

## **Buffalo River Watershed Management Plan**

### **Scope of Work Summary**

- 1. Title of Project:** Watershed-Based Management Plan for the Buffalo River Watershed, AR
- 2. Project Goals/Objectives:** The objective of this project is to prepare an EPA-accepted nine element watershed-based plan for the Buffalo River NPS priority watershed, while developing local support for the plan and its implementation. These objectives are planned steps toward the goal of reducing pollutants to levels that will restore/protect the designated uses of the waterbodies within the Buffalo River watershed.
- 3. Project Tasks:** 1) Build partnerships; 2) Characterize the watershed; 3) Finalize management goals and identify solutions; 4) Design implementation program; 5) Prepare EPA-accepted nine element watershed-based plan; 6) Reporting
- 4. Measures of Success:** This project will be considered successful if stakeholders are engaged and support the watershed-based management plan accepted by ANRC and EPA as the basis for implementing management actions to attain designated stream uses.
- 5. Project Location:** The Buffalo River watershed, ADEQ planning segment 4J, located in the north central part of Arkansas, is an irregularly-shaped watershed that includes parts of Baxter, Boone, Madison, Marion, Newton, Pope, Searcy, Stone and Van Buren counties. The watershed includes Bear Creek, Big Cave Creek, Big Creek, Left Fork, Buffalo River, Calf Creek, Clobber Creek, Davis Creek, Little Buffalo River, East Fork, Richland Creek, Sams Creek, Sellers Creek, Spring Creek and Thomas Creek.
- 6. Project Costs:** Total: \$99,813

## Project Description

### Introduction of Watershed Area

The Buffalo River Watershed (11010005) is home to about 17,000 Arkansans, lies within the White River Basin in Northwest Arkansas, and has a watershed area of 1,372 square miles (878,080 acres). The Buffalo River originates in Newton County, and flows north and then east, as do its tributaries Little Buffalo River, Big Creek, Cave Creek and Richland Creek. Bear Creek, Clobber Creek and Big Creek originate in Searcy County. The watershed is irregularly-shaped and crosses parts of Baxter, Boone, Madison, Marion, Newton, Pope, Searcy, Stone and Van Buren counties. A number of towns are located within the watershed. Marshall is the largest, located in the southeastern watershed. Jasper is the next largest, located in the western watershed.

Nearly 80 percent of the watershed's land area is forested. Approximately 21 percent of the land is either grassland or transitional uses, respectively (CAST, 2006). Widespread forest cover in the watershed coincides in large part with the Ozark National Forest. The watershed is located within the Ozark Mountains Physiographic Region of Arkansas with mountain ridges and intervening valleys and is characterized by a typical dendritic drainage pattern. Overall, the watershed slopes generally to the south. This watershed contains some unique natural resources, including the Buffalo National River and the Gene Rush Buffalo River Wildlife Management Area.

### Problem/Need Statement

Practices in the watershed are perceived to be a potential threat to the generally high water quality in the Buffalo River and its tributaries. The first step in protecting these waterbodies is to prepare a nine element watershed-based plan, and build local support for its implementation. The EPA requires an accepted nine element watershed-based plan to guide implementation of management practices using Clean Water Act Section 319 funds (319). Once the plan is prepared and accepted by EPA, local stakeholders can apply for 319 funds to implement best management practices identified in the plan within the Buffalo River watershed to control nonpoint source pollution and protect water quality.

### General Project Description

Watershed-based management planning typically occurs through six steps:

1. Building partnerships,
2. Characterizing the watershed,
3. Finalizing management goals and identifying solutions,
4. Designing an implementation program,
5. Implementing the watershed-based management plan, and
6. Measuring progress and making adjustments through adaptive management.

This project will proceed through the first four steps – building partnerships; characterizing the watershed; finalizing the vision, mission, goals, objectives, and management practices (i.e., solutions); and designing the implementation program. The results of these four steps will be documented in the nine element watershed-based management plan. Project tasks are described below.

