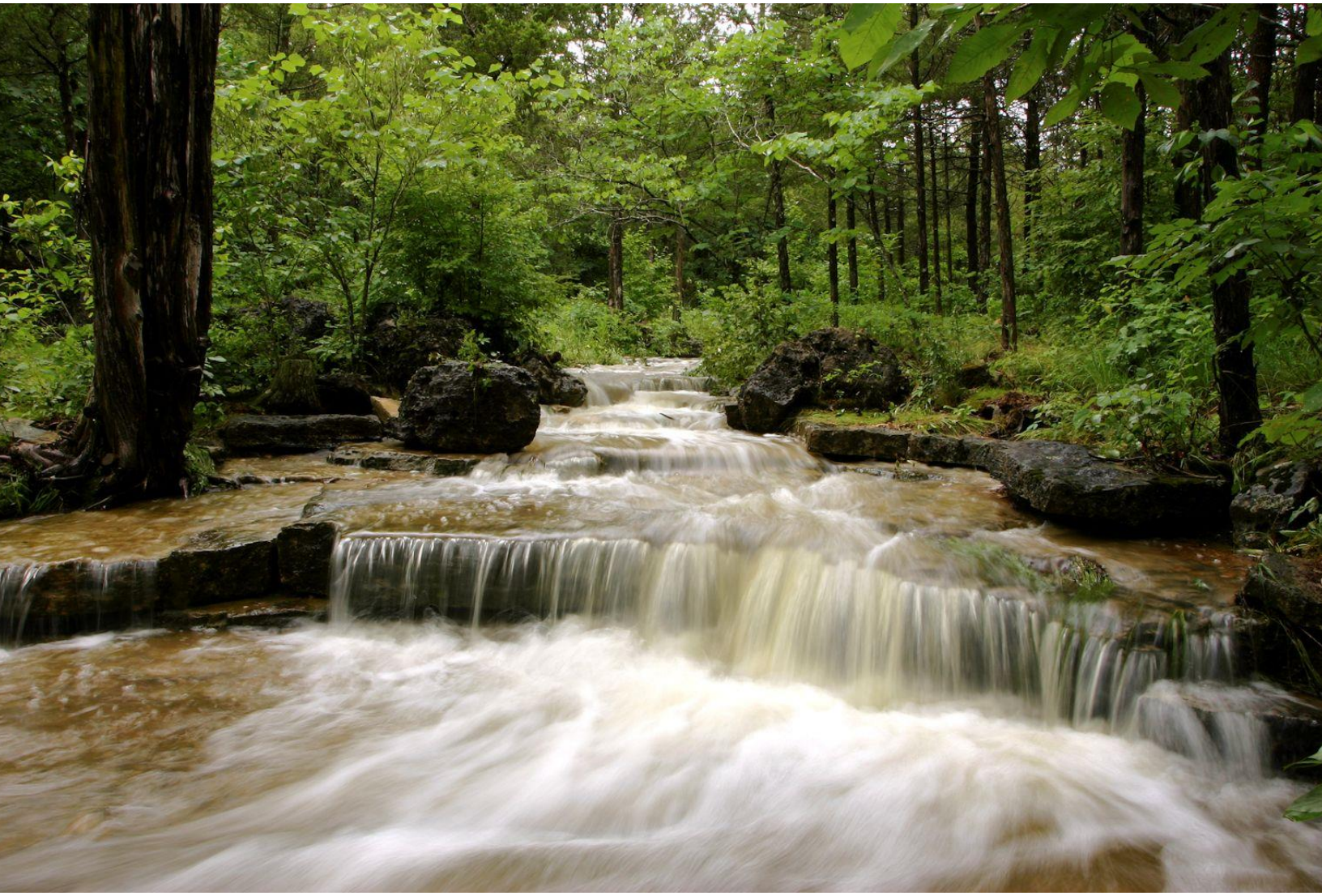
The Arkansas Annual Report

Prepared Pursuant to Section 319 (h) of the Federal Clean Water Act

FY 2016



Arkansas Natural Resources Commission

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1 SUMMARIES

Introducing Executive Director Holland:

On July 26, 2016 Governor Asa Hutchinson announced Bruce Holland as the new Executive Director of the Arkansas Natural Resources Commission (ANRC). Previously Randy Young had served as the Executive Director for over 30 years.

Mr. Holland (Bruce) is a native of Arkansas growing up in the Greenwood community (Sebastian County) in the western part of the state. The Holland family has been involved in agriculture since the 1820's where his family still operates a cattle farming operation. Bruce worked on the family farm with his siblings during his youth and teenage years. This helped to foster his recognition and implementation of conservation. Upon graduating high school, Bruce attended the University of Arkansas majoring in Chemical Engineering.

Returning to Greenwood, Bruce worked in a steel mill in various positions but was recognized for his attention to detail, production efficiency and quality, thus becoming the Quality Control and Assurance supervisor. Although Bruce worked 10-12 hour shifts in the steel mill, he was also working to develop and operate a cattle farm of his own.

In 2005, Bruce left the steel mill to operate his cattle farm full time. He served as a member of the Sebastian County Farm Bureau and the Farm Service Agency board. In 2010 Bruce ran for the Arkansas Senate. He was elected and served a two year term representing seven counties in western Arkansas. He was re-elected in 2012 for another 2 year term. During his term, Bruce was the chair of the Senate Agriculture, Forestry and Economic Development, and a member of the Budget, Education, Energy, and the Academic Facilities Oversight committees. Upon leaving the Senate, Bruce was named the Executive Director of the Arkansas Livestock & Poultry Commission in 2015. Bruce served in that capacity until being named ANRC's Executive Director in July 2016.

Bruce brings to ANRC the understanding of the necessity of agriculture, manufacturing, conservation, government operation and proven leadership experience. He knows and understands the issues and related concerns of the people of Arkansas and possesses the experience and leadership to address them. The Arkansas Natural Resources Commission and staff look forward serving and working to enhance conservation under Bruce's direction.

This report demonstrates the partnership, cooperation and commitment of government agencies, Conservation Districts, organizations, and groups to conservation and water quality. The Arkansas Natural Resources Commission is proud to provide this Annual Report for the Arkansas Nonpoint Source (NPS) Pollution Management Program.

Executive Summary:

The Arkansas Natural Resources Commission (ANRC) is the lead agency responsible for the Arkansas NPS Management Program. ANRC, its state partners and stakeholders, collectively known as the "work group", collaboratively work together to develop the NPS Pollution Management Plan (Plan). The Plan provides a broad framework and aspirational objectives and milestones for implementation of the NPS Pollution Management program. The Plan also utilizes a risk matrix assessment tool to prioritize watersheds for resource allocation. The Plan is comprehensively updated every five years based upon an adaptive approach. Annual update meetings are held to review and discuss new, additional, or updated information and if appropriate to be included into the Plan.

The Arkansas Department of Environmental Quality (ADEQ) is the primacy agency for overseeing water quality in Arkansas. ADEQ is required to develop and provide an Integrated Water Quality Assessment Report and listing, commonly referred to as the 305(b) report and the 303(d) list, every two years for EPA acceptance and approval. At the writing of this report, the 2010, 2012, 2014, and 2016 305(b) reports have not been approved by EPA. The assessment and report defines if waterbodies (streams, lakes, and impoundments) are meeting and supporting their designated uses. The 305(b) report and subsequent 303(d) list provides the initial and foremost basis to direct efforts to restore water quality within the state.

The primary and pinnacle evaluation of the NPS Program and Plan lies within the 303(d) list. As impaired waterbodies are restored, they are removed from the list. The level of effort needed to remove a waterbody is enormous and cannot be accomplished by a single agency, program, project or activity. It is essential that ANRC, its partners and stakeholders work together in a collaborative effort to improve water quality.

This report focuses on the accomplishments that were made in meeting the milestones of the NPS Program. It reflects projects, efforts, and activities initiated, implemented, or completed by partners and stakeholders during FY 2016. This report also contains calculated load reductions of sediment, nitrogen, and phosphorus; Best Management Practices (BMPs) that were installed; and how federal dollars were allocated categorically within the NPS Program.

In some areas and watersheds, water quality data and trends are showing improvement. As in years past and as we continue to move forward, water quality will continue to improve as:

- Watershed stakeholders become more actively involved in restoration efforts. State and federal agencies continue to provide technical and financial assistance.
- Education materials specific to individual watersheds are developed and delivered. Watershed stakeholders must organize and identify common water quality goals. Collective strategies and efforts culminate into 1) watershed plans, 2) schedules of implementation and 3) reassessments.
- Conservation and Comprehensive Nutrient Management Plans (CNMP) are developed, utilized, and implemented.
- Low Impact Development and Green Infrastructure techniques continue to be demonstrated in urban areas in a manner to insure there is no conflict with MS4 requirements. A continued focus of these demonstrations is the educational components for students, developers, municipalities and citizens of the community.

2 Green Infrastructure (GI) and Low Impact Development (LID)

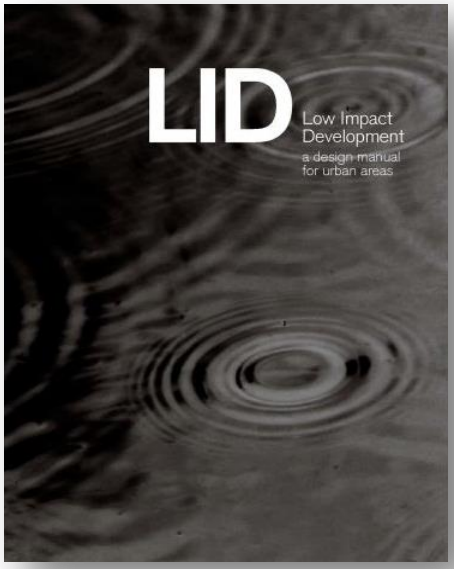
Green Infrastructure and Low Impact Development have continued to make a difference in the State of Arkansas. Low Impact Development Practices continue to catch hold in Arkansas and are becoming more and more accepted and used. Through the Arkansas 319 Program projects are being implemented and still having an effect on their watersheds. There have been several projects completed in FY 2016 and also projects initiated:

- 12-600 Water Quality Demonstration and Educational Program for Main Street Little Rock (Project 16-600 Phase II was initiated in October 2016) This project also has won 13 national and international awards
- 12-700 Initiation of Watershed Management Plan (WMP) for Lake Conway-Point Remove Subwatershed and a Low Impact Development Plan for Lake Conway Urban Watershed
- 13-300 Water Quality Demonstration and Educational Program for the Illinois River Watershed
- 13-1300 Low Impact Development Demonstration and Education Project for the Illinois River Watershed
- 15-500 Lake Atalanta Sediment Reduction and LID Demonstration Project
- 15-800 Implementing Green Infrastructure Elements for Enhanced Water Quality In the Illinois River Watershed

There are also Education and Demonstration projects taking place that are applicable to Green Infrastructure and Low Impact Development in the State:

- 13-1400 Lake Fayetteville Watershed Outreach and Education Grant
- 14-300 War Eagle Creek Riparian Management Education & Demonstration
- 15-900 Connecting NPS Management to Receiving Streams through BMP Education and Demonstration

One of the great successes with Green Infrastructure and Low Impact Development in the State has been the LID Manual. Through project 07-600 Implementation of Low Impact Development Best Management Practices to Remediate Sediment from Urban Development in Fayetteville, AR, the manual was developed and also reprinted in project 07-1800 where 1,000 more copies were developed for distribution. This manual has been used nationally and also translated into Chinese and Italian. It has also been nominated and received several awards: 2011-2012 Association of Collegiate Schools of Architecture (ACSA) Award, 2011 American Society of Landscape Architects (ASLA) Excellence Award, 2011 Environmental Design Research Association (EDRA) Award Finalist, 2011 American Institute of Architects (AIA) Honor Award, and 2010 Arkansas American Planning Association Award.



