Lower Saline River
Arkansas Department of Energy and Environment Division of Environmental Quality Planning Segment 2C
Hydrologic Unit Code 08040204

Introduction

The Lower Saline River Watershed is located in south central Arkansas. The watershed covers parts of Jefferson, Cleveland, Lincoln, Bradley, Drew, and Ashley counties. The largest cities in the watershed are Monticello and Warren. The Lower Saline River Watershed includes the Saline River from its confluence with Derrieusseaux Creek to its confluence with the Ouachita River. The major tributaries of the Lower Saline River include Big Creek, Hudgin Creek, Franklin Creek, Brown Creek, L'Aigle Creek, and Snake River. This watershed drains to the Felsenthal National Wildlife Refuge, which encompasses part of the Lower Saline River Watershed. The Lower Saline River Watershed was identified as an Arkansas Nonpoint Source Pollution Management Program (Arkansas NPS Program) priority watershed in 2022. Figure 1 shows a map of 2019 land cover in the watershed. Almost 50 percent of the watershed is forested, and 30 percent is wetlands. In 2020, this watershed was home to 31,490 Arkansans (U.S. Census Bureau 2021).

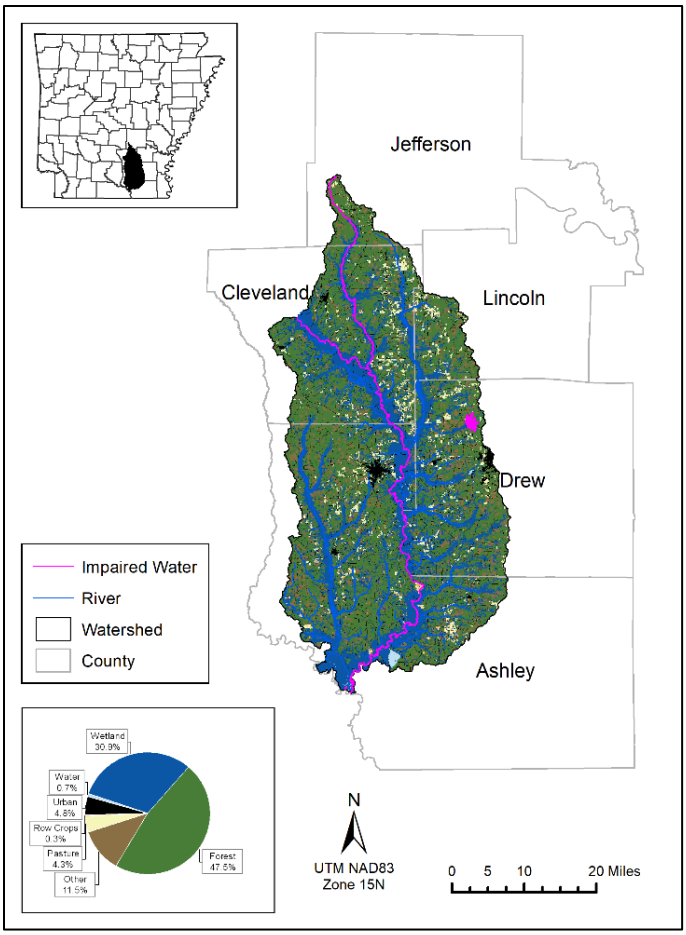

Figure 1. Lower Saline River Watershed Map

Nonpoint Source Pollutants in Lower Saline River Watershed

Several waterbodies of the Lower Saline River Watershed are listed as water quality impaired in the Arkansas 2018 303(d) List (Figure 1). A total of 150.5 stream miles are listed as impaired, representing 22.8 percent of the total assessed stream miles within Planning Segment 2C (659.9 miles). The aquatic life designated use is not supported in 150.5 stream miles. The Saline River in this watershed is under a fish consumption advisory due to mercury, as is the Felsenthal National Wildlife Refuge. NPS pollutants of concern in this watershed are lead, temperature, oxygen demanding materials, mercury, and turbidity. Nonpoint sources of these pollutants in the watershed include runoff from development and urban areas, runoff from pastures and poultry operations, livestock, and poultry litter used as fertilizer. 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 is for all waterbodies within the Lower Saline River Watershed to meet their designated uses. Table 1 lists Arkansas NPS Program short-term (2024-2029) objectives for the Lower Saline 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. TMDLs in the Lower Saline River Watershed have established load reduction goals for turbidity and mercury in fish tissue. 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 agriculture.arkansas.gov/natural-resources/divisions/water-management/nonpoint-source-management/.

