speyeria diana*

Mammals - Desert Shrew - *Notiosorex crawfordi*, Plains Harvest Mouse - *Reithrodontomys montanus*, Southeastern Shrew - *Sorex longirostris*, American Badger - *Taxidea taxus*

Mussels - Western Fanshell - *Cyprogenia aberti*, Ozark Pigtoe - *Fusconaia ozarkensis*, Arkansas Brokenray - *Lampsilis reeveiana*, Fatmucket - *Lampsilis siliquoidea*, Flutedshell - *Lasmigona costata*, Ouachita Kidneyshell - *Ptychobranthus occidentalis*, Rabbitsfoot - *Quadrula cylindrica*, Purple Lilliput - *Toxolasma lividus*, Bleedingtooth Mussel - *Venustaconcha pleasii*, Rainbow - *Villosa iris*

Reptiles - Western Diamondback Rattlesnake - *Crotalus atrox*, Collared Lizard - *Crotaphytus collaris*, Great Plains Skink - *Eumeces obsoletus*, Southern Prairie Skink - *Eumeces obtusirostris*, Western Slender Glass Lizard - *Ophisaurus attenuatus attenuates*, Graham's Crayfish Snake - *Regina grahamii*, Ground Snake - *Sonora semiannulata*, Ornate Box Turtle - *Terrapene ornata ornata*

Budget

Personnel	Salary	m/yrs	Fed Funds	Non-Fed Funds	Total Cost
4 BWA Staff	\$168,876	.1	\$0	\$16,887	\$16,887
Total, Personnel			\$0	\$16,887	\$16,877
Fringe Benefits 31.8%			\$0	\$5,370	\$5,370
Total Personnel including Fringe			\$0	\$22,257	\$22,257
Travel					
In State (Travel at .54 cents/mile for 1,620 miles to landowners)			\$0	\$3,000	\$3,000
Total Travel			\$0	\$3,000	\$3,000
Supplies					
Native Seedlings, grass and forb seed			\$20,000	\$0	\$20,000
Total Supplies			\$20,000	\$0	\$20,000
Contractual					
Tree Removal, Control Burn, Consultant (competitive bids)			\$20,000	\$0	\$20,000
Total Contractual			\$20,000	\$0	\$20,000
Indirect Charges					
Total Direct Charges			\$40,000	\$25,257	\$65,257
Total Indirect			\$0	\$0	\$0
Grand Total			\$40,000	\$25,257	\$65,257

Qualifications

John Pennington, Executive Director, has a B.S. in Biology from Arkansas Tech University and a M.S. in Crop, Soil, and Environmental Science from the UA-Fayetteville. John has worked with private landowners to provide education and assist with conservation practice application for 9 years.

Becky Roark, Outreach Director, has a B.S. in Landscape Architecture from the University of Arkansas. Becky has worked within the water quality and conservation fields since 2010 as Project Manager for the Illinois River Watershed Partnership helping to increase green infrastructure technologies for this region.

Melissa Welch, Program Coordinator, has a B.S. in Biology from Rhodes College and working on M.S. in Biology from UA-Fayetteville in stream ecology. Melissa has been working with landowners implementing conservation practices for one year.

Sarah Hallett, Program Coordinator, has a B.S. in Environmental Science from the University of Arkansas.