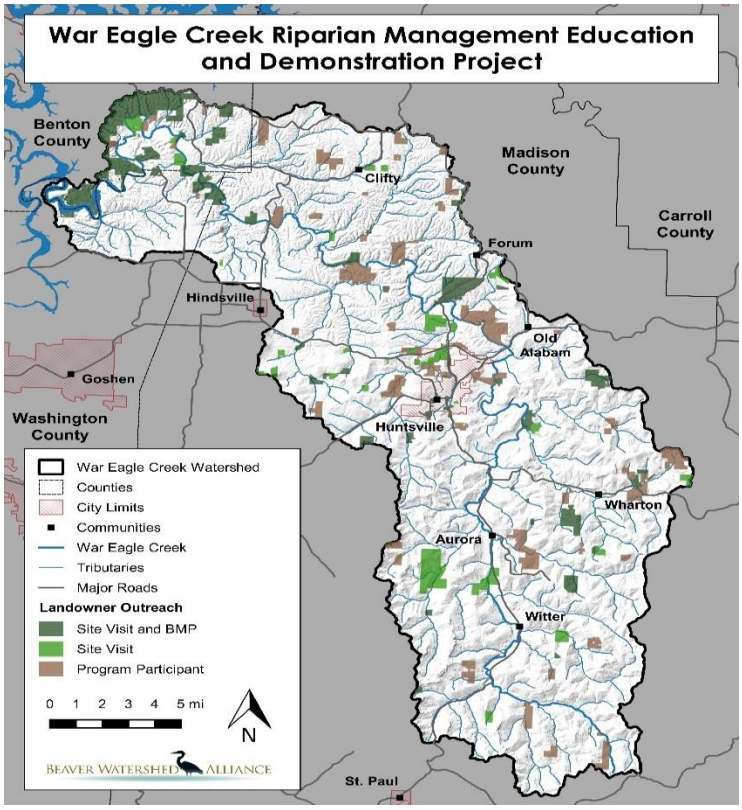
3 Education and Outreach

In recent years, education, outreach and demonstration projects have come to the forefront of Arkansas' 319(h) program. Educating landowners on the possible implications of non-point source pollution has been a daunting task, but with the implementation of these types of projects we are seeing success in the overall understanding of non-point source pollution prevention while showing how best management practices (BMPs) achieve this goal.

Here is a project that highlights the effort of partners providing education, outreach and BMP demonstration:

14-300 War Eagle Creek Riparian Management Education & Demonstration

The primary goals of this project was to educate landowners in the War Eagle Creek Watershed (WECW) about riparian and other BMPs, demonstrate BMP implementation, encourage the adoption of BMPs, and facilitate landowner-to-landowner education and demonstration. This successful project resulted in not only wide-ranging BMP adoption and demonstration, but the development of a stable landowner network in a region of the Beaver Lake Watershed where local landowners and residents are wary of outside individuals and organizations. This network will undoubtedly continue to grow as landowners teach their neighbors about the BMPs they are using on their property with successful results. Thus, as positive word about the actions taken during this project spreads throughout the watershed, more landowners will check in with the Beaver Watershed Alliance (BWA) or attend watershed education programs to learn about how they can improve land and water quality as well.



The War Eagle Creek Riparian Management Education and Demonstration Project was undoubtedly a success. Nearly 1,800 landowners not previously being engaged by a watershed organization were sent newsletters containing information on BMPs, educational programming, and general watershed news. Of those 1,800 landowners in the WECW, approximately 160 participated in the project by attending a program, checking in with BWA about an issue, requesting a site assessment, or implementing one of nearly 300 BMPs across the watershed. Those 160 landowners represent more than 10% of the land in the WECW. This network of landowners who now trust BWA and appreciate the watershed approach taken through this project will surely grow over time as word continues to spread about the usefulness of

voluntary adoption of BMPs. The partnerships developed with local organizations and municipalities will continue to prove vital for long-term land and water quality gains in the WECW and surrounding area.

Additionally, the information disseminated to landowners through this project's educational programming and materials will have a lasting impact on the mindset and knowledge base of the population. Misconceptions about land and water issues will begin to dissipate as the correct information from this and other similar projects continue to reach stakeholders.

The adaptive watershed approach utilized during this project can be applied anywhere to achieve common goals such as sediment load reduction. Big changes start with small steps, particularly those taken by interested landowners wanting to best-manage their property. Through working together with these individuals, their communities, and other watershed conservation organizations, water quality can be improved across the state, region, and country.

4 Watershed Management Plans (WMPs)

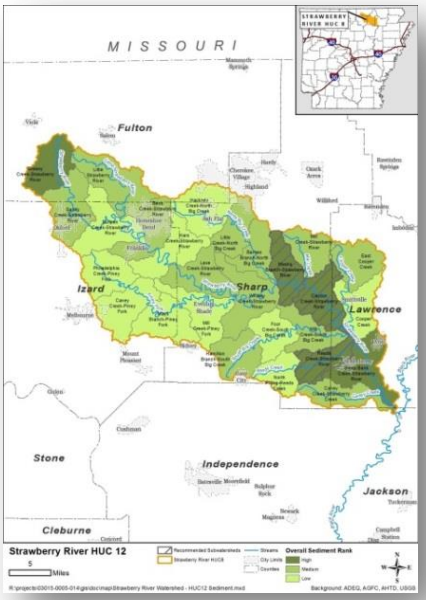
Where possible, Nine Element Watershed Management plans are developed in a cooperative effort between ANRC and local watershed stakeholders. The goal with developing Watershed Management Plans is to preserve, protect, and enhance resources and surface waters throughout the state. A watershed approach considers the entire geographic area that a watercourse drains to address a broad range of issues.

ANRC used state funds facilitating contracts with FTN Associates in the Strawberry (11010012), Cache (08020302) and Lower Little River (11140109) watersheds to develop acceptable EPA 9-element plans. The Strawberry, Lower Little and Cache WMPs drafts were completed in March 2016. After their completion all three plans were submitted to EPA for review and comments, which were received back from EPA in July 2016.

During the development of the Watershed Management Plans, a series of Stakeholder meetings were held each quarter. The Cache River was the largest watershed of the three and was broken into two sections, the Upper Cache and Lower Cache. A total of 8 meetings were held in the Cache with four in the Upper and four in the Lower sections. The Upper Cache meeting had an average attendance of 25 stakeholders and the Lower Cache's average attendance was 25 stakeholders. The Strawberry River and Lower Little River each had four stakeholder meetings with an average attendance of 23 in the Strawberry and 18 in the Lower Little Watershed.

The comments ANRC and its partners received from EPA were addressed and resubmitted to EPA in September of 2016 for review. The Strawberry River and Lower Little River Plans were accepted by EPA in November. ANRC anticipates that the Cache River plan will be accepted very soon. Below is a description of the three watersheds.

Strawberry River - The Strawberry River, in north central Arkansas, is a tributary of the Black River within the White River basin. The river originates in Fulton County, Arkansas and its 761.2 square mile watershed includes portions of Fulton, Izard, Sharp, Independence, and Lawrence Counties. The watershed is primarily rural. Approximately 60% of the watershed is forested. Animal agriculture is widespread in the watershed, including beef and dairy cattle, and poultry and swine feeding operations. Poultry operations are expanding in north Arkansas, including the Strawberry River watershed. Pasture accounts for 29% of the land cover in the watershed, often along streams. The Strawberry River is considered a high quality water resource and is designated as Extraordinary Resource Waters and a Natural and Scenic Waterway. The river supports over 100 species of fish, including the indigenous Strawberry River darter, and over 30 species of mussels. The majority of the Strawberry River and the Little Strawberry River are also designated as Ecologically Sensitive Waterbodies.



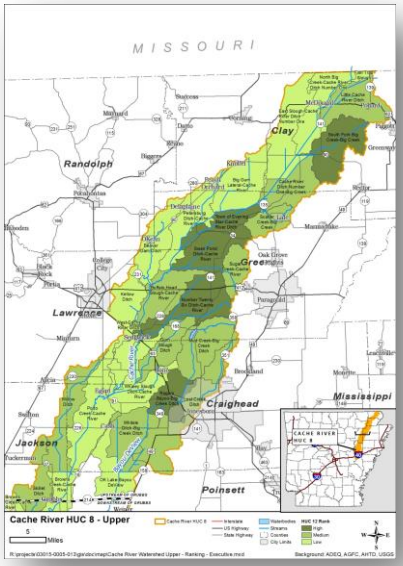
The priority pollutants that have been identified in subwatersheds are turbidity and E. coli. The plan summarizes pollutants of concern and priority nonpoint sources of these pollutants that are present in each of the recommended 12-digit HUC subwatersheds.

After the plan identified the pollutants of concern, a plan of action was developed to reduce the sources of pollutants. Some of the Best Management practices that the plan recommended were; Stream exclusion (Fencing + alternative water supply), Heavy use area treatment, Prescribed/rotational grazing, Forested riparian buffers, Streambank stabilization/ restoration, Pasture planting, Filter strips, and Vegetated riparian buffers.

