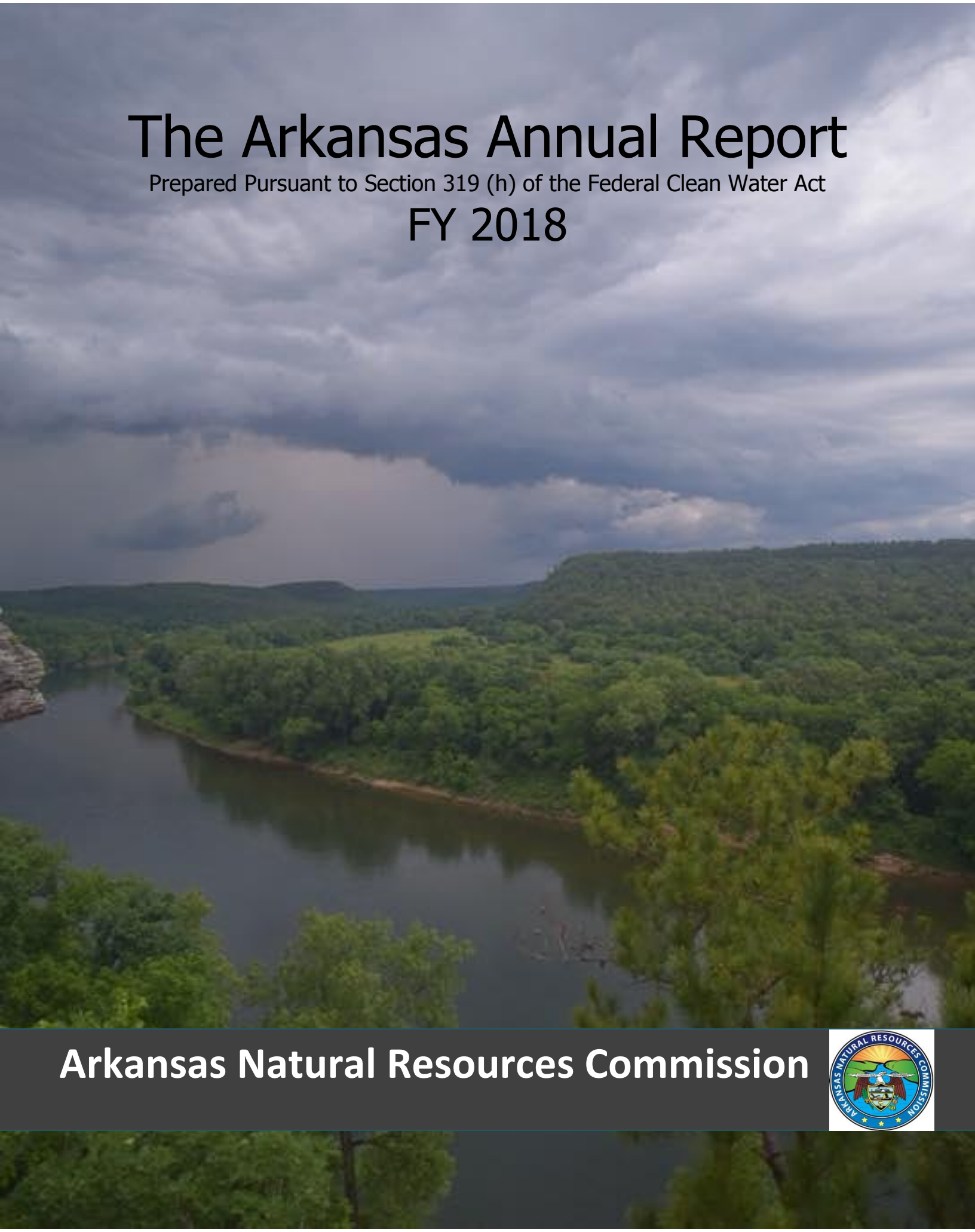

The Arkansas Annual Report

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

FY 2018

Arkansas Natural Resources Commission

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1 SUMMARIES

Notes from the Director:

Time flies by fast! It is hard to believe I've been the Executive Director of the Arkansas Natural Resources Commission (ANRC) since July 2016. We continue to enhance our services, streamline processes, and have a positive effect on Arkansas environment and infrastructure. More positive changes have been planned and will be made in the near future.

Governor Hutchinson promised the citizens of Arkansas a more efficient and effective state government. Moving into his second term, that promise continues to be fulfilled. In September, the Governor announced a reorganization plan. This plan would take the existing 50 plus state agencies, commissions, and boards and consolidate them under one of fifteen cabinet secretaries. In essence, this would reduce duplication of efforts and maximize resources, thus being more economically sustainable. Pending legislative approval in the 2019 session, the reorganization would place ANRC under the Arkansas Department of Agriculture. I see this as an opportunity for the agency, interdepartmental divisions and sections to further develop, strengthen and leverage partnerships to promote environmental conservation and water quality.

Last year I stated the state Nonpoint Source Management Plan had been updated for the period of 2017-2022; however, due to publication delays the Plan was amended to cover the period of 2018-2023. The updated Plan is more focused on nonregulated nonpoint sources and their management. In streamlining the Plan, NPS activities requiring permitting or those that are regulated have been removed, as ANRC does not have the legislative authority for enforcement. Regulatory laws and enforcement typically are administered by the Arkansas Department of Environmental Quality or the Arkansas Department of Health.

The NPS Management Program (Program) continues to focus on the development of nine-element watershed management plans (WMP) and their implementation. During this reporting period, a WMP has been developed for the most pristine watershed in the state, the Buffalo River watershed. The development of this WMP was made possible by the partnership of ANRC and Arkansas Department of Environmental Quality (ADEQ) and as a product of the Beautiful Buffalo River Action Committee formed by Governor Hutchinson in 2016.

The Program continues to advocate and demonstrate green infrastructure (GI) and Low Impact Development (LID) practices. The City of Little Rock Creative Corridor Phase II is highlighted in this report. Subsequently, the Program is beginning to have more inquiries regarding GI/LID implementation.

Challenges still occur for the NPS Management Program. We were not able to directly correlate the functions of the Program to the restoration of a waterbody. This was attributed to inconclusive data. We

are continuing to monitor these stream segments and sharing the data with ADEQ. We are confident data will demonstrate designated use attainment.

Partnerships and active participation are paramount for environmental conservation in our state. We continue to value our partnerships and are working to solidify them more each day. It takes the cooperation and commitment of government agencies, conservation districts, organizations, and groups to promote conservation and have an effect on water quality.

The Arkansas Natural Resources Commission is proud to provide this 2018 Annual Report for the Arkansas Nonpoint Source Management Program.

Bruce Holland
Executive Director
Arkansas Natural Resources Commission

Executive Summary:

The Arkansas Natural Resources Commission (ANRC) is the lead agency responsible for the Arkansas Nonpoint Source (NPS) Management Program. ANRC and its many partners and stakeholders collaboratively work together to develop the NPS Pollution Management Plan. The Plan provides a broad framework and aspirational objectives and milestones for implementation of the NPS Management Program. Watersheds are prioritized for resource allocation using a risk matrix assessment tool that is contained within the Plan. The Plan is updated every five years based upon an adaptive approach. The current Plan was updated and approved by EPA Region VI in August and covers the 2018-2023 timeframe.

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. 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 NPS Program's success has been evaluated primarily on 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. Throughout this report you will see the many partners that contribute to the success of the NPS Program.

This Annual Report focuses on the accomplishments that were made in meeting milestones of the NPS Program for FY 2018. It depicts projects, efforts, and activities initiated, implemented, or completed by partners and stakeholders over the past year. This report also contains calculated load reductions of sediment, nitrogen, and phosphorus; installed Best Management Practices (BMPs); and how federal dollars were allocated within the NPS Program.

Efforts continue to be made in improving water quality in select areas and watersheds. For this progress to continue, certain achievements will have to be accomplished, such as:

- State and Federal agencies continue to provide technical and financial assistance.
- Stakeholders "buy in" and becoming actively involved in restoring waterbodies.
- Low Impact Development (LID) and Green Infrastructure (GI) techniques are demonstrated in urban areas and demonstrations are implemented for educational purposes for students, developers, municipalities, and citizens of the community.
- Watershed stakeholders and groups organize and identify common water quality goals.
- Watershed plans, conservation plans, and comprehensive nutrient plans are developed, utilized, and implemented.
- Continuation of water quality monitoring in priority watersheds evaluating the status of those watersheds.

