

# Nonpoint Source Pollution in the L'Anguille River Watershed

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The L'Anguille River Watershed is located in northeast Arkansas and includes communities in Craighead, Cross, Lee, Poinsett, St. Francis and Woodruff counties.

A “watershed” is an area of land where all of the water that drains from it goes to the same place, so rainwater or snowmelt in this watershed eventually drains to a common location.

This Delta watershed is long and narrow and is named for the major waterway in the area, the L'Anguille River. Beginning just south of Jonesboro, the river flows southward for 98 miles until it reaches the St. Francis River near Marianna. The watershed spans 973 square miles and is home to an estimated 33,166 people as of 2011.<sup>1</sup> Nearly 71 percent of the land in this watershed is used for row crops.<sup>2</sup>

## Nonpoint Source Pollution

Water pollution that comes from multiple sources spread over an area, such as runoff from parking lots, agricultural fields, residential lawns, home gardens, construction, mining and logging, is known as nonpoint source pollution. As runoff moves across the landscape, it carries natural and manmade substances that can accumulate in waterways and make them uninhabitable for aquatic species or unusable by people. Potential pollutants include bacteria, nutrients, sediment, hazardous substances and trash.<sup>3</sup> Given the number of potential sources and variation in their potential contributions, these pollutants are not easily traced back to their source.



## L'Anguille River Watershed

Data source: GeoStor. Map created March 2011.

**Major streams:** Brushy Creek, First Creek, L'Anguille River, Larkin Creek, Second Creek

Second Creek, a tributary of the L'Anguille River, was designated by the state as an “Extraordinary Resource Water” or a water resource that is valued for characteristics such as beauty, recreation and social use.<sup>4</sup>

This fact sheet is intended to provide a better understanding of the L'Anguille River Watershed and its place on the state's priority list of 10 watersheds impacted by nonpoint source pollution.

<sup>1</sup>BAEG, 2011. County-Wise Population Data. Biological and Agricultural Engineering Department. University of Arkansas Division of Agriculture: Little Rock, Arkansas. See the Nonpoint Source Pollution Management Plan at <http://www.uaex.uada.edu/environment-nature/water/quality/NPSPollutionMgmt-Revised2015.pdf>

<sup>2</sup>CAST, 2006. Land Use/Land Cover Data. Biological and Agricultural Engineering Department. University of Arkansas: Fayetteville, Arkansas. See the Nonpoint Source Pollution Management Plan.

<sup>3</sup>Learn more about these categories in the Arkansas Watershed Steward Handbook at <http://www.uaex.uada.edu/environment-nature/water/docs/ag1290.pdf>.

<sup>4</sup>Learn more about extraordinary resource waters in the Arkansas Watershed Steward Handbook at <http://www.uaex.uada.edu/environment-nature/water/docs/ag1290.pdf>.

## L'Anguille River Watershed Water Quality Issues

Through water quality monitoring, environmental officials in Arkansas have determined that the entire length of the L'Anguille River has problems supporting some aquatic species because of high turbidity levels.<sup>5,6</sup> Turbidity is a measure of the clarity of water. High turbidity levels mean the water is murky from a variety of materials, such as soil particles, algae, microbes and other substances.<sup>7</sup>

Essentially all streams in the watershed have high turbidity and silt issues that may be a result of the clearing and channelization of streams for agricultural irrigation.<sup>8</sup> Additionally, development and property management practices can influence the amount of sediment that runs off properties along Crowley's Ridge. Other major nonpoint source pollution

### Arkansas' Priority Watershed List for Nonpoint Source Pollution

Arkansas has used a watershed-based approach to nonpoint source pollution management, allowing the public to guide planning to address water quality concerns.<sup>8</sup> The Arkansas Natural Resources Commission, or ANRC, administers the Nonpoint Source Pollution Management Program. The program exists to reduce water pollution through the funding of watershed planning and restoration activities, adoption of voluntary best management practices and the development of technologies that assist in water pollution reduction in Arkansas. Based on public input and the use of a qualitative risk assessment matrix, ANRC has designated 10 priority watersheds as needing the greatest attention. The risk matrix<sup>9</sup> identified the following priority watersheds for 2011-2016: Bayou Bartholomew, Beaver Reservoir, Cache River, Illinois River, L'Anguille River, Lake Conway-Point Remove, Lower Ouachita-Smackover, Poteau River, Strawberry River and Upper Saline.

concerns for this watershed are low oxygen levels, total dissolved solids, chlorides and sulfates, according to the Nonpoint Source Pollution Management Plan.<sup>10</sup>

These concerns led to the L'Anguille River Watershed being designated as a priority by ANRC in the state's 2011-2016 Nonpoint Source Pollution Management Plan.

## Stakeholder Priorities

To encourage continued public input, the University of Arkansas Division of Agriculture's Public Policy Center facilitated a water quality stakeholder forum for the L'Anguille River Watershed in August 2015. Participants identified erosion as their watershed's priority concern that needed addressing but also expressed concern over sedimentation and water velocity.

Forum participants reviewed a long list of stakeholders who should be engaged in addressing water quality concerns. Participants said the people who live near Crowley's Ridge, as well as developers of the properties, aren't aware of the impact they have on water quality downstream or do not see it as an issue. They recommended educating people living near Crowley's Ridge and the developers about the dual benefits of managing property aesthetics and water quality.

People who live, work or recreate in this watershed are encouraged to consider these community priorities when addressing water pollution. The public is also welcome to attend an annual stakeholder meeting where priority watersheds and nonpoint source pollution are discussed. For more information about nonpoint source pollution and its impact on the L'Anguille River Watershed, contact the Cooperative Extension Service, Arkansas Natural Resources Commission or the Arkansas Department of Environmental Quality. The Arkansas Watershed Steward Handbook is also a good source of information about basic water quality concerns and how the public can get engaged in addressing water pollution.<sup>11</sup>

<sup>5</sup> Learn more about water quality at <http://www.uaex.uada.edu/publications/pdf/FSA-9528.pdf>.

<sup>6</sup> See the Nonpoint Source Pollution Management Plan.

<sup>7</sup> Learn more about water quality issues in the Arkansas Watershed Steward Handbook is available at <http://www.uaex.uada.edu/environment-nature/water/docs/ag1290.pdf>.

<sup>8</sup> Integrated Water Quality Monitoring and Assessment Report (IWQMAR), 2008. Arkansas Department of Environmental Quality: Little Rock, Arkansas. See the Nonpoint Source Pollution Management Plan.

<sup>9</sup> Learn more about the qualitative risk assessment tool at <http://www.uaex.uada.edu/publications/pdf/FSPPC116.pdf>.

<sup>10</sup> Learn about these water quality issues in the Arkansas Watershed Steward Handbook.

<sup>11</sup> See the Arkansas Watershed Steward Handbook.

This fact sheet is one in a series of 10 fact sheets on nonpoint source pollution in priority watersheds.

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