The table below lists the practices the plan recommended to reduce pollutants:

Practice	TSS reduction	Bacteria reduction
Stream exclusion (Fencing + alternative water supply)	83%	30% - 95%
Alternative water supply	38%, 89%	57%
Heavy use area treatment	No information	Not applicable
Prescribed/rotational grazing	60%	60% - 72%
Controlled stream access	No information	No information
Forested riparian buffer	76%, 94%	30%
Streambank stabilization/ restoration	Up to 100%	Not applicable
Erosion control practices for unpaved roads	48% - 95%	Not applicable
Forestry BMPs (SMZ, stream crossing, road BMPs)	See Forested riparian buffer, and erosion control for unpaved roads	Not applicable
Pasture planting	59%	No information
Filter strips	53% - 91%, 31% - 98%	30% - 100%
Grassed waterway	17%	No information
Stacking sheds	Not applicable	No information
Conservation plans	See other practices	See other practices
Nutrient management plans	See other practices	See other practices
Vegetated riparian buffer	See filter strips	41%
Roof runoff structure	No information	No information
Pond	77%	No information

Cache River - The Cache River, in northeastern Arkansas, is a tributary of the White River. Its largest tributary is Bayou DeView, which joins the Cache River just upstream of the White River. The Cache River originates in southern Missouri, entering Arkansas in Clay County. Bayou DeView originates on Crowley's Ridge in Greene County. The Cache River watershed in Arkansas covers 1,956 square miles and includes portions of 12 counties: Clay, Craighead, Cross, Greene, Jackson, Lawrence, Monroe, Poinsett, Prairie, Randolph, St. Francis, and Woodruff. The watershed is primarily rural, with approximately 73% of the watershed used for agriculture, primarily crop production. Approximately 12% of the land in the watershed is classified as wetland, the majority of which is bottomland hardwoods located in the lower Cache River watershed. Approximately 8% of the land cover in the watershed is forest, the majority of which is located in the upper Cache River watershed on Crowley's Ridge.



Nonpoint sources that have been primarily identified for the Cache River watershed include Sediment and Lead from cropland and streambank erosion. One study in the Cache River watershed found a strong relationship between drainage area and TSS load. Septic systems and wildlife are other potential nonpoint sources in this watershed.

After the plan identified the pollutants of concern, a plan of action was developed to reduce the sources of pollutants. Some of the Best Management Practices that the plan recommended were in the Upper Cache: Drop Pipes, Irrigation water management, Cover crops, Filter strips, buffer strips, field borders, Tailwater recovery and Tailwater recovery. The Lower Cache recommendations were: Stream buffer zones, Cover crops, Filter strips, field borders and Channel and ditch maintenance.

Lower Little River - The Little River, in southwest Arkansas, is a tributary of the Red River. The Little River originates in Oklahoma and enters Arkansas in Sevier County. The Little River watershed in Arkansas (referred to as the Lower Little River) encompasses a total of 1,794 square miles, including all of Sevier County and parts of Polk, Howard, Hempstead and Little River counties. The watershed is primarily rural. Approximately 53% of the watershed is forested. Animal agriculture is widespread in the watershed, including beef and dairy cattle, and poultry and swine feeding operations. Pasture associated with these operations accounts for 18% of the land cover in the watershed.

Siltation/turbidity, pathogens, metals, and nutrients have been identified by ANRC as pollutants of concern for the Lower Little River watershed (ANRC 2005). ADEQ also identifies metals and nutrients as pollutants of concern in the watershed (ADEQ 2015a). Stakeholders are concerned about sediment. Given the land uses and types of waterbodies in the Lower Little River watershed, stakeholders are concerned that nutrients may be, or become, a nonpoint source water quality issue.

After the plan identified the pollutants of concern, a plan of action was developed to reduce the sources of pollutants. Some of the Best Management practices that the plan recommended were; Stream crossings for livestock, Forestry BMPs, Buffer zones, Little control and/or export, Fencing and alternate water supply and Erosion control training for unpaved road crews.

5 Program Success Stories in FY2016

Reducing Agriculture Runoff Improves Water Quality in the Cache River

Five Segments Removed From The Arkansas 2016 303(d) List For Lead

High lead levels in sediment running off from row crop areas impaired Arkansas' Cache River. As a result, the Arkansas Department of Environmental Quality (ADEQ) added two segments of the stream (47.6 miles total) to the state's 2004 Clean Water Act (CWA) section 303(d) list of impaired waters and three segments (47.9 miles total) to the state's 2006 CWA section 303(d) list for lead impairment. Watershed partners initiated watershed assessments and implemented best management practices (BMPs) to abate sediment runoff from row crops in the watershed. Along with sediment reductions from the BMPs, lead (pb) levels in the Cache River also declined and fell below the water quality standard (WQS). Although the stream remains impaired for turbidity, ADEQ removed five segments from the 2016 CWA section 303(d) list for lead impairment.

The Cache River (Waterbody AR-4B-08020302) is a long, narrow watershed that includes parts of Greene, Craighead, Poinsett, Jackson, Woodruff, Monroe, Prairie, Lawrence and Clay Counties. The Cache River begins in southern Missouri, flows 203 miles south through northeastern Arkansas, and empties into the White River near Clarendon, Arkansas. Bayou DeView is a major tributary to the Cache River.

Runoff from agricultural row crop fields was contributing excess lead to the Cache River as the sediments from these fields also contained high levels of lead from legacy agricultural practices. An October 1998–September 2003 ADEQ assessment (for the 2004 CWA section 303(d) list) found that reach 018 (25 miles long) and reach 020 (22.6 miles long) did not meet the state's WQS for lead. The next ADEQ assessment, conducted October 2000–September 2005 (for the 2006 CWA 303(d) list), found that reaches 017 (15.8 miles long), 019 (13.7 miles long), and 021 (18.4 miles long) also did not meet the state's WQS for lead. In Arkansas, the WQS for lead in a given stream reach is derived from the hardness index; therefore, it varies by region. In the Cache River, the WQS for lead is 2 micrograms per liter (µg/L). ADEQ found exceedances of the WQS when sampling during high-flow events. The samples were evaluated, and the five reaches were added to the state's 2004 and 2006 CWA section 303(d) lists of impaired waters for lead impairment. ADEQ subsequently completed draft total maximum daily loads for lead and total dissolved solids for the Cache River in 2012.

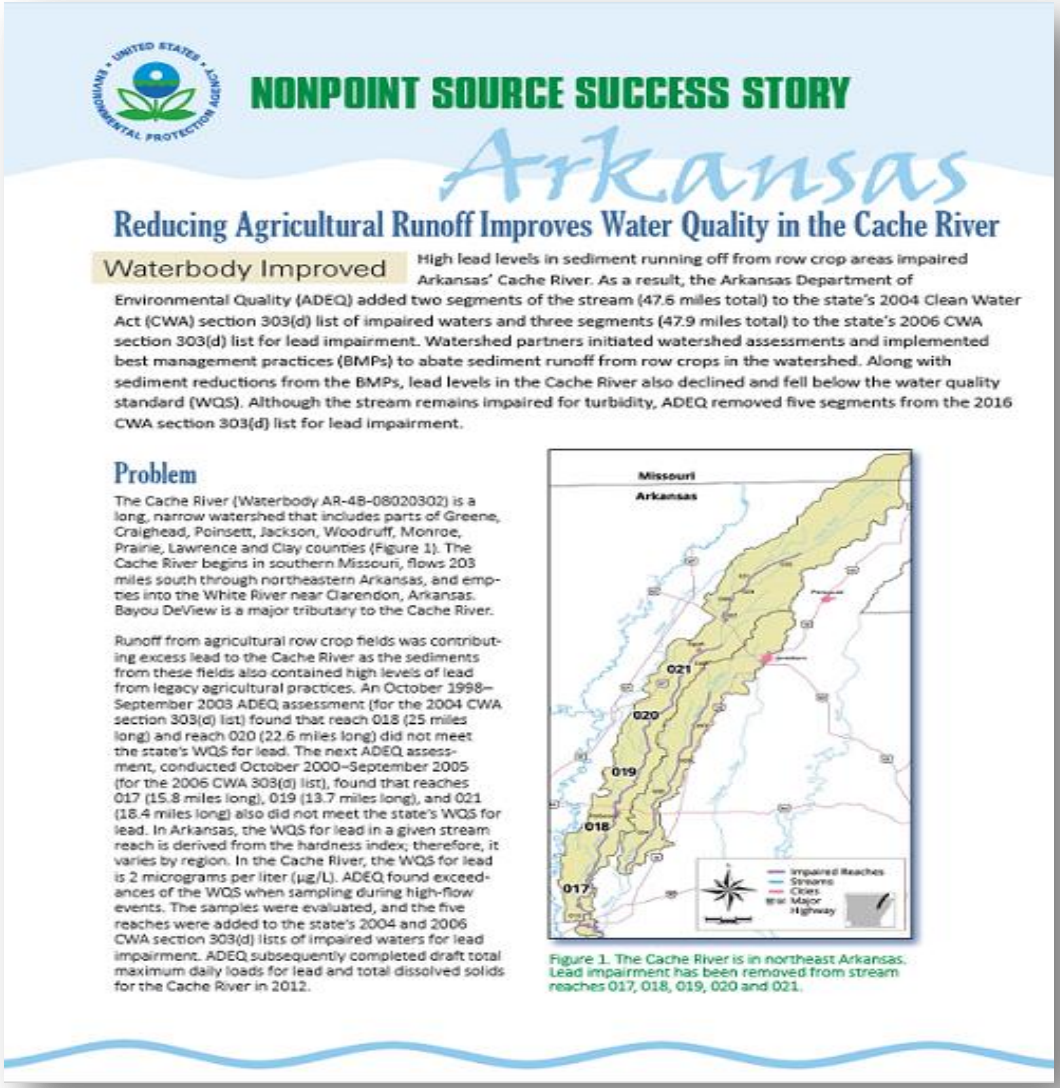
ANRC and its partners successfully addressed erosion and excess lead from agricultural row crop sources through cost-effective targeting of CWA section 319 funds. As a result of the practices implemented in the watershed, both lead and sediment levels have decreased. The 2016 ADEQ water quality assessment showed that Cache River reaches 017, 018, 019, 020 and 021 now meet the state's WQS for lead. Therefore, ADEQ has removed these five reaches from Arkansas' 2016 CWA section 303(d) list for lead impairment. The stream remains listed as impaired for turbidity.

The following partners helped to restore the five reaches of the Cache River: local landowners in the watershed, Jackson County Conservation District (JCCD), Cross County Conservation District (CCCD), The Nature Conservancy (TNC), ANRC, ADEQ, the U.S. Department of Agriculture's Natural Resources Conservation Service, and the U.S. Environmental Protection Agency (EPA). ANRC provided $994,751 of EPA CWA section 319 funds to watershed partners to support several projects. The JCCD and TNC used

$250,000 in CWA section 319 funds to help local landowners identify problem areas and purchase materials for implementing BMPs. The JCCD and TNC also provided $200,400 in cash and in-kind match to purchase and install materials. The CCCD used $450,000 in CWA section 319 funds to purchase BMP materials. The CCCD also provided $450,000 in cash and in-kind match to purchase and install materials.