**Task 1 Build partnerships:** The ANRC Contractor will facilitate the formation of stakeholder teams to champion the development and implementation of the watershed-based management plan, emphasizing the socioeconomic benefits that can accrue to all stakeholders from restoring segments of the Buffalo River and its tributaries. Key stakeholder groups in the Buffalo River watershed include: Arkansas Association of Conservation Districts, Arkansas Farm Bureau, Friends of the Buffalo, Buffalo River Watershed Alliance, Arkansas Canoe Club, Ozark Society, National Park Service, National Park Conservation Association, and Arkansas Game and Fish Commission.

**Task 2 Characterize the watershed:** The ANRC Contractor will review existing studies of the Buffalo River watershed, and, if needed, further identify sources and causes of pollution (Plan Element 1).

**Task 3 Finalize management goals and identify solutions:** The ANRC Contractor will work with the teams to create a vision, mission, and management goals for the Buffalo River watershed. The teams will also determine the load reductions needed (Element 2), critical areas for management, and management actions/practices to achieve the management goals (Element 3) for the basin.

**Task 4 Design implementation program:** In conjunction with the teams, the ANRC Contractor will design a program for implementing the goals and solutions, emphasizing the socioeconomic benefits that will accrue to the stakeholders when the plans are implemented. This will involve estimating funding needs, and identifying funding sources (Element 4), developing information and education activities (Element 5), an implementation schedule and milestones (Elements 6 and 7), and identifying indicators and a program for monitoring and tracking progress (Elements 8 and 9).

**Task 5 Prepare nine element watershed-based plan:** Utilizing the information gathered during Tasks 1 through 4, the ANRC Contractor will prepare a nine element watershed-based plan for the Buffalo River watershed that incorporates any differences in objectives and/or management activities in the basin. This plan will be reviewed by the team, ANRC, and EPA, and their comments incorporated.

**Task 6 Reporting:** All reports will be prepared and submitted (hard copies and electronically).

1. Quarterly reports will be submitted electronically by ANRC and will briefly state accomplishments made for each task.
2. Final Report will be submitted by ANRC at the completion or the end date for the project. The Final Report should be a narrative description and should encompass all activities (from start to finish) related to the project. An executive summary as well as a final outcome and/or conclusion section shall be contained in the Final Report.

After this project is completed, the nine element watershed-based plan will be implemented by local and agency stakeholders.

**Tasks, Objectives, Subtasks, Schedules, Deliverables, and Estimated Costs****Task 1, Build partnerships** **Costs \$25,128**

**Objectives:** Formation of stakeholder team to support development and implementation of the watershed-based plan

**Subtask 1.1** Identify and contact stakeholders for team based on preliminary issues

**Subtask 1.2** Form a stakeholder team

**Subtask 1.3** Four team meetings

**Deliverables:**

1. Teams of stakeholders committed to participating in development of plan and implementing the resulting plan

**Task 2, Characterize watershed** **Costs \$11,992**

**Objective:** Review existing studies of the Buffalo River watershed to characterize pollutants, sources, and loads

**Subtask 2.1** Gather existing data and information from previous studies and modeling

**Subtask 2.2** Identify data gaps

**Subtask 2.3** Characterize pollutant trends, sources, and causes

**Subtask 2.4** Estimate pollutant loads

**Deliverables:**

1. Summary of existing information on pollutants, sources, and loads; data gaps; and the results of data evaluation and any additional research conducted

**Task 3, Finalize management goals and identify solutions** **Costs \$6,480**

**Objective:** Stakeholder vision, mission, goals, objectives, and solutions for the Buffalo River watershed

**Subtask 3.1** The ANRC Contractor will assist stakeholder teams in developing vision, mission, and goals for the Buffalo River watershed

**Subtask 3.2** Develop indicators and targets related to stakeholder watershed goals

**Subtask 3.3** Determine load reductions needed to achieve stakeholder watershed goals and vision

**Subtask 3.4** Identify critical areas for management and restoration

**Subtask 3.5** Develop management activities to achieve stakeholder watershed goals

**Deliverables:**

1. Stakeholder vision, mission, and goals for the Buffalo River watershed
2. Management plan for achieving watershed goals and vision in northern and southern areas of the watershed, including indicators, targets, load reductions, management activities, and critical areas