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

Green Infrastructure (GI) and Low Impact Development (LID) have become popular methods for reducing nonpoint source pollution in and around the State of Arkansas. Through the Arkansas 319 Grant Program, projects are being implemented and affecting water quality within their respective watersheds. There have been several projects completed in FY 2018 and also projects that are just beginning. Here are a few of the GI and LID projects that are highlights for this report:

15-800 Implementing Green Infrastructure Elements for Enhanced Water Quality In the Illinois River Watershed

This project helps meet the goals of the 2012 Watershed-Based Management Plan for the Illinois River watershed. The Illinois River Watershed Partnership (IRWP) works collaboratively with communities in the watershed to help protect water quality while helping communities realize the greatest possible benefits of conservation efforts and investments. Conservation, restoration and enhancement of natural areas and green spaces in the watershed have been realized through this project. This was done by incorporating trees and native grasses in riparian areas, installing rain gardens, bioswales, pervious pathways, porous pavers and vegetated roofs, and incorporating rain water harvesting to mimic natural systems in developed areas and helping to revitalize urban areas and make neighborhood streets and greenways safe for walking and biking, while improving water quality. The IRWP has a track record of working with a broad base of stakeholders including vulnerable and disadvantaged populations. Through this project 15 green infrastructure practices were installed for water quality demonstration, enhancement in the headwaters of the Watershed for downstream protection and water quality improvement.

This project accomplished two goals. One reduced non-point source sediment and nutrient loads into the Illinois River watershed through the implementation of demonstration green infrastructure elements. The second goal was to identify effective methods of green infrastructure as a water quality Best Management Practice (BMP) and have them voluntarily implemented by individuals and organizations.

The first project objective was to implement 15 green infrastructure projects in highly visible public and quasi-public locations. Funding for this project installed seven rain gardens, five porous paver projects, five bioswales, one rain barrel installation, and one green roof, which serviced just over 7.7 acres of impervious surface. Geographically, these projects were installed in highly urbanized areas across the entire watershed. Seven were installed in Fayetteville, two in Siloam Springs, two in Rogers, three in Springdale, and one in Bentonville. Grantee partners were also diverse, with installations in public parks, six at schools, one church, one university, commercial and public buildings. Using public to quasi-public locations for the implementation helped facilitate the idea of green infrastructure and demonstrated appropriate BMPs that citizens and organizations can adopt.

The second objective was accomplished with the training of 75 persons on how to properly design, implement, and maintain green infrastructure elements. This training took place in 3 "Rain Garden Academies". Additional technology transfer took place through the distribution of green infrastructure fact sheets at various education outreach events across the watershed.

The project met its intended goals and objectives demonstrating LID and GI elements to many and various stakeholders in the Illinois River Watershed. The cooperation of multiple partners such as city park staff, school districts and administrators, developers, organizations and individuals was a unique success in itself. This project not only served to help improve water quality through direct stormwater management via green infrastructure projects, but also formed new bonds and strengthened existing ones between IRWP and other local groups. These bonds will continue to help advance the goals of improving water quality within the watershed.

16-600 Water Quality Demonstration and Educational Program for Main Street Little Rock, Phase II

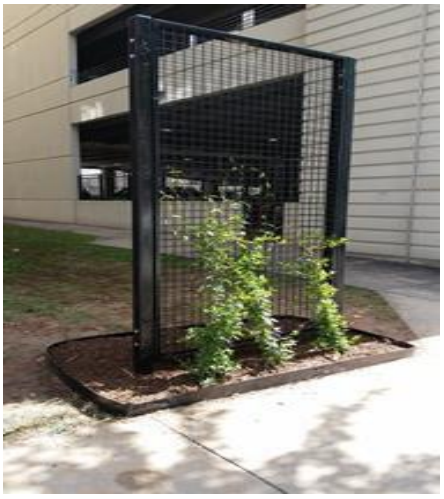
The Main Street Water Quality Demonstration and Education Project Phase II was the second LID/GI project within the Creative Corridor. Phase II built upon the success of the Phase I project and continued to demonstrate the benefits of utilizing Low Impact Development (LID) and other green infrastructure (GI) techniques. Phase I (12-600 Water Quality Demonstration and Educational Program for Main Street Little Rock) was highly successful winning multiple industry and professional awards. The techniques designed and demonstrated function to improve water quality and to educate the community. This project's focus was two blocks of Main Street (600 and 700 blocks). The BMPs that were used included: permeable pavers, rain gardens, appropriate drought and flood resistant trees and plants, filter systems,

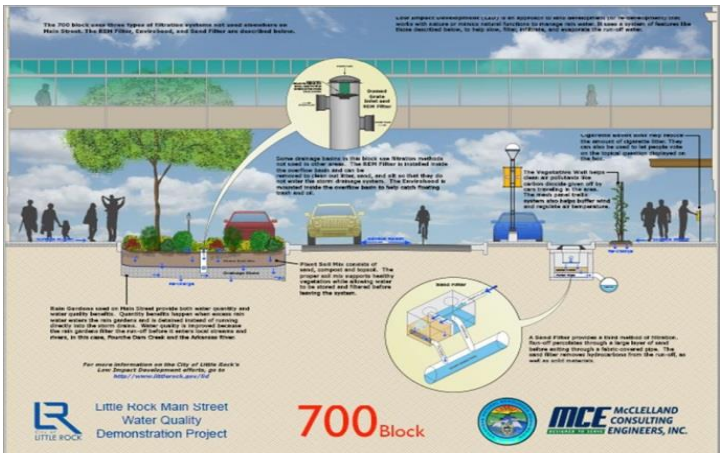
and the installation of a vegetative wall. Community involvement and "buy-in" was essential for the LID/GI techniques demonstrated to be publically accepted.

This project was initiated on October1, 2016 and was completed September 30, 2018. There were several partners who helped this project become a great success. The primary partners included: City of Little Rock, McClelland Consulting Engineers, Redstone Construction Group and eSTEM Public Charter School.

Phase II focused on different and specific types of filtering systems compared to Phase I. Sand filters, trash guards, skimmers, and inlet filter sacks were all used in combination during this project. A two-chamber sand filtering system is depicted in the figure to the right below:

A vegetative wall (figure below on the left) and rain gardens were also implemented. Collectively these systems all work together to form a treatment chain to improve runoff water quality before it leaves the project site. Interpretive graphic signs were also incorporated into the project and purposely designed to be aesthetically compatible with the demonstrations implemented and easy to understand for the general public regarding LID and GI techniques. See the figure below on the right:





Education was a significant portion of this project and along with public tours and tours with eSTEM Public Charter school (self-guided and guided); videos were produced and shown on the City of Little Rock cable television station (LRTV), the City's website, and YouTube (https://youtu.be/1xwhlSSSNko). Social Media (Facebook and Twitter) were also utilized to distribute information and build acceptance of the project.

This and the Phase I projects have made a significant impact economically in the downtown area. This area is now experiencing increased foot traffic, social gathering and nightly entertainment, multiple restaurants and efficiency apartments commonly referred to as "Lofts". Estimates from the City report an economic impact of greater than $100M. These projects have generated touring visitors from multiple states in the US and several groups from outside the continental US. After touring the projects the groups always ask insightful questions and request more information. A view of the project area is located in the figure below:

3 Education and Outreach

Education and outreach projects continue to be a focus of the Arkansas 319(h) program. Educating landowners and the citizens of Arkansas about NPS pollution and the methods of control, reduction or abatement is challenging. Assessing the water quality benefits of education is almost impossible. Continuing to demonstration projects and repackaging education materials is the most effective means we have found to promote the NPS Program.

In the first few years of initiating the Program the focus was agriculture. As the Program has developed and matured the scope of has broadened. We work with a diverse group of partners implementing and demonstrating a vast array of techniques to address NPS pollution. The projects highlighted in this section are just a few examples of the sometimes "non-traditional" approaches we have employed.

15-900 Connecting NPS Management to Receiving Streams through BMP Education and Demonstration

The University of Arkansas Division of Agriculture Cooperative Extension Service initiated this project to increase awareness and knowledge of best management practices to improve stream water quality of the Beaver Reservoir (11010001) and Illinois River (11110103) Watersheds. This was a project utilizing a storm drain inlet and low impact development BMPs demonstrations.

The storm drain inlet demonstration uses an inlet filter that "catches" and allows the debris to be categorized. This information can assist to identify the most visual pollutants and develop outreach and education strategies to promote awareness to those living in the immediate area. Additionally storm drain art, the process of drawn or painted art at the storm drain inlet served as a means of public engagement to produce the art and a constant visual reminded how storm runoff effects water quality.