Additionally TNC used $294,751 in CWA section 319 funds to identify, quantify and rank stream segments for restoration. These data helped pinpoint projects where targeted BMPs could reduce sediment inputs in the watershed. TNC also provided $247,220 in cash and in-kind match to identify priority stream segments in the watershed and install monitoring stations.

If you would like to read more on this success story you can visit:
https://www.epa.gov/sites/production/files/2016-10/documents/ar_cache_river_508.pdf



NONPOINT SOURCE SUCCESS STORY

Arkansas

Reducing Agricultural Runoff Improves Water Quality in the Cache River

Waterbody Improved

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Problem

The Cache River (Waterbody AR-4B-08020302) is a long, narrow watershed that includes parts of Greene, Craighead, Poinsett, Jackson, Woodruff, Monroe, Prairie, Lawrence and Clay counties (Figure 1). The Cache River begins in southern Missouri, flows 203 miles south through northeastern Arkansas, and empties into the White River near Clarendon, Arkansas. Bayou DeView is a major tributary to the Cache River.

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Figure 1. The Cache River is in northeast Arkansas. Lead impairment has been removed from stream reaches 017, 018, 019, 020 and 021.

6 Other Entities That Augment Section 319(h) Programs and Initiatives

The Arkansas NPS program has various partners and other entities that work to reduce non-point source pollution. Partners consist of the Natural Resources Conservation Service (NRCS), Arkansas Natural Heritage Commission (ANHC), Arkansas Department of Environmental Quality (ADEQ), the University of Arkansas Cooperative Extension Service (UACES), The Nature Conservancy (TNC), Beaver Watershed Alliance (BWA), Illinois River Watershed Partnership (IRWP) and various other entities funding and/or implementing projects augmenting the efforts of the Arkansas 319(h) program. Listed below are several examples of projects from numerous entities that have implemented projects to enhance the mission of the Arkansas NPS program in FY 2016.

Natural Resources Conservation Service (NRCS)

From the Natural Resources Conservation Service 2015 Arkansas Annual Report[1], more than $133 million in financial assistance was used to help put conservation on the ground. Farm Bill conservation programs helped producers implement conservation practices and address their resource concerns. The NRCS enhanced technical assistance and increased capacity by adding staff and utilizing partner agreements, even though there were some reductions in financial assistance. Through a recent economic impact study the NRCS contributed $150 million to the State's economy above and beyond the federal assistance provided. Helping Arkansas producers get conservation on the ground better and quicker than ever before will continue to be NRCS's goal.

Environmental Quality Incentives Program (EQIP)

The Environmental Quality Incentives Program (EQIP) promotes agricultural production and environmental quality as compatible goals, providing technical and financial assistance to install or implement conservation practices on agricultural lands. EQIP funds are prioritized through concerns identified by conservation districts through work groups. For FY 2015, farmers received more than $43.85 million in financial assistance. There were 1,833 applications funded on more than 252,385 acres. This assistance helped install practices that reduced soil erosion, use water more efficiently, improve grazing lands, wildlife habitat, and water quality. The most popular practices installed were: fencing, heavy use area, watering facility, livestock pipeline, pasture planting, irrigation water management, nutrient management, irrigation pipeline, structure for water control, and prescribed burning.

Agricultural Conservation Easement Program (ACEP)

For FY 2015 there were seven easements that Arkansas NRCS enrolled under the Arkansas Conservation Easement Program (ACEP) Wetlands Reserve Easements (WRE). More than $18.3 million was obligated for 6,785 acres. This program offers landowners opportunities to protect, restore and enhance wetlands on their properties. Arkansas is third in the nation under this program enrolling more than 235,000 total acres.

Conservation Stewardship Program (CSP)

The goal of the Conservation Stewardship Program (CSP) is to encourage agricultural and forestry producers to undertake additional conservation activities to improve and maintain existing conservation on their land. Soil, water, air and related natural resources are enhanced and conserved through financial and technical assistance. There were 673 contracts developed and 582,223 acres enrolled in FY 2015. These contracts are contracted for five years and will provide over $13.4 million in financial assistance. Through this program Arkansas NRCS has paid over $57.6 million, during FY 2015, for existing contracts.

Regional Conservation Partnership Program (RCPP)

The Regional Conservation Partnership Program (RCPP) is a program that promotes coordination between NRCS and partners to deliver assistance to producers and landowners. RCPP encourages partners to join in efforts with producers to increase the restoration and use of soil, water, wildlife, and related natural resources. This program is enacted on the regional or watershed scale. This program aims to address water quality degradation, groundwater declines, and inadequate habitat for fish and wildlife on irrigated croplands in the Bayou Meto Lower Arkansas region; reducing nutrient and sediment loads entering the Red River; improving water quality in the Illinois River Watershed; and assisting rice producers to address water quality and quantity in Arkansas, Mississippi, California, Louisiana, Missouri, and Texas. The top conservation practices under this program were nutrient management, irrigation water management, irrigation pipeline, irrigation land leveling, and cover crop for FY 2015. There were three projects in the Illinois River, Bayou Meto-Lower Arkansas, and Red River watersheds with 6 contracts funded, 953 acres treated, and over $687K funds obligated.

Conservation Security Program (CSP)

The Conservation Security Program (CSP) was a voluntary program that provided financial and technical assistance to promote the conservation and improvement of soil, water, air, energy, plant and animal life, and other conservation purposes on Tribal and private working lands. There were three counties who received financial assistance for FY 2015: Arkansas, Jefferson, and Lonoke. Over $184K was obligated to these counties in Arkansas.

Mississippi River Basin Healthy Watersheds Initiative (MRBI)

Through the Mississippi River Basin Healthy Watersheds Initiative (MRBI), NRCS and partners work with producers and landowners to implement voluntary conservation practices that improve water quality, restore wetlands, enhance wildlife habitat and sustain agricultural profitability in the Mississippi River basin. In FY 2015 were three new watershed projects that received funding (Caney Creek, Strawberry River, and Upper Cache River Watersheds), six existing projects that received funding and three existing watersheds and projects that received additional funding in FY 2015. For FY 2016, NRCS is investing $30 million in 33 priority watersheds and 40 existing projects nationwide. There were four new watersheds in Arkansas to receive funding in FY 2016: Middle Strawberry, Upper Bayou Macon, Cache Willow/Podo Creek, and Tupelo Bayou- Beaverdam Creek.

Arkansas Department of Environmental Quality (ADEQ)

The Arkansas Department of Environmental Quality's (ADEQ) mission is to protect, enhance, and restore the natural environment for the well-being of all Arkansans. The Arkansas Department of Environmental Quality (ADEQ) is the state's main environmental protection agency, charged with protecting, enhancing, and restoring the environment for Arkansans. One of the ways that ADEQ and ANRC have strengthened their partnership over the past year has been through quarterly multi-agency meetings. These meetings began in late 2014 and have continued through 2016. There are several agencies and a Non-governmental organization (NGO) that regularly attended: ANRC, ADEQ, U.S. Geological Survey (USGS), Arkansas Department of Health (ADH), Arkansas Natural Heritage Commission (ANHC), and Equilibrium a NGO. The main goal of these meetings has been to better understand and coordinate water quality data in the State. It has been greatly beneficial to ANRC and others in understanding various assessment methodologies and processes that ADEQ frequently uses.

The Nature Conservancy (TNC)

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. Since 1982, The Nature Conservancy in Arkansas has worked with partners to conserve over 300,000 acres of forests, woodlands, prairies, caves and dozens of river miles. The accomplishments for 2016 include[2]: $6 million invested into the Greers Ferry Lake watershed through a partnership with BHP Billiton and the Sustainable Rivers and Forests Initiative, created two new preserves protecting 8 river miles and 1,840 acres along the Archery Fork and South Fork Tributaries, planning of restoration on 4,500 acres in the Cache River Watershed in partnership with the Wetland Reserve Easement Program, 68 prescribed burns on over 18,000 acres, installation of toewood to stabilize the riverbanks of the Kings River, and 5 grants awarded to Calhoun, Van Buren, Stone, Searcy, and Greene Counties under the Unpaved Roads Program.

Beaver Watershed Alliance (BWA)

The Beaver Watershed Alliance (BWA) works to proactively protect, enhance, and sustain the high water quality of Beaver Lake and its tributaries through voluntary best management practice implementation, outreach and education, and scientific evaluation. BWA provides strategic, valued, and meaningful programing to provide watershed landowners and environmental stewards with the resources they need to help protect the water quality of Beaver Lake and its tributaries. The BWA was formed in 2011 to establish programming to maintain high quality drinking water in Beaver Lake and improve water quality on the Beaver Lake Watershed. The Alliance represents a diverse stakeholder group from conservation, education, water utilities, technical and science, business, agriculture, recreation and local government groups working together for the cause of clean water. For the 2015-2016 year BWA had many impacts on the Beaver Lake Watershed[3]: BWA directly reached 17,663 stakeholders and generated $130,767 in volunteer community service hours, 11 tons of trash was removed from 100 miles of river and lakeshore, 11,200 landowners were engaged with 900 participating in the use of new BMPs on their lands, 800 BMPs have been implemented, 58 rain gardens have been installed, hundreds of acres of forest management plans have

been created, 117 watershed outreach, education and stewardship programs were conducted, signage has been placed throughout the watershed, assessments has increased watershed protection efforts and prioritization, and over 1 million people have been reached through TV, Newspaper, and digital media.

University of Arkansas Cooperative Extension Service (U of A CES)

The University of Arkansas Cooperative Extension Service (UACES) is a valuable partner in the Nonpoint Source (NPS) arena and have partnered with ANRC to enhance the overall mission of the Arkansas NPS program. Most of the accomplishments over the past year have been in the realm of collection and assimilation of information for development of the 2017 – 2022 Arkansas Nonpoint Source Management Program Plan by the UACES faculty, staff and water quality stakeholders. During FY 2016, the University of Arkansas Cooperative Extension Service has worked to recruit stakeholders from across Arkansas to serve as reviewers for the new NPS Management plan; promoted, attended and facilitated several water quality meetings around the state, educated water quality stakeholders about community engagement and consensus building; served as committee members for water quality boards and commissions; hosted a Keep Bayou Bartholomew Clean event, supported the development of a Stormdrain Art program, and provided Master Gardener and youth education in Jefferson County. UACES's work is helping reduce NPS pollution around the state and the education and outreach work that is accomplished only increases the effectiveness of the Arkansas NPS Program.

