

# What is the Buffalo River Watershed Management Plan?

**December 2021**

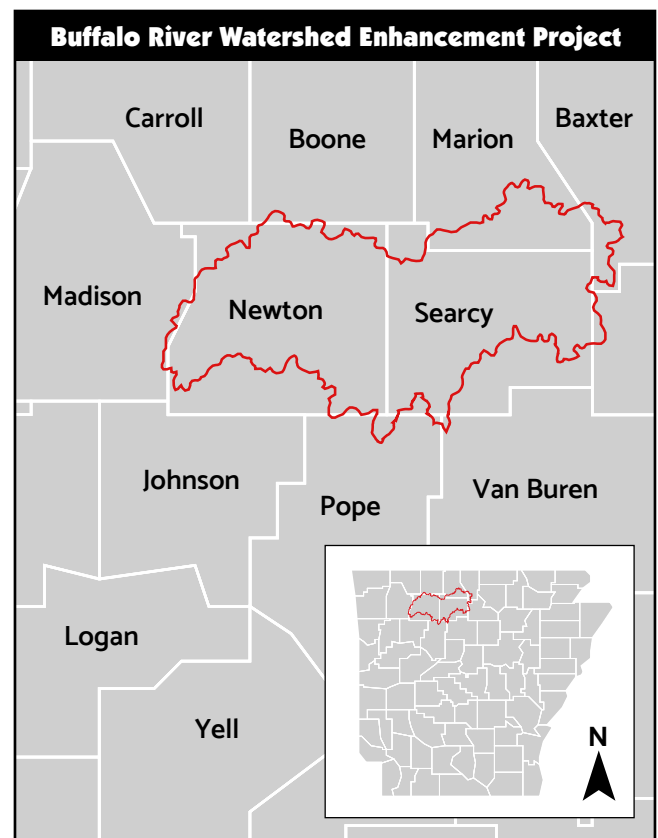
A watershed management plan for the Buffalo River Watershed, a tributary of the White River in north central Arkansas, was completed in 2018 as part of a state-led approach to identify and address potential issues of concern in the watershed.

Watershed management plans are voluntary and not regulatory, which means no state agency or land-owner is required to use the strategies or steps identified in the document. The existence of a plan is not the same thing as a regulation being in place.

The Buffalo River Watershed Management Plan states it is a “framework for landowners, communities, and organizations to voluntarily undertake water quality projects in the watershed and improve their ability to solicit and secure funding and assistance for these projects from various government and private sources.”

These types of non-regulatory plans typically describe watershed features, include water quality data, and identify concerns and voluntary strategies to address them. Stakeholders – people who live, work or have some other interest in an area – often provide input on what concerns exist and recommendations to address them. In this case, a series of public meetings were led by FTN Associates, an environmental consulting firm, to gather input from stakeholders.

This fact sheet is an attempt to provide people with an increased understanding of the Buffalo River Watershed Management plan, how it was developed, and the recommendations included.



## What is a Watershed?

A watershed is any area that drains to a common location, such as a stream or a lake.

The stormwater drains from watersheds into local waterways. Water that does not run off mostly soaks into the ground but can also flow sideways beneath the surface or vertically into the groundwater. This moving water can encounter and move pollutants with it on its way to streams

and rivers as it flows across or under places such as streets, yards, construction sites, pastures, and forests. Pollutants delivered to streams and lakes from runoff is known as nonpoint source (NPS) pollution.

Nonpoint source pollution is difficult to predict and manage due to the diffuse nature of the source and variability in landscapes, climate, land use and many other factors.

Ultimately, the pollutants delivered to streams can degrade or impair water quality to the extent the waterway no longer meets its designated uses such as swimming, supporting wildlife, fishing, drinking, or using for agricultural or industrial water supply.

## **Understanding Watershed Management Plans (WMPs)**

Many communities, non-profit organizations, agencies, and local governments have created plans for how to manage the watersheds that provide their drinking water or receive their stormwater and wastewater discharges. The common goal of these plans — sometimes called by the acronym WMP — is to limit pollution into nearby waterways.