The project efforts also included public and one on one engagement, signage, digital media, and community clean up events. The clean-up events provided the public a visual representation of homeowner and residential activities affecting water quality LID demonstrations (rain gardens), and ballot bin collection boxes for the collection of cigarette butts. One of the most unique aspects utilized was the use of a GoPro camera. The camera, representing a "floatable pollutant" was used to video the pollutant path, into the storm drain, through the drain to the receiving stream. Three different video was produced and published on YouTube and the University of Arkansas Washington County Cooperative Extension web page.

- This project was able to promote and engage public participation, volunteers, partner organizations, cooperation and contribution from municipalities. Twenty-six outreach events and field day activities saw 1,306 participants and volunteers, who contributed 2,590 hours of volunteer contributions and saw the removal of just over 7 tons of litter.

- The storm drain inlet filters collected 125 pounds of various pollutants such as "floatables", litter, sediment, and yard waste. To reinforce the impact the residents had in the project area the pollutants were categorized and displayed at educational events and posted on social media.

- Ballot Bins and cigarette butt cleanups netted over 75 pounds of cigarette butts.

2018 Outreach and Education Efforts (October 1, 2017 to September 30, 2018)

Event Type	# times method used (participants reached)	Impact Notes
Cleanups/Field Days	6 (378)	3 hosted, 3 partner, removal of over 1 ton of litter
BMP Education Demonstrations	5	1 Ballot Bin, 1 Water Pantry, 1 LID Signage, 1 LID Walking Tour, 1 LID & Signage Installation
Staffed Display/Tabling	2 (81)	Mulberry River Society 50 Year Celebration; Homegrown Mountain Sports & Music Festival
Presentations	5(65)	NWA Master Naturalists, Flower, Garden, and Nature Society US Senate Agricultural Staff – Boozman, and AR Urban Forestry Advisory Board

15-1200 Statewide Silvicultural BMP Assessment

The 1972 Clean Water Act required states to establish a program to encourage implementation of Best Management Practices (BMPs) to control non-point sources of pollution. In the state of Arkansas, the Arkansas Forestry Commission (AFC) is the lead agency responsible for the Forestry BMP Program. The

BMP Program relies on the voluntary implementation of BMPs based on the training and education of forest landowners and users. When BMP guidelines were first developed in the early 1970s, initial education and training efforts were based on data obtained from soil loss monitoring and from information gathered while investigating complaints related to silvicultural activity.

Besides the creation of a Forestry BMP program to address non-point source pollution related to forest management, the reauthorization of the Clean Water Act in 1987 additionally required states to develop methods for determining the effectiveness of their BMP guidelines. In 1996, Arkansas adopted the BMP implementation survey procedures developed by the Southern Group of State Foresters to address this requirement. Titled "Silviculture Best Management Practices Implementation Monitoring, a Framework for State Forestry Agencies", this document provided a methodology for monitoring BMP implementation that is statistically sound, objective, technically feasible, and consistent with BMP program efforts in all thirteen southern states.

The main goal of this project was to deduce silviculture BMP implementation rates in the state. To determine the rate of BMP implementation, sites of recent forest activity that could be evaluated for BMP implementation had to be identified. To reduce bias in site selection, a pool of sites of recent forestry activity that could be evaluated for BMP implementation was identified using LandSatFact. LandSatFact is a computer program which compares Landsat satellite images to detect changes in forest cover. Changes in forest cover selected for the pool were at least 10 acres in size and changes that were less than one-year-old were preferred. Within each county's pool, Microsoft Excel's random number generator was used to assign a number to each tract. The numbers, and corresponding tracts, were then sorted in ascending order. The appropriate number of tracts for each county were then selected from each county's pool. The number of tracts selected for the survey in each county was weighted based on timber severance tax data.

AFC personnel contacted the landowners to gain access and determine the suitability of the site for the survey (only silvicultural activities were considered suitable; conversions to non-forest were not suitable). Landowners were divided into four groups: public, corporate, industry, and individual or family forest landowners (FFLO). Statistical analysis from previous surveys indicated that a sample size of 200 sites would yield results within a 95 percent confidence level. Of 4,786 sites initially identified (Figure 1), 237 tracts were surveyed for BMP implementation (Figure 2).

Figure 1: Distribution of candidate sites

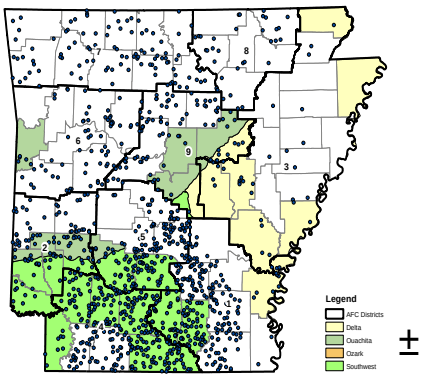
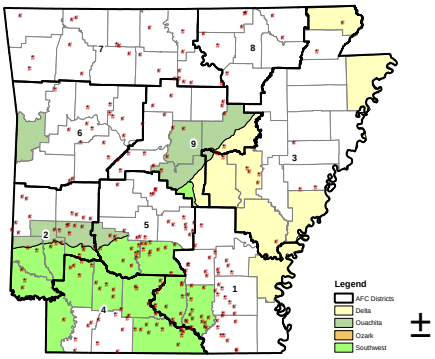


Figure 2: Distribution of harvest sites surveyed



The monitoring questionnaire used during the site evaluations consisted of 67 questions based on four BMP categories: Streamside Management Zones (SMZs), Roads, Harvesting, and Regeneration. All questions were taken directly from the revised BMP guideline book, and referenced with applicable section and sub-section numbers as noted in the book. Each question was worded so that a positive answer was recorded with a "Yes", while a departure from BMP recommendations received a "No" response. Answers for questions that did not apply were indicated by "NA". Each question also included a determination of significant risk. A significant risk is a situation or set of conditions that has resulted, or very likely will result, in the significant and measurable degradation of water quality.

From this process, AFC determined the overall statewide rate of forestry BMP implementation to be 93% (Table 1). Implementation of forestry BMPs related to harvesting and regeneration practices scored highest with a rate of 95%. Implementation of forestry BMPs related to roads scored 86%, while SMZ BMP implementation scored 82%. Harvesting and Regeneration BMP implementation was significantly higher than Road and SMZ implementation, and there was a significant difference between the Road and SMZ categories.

Table 1: Overall BMP implementation summary

Category	Number of Tracts	Implementation Percent	Margin of Error
Streamside Management Zones	197	89	2.69
Roads	158	92	1.98
Harvesting	236	96	1.00
Regeneration	104	98	1.44
Overall Implementation Rate	**237**	**93**	**1.32**

These results follow the typical pattern observed in previous surveys. However, while the overall implementation rate has remained in the upper 80th percentile for the last three surveys, the statewide rate of 93 percent represents a statistically significant 3 percent increase from the previous survey.

Besides determining the statewide BMP implementation rate, there was a desire to examine if BMP utilization varied within the different physiographic regions of the state. While Arkansas can be divided into several regions, for the purpose of this survey, the state was partitioned into four distinct areas: Delta, Ouachita, Ozark, and Gulf Coastal Plain, or Southwest (Figures 1 & 2). Seven tracts were in the Delta, while 34 tracts and 37 tracts represented the Ouachita and Ozark regions, respectively. The majority, 159 tracts, were located in the Southwest region. While the Ouachita region had the highest level of BMP implementation, there was no significant difference between the BMP scores of any of the regions (Table 2).

Table 2: Implementation rate by physiographic region

Region	Number of Sites	Acres	Implementation Percent	Margin of Error
Delta	7	528	91.81	6.91
Ouachita	34	2,699	95.19	3.11
Ozark	37	2,958	93.12	2.97
Southwest	158	12,462	92.55	1.70

Table 3: Implementation by Ownership Class

Ownership	Number of Tracts	Acres	Implementation Percent	Margin of Error
Public	9	471	99.25	1.00
Industry	89	8,001	97.17	1.06
Corporate	51	4,139	96.38	1.76
FFLO	88	6,335	86.25	2.67

Ownership was divided into four categories for the survey: public, industry, corporate, and Private Individual or Family Forestland Owners (FFLO). The 2011 survey was the first Arkansas survey that differentiated between corporate and industrial ownership. With the increased presence of non-traditional forestland owners purchasing lands formerly held by industry, the industrial category was split to allow for corporate ownership analysis. Industrial ownership was classified as those entities that owned forestland and had some kind of processing facility in the state. The corporate category included timber investment management organizations (TIMOs) and other similar entities. Of the 237 tracts evaluated for this survey, 88 (37 percent) were owned by FFLOs, 89 (38 percent) were owned by industry, 51 (22 percent) were corporately owned, and 9 (4 percent) were publicly owned (Figure 6). No meaningful difference was found in the scores of corporate, industry and public ownerships. However, a significant difference was found between the FFLO category and others.