Arkansas Game and Fish Commission (AGFC)

The Arkansas Game and Fish Commission (AGFC) plays an important role in keeping The Natural State true to its name. During the last 100 years, the agency has overseen the protection, conservation and preservation of various species of fish and wildlife in Arkansas. Through agency programs geared toward the public, the Arkansas Game and Fish Commission works to generate awareness of ethical and sound management principles for fish, wildlife and their habitat. Arkansas Stream Teams[4] enable concerned citizens to become involved in stream and watershed conservation. Efforts revolve around three primary aspects of stream conservation: education, advocacy and stewardship. Through the Stream Teams and during FY 2016, AGFC stabilized or assisted Landowners on over 43,000 feet of streams.

Illinois River Watershed Partnership (IRWP)

The Illinois River Watershed Partnership (IRWP) works to improve the integrity of the Illinois River through education and outreach, water quality monitoring, and the implementation of conservation and restoration practices throughout the watershed. Accomplishments for FY 2016 include: programs and technical assistance for landowners, several outreach events conducted, implementing green infrastructure practices, partnering with NRCS through the Regional Conservation Partnership Program (RCPP), and providing support and education through the Illinois River Watershed Sanctuary and Learning Center. The IRWP plans to remain active in the coming years and their partnership with ANRC is beneficial to the Arkansas NPS program.

Discovery Farms

The University of Arkansas' Division of Agriculture along with many partners is helping farmers address nonpoint source pollution in agricultural runoff through the Arkansas Discovery Farm Program. The program utilizes partnerships consisting of farmers, scientists and conservation professionals working to achieve environmental and agricultural sustainability for farming in Arkansas through on-farm monitoring, demonstration, and research to:

- Assess the need for and the effectiveness for adopting appropriate Best Management Practices (BMPs) to reduce nutrient and sediment loss and conserve water for major agricultural systems.
- Provide on-farm verification of nutrient and sediment loss reductions and water conversation.
- Mitigate nutrient and sediment losses that may prevent State waters from attaining designated uses.
- Deliver outreach programs to producers to aid them achieve production and environmental goals.
- Provide information in support of the Arkansas State Water Plan.

The statewide program currently consists of nine farms in Arkansas consisting of Poultry, Beef, and Row Crop Operations in Washington, Pope, Cross, Arkansas, Desha, Jefferson, and St. Francis Counties. Various BMPs are being utilized to reduce nutrient and sediment runoff. One farm in Washington County is implementing grass filter strips between production houses to reduce Nitrogen runoff by 50% over the next 3 years. Other landowners are constructing chicken houses will less of an environmental footprint, planting cover crops during the winter months, reassessing irrigation techniques, and managing water quantities along with nutrient and sediment loss in critical groundwater areas. An often overlooked aspect of Discovery Farms is the educational aspect, especially efforts to educate policy makers and the public at large. For example, on farm tours have provided a powerful platform for our Discovery Farmers to educate attendees on agriculture and their water resources protection efforts.

Arkansas Multi-Agency Wetland Planning Team

There is no formalized method to quantify the success and failure of mitigation projects either individually or collectively in Arkansas. However considerable monetary resources are being directed toward aquatic resources enhancement and restoration activities with the assistance of federal dollars and the Clean Water Act. There is a lack of coordinated reporting effort to verify long-term project successes and environmental benefit to the state from these activities. Identification and pilot testing of potential reporting frameworks are being evaluated to increase opportunity to quantify net gains and losses associated with mitigation activities. The Mitigation Assessment & Reporting "Pilot" Project plans to investigate the viability of these potential administrative processes and relevance of geospatial monitoring. Formulating interagency strategies to verify long-term environmental benefits from mitigation activities in Arkansas is a priority for this project.

Gulf of Mexico Hypoxia Task Force

Arkansas, along with 11 other states within the Mississippi River Basin, voluntarily participates on the Gulf of Mexico Hypoxia Task Force. Arkansas, represented by ANRC, has been involved on the Task Force since 1999. Assistance is provided to the Task Force through project specific subcommittees and a long-standing Coordinating Committee. The point source subcommittee produced the *2016 Report on Point Source Progress in Hypoxia Task Force States*. This document, released on March 1, 2016, represented the first ever report addressing the extent of nitrogen and phosphorus monitoring and discharge limits for major sewage treatment plants within the borders of the 12 states comprising the Hypoxia Task Force. These specific permit activities, along with other elements of the state nutrient reduction strategies, will continue progress toward reducing nitrogen and phosphorus pollution in the Mississippi/Atchafalaya River Basin. During 2016, another Task Force subcommittee explored potential mechanisms for reporting successes of nonpoint source pollution reduction activities. When efforts from this subcommittee are concluded, a summary report will be published.

Arkansas Natural Heritage Commission (ANHC)

The Arkansas Natural Heritage Commission's mission is to preserve natural diversity, to promote choice among beneficial uses of the environment, and to promote a balance between development and environmental protection in the State of Arkansas for this and succeeding generations. During FY 2016[5], the Arkansas Natural Heritage Commission has had many achievements in partnerships, implementation, outreach, surveys, and land acquisitions. ANHC co-hosted the 42nd Annual Natural Areas Association (NAA) conference with The Nature Conservancy. Through partnerships, several programs were initiated including: Adopt a Natural Area Program, Restoration of Prairies and Glades for Fish and Anglers, and Restoring Middle Fork Barrens for Fish and Anglers with Hot Springs Village. Outreach and Educational programs were also utilized including hands on training, library programs, classroom programs, social media, e-newsletters, and videos. ANHC built, enhanced, and maintained many trails on natural areas around the state. There were 19 volunteer events conducted with 161 volunteers totaling up around 700 volunteer hours. ANHC has around 63,454 acres of land in their natural areas and they aim to be good neighbors with the communities and those who visit and enjoy their lands. For FY 2016, ANHC's expenditures totaled a little under $5.3 million. Around 60% was used for Natural Area Acquisition but the remaining funds were used for Administration, Land Management and Research.

[1] NRCS 2015 Annual Report

[2] http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/arkansas/arkansas-annual-report-2016.pdf

[3] Beaver Watershed Alliance 2015-2016 Impact Reprt

[4] http://www.agfc.com/fishing/Pages/FishingProgramsAST.aspx

[5] https://www.naturalheritage.com/About/annual-report

Snapshot Reporting for FY2016 (July 2015 – August 2016)

Snapshot reporting was introduced September 2014 at the Stakeholder Meeting and was outlined as a way to share Arkansas water quality projects or activities with ANRC. The goal was to capture water project efforts around the state that were contributing to the benefit of the 319 program. A form was developed and partners were solicited to report projects that they could share with ANRC. These snapshot reports have helped ANRC 319 section better understand the work that is being accomplished around the state for nonpoint source pollution. These reports demonstrate the commitment partners have to enhance or improve water quality. Financial, technical assistance and the activities listed was provided independent of the Arkansas NPS Management Program.

The table below is the projects that were reported to ANRC for FY 2016. There were 28 projects reported to ANRC from various groups managing them with the assistance of many partners. If you would like more information on any of these projects please contact ANRC or the management of these projects around the state.

Title	Management	Timeframe	Location	Project Type	Partners
Agriculture Equipment Program for Benton County	Benton County Conservation District (BCCD)	Ongoing	Benton County	Equipment Rental	Producers and Landowners in Benton County
Water Quality Technician (WQT) Program	Benton County Conservation District (BCCD)	Ongoing	Benton County	Technical Assistance	ANRC, Producers and Landowners in Benton County, BCCD
Friends of the Fourche Creek	Audubon/Friends of the Fourche Creek	4 cleanups during 10/15-8/16	Little Fourche Creek 1111020702	Volunteer Cleanups	Arkansas Audubon, Riggs CAT, volunteers, and in-kind partners
StreamSmart Volunteer Water Quality Monitoring	Ozarks Water Watch	Aug. 2012 – Sep. 2017	Benton, Washington, and Madison Counties (11010001)	Monitoring Education & Outreach	Beaver Water District, Walton Family Foundation, Arkansas Water Resources Center, AGFC, NWA Master Naturalists, Beaver Watershed Alliance, Association for Beaver Lake Environment
Beaver Lake Volunteer Program	Ozarks Water Watch	April 2014 – September 2017	Benton County (11010001)	Monitoring	Beaver Water District and Walton Family Foundation
Beaver LakeSmart Education and Outreach Program	Ozarks Water Watch	October 2015 – September 2016	Benton and Washington Counties (11010001)	Education & Outreach Monitoring	Beaver Water District and Walton Family Foundation
Urban Forestry Expansion Program	Beaver Watershed Alliance	March 2016 – August 2016	Beaver Reservoir Watershed (11010001)	BMP Implementation and Education & Outreach	Arkansas Forestry Commission, TNC, ANHC, Cities of Fayetteville, West Fork, Elkins, Winslow, Goshen, and various Landowners

Title	Management	Timeframe	Location	Project Type	Partners
Lakeside Watershed Opportunity Assessment	Beaver Watershed Alliance	April 2015 – September 2016	Beaver Reservoir Watershed (11010001)	Education & Outreach	Watershed Conservation Resource Center and Landowners
Rain Garden Mini Grant Program	Beaver Watershed Alliance	April 2015 – September 2016	Beaver Reservoir Watershed (11010001)	BMP Implementation and Education & Outreach	Watershed Conservation Resource Center and Landowners
Pond Placement Optimization	Beaver Watershed Alliance	August 2014 – September 2016	Beaver Reservoir Watershed (11010001)	Assessment and Modeling	University of Arkansas and USGS
Evaluating the Assessment Methodology for Numeric Criteria of Beaver Lake and Long Term WQ Trend Analysis in the White River above Beaver Lake	Beaver Watershed Alliance	September 2015 – August 2016	1101000101, 1101000102, 1101000103, 1101000104, 1101000105, 1101000106, & 1101000107	Assessment	University of Arkansas, USGS, City of Fayetteville, Beaver Water District, Washington County Farm Bureau, and CH2MHILL-OMI
Stream Team NPS Reports (Irvin)	Arkansas Game and Fish Commission (AGFC)	October 2015 – September 2016	08040102 (Pike Co.), 11110207 (Pulaski), 08040102 (Hot Spring), 08040101 (Montgomery), 11010014 (Van Buren), 11110201 (Johnson), and 08040102 (Montgomery)	Streambank Stabilization	USFWS, USFS, Southeast Aquatic Resources Partnership, Partners for Fish and Wildlife, and Landowners
Spring River Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region II)	October 2015 – September 2016	11010010 (Sharp County)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Eleven Point River Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region II)	October 2015 – September 2016	11010011 (Randolph County)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Ouachita River Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region II)	October 2015 – September 2016	08040101 (Clark County)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Current River Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region II)	October 2015 – September 2016	11010008 (Randolph County)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Beaver Lake Watershed Landowner Assistance	AGFC Stream Team (Region I)	October 2015 – September 2016	11010001 (Carroll, Madison, and Washington Counties)	Technical Assistance and Bank Stabilization	Landowners, AGFC, and BWA
Buffalo River Watershed Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region I)	October 2015 – September 2016	11010005 (Searcy and Newton Counties)	Technical Assistance and Bank Stabilization	Landowners, AGFC, and NRCS

