NONPOINT SOURCE SUCCESS STORY

Arkansas

Reducing Erosion Improves Water Quality in the West Fork and East Fork Point Remove Watersheds

Waterbodies Improved

High levels of turbidity due to surface erosion had impaired Arkansas' West Fork and East Fork Point Remove watersheds. The Arkansas Department of Environmental Quality (ADEQ) added three stream segments (38.6 miles total) to the 2014 Clean Water Act (CWA) section 303(d) list of impaired waters. All three stream segments were listed for turbidity impairment from a surface erosion source. Watershed partners initiated implementation of agricultural best management practices (BMPs) to reduce sediment runoff. In-depth monitoring was also conducted through the Arkansas Natural Resources Commission's (ANRC) CWA section 319 program. The turbidity levels in the West Fork Point Remove (AR-3F-11110203-016 and AR-3F-11110203-017) and East Fork Point Remove (AR-3F-11110203-014) watersheds have declined, prompting ADEQ to propose removing these three segments from the draft 2018 CWA section 303(d) list of impaired waters.

Problem

The West Fork and East Fork of Point Remove Creek emerge in the northernmost portion of the Lake Conway–Point Remove Watershed and flow southward (Figure 1). Land use in the Lake Conway–Point Remove Watershed is predominately forested, especially in the headwater (northern) portion of the basin. Pastures are distributed in a mosaic fashion throughout the forested areas and agricultural land use constitutes much of the southern portion of the basin. The West Fork Point Remove Creek Watershed is the most sizable of the subwatersheds in the northwestern portion of the Lake Conway–Point Remove Watershed. Approximately 90 percent of the West Fork Point Watershed is forest and pastureland. The East Fork comparatively is comprised of about 77 percent forest and pastureland use. The area also supports numerous natural gas wells.

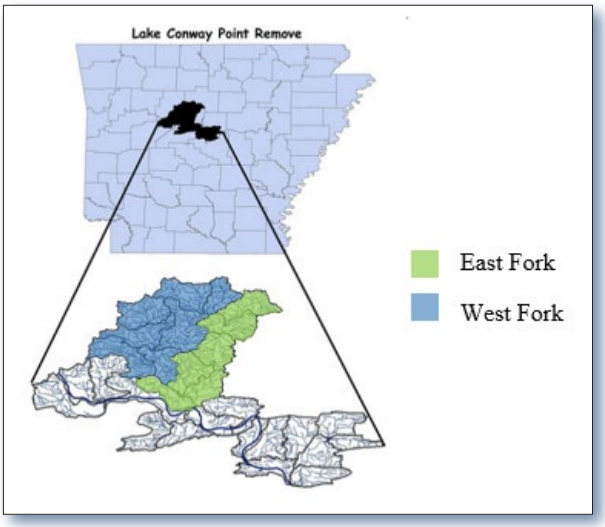

Figure 1. The Lake Conway–Point Remove Watershed is in central Arkansas.

Runoff from forested areas, pasturelands and gas well areas were contributing excess turbidity in these watersheds. ADEQ's assessments determined that reach 017 (14.4 miles) and reach 016 (3.3 miles) of the West Fork Point Remove Watershed and reach 014 (20.9 miles) of the East Fork Point Remove Watershed were not meeting the state's water quality standard for turbidity. The water quality standard for turbidity in the Arkansas River Valley Region states that values should not exceed 21 nephelometric turbidity unit (NTU) during base flows (June to October) in more than 20 percent of samples and not more than 40 NTUs during all flow conditions in more than 25 percent of samples taken in not less than 24 monthly samples. These segments were placed on the 2014 and 2016 CWA section 303(d) lists of impaired waters for not meeting the Regulation 2 standards for turbidity.