Efforts to improve the BMP implementation rate of FFLOs should be a primary goal. It appears from the FFLO Questionnaire, that the general level of knowledge of BMPs and their importance needs to be improved. As indicated in this survey, improving landowners' familiarity with BMPs alone appears to improve the rate of BMP implementation. There is also a significant difference in the implementation

score if the landowner is a member of a professional forestry organization or requires BMPs in a written contract. There should be a multifaceted approach of improving landowners' general knowledge, while at the same time, continuing to encourage them to seek membership in a forestry organization that may offer assistance when conducting a timber sale.

Project 16-500 White River and Richland Creek Watershed Opportunity Assessment

This project increased landowner awareness and knowledge of issues in the Middle Fork-White River, East Fork-White River, Headwaters-White River, and Richland Creek Watersheds. These areas have been identified as priority areas in their nine-element watershed plan. The issues (various activities or processes that increase erosion and sedimentation) are being addressed through public outreach, education, and demonstration programs.

This project was initiated on October 1, 2016 and will be completed by June 30, 2019. This project is following the recommendations outlined in portions of the Beaver Lake Watershed Management Plan (BLWMP) and the Arkansas Nonpoint Pollution Plan to: improve water quality of impaired streams, identify detailed watershed protection opportunities needed to upgrade the BLWMP and foster watershed ownership, and foster voluntary urban, rural, and municipal stewardship actions among the residents. The priorities of the project are to:

- Utilize an existing riparian landowner database which is currently in development and develop riparian landowner databases for the East Fork-White River, Headwaters-White River, and Richland Creek Watersheds to reach stakeholders to increase their knowledge/understanding of forest, pasture, and riparian buffer functions and associated benefits for improving and maintaining water quality
- Conduct riparian area, forest, and pasture assessments and encourage each landowner to consider options to utilize in protection/improvement of their land(s)
- Establish riparian management/improvement and other BMP demonstrations
- Expand landowner-to-landowner educational programs
- Identify watershed improvement opportunities specific to locations within the Middle Fork-White River, East Fork-White River, Headwaters-White River, and Richland Creek Watersheds for inclusion in updates to the BLWMS

In this project, the BWA is working cooperatively with the following:

- University of Arkansas Cooperative Extension Service (UACES)
- Natural Resources Conservation Service (NRCS)
- Farm Service Agency (FSA)
- Conservation Districts (CDs)
- United States Forest Service (USFS)
- Beaver Water District
- Other farming, municipal, forestry, watershed, and conservation organizations

Education and outreach portion of the project is being developed for all 12 digit HUCs identified as priorities the BLWMP. This effort encourages and is enhancing landowner participation and providing the necessary information to be perpetuated after project funding has concluded. As a measure of the and impacts of outreach, education, and capacity-building voluntary BMP adoption and implementations are being documented.

Below is a table depicting the various BMPs installed and Education/Outreach events that were held:

BMP Name	**BMP#**	**Total number of farms with this BMP**	**Total Amount (ac / ft)**
Filter Strip	332	3	5.31 acres/ 400ft
Brush Management	314	1	5.1 acres/ 400 ft
Mulching	484	1	<1 ac/ 20 ft
Riparian Forest Buffer	391	14	16 ac/ 6200ft
Tree/Shrub Estab	612	32	107 ac/ 14120 ft
Riparian Buffer Establishment	395	8	9.07 ac/3621 ft
Upland Wildlife Habitat Management	645	20	96.34 ac/8652 ft
Site Prep	490	33	112 ac/14824 ft

Activity	**Amount**	**Number of Attendees**
Field Days	2	33
Training Sessions	5	5
Events	12	269
Outreach Meetings	4	39

4 Watershed Management Plans (WMPs)

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 (on an 8 digit HUC scale) that a watercourse drains to address a broad range of issues.

In FY 2018 one WMP was completed and another initiated. The Buffalo River Watershed Management Plan was completed with assistance of local stakeholders, state agencies, carious organizations and FTN & Associates Environmental Engineering. Also, the Middle White River Watershed Management Plan was initiated and is currently in development. Below is a summary of the progress, completion, and stage of the development of the plans.

Buffalo River Watershed Management Plan

On September 30, 2016, Governor Asa Hutchinson announced the Beautiful Buffalo River Action Committee. To address water quality concerns throughout the watershed and continues to ensure the Buffalo National River maintains all designated uses, the Committee "established measurable objectives, set achievable action items, establish durable partnerships, share agency resources, and inform policymakers and the general public of relevant progress."

Governor's Call to Action (in part):

> *"As Governor of the State of Arkansas, it is my position that Arkansans best understand the value of the state's natural resources and, as a result, must lead in protecting them now and for future generations. The Buffalo National River is a source of great scenic beauty, an unique habitat, an agricultural resource, and a preeminent tourism destination. This landmark is vitality important to the state and nation. The Buffalo River water quality is monitored and continues to meet the extraordinary resource water quality standards. In recent years, concerns have been raised about possible water quality issues in tributaries to the river within the watershed. In response to these concerns, my administration will be proactive, as I am committed to protecting and supporting the vitality of the Buffalo National River."*

The Buffalo River (see figure 3), located in Northern Arkansas, was the first National River to be designated in the United States. The Buffalo River is 153 miles (246 km) long. The lower 135 miles (217 km) flow within the boundaries of an area managed by the National Park Service, where the stream is designated the Buffalo National River. It was established by an Act of Congress on March 1, 1972, ending the recurring plans of the U.S. Army Corps of Engineers to construct one or more dams on the river. The National River designation protects natural rivers from industrial uses, impoundments and other obstructions that may change the natural character of the river or disrupt the natural habitat for the flora and fauna that live in or near the river.

The Buffalo River watershed encompasses parts of Searcy, Newton, Boon, Stone, Marion and Baxter Counties. The watershed is approximately 1400 sq mi. Landownership is divided between private

(61%), state (1%) and federal ownership (38%). Of the total watershed are 80% is forested. The water quality in Buffalo River watershed is the least impaired in Arkansas.

This WMP was initiated in response of a CAFO operating in the watershed, the contention of NGOs, environmental groups and the National Parks Service was the permitted facility could affect the water quality of the Buffalo River. Based upon these assumptions, the formation of BBRAC and the need for a plan to maintain water the WMP was developed.

Four stakeholder meetings were held during 2017, two in both Marshall and Jasper (the largest municipal areas within the watershed). The meetings were well attended and stakeholders actively participated in discussions and made recommendations regarding of the content of the WMP. Thus, relative and applicable input that was received was incorporated into the plan. A fully developed Buffalo River Watershed Management Plan was submitted to EPA in March of 2018 and ANRC received a letter of acceptance from EPA in June of 2018.