In Arkansas, watershed management plans have been used to identify voluntary strategies for achieving water quality goals. A watershed management plan typically follows the same format and includes:

- A description of how land is used in the watershed (how many miles or acres are involved, percentage of land used for urban, agriculture, or forest, miles of waterways)
- Results of water quality studies
- Concerns and problems identified by local residents, property owners and government officials
- Strategies for reducing or resolving water quality concerns through land management practices and educational public outreach programs
- A time frame for when actions should take place

The document creates a shared starting point for communities and organizations interested in working on water quality issues and can increase the likelihood for project funding from various government agencies.

Multiple watershed management plans have been developed in Arkansas. Plans exist for Bayou Bartholomew, Cache River, Illinois River, Lake Fort Smith, L'Anguille River, Lee Creek, Lower Little,

Strawberry River, and the Upper White River.

The Arkansas Department of Agriculture – Natural Resources Division (ADA-NRD) coordinates the drafting of these plans in Arkansas and submits them to the U.S. Environmental Protection Agency for review. The federal agency's acceptance increases the likelihood water quality projects in those watersheds could qualify for and receive funding from government agencies.

## **The Development of the Buffalo River Watershed Management Plan**

In response to concerns voiced about the water quality of the Buffalo River, a committee established by the governor called for the creation of a watershed management plan.

The Beautiful Buffalo River Action Committee originally included staff from the Arkansas Department of Environmental Quality (now part of the Department of Energy and Environment and called the Division of Environmental Quality), Arkansas Department of Health, Arkansas Agriculture Department, Arkansas Department of Parks and Tourism, and the Arkansas Natural Resources Commission (now known as the Natural Resources Division in the Arkansas Division of Agriculture).

The Natural Resources Division was tasked with creating the plan and submitting it to the EPA.

The general approach for developing the plan placed emphasis on building partnerships, characterizing the watershed, establishing management goals, identifying solutions, and designing an implementation framework. The process included four public meetings, which sought to inform stakeholders about the development of the plan and solicit their input and feedback throughout its creation.

## **The Buffalo River Watershed**

The Buffalo River watershed is located in north central Arkansas and crosses the borders of nine counties. The watershed covers 1,342 square miles. About 80% of the watershed is forested land that is difficult to access, another 14% is pastureland, and the remaining portion is a mix of herbaceous/grassland and urban land use.

An estimated 15,545 people live in the watershed, according to the management plan. The Buffalo River

was designated as a National Park in 1972 and attracts 1.7 million visitors a year.

### Counties Making Up the Buffalo River Watershed

- Baxter
- Boone
- Madison
- Marion
- Newton
- Pope
- Searcy
- Stone
- Van Buren

Major tributaries, or subwatersheds, in this watershed are Bear Creek, two Big Creeks, Calf Creek, Cave Creek, Cecil Creek, Clabber Creek, Davis Creek, Little Buffalo River, two Mill Creeks, Richland Creek, Tomahawk Creek, Water Creek, Thomas Creek, Spring Creek, and Sellers Creek.

The Buffalo River and its tributary Richland Creek are considered an Extraordinary Resource Water and Natural and Scenic Waterway by the state, which are designations that recognize the scenic beauty, scientific value, recreation potential and value the waterway has among its users. Portions of the Buffalo River also have been designated as critical habitat for the threatened Rabbitsfoot mussel. The watershed also includes habitat for endangered bat species.

Eleven species in the overall watershed are listed as threatened or endangered by the state and federal government. Four of these species are bats, two are mussels, and five are plants.

### Water Quality Concerns

The Division of Environmental Quality (DEQ) keeps a list of waterbodies in the state that do not support their intended use such as drinking water, swimming, fishing, or irrigation.

Bear Creek is the only waterway in the Buffalo River Watershed that is on DEQ's 2016 list. Water quality monitoring found that Bear Creek had high levels of total dissolved solids, most likely a result of treated wastewater discharged into the creek near Marshall.

Despite this, the popularity of the Buffalo River and concerns over a hog farm then operating in the watershed have prompted discussions about the impact of human activities that introduce potential pollutants such as bacteria, sediment, trash, and nutrients on water quality in the entire watershed.