Title	Management	Timeframe	Location	Project Type	Partners
Bull Shoals Watershed Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region I)	October 2015 – September 2016	11010003 (Boone and Marion Counties)	Technical Assistance and Bank Stabilization	Landowners, AGFC, and NRCS
Elk Watershed Assistance and Bank Stabilization	AGFC Stream Team (Region I)	October 2015 – September 2016	11070208 (Benton County)	Technical Assistance and Bank Stabilization	Landowners, AGFC, and BWA
Illinois River Watershed Landowner Assistance	AGFC Stream Team (Region I)	October 2015 – September 2016	11110103 (Benton and Washington Counties)	Technical Assistance and Bank Stabilization	Landowners, AGFC, IRWP, and Benton County Rd. Dept.
Little Red River Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region I)	October 2015 – September 2016	11010014 (Van Buren County)	Technical Assistance and Bank Stabilization	Landowners, AGFC, and USFWS
Spring Watershed Landowner Assistance and Bank Stabilization	AGFC Stream Team (Region I)	October 2015 – September 2016	11010010 (Fulton County)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Bull Shoals Tailwater Landowner Assistance and Bank Stabilization	AGFC Trout Habitat Program	October 2015 – September 2016	11010003 (Baxter and Marion Counties)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Norfork Tailwater Landowner Assistance and Bank Stabilization	AGFC Trout Habitat Program	October 2015 – September 2016	11010006 (Baxter County)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Greers Ferry Tailwater Landowner Assistance and Bank Stabilization	AGFC Trout Habitat Program	October 2015 – September 2016	11010014 (Cleburne and White Counties)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Spring River Landowner Assistance and Bank Stabilization	AGFC Trout Habitat Program	October 2015 – September 2016	11010010 (Sharp and Fulton Counties)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC
Beaver Tailwater/ Kings River Landowner Assistance and Bank Stabilization	AGFC Trout Habitat Program	October 2015 – September 2016	11010001 (Sharp and Fulton Counties)	Technical Assistance and Bank Stabilization	Landowners working with the AGFC

7 NPS Pollution Management Program Milestones:

Milestones for the NPS Pollution Management Program for FY 2016

In the FY 2014 Annual Report, the Arkansas NPS program staff incorporated a milestone section to outline the specific milestones that the ANRC NPS program staff, cooperating partners, and stakeholders established. The goal was to detail the work and specific projects that helped accomplish or partially complete work under each milestone. In FY 2016 there were active projects that were continuations of previous projects and helped leverage the success of those projects. There have been several projects funded by this program that directly address specific milestones.

ANRC continues to conduct baseline monitoring in priority watersheds to better assess the status of those watersheds and the impact that BMP implementation is making. These baseline monitoring projects can be considered, for the most part, continuations of previous baseline monitoring projects.

Several BMP implementation projects are vital to meeting Milestone 6 dealing with the reporting of load reductions to the Grants Reporting and Tracking System (GRTS) database. Without these projects, that are accomplishing reductions in Nitrogen, Phosphorus, and Sediment, there would be no loads to insert into the GRTS system.

The program management team will continue to use the adaptive management process to adjust objectives and to measure progress toward identified short-term milestones. Project partners, supported by Clean Water Act (CWA) Section 319 grants, will meet in September of each year to review progress toward project objectives and established program milestones. The Nonpoint Source (NPS) Pollution Management Program Stakeholder Group met to discuss the measurable milestones and the progress being reported. Additionally ANRC reviews milestones, progress toward meeting the milestones and discuss possible additions, deletions and/or revisions, as appropriate.

ANRC and the U.S. Environmental Protection Agency (EPA) recognize the achievement of goals and milestones are subject to potential changes in national funding levels, in addition to environmental and weather related factors, the national economic climate, and other variables beyond the control of the state. EPA and the state must also recognize that changes to the goals and milestones can be influenced by revisions to national EPA guidance. Subsequently, Arkansas may choose to re-evaluate and update applicable goals and milestones to adjust for such changing factors. This adaptive management approach enables the state to make appropriate modifications to the Management Program for the continuation of attaining satisfactory progress.

On the next page are the milestones with the contributing projects or work that has been done in FY 2016:

1. Continue the process of identifying 12-digit hydrologic unit areas for priority watersheds for program management purposes. This will occur in concert with a thorough analysis of the modeling assumptions and metrics and be accompanied by significant validation efforts. The qualitative risk assessment matrix will be updated every other year or six months after ADEQ releases the impaired waters list. Priority watersheds will be evaluated and updated every two years after the qualitative risk assessment matrix is updated.

Priority watersheds (8 digit HUC level) were finalized at the NPS Annual Stakeholder and Project Review meeting in September 2016. These watersheds will be the focus for the 2017-2022 Arkansas NPS Management Program. Further assessment beyond initial 8 digit SWAT modeling has not been conducted. Due to economic conditions technical assistance is not readily available. ANRC is working with various partners to address this issue.

2. Continue to conduct strategic baseline monitoring in selected high priority 12-digit hydrologic unit areas within matrix-identified priority watersheds. ANRC anticipates 3-4 priority watersheds will have baseline monitoring over the life of the plan.

11-500- Water Quality Monitoring in the Upper Illinois River Watershed and Upper White River Basin- This project was a continuation to the baseline monitoring of two of the priority watersheds. This project was completed September 30, 2015. The final report for this project was submitted on September 30, 2015 and was officially approved by EPA on November 4, 2015. Overall this project found several exceedances for sediment, nutrients, and bacteria. The sources were identified and suggestions were made about ways to implement future targeted BMPs. There were also locations identified for possible future success stories.

12-800- Water Quality Monitoring for the L'Anguille Watershed- This project also contributed to this milestone and monitored the L'Anguille Watershed thru September 30, 2015. The accomplishments that have been made for FY 2016 are as follows: Equilibrium submitted a final report December 2015 and was accepted by EPA in February 2016.

13-400- Water Quality Monitoring for the Bayou Bartholomew Watershed (Deep Bayou) -This project is collecting data for one of ANRC 319's priority watersheds (Bayou Bartholomew) but is also a more focused monitoring project, partnering with the National Water Quality Initiative (NWQI). The accomplishments that have been made for FY 2016 are as follows: There were 509 grab samples and 104 routine samples have been collected from 10 monitoring locations, in-situ data has been recorded at each monitoring station, 613 samples have been analyzed, stage height data and velocity has been surveyed at 5 locations, and data has been imported into WQX database. This project is slated to conclude in September 2017.

13-500- Middle Cache River Monitoring- This project attempted to ascertain the effectiveness of BMPs implemented by MRBI partners in the middle Cache River watershed thru in stream water quality monitoring at the outflow of selected 12 digit HUCs. This monitoring began in the summer of 2013 and concluded in June 2016. 828 samples were collected and analyzed with 216 of those being done in FY 2016. The project concluded that monthly sediment means were trending lower, but the opposite was true of nutrient mean values. Also, select sub-watersheds were identified as targets for implementation.

15-200- Water Quality Monitoring for the L'Anguille River Watershed- This project is a continuation of the baseline monitoring and is located in a priority watershed. There are ten monitoring locations in selected

12 digit HUCs of the L'Anguille watershed. The accomplishments that have been made for FY 2016 are as follows: A QAPP was developed and finalized, equipment was installed at ten monitoring locations, there were 488 grab samples and 98 routine samples have been collected from the monitoring locations, in-situ data has been recorded at each monitoring station, 586 samples have been analyzed, and daily discharge has been surveyed at all 10 locations. This project is scheduled to conclude September 2019.

15-300- Water Quality Monitoring for the Lake Conway Point Remove Watershed- This project is a continuation of the baseline monitoring from 2014 (11-600) and located in a priority watershed. There are ten monitoring locations in selected 12 digit HUCs of this watershed. The accomplishments that have been made for FY 2016 are as follows: A QAPP was developed and finalized, equipment was installed at ten monitoring locations, there were 479 grab samples and 96 routine samples have been collected from the monitoring locations, in-situ data has been recorded at each monitoring station, 575 samples have been analyzed, and daily discharge has been surveyed at all 10 locations. This project is scheduled to conclude September 2019.

15-400- Water Quality Monitoring in the Upper Illinois River Watershed and Upper White River Basin- This project is also a continuation of baseline monitoring and project 11-500. There are 15 sites that are being monitored in both of these priority watersheds. The accomplishments that have been made for FY 2016 are as follows: A QAPP was developed and finalized, there have been 10-13 samples collected from each monitoring site every quarter during base and storm flow conditions, all samples have been analyzed and are being used to estimate annual loads and trends. This project is scheduled to conclude December 2018.

3. Continue to employ a formal annual review process of select NPS projects funded with CWA 319 grants aimed at improving project effectiveness. The formal review results will be reported annually in the NPS annual report.

The Arkansas Natural Resources Commission and the UA Division of Agriculture hosted the annual Nonpoint Source Pollution Stakeholder & Project Review Meeting on Sept. 21-22, 2016 in Little Rock. The meeting took place at the Cooperative Extension Service facility and had 69 attendees on the first day and 45 attendees on the second day. The agenda for day one focused on program updates, the Arkansas Nutrient Trading Program, Unpaved and Paved Roads, and Water Quality Agency Updates. There were presenters from the Cooperative Extension Service, ANRC, EPA, Nutrient Water Quality Trading Advisory Panel, Department of Rural Services, Arkansas Nature Conservancy, State Highway and Transportation Department, Arkansas GIS Office, Department of Health, Game and Fish Commission, Forestry Commission, Natural Resources Conservation Service, Arkansas Department of Environmental Quality, USGS, and Arkansas Natural Heritage Commission. Stakeholders were provided the opportunity to listen and comprehend what actions were being taken around the state from a variety of partners. It was the goal to provide this presentation opportunity to the NPS program partners and highlight their successes challenges and an opportunity to network or collaborate. Additionally the meeting served to inform attendees of other partner's work that was being accomplished and the applicability projects or activities to NPS milestones. Day One was a full day and concluded late that afternoon.