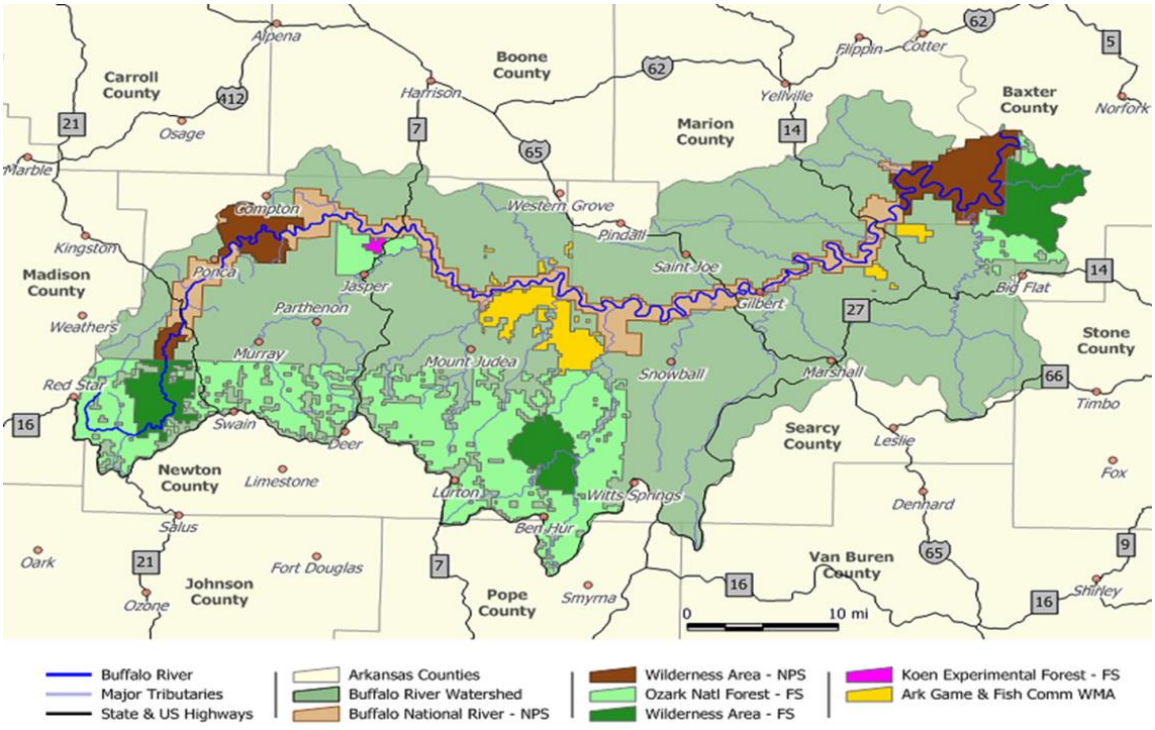


Figure 3: Buffalo River Watershed

The WMP identified and recommended six subwatersheds (12 digit HUC scale) that could benefit from increased BMP implementation, additional in-stream water quality monitoring, increased collaboration between stakeholders and education of landowners and seasonal tourist. These subwatersheds that were identified include: Mill Creek (upper), Calf Creek, Bear Creek, Brush Creek, Tomahawk Creek and Big Creek (lower). This identification does not preclude any of the recommendation from being implemented in other subwatersheds.

The BMPs that were recommended for these subwatersheds are:

- Bank stabilization/stream restoration
- Riparian buffers
- Livestock stream access control
- Pasture planting
- Filter strips
- Nutrient management plans
- Forestry best management practices

Middle White River Watershed Management Plan

The Middle White River Watershed Management Plan is being prepared based on EPAs nine element watershed-based plan criteria. One of the first challenges was developing local support for the plan and a level of commitment for its implementation. These are the initial steps of any WMP. After all it takes the efforts of the local stakeholders to reduce NPS pollutant loads and restore the designated uses of the waterbodies.

The Middle White Watershed (11040004) is home to about 68,000 Arkansans, lies within the White River Basin in Eastern Arkansas, and has a watershed area of 1,513 square miles (968,320 acres). The White River flows through Baxter County, in the northwest corner of the watershed, and exits the watershed in southeast Independence County. The watershed is wide and irregularly shaped, and crosses parts of Baxter, Cleburne, Fulton, Independence, Izard, Jackson, Marion, Searcy, Sharp, and Stone Counties. A number of towns are located within the watershed. Mountain Home is the largest, with most of the city in the northern part of the watershed. Batesville is the next largest, located in the southeastern part of the watershed.

Approximately 65 percent of the watershed's land area is forested and 30 percent of the land is grass land and transitional (CAST, 2006). Cropland makes up 3 percent of the watershed with the remaining land being urban, suburban and water. The watershed is located in the Ozark Mountains Physiographic Region with mountainous ridges made of resistant sandstone and intervening valleys. Overall, the watershed slopes generally to the south. Parts of the watershed lie within the Ozark National Forest.

As of the writing or this report two watershed stakeholder meeting have been conducted. Information from these meetings has been utilized to address several of the mandated elements and to begin developing draft contents for the WMP. Historical water quality, resource assessments and various other quality assured data have been utilized to identify five subwatersheds (see figure 4) that would benefit from BMP implementation. Those subwatersheds identified include:

- Hicks Creek
- Spring Creek
- Miller Creek
- Greenbrier Creek
- Salado Creek

Addition information is needed to complete all elements of the WMP but it is anticipated the WMP will be completed in March 2019.

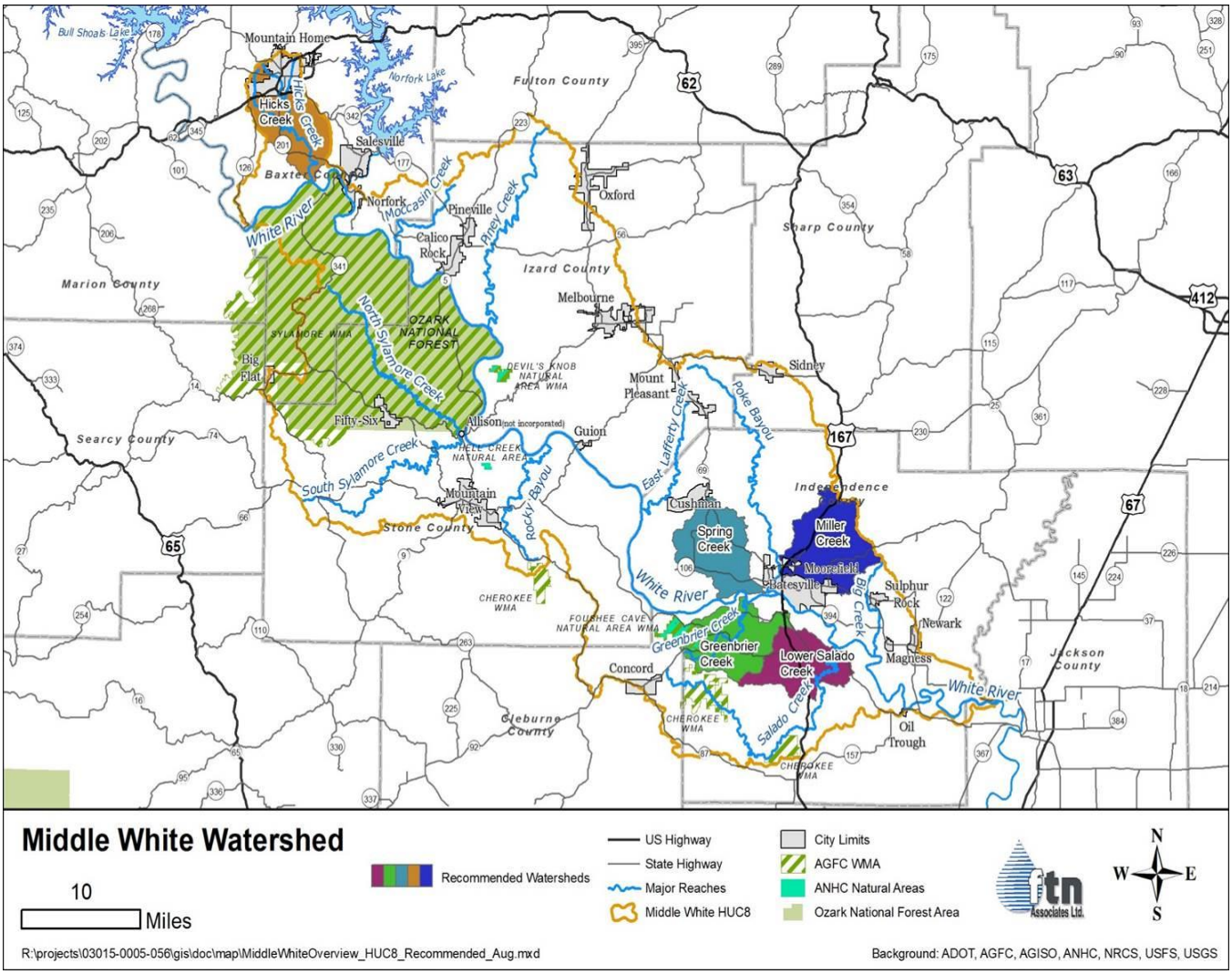


Figure 4: Middle White River Watershed

5 Program Success Stories in FY 2018

In April 2018, ADEQ released the 2018 Draft 305 (b) report/303 (d) list. A section of the report identified all the delistings that had occurred between 2016 and 2018 (see table below). ANRC identified several of these delisted segments where projects funded through the 319 program could be partially attributed to the delisting. These identified segments were forwarded to Region 6 EPA personnel for a preliminary review and concurrence with the delistings. At the time of this writing, ANRC has been informed the proposed delistings ANRC identified would not be eligible for success story status, due to lack of data. ANRC will continue to fund water quality monitoring and data collection at these sites in an effort to meet the concerns of EPA.