**Task 4, Design implementation program** **Costs \$12,000**

**Objective:** Plans for implementing and tracking management activities in the Buffalo River watershed

**Subtask 4.1** Develop implementation schedule and milestones and identify who will be responsible for implementation

**Subtask 4.2** Identify performance measures related to management implementation and achieving watershed goals and objectives

**Subtask 4.3** Identify/develop monitoring activities

**Subtask 4.4** Identify/develop information/education activities

**Subtask 4.5** Identify technical and financial needs and sources for implementing management plan

**Subtask 4.6** Plan for regular review and revision of plan

**Deliverables:**

1. Implementation plan for the Buffalo River watershed

**Task 5, Nine element watershed-based management plan** **Costs \$19,628**

**Objective:** Stakeholder approved nine element watershed-based management plan for the Buffalo River watershed

**Subtask 5.1** Draft background information, including Elements 1 and 2

**Subtask 5.2** Incorporate stakeholder vision, mission, goals, objectives, and solutions

**Subtask 5.3** Draft implementation program, including Elements 3 through 9

**Subtask 5.4** Draft nine element watershed-based plan for review by team and ANRC

**Subtask 5.5** Revised plan incorporating comments from team and ANRC, for EPA review

**Subtask 5.6** Accepted plan incorporating comments from EPA

**Deliverables:**

1. Draft plan for review
2. Final plan incorporating review comments

**Task 6, Reporting** **Cost \$12,614**

**Objective:** Provide ANRC information regarding the progress of this project on a quarterly and annual basis; further more provide a Final Report detailing the project.

**Subtask 6.1** Quarterly Reports that include implementation documentation

**Subtask 6.2** Final Report

**Deliverables:**

1. Quarterly Reports with implementation documentation
2. Final Report at the conclusion of the project activities

**Schedule of Tasks and Outputs:**

<b>Task</b>	<b>Subtask Number</b>	<b>Description</b>	<b>Start Date</b>	<b>Completion Date</b>
1		Building partnerships	Month 1	Month 15
	1.1	Identify and contact stakeholders for teams based on preliminary issues	Month 1	Month 2
	1.2	Form stakeholder team	Month 1	Month 2
	1.3	Four team meetings	Month 2	Month 12
2		Characterize watershed	Month 1	Month 4
	2.1	Gather existing data and information	Month 1	Month 2
	2.2	Identify data gaps	Month 2	Month 3
	2.3	Characterize pollutant trends, sources, and causes	Month 2	Month 4
	2.4	Estimate pollutant loads	Month 1	Month 4
3		Finalize management goals and identify solutions	Month 2	Month 7
	3.1	Develop vision, mission, goals	Month 2	Month 4
	3.2	Develop indicators and targets	Month 4	Month 5
	3.3	Determine load reductions	Month 4	Month 7
	3.4	Identify critical areas	Month 4	Month 7
	3.5	Develop management activities	Month 4	Month 7
4		Design implementation programs	Month 6	Month 10
	4.1	Develop implementation schedule and milestones	Month 6	Month 10
	4.2	Identify performance measures	Month 6	Month 10
	4.3	Identify/develop monitoring activities	Month 6	Month 10
	4.4	Identify/develop information/education activities	Month 6	Month 10
	4.5	Identify technical and financial needs and sources	Month 6	Month 10
	4.6	Plan for regular review and revision of plans	Month 6	Month 10
5		Nine element watershed-based management plan	Month 1	Month 15
	5.1	Background information	Month 1	Month 6
	5.2	Vision, mission, goals, BMPs	Month 4	Month 7
	5.3	Implementation program	Month 6	Month 10
	5.4	Draft plan for team & ANRC review	Month 1	Month 10
	5.5	Team & ANRC-approved plan for EPA review	Month 11	Month 12
	5.6	EPA-accepted plan	Month 12	Month 15
6		Reporting	Month 1	Month 15
	6.1	Quarterly reports	Month 3	Month 15
	6.2	Final project report	Month 12	Month 15

**Public Participation:**

Public participation will be through the stakeholder teams. The teams will participate in development of the watershed-based plan elements, and review the draft plan. Stakeholders will be responsible for implementing the plan.

**Measures of Success and Performance:**

This project will be successful if the watershed-based management plan is accepted by the stakeholder teams, ANRC, and EPA, and is implemented.