Table 1. Arkansas NPS Program short-term objectives for Lower Saline River Watershed

2024-2029 Objective	Tracking Strategy
Measurably reduce concentrations or loads of pollutants causing water quality impairments	Routine water quality monitoring with load calculations
Social equity in water quality protection and improvement	Number or percent of activities in low income or minority dominated areas Number or percent impairments in low income or minority dominated areas
Increased resilience of natural systems and society	Routine water quality monitoring and Clean Water Act biennial water quality assessment
No new impaired stream reaches, or water quality criteria not being met	Routine water quality monitoring and Clean Water Act biennial water quality assessment
2018 impaired stream reaches attain water quality standards	Routine water quality monitoring and Clean Water Act biennial water quality assessment
Soil and Water Assessment Tool watershed model	Proposal for modeling project Initiation of modeling project Completion of modeling project
Nine-element watershed management plan	Proposal for watershed management plan Initiation of watershed management plan EPA acceptance of watershed management plan

Nonpoint Source Pollution Strategy

The state NPS pollution management strategy for this watershed is to work toward development of a watershed management plan (WMP) and then support implementation of the WMP to address NPS pollution and load reduction goals of the TMDLs. The WMP will identify focus areas for water quality improvement, protection, and monitoring, as well as best management practices (BMPs) for reducing NPS pollutants of concern. This WMP will coordinate with the ongoing update of the Upper Saline River WMP.

Administration of Nonpoint Source Pollution Management

There is currently no single entity in the Lower Saline River Watershed with the capacity to implement a WMP. However, the Saline River Watershed Alliance and The Nature Conservancy are active within the Upper Saline River Watershed and provide public education and outreach. The Arkansas Game and Fish Commission (AGFC) manages river access points in the Lower Saline River Watershed, as well as Wildlife Management Areas. The U.S. Fish and Wildlife Service manages the Felsenthal National Wildlife Refuge. The Arkansas NPS Program will work with cooperating entities in the watershed to promote voluntary coordination and incorporate conditions requiring cooperation in grant agreements, as appropriate.

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), newsletters, and on websites and social media.

Behavioral changes can be tracked by implementation of BMPs and opinion polls. Organizations active in this watershed track implementation of BMPs through their programs, including the Arkansas Department of Agriculture's Natural Resources Division (NRD) and U.S. Department of Agriculture Natural Resources Conservation Service (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 Lower Saline River Watershed. The Arkansas Department of Energy and Environment Division of Environmental Quality (DEQ) maintains routine water quality monitoring stations within the watershed. DEQ uses data from these stations 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 a number of sources, including local county conservation districts, NRD, NRCS, the University of Arkansas System Division of Agriculture Cooperative Extension Service, AGFC, and other groups active in this watershed. There are several programs available in the Lower Saline River Watershed that can provide funding assistance for BMPs that reduce NPS pollution. Technical and financial assistance can also be obtained by contacting the AGFC, county conservation districts, and county extension offices.

References

Arkansas NPS Program: https://www.agriculture.arkansas.gov/natural-resources/divisions/water-management/nonpoint-source-management/.

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.

Saline River Watershed Alliance: https://www.facebook.com/SRWA2020/.

TMDLs for Turbidity for Seven Stream Reaches in Arkansas: https://www.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Turbidity%20TMDLs%20for%207%20streams%20in%20AR_with%20addendum.pdf.

TMDLs for Lakes Listed for Mercury in Fish Tissue for the Ouachita River Basin, Arkansas: https://www.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Turbidity%20TMDLs%20for%207%20streams%20in%20AR_with%20addendum.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/.