Illinois River Watershed Arkansas Department of Energy and Environment Division of Environmental Quality Planning Segment 3J Hydrologic Unit Code 11110103

U.S. Environmental Protection Agency-Accepted Watershed Management Plan

Introduction

The Illinois River originates near Hogeye, Arkansas, approximately 15 miles southwest of Fayetteville. The river flows northwesterly, crossing the Ozarks of northwest Arkansas and into Oklahoma, five miles south of Siloam Springs, Arkansas, near Watts, Oklahoma. The Illinois River Watershed lies in Benton and Washington counties, as well as a small portion of Crawford County, in northwest Arkansas. The main tributaries of the Upper Illinois River in Arkansas are Osage Creek, Clear Creek, Baron Fork, and the Muddy Fork. This watershed has been an Arkansas Nonpoint Source Pollution Management Program (Arkansas NPS Program) priority watershed since 1998. Figure 1 shows a map of 2019 land cover in the watershed. Forty-six percent of the watershed is pasture, 33 percent is forest, and 18 percent is urban.

This watershed includes large areas of some of the largest and fastest growing cities in Arkansas, including Bentonville, Fayetteville, Springdale, and Rogers. Northwest Arkansas (consisting of Benton, Washington, and Madison counties) recently became the 100th largest metropolitan area in the U.S. (Northwest Arkansas Democrat Gazette 2023). Benton and Washington counties are among the highest in Arkansas in population growth, increasing 5.7 percent and 3.8 percent respectively between 2020 and 2022 (Axios NW Arkansas, 2023). In 2020, this watershed was home to over 335,000 Arkansans (U.S. Census Bureau 2021).

Nonpoint Source Pollutants in Illinois River Watershed

Several waterbodies of the Illinois River Watershed are listed as water quality impaired in the Arkansas 2018 303(d) List (Figure 1). A total of 30.7 stream miles are listed as impaired in the Arkansas portion of the watershed, representing 16.7 percent of the total stream miles assessed within the Illinois River Watershed (183.5 miles). An additional 171 acres of Lake Fayetteville are listed as impaired. The primary contact designated use is not supported in 26.3 stream miles. Impaired waterbody uses are not specified for 16.3 stream



Figure 1. Illinois River Watershed Map

miles. Several streams that cross the Arkansas-Oklahoma border in this watershed are classified as impaired in Oklahoma. Both point and nonpoint sources of pollution contribute to impairments on both sides of the border. In addition, this watershed has been identified as a Tier 1 focus watershed for nutrient reduction through the Arkansas Nutrient Reduction Strategy (NRD 2022). NPS pollutants of

concern in this watershed are phosphorus, nitrogen, pathogens (E. coli), pH, chlorides, sediment, sulfates, and trash/litter. Nonpoint sources of these pollutants of concern in this watershed include runoff from development and urban areas, runoff from pastures and poultry operations, livestock, and failing septic systems. Climate change is causing an increase in storm intensity in Arkansas, which can result in more runoff and erosion, leading to increased pollutant loads to surface waters.

Nonpoint Source Pollution Goals

The long-term goal of the Arkansas NPS Program for the Illinois River Watershed is that all waterbodies support their designated uses on both sides of the state border. Table 1 lists Arkansas NPS Program short-term (2024-2029) objectives for the Illinois River Watershed. The program also supports the load reduction goals identified in Total Maximum Daily Load (TMDL) studies that have been prepared for waterbodies in this watershed, and phosphorus load reduction goals established by the Arkansas-Oklahoma Arkansas River Basin Compact Commission. TMDLs have established load reduction goals for pathogens and phosphorus within this watershed. Progress toward achieving the objectives is summarized in Table 1 and will be reported in Arkansas NPS Program annual reports which can be found at <u>agriculture.arkansas.gov/natural-resources/divisions/water-management/nonpoint-source-management/</u>.

2024-2029 Objectives	Tracking Strategy	2018-2023 Progress
Measurably reduce	Routine water quality	8.1 miles of Illinois River and 3.2 miles
concentrations or	monitoring with load	of Muddy Fork Illinois River delisted
loads of pollutants	calculations	for pathogens 2016-2018
causing water quality		
impairments		8.0 miles of Sager Creek delisted for
		nitrates 2016-2018
Social equity in	Number or percent of	Unknown - not a listed objective 2018-
water quality	activities in low income or	2023
protection and	minority dominated areas	
improvement		
	Number or percent	
	impairments in low income	
	or minority dominated	
	areas	
Increased resilience	Routine water quality	Water quality data collected at routine
of natural systems	monitoring and Clean	monitoring locations
and society	Water Act biennial water	
	quality assessment	Water quality assessments 2018,
		2020, and 2022
No new impaired	Routine water quality	14.4 miles of impairments added
stream reaches, or	monitoring and Clean	2016-2018
water quality criteria	Water Act biennial water	
not being met	quality assessment	177 acres of impairments added 2016-
		2018 (Lake Fayetteville)
2018 impaired	Routine water quality	8.1 miles of Illinois River and 3.2 miles
stream reaches	monitoring and Clean	of Muddy Fork Illinois River delisted

Table 1. Arkansas NPS Program short-term goals for Illinois River Watershed

attain water quality standards	Water Act biennial water quality assessment	for pathogens 2016-2018
		8.0 miles of Sager Creek delisted for
		nitrates 2016-2018
Finalize bi-state	Status of update	Bi-state update of watershed
update of watershed	EPA acceptance of plans	management plans initiated 2022
management plans		

Nonpoint Source Pollution Strategy

The Watershed-Based Management Plan (WMP) for the Upper Illinois River Watershed, Northwest Arkansas is aimed at protecting and improving water quality in this watershed and can be found at <u>agriculture.arkansas.gov/wp-content/uploads/2022/03/Illinois-River-WMP-Final-2012.pdf</u>. The WMP identifies focus areas for water quality improvement and protection, as well as best management practices (BMPs) for reducing NPS pollutants of concern. The state NPS pollution management strategy for this watershed is to support implementation of the plan already developed for the watershed that addresses NPS pollution.