Day Two was the NPS Project Review Meeting and 45 attendees took part that day. There were nine presenters this year from watershed groups, non-profits, academia, and government agencies. The following projects were presented and discussed.

Project Number	Project Name	Project Type
13-300	Water Quality Demo and Educational Program for the Illinois River Watershed	Demonstration/ Education
13-1300	Low Impact Development Demonstration and Education Project for the Illinois River Watershed	LID Demo/Education
15-800	Implementing Green Infrastructure Elements for Enhanced Water Quality in the Illinois River Watershed	LID Demo/Education
13-1100	White River Bank Restoration and Monitoring Project	Streambank Restoration
15-400	Illinois and Upper White River Monitoring	Monitoring
13-400	Water Quality Monitoring for the Bayou Bartholomew Watershed	Monitoring
13-500/14-400	Middle Cache River and Little River Ditches Watershed Monitoring	Monitoring
14-300	War Eagle Creek Riparian Management Education & Demonstration	Education & Demo
15-500	Lake Atalanta Sediment Reduction and LID Demonstration Project	LID Demonstration
15-900	Connecting NPS Management to Receiving Streams through BMP Education and Demonstration	Education & Demo
15-1200	Arkansas Silvicultural Non-point Source (NPS) Project	Assessment

4. As resources allow, continue cooperation with the Arkansas State Plant Board and the Abandoned Pesticide Program in the collection of data associated with the environmental risk reductions related to farmer participation in abandoned pesticide collection. Any developments in this area will be reported annually in the NPS annual report.

Since 2005, the program has been conducted in all 75 counties in the state, successfully recovering nearly 2.9 million pounds of unwanted agricultural pesticides. In FY 2016, NPS staff participated in quarterly meetings of the Abandoned Pesticide Collection Advisory Committee, giving input as to where and when collection events should be held. Thirteen different collection events safely removed 220,362 pounds of pesticides from the environment the last year.

5. Continue to produce and submit the NPS annual report by the end of January each year.

The 2015 Arkansas Annual Report was submitted January 19, 2015 to EPA Region VI. ANRC received correspondence dated March 23, 2016 from the Region related to receipt, review, acceptance and suggestions to the report. Comments on the report were overall positive and encouraging. They consisted of how well organized and concise the document was and how it summarized the successes from FY 2015 well. ANRC also worked to address the comments from the previous year's report in this Annual Report. Comments (FY 2015 Annual Report) related to improving the report consisted of 1) estimated load reductions from NRCS and 2) the continuation of the Arkansas Stewardship Program.

Due to privacy restrictions ANRC is not able to obtain and report load reduction for specific BMPs implemented through NRCS programs. ANRC has received aggraded information related to acres, number of practices, dollars allocated, obligated and expended.

ANRC has solicited partners to further expand the Arkansas Stewardship Program. Specific partners solicited included U of A Cooperative Extension Service, Illinois River Watershed Partnership and the Arkansas Department of Health. At the writing of this report no progress has been made.

6. Continue to report load reductions (sediment and nutrients) and BMPs in the Grants Reporting and Tracking System (GRTS) database each year. These results will be included in the NPS Annual Report.

12-400- Lower L'Anguille River Watershed Cost-Share Project Phase IV- St. Francis County Conservation District has assisted 5 applicants in helping water quality in the Lower L'Anguille River Watershed. BMPs implemented include: Structure for water control, Irrigation Water Conveyance and Drop Pipes.

13-900- Poplar Creek Watershed Improvement- This project with the Greene County Conservation District sought to address impairment (sedimentation) of a tributary of the Cache River called Poplar Creek. The project offered eligible landowners technical and financial assistance to implement BMPs on their property. This project started in June 2013 and concluded in September of 2016. Load reductions for the project have been calculated and entered into the GRTS database.

14-500- Sediment & Nutrient Management in the L'Anguille River Watershed in St. Francis County Cost-Share project has assisted 46 applicants in helping water quality in the L'Anguille River Watershed. Also newsletters, newspaper articles and radio spots were used informing landowners in the watershed about ways to prevents non-point source pollution. BMPs implemented include: Cover Crops, Irrigation Water Conveyance and Nutrient Management.

15-600- Boone County Beaver Reservoir Watershed Project- This project with the Boone County Conservation District is trying to address water quality concerns in the Upper White River watershed. The project offers eligible landowners technical and financial assistance to implement BMPs on their property. This project started in October 2015 and will continue thru September 2018. Load reductions for the project have been calculated and entered into the GRTS database.

15-1100- Strawberry River Sub Watershed Project-Fulton County Conservation District has assisted 29 applicants in helping water quality in the Strawberry River Watershed. BMPs implemented include: Fencing, Herbaceous Weed Control, Pasture Planting, Brush Management, Watering Facility and Heavy Use Areas. Also, field days, newsletters, newspaper articles and radio spots were used in informing landowners in the area about ways to prevent non-point source pollution.

The table below is a reflection of the load reductions that have been accomplished during FY 2016. Every quarter these load reductions and other information such as BMP amounts are entered into the EPA GRTS database. Projects, that have information entered in for load reductions, consist of demonstration, BMP implementation, and streambank restoration projects. Most of these projects submit information quarterly or at the conclusion of the project. There are various models that are used in calculating load reductions and they can vary between projects. So, this table depicts active projects that had a quantifiable reported load reduction during the period of FY 2016.

FY 2016 ACTIVE PROJECT LOAD REDUCTIONS

	Nitrogen Reduced (lbs./year)		Phosphorus Reduced (lbs./year)		Sediment Reduced (tons/year)	
Project #	FY 16	Project Life	FY 16	Project Life	FY 16	Project Life
12-400	NA	NA	NA	NA	NA	2,000
12-1000	NA	NA	NA	NA	NA	31,340
13-900	10	160	5	80	4	232
14-300	NA	[295-590]	NA	NA	NA	NA
14-500	5,685	9,459	2,842	4,728	2,218	3,774
14-600	NA	NA	NA	30	NA	130
15-600	256	256	127	127	174	174
15-1100	600	600	299	299	330	330
Totals	6,551	10,770-11,065	3,273	5,264	2,726	37,980

7. Continue to partner and assist the Natural Resources Conservation Service (NRCS) in the review, selection or development of National Water Quality Initiative (NWQI), Mississippi River Basin Initiative (MRBI), Regional Conservation Partnership Program (RCPP), Environmental Quality Incentive Program (EQIP) or other programs that will improve or enhance water quality in watersheds on an annual basis. ANRC will also participate in the State Technical Committee annually or as it convenes. A summary of meetings attended, programs reviewed or participation will be reported annually. Additionally ANRC will monitor (in-stream WQ monitoring) a minimum of 2 NWQI 12 digit watersheds and 2 MRBI 12 digit watersheds yearly through the life of this plan. Monitoring results will be assessed and reported in the NPS Annual Report as they become available.

ANRC continues to participate in the State Technical Committee (STC). Meetings (WQ subcommittee and the general STC) were attended in March, August and October 2016. ANRC also assisted with the selection of three 12 digit HUCs in the Upper Cache River watershed for inclusion in the NWQI. Monitoring continues in the original watersheds selected for the NWQI. The monitoring is in three 12 digit HUCs in the Bayou Bartholomew watershed. To date WQ monitoring data has not been fully compiled and statistically analysis preformed.

13-400- Water Quality Monitoring for the Bayou Bartholomew Watershed (Deep Bayou) -This project is collecting data for one of ANRC 319's priority watersheds (Bayou Bartholomew) but is also a more focused monitoring project, partnering with the National Water Quality Initiative (NWQI). The accomplishments that have been made for FY 2016 are as follows: There were 509 grab samples and 104 routine samples have been collected from 10 monitoring locations, in-situ data has been recorded at each monitoring station, 613 samples have been analyzed, stage height data and velocity has been surveyed at 5 locations, and data has been imported into WQX database. This project is slated to conclude in September 2017.

13-500- Middle Cache River Monitoring- This project attempted to ascertain the effectiveness of BMPs implemented by MRBI partners in the middle Cache River watershed thru in stream water quality monitoring at the outflow of selected 12 digit HUCs. This monitoring began in the summer of 2013 and concluded in June 2016. 828 samples were collected and analyzed with 216 of those being done in FY 2016.
14-400- Little River Ditches Monitoring- This project is trying to ascertain the effectiveness of BMPs implemented by MRBI partners in the Little River Ditches watershed. This monitoring began in January of 2015 and is scheduled to continue through September of 2017. 201 samples have been collected and analyzed with 108 of those being done in FY2016.

8. Continue to evaluate and support in-stream water quality monitoring to assess the effectiveness of implemented 319(h) grant-funded projects, and report monitoring data to ADEQ annually or as appropriate.

ANRC strives to send all baseline monitoring data to ADEQ annually and at the conclusion of projects. The data is sent by October 1 of every year but can be sent at other times of the year. The following projects have had data submitted to ADEQ during FY 2016: 11-500, 12-800, 13-400, 13-500, 14-400, 15-200, 15-300, and 15-400.

9. Review ADEQ's 305(b) report and subsequent 303(d) list approved by EPA for delisted streams or stream segments and determine area activities implemented during the period prior to delisting as a result of NPS load reductions. Review of the 303(d) list will occur every two years and draft success stories will be developed for delisted segments as appropriate. The goal is to develop two to three success stories within the time frame of this management plan.

ANRC continues to review the draft 2016 stream segment delistings for potential delistings. In FY 2016 a success story was developed for the Cache River. To date the 2010, 2012, 2014, and 2016 Intergraded Water Quality Assessment Report (305(b)) has not been approved by EPA and the Arkansas Department of Environmental Quality has not published an updated stream segment listing/delisting.

10. Develop and implement the Arkansas Watershed Stewardship training program, which will provide watershed education to help residents participate in programs designed to address water quality issues. Program facilitators will train 300 people each year. The AWS training program will occur 8 times in 2014 in 8 priority watersheds with a total of 300 people each year being educated in water quality restoration practices.

ANRC has solicited partners to further expand the Arkansas Stewardship Program. Specific partners solicited included U of A Cooperative Extension Service, Illinois River Watershed Partnership and the Arkansas Department of Health. At the writing of this report no progress has been made.

11. Work with partners or other stakeholders to initiate or to have two to three watershed management plans accepted as meeting EPA's nine key elements within the time frame of this NPS Management Plan. Progress on working with watershed groups and/or submittal or acceptance of watershed plans could also be reported on an annual basis in the NPS annual report.