Draft 2018 Waters Delisted from Final Category 5 2016 303(d) list

Stream Name	Assessment Unit	PLNG SEG	Miles	Monitoring Station	Designated Use Not Supported						Water Quality Standard Non-Attainment												SOURCE					
					FC	AL	PC	SC	DW	AI	DO	pH	Tm	Tb	Cl	SO4	TDS	PA	Cu	Pb	Zn	Other	IP	MP	SE	AG	UR	Other
Mine Creek, upper	AR_11140109_934	1C	0.7	MIN0001 RED0048B													x						x					
Rolling Fork Creek	AR_11140109_919	1C	7.3	RED0058												x							x					
Holly Creek	AR_11140109_013	1C	7.9	RED0034B		x					x																	UN
Mountain Fork	AR_11140108_014	1D	8.4	RED0001									x	x														UN
Saline River	AR_08040203_009	2C	19.5	e - OUA0042										x														UN
Saline River	AR_08040203_007	2C	4.1	OUA0042										x														UN
Bayou De L'outre	AR_08040202_008	2D	7.9	e - OUA0005, UAA		x			x		x					x	x						x					
Bayou De L'outre	AR_08040202_007	2D	1.9	e - OUA0005		x			x		x					x	x						x					
Bayou De L'outre	AR_08040202_006	2D	13.2	OUA0005		x			x		x					x	x						x					
Wilson Creek	AR_08040101_901	2F	2.3	WILL;EWCL												x												UN
Bayou Meto	AR_08020402_907	3B	25.8	ARK0060		x								x														UN
Bayou Meto	AR_08020402_007	3B	56.5	ARK0050		x					x					x							x					
Fourche Creek	AR_11110207_022	3C	12.8	ARK0131 ARK0147A, B, C, D							x		x	x											x			
White Oak Bayou	AR_11110207_912	3C	19.5	ARK0162B								x							x	x								UN
E. Fork Cadron Creek	AR_11110205_005	3D	35.7	ARK0163 UWEFC02							x																	UN
E. Fork Cadron Creek	AR_11110205_002	3D	19.6	ARK0158 UWEFC01							x														x			
S. Fourche LaFave R.	AR_11110206_014	3E	30.2	ARK0052									x															UN
Stone Dam Creek	AR_11110203_904	3F	4.8	ARK0051													x											UN
W. Fk. Point Remove	AR_11110203_017	3F	20.5	ANRC										x											x			
W. Fk. Point Remove	AR_11110203_016	3F	4.2	ANRC										x											x			
E. Fk Point Remove	AR_11110203_014	3F	37.9	ANRC										x											x			
Chickalah Creek	AR_11110204_002	3G	19.3	ARK0058							x																	UN
Poteau River	AR_11110105_031	3I	6.6	ARK0055, UAA											x		x						x	x				
Poteau River	AR_11110105_731	3I	12.1	ARK0054 ARK0100										x														UN
Sager Creek	AR_11110103_932	3J	8.0	ARK0005																		NO3		x				
Lost Creek Ditch	AR_08020302_909	4B	7.9	WHI0172							x												x	x				
Big Creek Ditch	AR_08020302_910	4B	1.2	WHI0196		x													x									UN
Crooked Creek	AR_11010003_049	4I	19.1	UWCKC01, WHI0048													x											UN
Crooked Creek	AR_11010003_949	4I	17.1	WHI0066 WHI0067													x											UN
Bear Creek	AR_11010005_026	4J	23.9	UWBRK01+													x							x				
Holman Creek	AR_11010001_059	4K	9.1	WHI0070													x						x	x				
Kings River	AR_11010001_037	4K	19.1	WHI0009A												x												UN
White River	AR_11010001_023	4K	6.2	WHI0052, WHI0151A, WHI0151B, WR45, Banks farm, Wyman Bridge													x											UN
L' Anguille River	AR_08020205_004	5B	16.0	UWLGR01 USGS_07047942		x										x	x									x		

Lake Name	Assessment Unit	PLNG SEG	Acreas	Monitoring Station	Designated Use Not Supported						Water Quality Standard Non-Attainment												SOURCE					
					FC	FSH	PC	SC	DW	AI	DO	pH	Tm	Tb	Cl	SO4	TDS	PA	Cu	Pb	Zn	Other	IP	MP	SE	AG	UR	Other
Flint Creek (Swepco)	AR_11110103_4060	3J	531.0	LARK009A		x																UN					x	L

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

The Arkansas NPS program has several partners and other entities that work to reduce non-point source pollution. Partners consist of, but are not limited to, 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. Listed below are several partners and the implemented projects and programs that have enhanced the mission of the Arkansas NPS program in FY 2018.

Natural Resources Conservation Service (NRCS)

The Natural Resources Conservation Service (NRCS) Arkansas Annual Report is available in February of each year. The NRCS 2017 Arkansas Annual Report noted more than $153 million in financial assistance obligated through Farm Bill conservation efforts and over 1.2 million in conservation acres. NRCS has several programs that help producers implement conservation practices and address resource concerns. NRCS delivered conservation technical assistance through the voluntary Conservation Technical Assistance Program (CTA) and helped farmers, ranchers, and foresters with their conservation planning process. The goal of the NRCS is to help Arkansas producers get conservation on the ground through technical and financial assistance and direct relationships with farmers, ranchers, and foresters!

Environmental Quality Incentives Program (EQIP)

EQIP promotes agricultural production and environmental quality as compatible goals, providing technical and financial assistance to install or implement structural and management conservation practices on agricultural lands. Farmers received more than $44 million in financial assistance for FY 17. There were 1,511 applications funded on more than 256,967 acres. Top practices installed included: Fence, Heavy Use Area Protection, Forage and Biomass Planting, Watering Facilities, Irrigation Water Management, Structure for Water Control, Irrigation Pipeline, Nutrient Management, Irrigation Land Leveling, Livestock Pipeline, Roofs and Covers, Prescribed Burning, and Cover Crops.

Agricultural Conservation Easement Program (ACEP)

There were 32 easements that Arkansas NRCS enrolled under ACEP Wetlands Reserve Easements (WRE). More than $39 million was obligated under this program. The Wetlands Reserve Easement Restoration program alone obligated over $7.4 million to landowners. This program offers landowners opportunities to protect, restore and enhance wetlands on their properties.

Conservation Stewardship Program (CSP)

The goal of CSP is to encourage agricultural and forestry producers to undertake additional conservation activities to improve and maintain existing conservation on their land. By providing financial and technical assistance, this program conserves and enhances soil, water, air, and related natural resources. There were 786 new contracts developed and 879,487 acres enrolled in FY 2017. These contracts will provide over $15.6 million in financial assistance to participants over the five year contract agreements. Payments made for the CSP program totaled more than $68.1 million.

Regional Conservation Partnership Program (RCPP)

RCPP is a program that promotes coordination between NRCS and partners to deliver assistance to producers and landowners. RCPP encourages partners to increase the restoration and sustainable use of soil, water, wildlife, and related natural resources on regional or watershed scales. There were five projects in the East Fork Cadron Creek, Greers Ferry Lake, Illinois River, Mississippi River basin, and Red River watersheds and also a Rice Stewardship Partnership project. This program had 70 contracts funded, 70,632 acres treated, and over $1.8 million in obligations.

Mississippi River Basin Healthy Watersheds Initiative (MRBI)

The Mississippi River Basin Healthy Watersheds Initiative (MRBI) is a locally-led, voluntary program that has provided financial and technical assistance to agricultural producers with the goal of reducing nitrogen, phosphorus, and sediment levels in watersheds around the state of Arkansas. For FY 2017, MRBI has accounted for 109 contracts, 18,086.70 acres treated, and over $5.7 million in obligations.

National Water Quality Initiative (NWQI)

Through NWQI, NRCS and partners work with producers and landowners to implement voluntary conservation practices that improve water quality in high-priority watersheds while maintaining agricultural productivity. NWQI is designed to help individual agricultural producers take actions to reduce the loss of sediment, nutrients, and pathogens into waterways where water quality is a critical concern. The goal of NWQI is to implement conservation practices in sufficient quantity in a concentrated area so that agriculture no longer contributes to the impairment of water bodies within these priority watersheds. In FY 2017, NWQI has signed 29 contracts, treated over 7,977 acres, and obligated over $1 million to landowners in Arkansas.

Arkansas Department of Environmental Quality (ADEQ)

ADEQ's mission is to protect, enhance, and restore the natural environment for the well-being of all Arkansans. ADEQ is the state's main environmental protection agency, charged with protecting, enhancing, and restoring the environment for Arkansans. In 2014, several agencies and organizations partnered to better understand and coordinate water quality data in the State. These meetings were initially scheduled on a quarterly basis. These agencies and organizations consisted of ANRC, ADEQ, U.S. Geological Survey (USGS), Arkansas Department of Health (ADH), Arkansas Natural Heritage Commission (ANHC), and Equilibrium a Non-governmental organization (NGO). These meetings have provided a great opportunity for ANRC to better understand various assessment methodologies and processes that ADEQ frequently uses. Meetings continued in FY 2018 with the most

recent meeting discussing the draft 2018 303(d) List of Impaired Waterbodies. Other topics have included, but were not limited to: data submission and deadlines, upcoming dates for data requests, and consistent data formats.