## Buffalo River Watershed Management Plan

The Buffalo River Watershed Management Plan attempts to address water quality concerns by providing a series of voluntary recommendations that can be acted upon by anyone. The document encourages partnerships and teamwork to accomplish the goal of maintaining and improving water quality.

The recommendations involve land management practices, water quality monitoring, studies to help identify sources of erosion and bacteria, creation of watershed teams, and monitoring of trash levels.

The 794-page plan focuses on six subwatersheds: Bear Creek, Big Creek (Lower), Brush Creek, Calf Creek, Mill Creek (Upper) and Tomahawk Creek. (Note: The Big Creek referred to in this management plan is in Searcy County. A second waterway by the same name is in Newton County and is not addressed in the document).

### What the Buffalo River Watershed Plan Includes:

- Basic information on how land is used in the watershed
- Results of past water quality testing in the watershed
- Recommendations for reducing nitrogen and bacteria levels in the watershed
- An overview of water quality concerns voiced by stakeholders at public meetings
- General voluntary land management practices producers could use to reduce nutrient and sediment loss
- Recommendations for continued water quality monitoring and testing
- Studies that should be undertaken to identify eroding streambanks and microbial sources of E. Coli
- Recommendations for continued educational outreach and the formation of volunteer watershed teams

### What the Buffalo River Watershed Plan Doesn't Include:

- Regulations or new laws that require property owners to use land management practices recommended in the plan
- Funding for implementing the recommendations

## What does the plan recommend?

The Buffalo River Watershed Management Plan recommends actions unique for each of these subwatersheds across five categories: (1) management practices, (2) monitoring, (3) studies, (4) awareness and education, and (5) teams.

Management practices to reduce pathogens, nutrients, erosion, and sediment are recommended to greater or lesser amounts for each subwatershed depending on their characteristics and water quality.

When it comes to land use or landcover, recommendations involve using best management practices for pastureland, forests, unpaved roads, riparian areas along waterways, and on-site wastewater.

Some examples of recommendations include rotating cattle grazing, using cover crops, constructing ponds to help trap sediment in runoff water, on-site waste water system improvements and management, and unpaved road improvements.

While these are recommendations to maintain and improve water quality in the watershed, landowners in the watershed are not required to follow any of the recommendations. The plan's existence is not the same as there being a regulation or a requirement created by law. Some potential sources of funding are included in the plan, but a new source of funding through the Beautiful Buffalo River Committee for the watershed was created after the plan was developed.

The full plan can be downloaded from the Division of Environmental Quality website [www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018-05-22-final-buffalo-river-wmp.pdf](http://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018-05-22-final-buffalo-river-wmp.pdf).

## What Can I do as an Individual Stakeholder?

Individuals can play a major role in voluntary implementation of watershed protection including:

- Removing all trash when using the river for recreation such as canoeing, swimming, fishing and camping
- Organizing an Arkansas Game and Fish Stream Team where a portion of the river is adopted to clear trash and report any potential pollutant concerns
- Undertaking septic system/on-site wastewater management improvements
- Following all park recommendations on proper disposal of human wastes
- Promoting good stewardship to others in a respectful manner
- Volunteering for water quality improvement activities
- Increasing and maintaining streamside vegetation
- For more information about how you can help protect this treasured natural resource and participate in watershed protection, contact your local County Extension Office for educational resources such as the [Arkansas Watershed Stewardship Program](#) and [Streamside Management for Landowners](#).

---

The University of Arkansas System Division of Agriculture's Public Policy Center provides timely, credible, unbiased research, analyses and education on current and emerging public issues. This fact sheet was written by Kristin Higgins, program associate in the Public Policy Center; John Pennington, water quality educator; and Adam Willis, Newton County extension agent.

Printed by University of Arkansas Cooperative Extension Service Printing Services

The University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services without regard to race, color, sex, gender identity, sexual orientation, national origin, religion, age, disability, marital or veteran status, genetic information, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer. FSPPC321-PD-12-2021