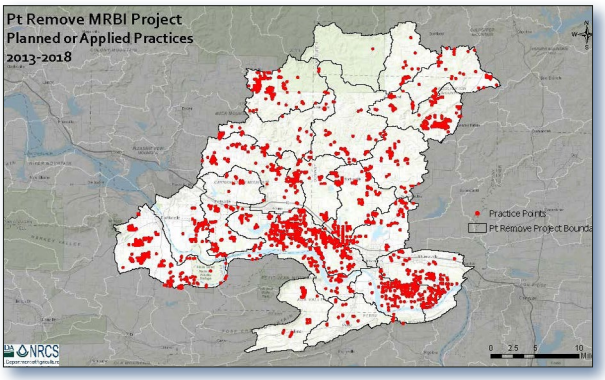

Figure 2. NRCS MRBI projects and practices implemented within the Lake Conway–Point Remove Watershed.

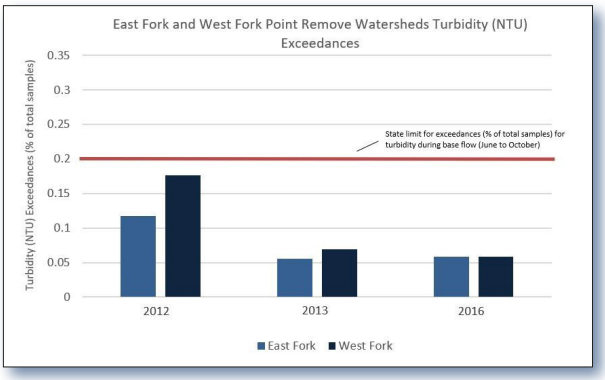

Figure 3. Monitoring data for the East Fork and West Fork Point Remove watersheds.

Story Highlights

Multiple CWA 319 section grants have supported work completed in the Lake Conway–Point Remove Watershed, including use of a no-till drill on farmland within the watershed to reduce erosion; installation of irrigation best management practices, which resulted in a reduction of an estimated 230 tons/year of sediment/siltation; completion of assessments; and education efforts.

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) has implemented several agricultural projects and practices including tailwater recovery, cover crops, and nutrient management within the watershed using programs like the Environmental Quality Incentives Program (EQIP) and the Mississippi River Basin Healthy Watersheds Initiative (MRBI) (Figure 2). The Lake Conway–Point Remove Watershed Alliance has also contributed to the success of these watersheds reaching water quality standards.

Results

Partners have used CWA section 319 funds provided by ANRC and U.S. Environmental Protection Agency (EPA) Region 6 to assess water quality in the Lake Conway–Point Remove Watershed. In 2011, the ANRC and Equilibrium (a nonprofit organization) collected and analyzed 1,831 samples. They began another water quality monitoring project in 2015 and have analyzed 2,049 total samples to date. These data demonstrated that turbidity levels in the West Fork and East Fork Point Remove segments have declined over time. Additionally, in 2017 the ANRC and the Lake Conway–Point Remove Watershed Alliance initiated a monitoring and assessment project on the major tributaries in the Lake Conway–Point Remove Watershed to help develop a nine-element watershed-based plan. These data have also shown lowered turbidity levels in the West Fork and East Fork Point Remove segments.

The 2018 ADEQ water quality assessment indicates that the West Fork Point Remove Watershed (segment 017 and segment 016) and East Fork Point Remove Watershed (segment 014) now meet the state's water quality standard for turbidity (Figure 3). Therefore, ADEQ has proposed removing these three reaches from the draft Arkansas 2018 CWA section 303(d) list of impaired waters for turbidity.

Partners and Funding

Many partners have contributed to the improvement of the West Fork and East Fork Point Remove Watershed segments. The NRCS invested funds through the EQIP and MRBI programs into pollution control practices in the watershed. ANRC provided $1,370,918 in EPA CWA section 319 funds to support water quality improvement and assessment projects, including numerous projects led by the nonprofit Equilibrium. Other partners have invested money, resources, and in-kind match, including Lake Conway–Point Remove Alliance, Point Remove Wetlands Reclamation and Irrigation District, the Conway County Conservation District and local landowners.

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