The Nature Conservancy (TNC)

The Nature Conservancy in Arkansas has been working cooperatively with private landowners, businesses, public agencies and other organizations to conserve and restore the lands and waters of the Natural State for people to enjoy since 1982. The mission of TNC is to conserve the lands and waters on which all life depends. The Nature Conservancy has worked with many partners to conserve more than 300,000 acres of critical natural lands in Arkansas for people to use and enjoy. The Conservancy has priority programs that focus on each of the state's ecosystems in each of the state's eco-regions. The Nature Conservancy has 21 preserves all around the state. Some of the accomplishments from FY 2018 include (but are not limited to): 2,000 acres enrolled in wetland easements, 8 new acquisitions totaling 1,304 acres, 59 prescribed burns on 11,831 acres, 9 new unpaved roads BMP projects initiated (with Arkansas Rural Services as a partner), and 4,252 acres of trees planted. Also, in the 2018 TNC Year End Report there were two projects highlighted that focused in on addressing eroding ditches and restoring channelized streams to their natural channel and floodplain. One of these projects was in the Upper Cache River watershed and the other was in Benson Creek which connect to Bayou DeView and the Cache River.

The Arkansas Unpaved Roads Program (Arkansas Economic Development Commission (AEDC) / Arkansas Rural Services)

Created by Act 898 of the 90th General Assembly, the purpose of the Unpaved Roads Program (Program) is to create a better unpaved county road system with a reduced negative environmental impact on priority water resources in Arkansas. This Program focuses on best management practices (BMPs) that reduce the impact of sediment and road runoff to streams, rivers, and drinking water supplies while reducing long term unpaved county road maintenance costs. The Program is designed to fund work on public roads with unbound road surfaces. Public entities that own and maintain public roads in Arkansas that are open to public vehicle travel at least eight consecutive weeks a year are eligible to apply for up to $75,000 in state matching funds toward a single project. For FY 2017, there were seven counties (Benton, Calhoun, Crawford, Lawrence, Stone, Van Buren, and Washington) that requested funds through this program. Four of these counties were funded (Benton, Stone, Van Buren, and Washington). The total amount requested from these seven applicants was over $444K in program funds. The Arkansas Unpaved Roads Program was able to fund over $253K through the four approved projects. Through these projects, the counties were able to install various BMPs and reduce erosion and improve drainage along many unpaved roads. These unpaved roads practices have been proven effective in helping water quality and increasing habitat for endangered species.

Beaver Watershed Alliance (BWA)

The 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. Beaver Lake is the drinking water source for 1 in 6 Arkansas and services over 420K citizens of the State. 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 FY 2018, there were 178 programs conducted, 2,832 participants, over $157K in volunteer match generated, 50 acres of invasive plants removed, 16,786 native plants planted, 13,712 linear feet of streambank planted, 120 acres of pasture renovated, 243 acres reforested, 5 acres of seeding, 3 miles of waterway cleaned up, 8,954 lbs. of trash removed, 4,261 monthly e-news subscribers, and 24,236 streamside and forested landowners receiving quarterly mail-outs. The BWA have several grant funded projects that consist of: two projects with EPA/ANRC, two projects through the NRCS, a US Endowment for Forestry and Communities- Healthy Watersheds Consortium Grant Program, National Fish and Wildlife Grant Project, Source Water Protection Services with Beaver Water District Program, and 4 projects with the Walton Family Foundation.

ANRC's Clean Water Revolving Loan Fund

The Clean Water Revolving Loan Fund (CWRLF) is administered by the Water Resources Development Division (Division) of ANRC. It is a partnership within the agency but also has partners that include the Arkansas Department of Health, Arkansas Development Finance Authority (ADFA), counties, and municipalities around the state of Arkansas. The primary focus of the program is to achieve public health protection and rule compliance. Through this program and during FY 2018, there were over $1.6 million in loans made out to various applicants around the state.

Just a few of our many Partnerships:

Snapshot Reporting for FY 2018 (July 2017 – August 2018)

Snapshot reporting was developed in 2014 as a method to share Arkansas water quality projects or activities with ANRC. The goal of Snapshot Reports is to capture water project efforts around the state that are contributing to the benefit of the Nonpoint Source Management Program. Snapshot reports have helped ANRC better understand the work that is being accomplished around the state. These reports demonstrate the commitment partners have in enhancing or improving water quality.

The table below represents projects that were reported to ANRC for FY 2018. There were 33 projects reported from various groups managing them with assistance from various partners. If you would like more information on any of these projects please contact ANRC at (Allen.Brown@arkansas.gov or Kevin.Mcgaughey@arkansas.gov).

Title	Management	Timeframe	Location	Project Type	Partners
Bull Shoals Tailwater Landowner Assistance/Bank Stabilization	AGFC	October 01, 2017 through September 30, 2018	HUC 11010003 Baxter/Marion Counties	Landowner Assistance/ Bank Stabilization	Various Landowners
Norfork Tailwater Landowner Assistance/Bank Stabilization	AGFC	October 01, 2017 through September 30, 2018	HUC 11010006 Baxter County	Landowner Assistance/ Bank Stabilization	Various Landowners
Greers Ferry Tailwater Landowner Assistance/Bank Stabilization	AGFC	October 01, 2017 through September 30, 2018	HUC 11010014 Cleburne/White Counties	Landowner Assistance/ Bank Stabilization	Various Landowners
Spring River Landowner Assistance/Bank Stabilization	AGFC	October 01, 2017 through September 30, 2018	HUC 11010010 Sharp/Fulton Counties	Landowner Assistance/ Bank Stabilization	Various Landowners
Beaver Reservoir Assistance and Stabilization	AGFC, Region 1 Stream Team	October 01, 2017 through September 30, 2018	11010001, Washington, Benton, Carroll, Madison, Boone Counties	Landowner Assistance/ Bank Stabilization	Various Landowners
Buffalo River Assistance and Stabilization	AGFC, Region 1 Stream Team	October 01, 2017 through September 30, 2018	11010005 Newton and Searcy	Landowner Assistance/ Bank Stabilization	Various Landowners
Crooked Creek Assistance and Stabilization	AGFC, Region 1 Stream Team	October 01, 2017 through September 30, 2018	11010003 Boone and Marion counties	Landowner Assistance/ Bank Stabilization	Various Landowners
Illinois River Assistance and Stabilization	AGFC, Region 1 Stream Team	October 01, 2017 through September 30, 2018	11110103 Benton and Washington	Landowner Assistance/ Bank Stabilization	Various Landowners

Title	Management	Timeframe	Location	Project Type	Partners
Cove Creek, BSA Camp Assistance and Stabilization	AGFC, Region 1 Stream Team	October 01, 2017 through September 30, 2018	11010014 Searcy County	Landowner Assistance/ Bank Stabilization	Various Landowners
Little Sugar Creek Assistance and Stabilization	AGFC, Region 1 Stream Team	October 01, 2017 through September 30, 2018	11070208 Benton County	Landowner Assistance/ Bank Stabilization	Various Landowners
Spring River Assistance and Stabilization	AGFC, Region 1 Stream Team	October 01, 2017 through September 30, 2018	11010010 Fulton County	Landowner Assistance/ Bank Stabilization	Various Landowners
Strawberry River Assistance and Stabilization	AGFC	October 01, 2017 through September 30, 2018	11010012 Sharp and Izard Counties	Landowner Assistance/ Bank Stabilization	Various Landowners
White River Assistance and Stabilization	AGFC	October 01, 2017 through September 30, 2018	11010004 Baxter, Izard, and Stone counties	Landowner Assistance/ Bank Stabilization	Various Landowners
Eleven Point River Landowner Assistance/Bank Stabilization	AGFC, Region 2 Stream Team	October 01, 2017 through September 30, 2018	HUC 11010011 Randolph County	Landowner Assistance/ Bank Stabilization	Various Landowners
Ouachita River Landowner Assistance/Bank Stabilization	AGFC, Region 2 Stream Team	October 01, 2017 through September 30, 2018	HUC 08040101 Clark County	Landowner Assistance/ Bank Stabilization	Various Landowners, NRCS
Current River Landowner Assistance/Bank Stabilization	AGFC, Region 2 Stream Team	October 01, 2017 through September 30, 2018	HUC 11010008 Randolph County	Landowner Assistance/ Bank Stabilization	Various Landowners, NRCS
Spring River Landowner Assistance/Bank Stabilization	AGFC, Region 2 Stream Team	October 01, 2017 through September 30, 2018	HUC 11010010 Sharp County	Landowner Assistance/ Bank Stabilization	Various Landowners
Stream Team Region 4 Landowner Assistance/Bank Stabilization Projects	AGFC, Region 4 Stream Team	October 01, 2017 through September 30, 2018	Caddo River, EF Horsehead Creek, Prairie Bayou, Crooked Creek, SF Caddo River, Ouachita River, Williams Creek	Landowner Assistance/ Bank Stabilization	Various Landowners, NRCS, Contractors, and PFW
Partner's Lake Nuisance Algal Growth	Arkansas Water Resources Center (AWRC)	4/1/2017 through 10/30/2018	11110103: Benton County	Education, Outreach, & WQ Monitoring	NSF Eco-REU, Illinois River Watershed Partnership
Forest Service Lake Monitoring and Fertility Management	Arkansas Water Resources Center (AWRC)	4/1/2014 through 9/30/2018	11110103: Washington Co. 11110202: Logan Co. 11110204: Yell Co.	Education, Outreach, & WQ Monitoring	U.S. Forest Service,