Administration of Nonpoint Source Pollution Management

In 2022, the Arkansas Department of Agriculture's Natural Resources Division (NRD) began collaborating with the Oklahoma Conservation Commission to update both state's WMPs for the Illinois River Watershed. The Illinois River Watershed Partnership (IRWP), formed in 2005, has undertaken significant efforts to implement the 2012 Arkansas WMP, including public education and installing water quality improvement structures and practices. Other partners that participate in NPS management in this watershed include city and county governments, the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Arkansas Game and Fish Commission (AGFC), Northwest Arkansas Land Trust, Northwest Arkansas Regional Planning Commission, Cherokee Nation, U.S. Fish and Wildlife Service, Walton Foundation, Grand River Dam Authority, Arkansas Farm Bureau, The Nature Conservancy, University of Arkansas System Division of Agriculture (UADA), county conservation districts, utility companies, the poultry and cattle industries, and other interest groups.

NRD will work with cooperating entities in the watershed to promote voluntary coordination and incorporate conditions requiring cooperation in grant agreements, as appropriate. A high degree of voluntary coordination already exists in the agriculture program through the Arkansas Conservation Partnership. In the construction and urban programs, there is significant coordination through a voluntary contractual agreement among municipalities, counties, UADA Cooperative Extension Service, and Northwest Arkansas Regional Planning Commission to provide education and training on stormwater management.

Nonpoint Source Pollution Management Tracking and Monitoring

NPS pollution management is tracked and evaluated at three levels: education and outreach activities, behavioral and/or opinion changes, and water quality. Many of the organizations active in this watershed track and report their education and outreach activities, including those related to NPS pollution. In some cases, these activities are tracked in annual reports, (e.g., Arkansas NPS Program, IRWP) newsletters, and on websites and social media.

Behavioral changes can be tracked by implementation of BMPs and opinion polls. Many of the organizations active in this watershed track implementation of BMPs through their programs, including IRWP, NRD, and NRCS. This information is listed in their annual reports and on their websites.

Water quality monitoring data will be used to evaluate the effectiveness of NPS pollution management activities in the Illinois River Watershed. The Arkansas Department of Energy and Environment Division of Environmental Quality (DEQ), U.S. Geological Survey, and the University of Arkansas Water Resources Center maintain water quality monitoring stations within the watershed. IRWP conducts regular ecological assessments of streams in the watershed. DEQ uses data from these sources in their biennial evaluation of water quality.

Nonpoint Source Pollution Management Support and Funding

Technical information and assistance with implementing BMPs to reduce NPS pollution is available from multiple sources, including county conservation districts, NRD, NRCS, UADA Cooperative Extension Service, AGFC, IRWP, and other interest groups active in this watershed. There are a number of programs available in the Illinois River Watershed that can provide funding assistance for BMPs that reduce NPS pollution. Listings of sources of technical and financial assistance with NPS pollution BMPs are available in the WMP. Technical and financial assistance can also be obtained by contacting AGFC, IRWP, county conservation districts, or county extension offices.

References

- Arkansas NPS Program: https://www.agriculture.arkansas.gov/natural-resources/divisions/watermanagement/nonpoint-source-management/.
- Axios NW Arkansas, 2023: https://www.axios.com/local/nw-arkansas/2023/04/07/northwest-arkansas-population-growth-outpace.
- DEQ. 2020. "Final 2018 303(d) List." Arkansas Department of Energy and Environment Division of Environmental Quality. Accessed September 2020. https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018 303(d) list.pdf.
- Grantz, Erin M, and Brian E Haggard. 2023. Constituent Loads and Trends in the Upper White River Basin: A Nonpoint Source Management Program Priority Watersheds. MSC 395, Fayetteville: University of Arkansas Division of Agriculture Arkansas Water Resources Center.
- Illinois River Watershed Partnership: https://www.irwp.org.
- Northwest Arkansas Democrat Gazette, 2023: https://www.nwaonline.com/news/2023/may/29/northwest-arkansas-breaks-into-nations-top-100/.
- NRD. 2022. 2022 Arkansas Nutrient Reduction Strategy (ANRS). strategy, Little Rock: NRD. Accessed July 2023. https://www.agriculture.arkansas.gov/wp-content/uploads/2022/07/2022-7-21-ANRS-FINAL-PUBLISH.pdf.
- Pathogen TMDLs for Clear Creek 11110103-029 in Arkansas Planning Segment 3J: https://www.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Clear Creek Patogens.pdf.
- US Census Bureau. 2021. "Block Groups 2020 Census." *Arkanasas GIS Office.* August 21. Accessed June 2023. https://gis.arkansas.gov/product/block-groups-2020-census/.
- Watershed-Based Management Plan for the Upper Illinois River Watershed, Northwest Arkansas: https://www.agriculture.arkansas.gov/wp-content/uploads/2022/03/Illinois-River-WMP-Final-2012.pdf.