ANRC used state funds facilitating contracts with FTN Associates in the Strawberry (11010012), Cache (08020302) and Lower Little River (11140109) watersheds to develop acceptable EPA 9-element plans. The Strawberry, Lower Little and Cache WMPs drafts were completed in March 2016. After their completion all three plans were submitted to EPA for review and comments, which were received back from EPA in July 2016.

The comments ANRC and its partners received from EPA were addressed and resubmitted to EPA in September of 2016 for review. The Strawberry River and Lower Little River Plans were accepted by EPA in November. ANRC anticipates that the Cache River plan will be accepted very soon. Below is a description of the three watersheds.

12. Work with partners or other stakeholders to initiate Low Impact Development (LID) projects within priority watersheds.

The City of Little Rock continues to implement LID in the downtown area (16-600) and in other selected areas of the city. Cities in northwest Arkansas in the Illinois River (15-500, 15-800) and Beaver Lake Watersheds (14-300) (Bentonville, Rogers, Springdale and Fayetteville) are the most active in the State for implementing LID. Developing on previously funded (319h) projects these cities and citizens are implementing LID and green infrastructure practices with private funds.

13-300- IRWP Greenway project was completed and the final project report accepted by EPA in July 2016. This project demonstrated the benefits of rain gardens and other LID practices to stake holders within the watershed. The IRWP installed Low Impact Development (LID) demonstration projects and used clean water initiatives such as porous pavers, tree wells, rain gardens and phosphorous removal structures such as vegetated swales, riparian buffers with native grasses and trees to improve water quality. As the infrastructure was installed, the IRWP educated and involved the community on the key educational water quality improvement and best management practice aspects.

The IRWP has successfully installed 5 Trailheads on Razorback Greenway with Green Infrastructure, 15 Rain Gardens, installed 12 interpretive signage sites, held 7 LID workshops and conducted online media campaigns 3 times during the project timeframe.

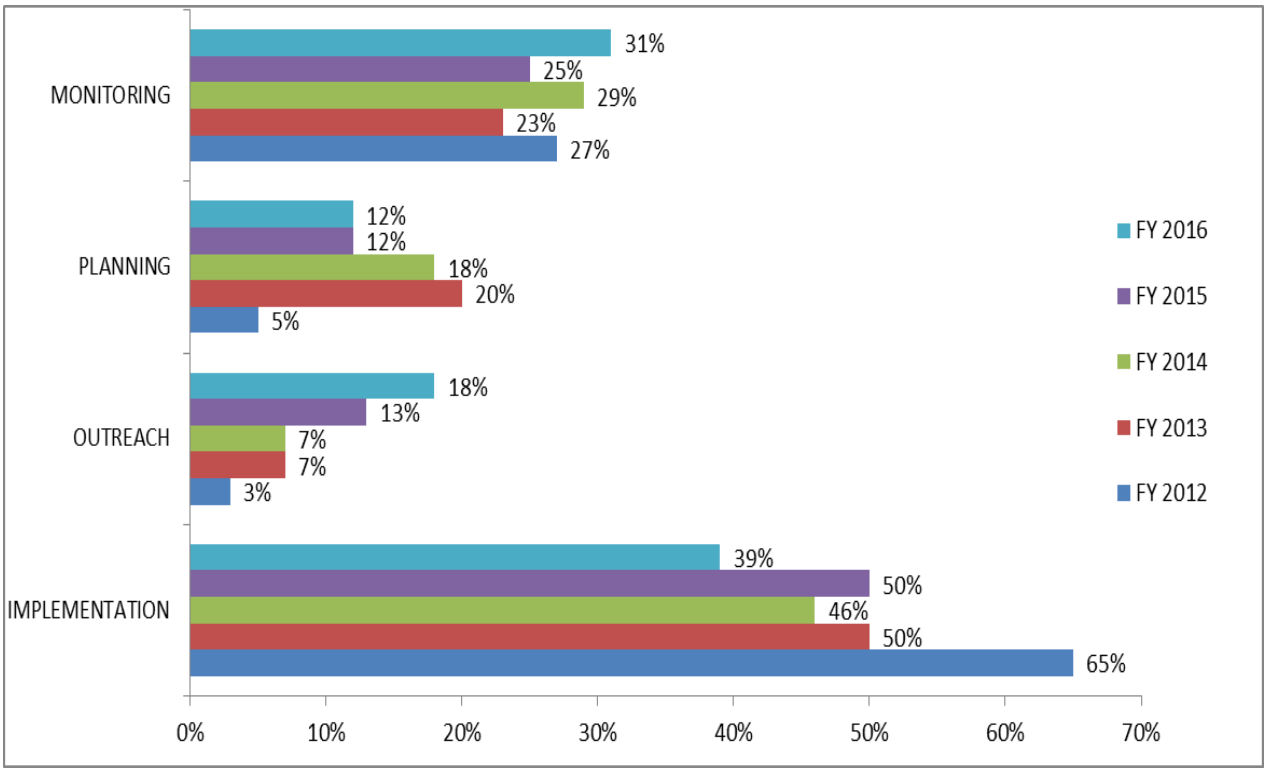
8 FEDERAL RESOURCE ALLOCATION:

Program Expenditures:

Program Expenditures for FY 2016:

The Arkansas Nonpoint Source Program allocates most of its Clean Water Act 319(h) funds to its partners who plan to implement projects in priority watersheds that best meet the goals and milestones of the Program. These partners must be capable of carrying out projects and are typically required to provide a minimum of 43% match in non-federal funds. In FY 2016, ANRC and its project partners spent approximately $2.3M in federal funds to address water quality resource concerns and to reduce or prevent nonpoint source pollution.

The chart below shows how federal funds disbursed for projects were allocated among monitoring, planning, outreach, and implementation projects. Monitoring expenditures increased 6% of federal expenditures from FY 2015 to 2016. Planning expenditures remained at 12% while outreach expenditures increased 5% respectively. Implementation expenditures decreased 11% in FY 2016 mainly due to the increase in monitoring and outreach efforts by various partners.



9 Best Management Practices

Best Management Practices Implemented in FY 2016

The table below contains BMPs that have been implemented during FY 2016 and the quantity of each BMP according to active projects during FY 2016.

		Demonstration Projects					
Best Management Practices	**NRCS #**	**12-400**	**13-900**	**14-500**	**15-600**	**15-1100**	**Total**
Structure for Water Control (feet)	587	120					120 feet
Irrigation Pipeline (feet)	430	100		11,609	88	3,808	15,605 feet
Critical Area Planting (acres)	342		8				8 acres
Mulching (acres)	484		8				8 acres
Pond (units)	378		5			1	6
Tree/Shrub Establishment (acres)	612		5				5 acres
Tree/Shrub Site Preparation (acres)	490		5				5 acres
Cover Crop (acres)	340			664			664 acres
Grade Stabilization Structure (feet)	410			587			587 feet
Residue Management (acres)	345			92			92 acres
Fencing (feet)	382				5,351	8,954	14,306 feet
Forage and Biomass Planting (acres)	512				209	372	581 acres
Heavy Use Area (units)	561				1	3	4
Watering Facility (units)	614				1	3	4
Brush Management (acres)	314					586	586 acres
Herbaceous Weed Control (acres)	315					202	202 acres

10 FY 2016 Non-point Source Program Accomplishments

- **Watershed Management Plans**- There were three successful Watershed Management Plans developed in the Cache, Strawberry, and Lower Little River Watersheds.

- **Success Stories**- ANRC had one success story for FY 2016 in the Cache River Watershed that removed 5 segments from the 2016 303(d) list for lead (pb). This success story would not have been possible without the dedication and commitment of all involved partners and the funding provided by EPA.

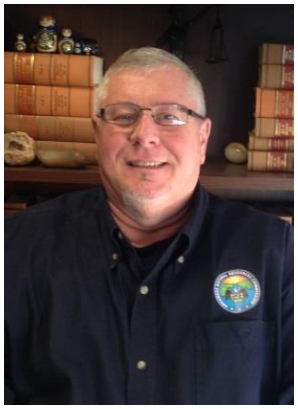
- **Education and Outreach-** Education and Outreach projects continue to be a vital part of the NPS program. While there is not always a measurable load reduction associated with the education and outreach projects, we are seeing a difference in the public's perception of pollution in their communities. LID techniques have caught on and the catalyst for recent successes have been projects in NW Arkansas and the Main Street Project in Downtown Little Rock. The public is buying in to these LID/GI techniques for their aesthetic and water quality benefits.

- **Enhancing Partnerships-**Partnerships were further strengthened for FY 2016. ANRC, EPA, NRCS, ADEQ, TNC, ANHC, U of A CES, IRWP, BWA, and various other partners worked together through initiatives and programs reducing nonpoint source pollution. ANRC, ADEQ, USGS, ADH, ANHC, and Equilibrium continue to meet quarterly with the goal of better coordinating program goals and objectives. Enhancing these partnerships will continue to be a primary goal for the NPS Program in the coming years.

- **GRTS Reporting**- For FY 2016 there were load reductions achieved that directly relate to 319(h) funded projects. Load reductions were found in many of the priority watersheds around the State. Total load reductions for FY 2016 were 2,726 tons/acre for sediment, 3,273 lbs./acre for phosphorus, and 6,551 lbs./acre for nitrogen. All of these load reductions were entered into the GRTS database.

Program Staff

The Arkansas Natural Resources Commission, Nonpoint Source Management Program staff would like to thank EPA for the financial and technical assistance provided and the diverse partners and stakeholders that assisted in the endeavor to improve water quality in the Arkansas.



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Fiscal Manager/Coordinator

- Program Administration
- NPS Management Plan Update
- Project Development and Management
- Partnership Coordination and Development
- LID/GI, BMP Implementation and Education/Outreach

Kevin McGaughey,
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Allen Brown,
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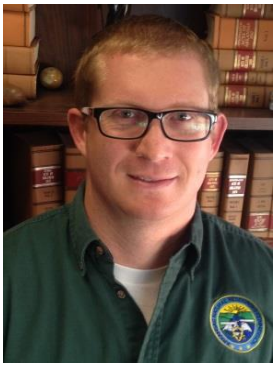

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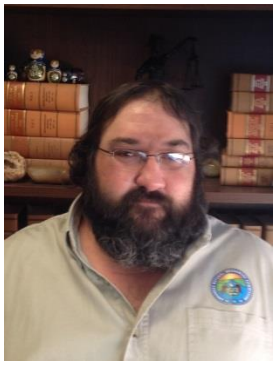

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