Title	Management	Timeframe	Location	Project Type	Partners
West Fork White River Water Quality Monitoring	Arkansas Water Resources Center (AWRC)	June 2014-June 2018	11010001, Washington County	Water Quality Monitoring	Beaver Watershed Alliance, University of Arkansas Division of Agriculture, ADEQ, Beaver Watershed Alliance
Riparian, Forest, and Source Water Protection Landowner Outreach	Beaver Watershed Alliance	2013-ongoing	1101000104 1101000107 1101000106	BMP Implementation and Outreach	Beaver Water District, Walton Family Foundation, Arkansas Forestry Commission, Arkansas Game and Fish, Natural Resources Conservation Services, Watershed Conservation Resource Center, Madison, Carroll, Benton, Washington Counties
Experimental demonstration of ponds for watershed management: Phase I	Beaver Watershed Alliance	2017 - 2020	1101000104	Monitoring and Landowner Engagement	Walton Family Foundation and Baylor University
Source Water Protection Speaker Series	Beaver Watershed Alliance	2013-ongoing	1101000104 1101000107 1101000106	Education and Outreach	Beaver Water District, City of Rogers, Ozark Ecological Restoration Inc., Nutrient Trading Group
Low Impact Development Mini Grant Program & LID Management	Beaver Watershed Alliance	Oct 2017 - Sept 2018	11010001	BMP Implementation; Low Impact Development	Beaver Water District, City of Huntsville, Madison County Master Gardeners, Beaver Lake Sail Club, City of Winslow, Waterford Estates, Historic Johnson Farms
National Fish and Wildlife Foundation - Five Star and Urban Waters Restoration Program 2017	Beaver Watershed Alliance	2017-07-15 through 2019-07-15	110100010404 110100010403Washington County	BMP Implementation; Education and Outreach; Watershed Mgt. Plan	National Fish and Wildlife Foundation, City of Fayetteville, City of Greenland, Arkansas Natural Heritage Commission, Fayetteville Natural Heritage Association; Ozarks Off-Road Cyclists; Watershed Conservation Resource Center; Northwest Arkansas Master Naturalists; Northwest Arkansas Land Trust; University of Arkansas; Arkansas Canoe Club, Tyson Foods; FedEx; Comprehensive Botanical Services
Pasture Aeration	Beaver Watershed Alliance	2016-ongoing	11010001; Washington, Madison, Carroll and Benton Co.	BMP Implementation; Education and Outreach	Beaver Water District, University of Arkansas, Madison, Carroll, Washington, Benton Counties

Title	Management	Timeframe	Location	Project Type	Partners
Improving WQ Standards for Mobile Food Providers	City of Hot Springs	March 2018-ongoing	City of Hot Springs	Education and Outreach	NA
IRWP Programs	Illinois River Watershed Partnership	2018- ongoing	Washington and Benton counties, 11110103	BMP Implementation; Education and Outreach; Monitoring	NRCS, Walton Family Foundation, US Fish and Wildlife Service, Benton Co., Fayetteville, Washington Co., Bentonville, Springdale, Springdale Water Utilities, AGFC, AR River Compact Commission, Rogers Water Utilities, AR Natural Heritage Commission, The Nature Conservancy, AR Water Resources Center, and many others
Stream Investigation, Stabilization & Design Workshop	City of Fort Smith	September 18-20, 2018	111102010401 111102010402 Crawford Co.	Education and Outreach	Lake Fort Smith State Park and River Research and Design & Mitigation Surveying Services
Beaver Lake Monitoring	Ozarks Water Watch	8/01/2012 through 09/30/2019	Beaver Lake Watershed - Benton, Washington, and Madison County	Monitoring	Beaver Water District, Arkansas Water Resources Center, and Beaver Watershed Alliance
Beaver Lake Monitoring	Ozarks Water Watch	8/01/2014 through 09/30/2019	Beaver Lake Watershed – Benton and Washington County	Monitoring	Beaver Water District, Arkansas Water Resources Center, and Beaver Watershed Alliance
Beaver Lake Education and Outreach	Ozarks Water Watch	10/01/2013 through 09/30/2019	Beaver Lake Watershed – Benton and Washington County	Education and Outreach	Beaver Water District

7 NPS Pollution Management Program Milestones

Milestones for the NPS Pollution Management Program for FY 2018

In FY 2014, the Arkansas NPS program staff incorporated a section in the Annual Report outlining the specific milestones that the ANRC NPS program staff, cooperating partners, and stakeholders were making progress toward. In FY 2018, there were funded projects that directly addressed specific milestones.

Baseline monitoring in priority watersheds is still conducted to better assess the status of priority watersheds and the impact that BMP implementation is making. Many of these baseline monitoring projects are continuations of previous projects that have several years of data and trends. The data from these baseline monitoring projects is submitted to ADEQ and is used in the development of the 303(d) List of Impaired Waterbodies.

BMP implementation projects continue to be vital in meeting several milestones including Milestone 6 and those milestones dealing with load reductions and the Grants Reporting and Tracking System (GRTS) database. These implementation projects produce tangible loads that can be measured and entered into the GRTS database. Implementation projects are a priority to the Arkansas NPS Program because they have the opportunity of getting the quickest results and load reductions.

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 meet as applicable and review progress toward project objectives and established program milestones. ANRC will continue to review milestones, track progress toward meeting milestones, and discuss possible additions, deletions and/or revisions, as appropriate.

ANRC and the U.S. EPA recognize the achievement of goals and milestones are subject to potential changes in national funding levels, 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. Because of these possible changing factors, Arkansas will re-evaluate and update applicable goals and milestones of the plan. This adaptive management approach enables the state to make appropriate modifications to the Management Program for the continuation of attaining satisfactory progress.

Below are the milestones with contributing projects or work accomplished in FY 2018:

1. Update the qualitative risk assessment matrix after ADEQ releases the impaired waters list and it is accepted by EPA. Priority watersheds will be evaluated and updated after the qualitative risk assessment matrix is updated.

The NPS Pollution Management Program's priority watersheds (8 digit HUC level) were finalized at the NPS Annual Stakeholder and Project Review meeting in September 2016. These watersheds are the focus for the 2018-2023 Arkansas NPS Management Plan. Further assessment beyond initial 8 digit SWAT modeling has not been conducted. Due to economic conditions, technical assistance is not readily available, but ANRC will continue to work with various partners in addressing this issue.

2. Continue to conduct strategic baseline monitoring in selected high priority 12-digit hydrologic units to assist in the development of Watershed Based Plans. ANRC anticipates three to four priority watersheds will have baseline monitoring over the life of the plan.

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 also partners with the National Water Quality Initiative (NWQI) program. The accomplishments that have been made for FY 2018 are as follows: Statistical analysis was performed comparing results between all monitoring stations, data was prepared, imported, and validated into the WQX database, and reporting was finalized. This project concluded early 2018 with the submission and approval of the final report.

15-200 Water Quality Monitoring for the L'Anguille River Watershed- This project is a continuation of 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 2018 are as follows: There were 487 routine grab samples and 98 QAQC samples that were collected from the monitoring locations, in-situ data was recorded at each monitoring station, 611 samples were analyzed, and data has been imported and validated in the STORET (WQX) database. This project is scheduled to conclude in 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 is 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 2018 are as follows: There were 498 routine grab samples and 100 QAQC samples collected from the monitoring locations, in-situ data was recorded at each monitoring station, 706 samples were analyzed, and data was imported and validated in the STORET (WQX) database. This project is scheduled to conclude in 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 that has continued for several years. There are 15 sites that are being monitored in both of these priority watersheds. The accomplishments that have been made for FY 2018 are as follows: there were 8-15 samples collected from each monitoring site every quarter during base and storm flow conditions, all samples were analyzed and are being used to estimate annual loads and trends, and there were 4 quarterly reports and 1 annual report submitted during this timeframe. This project is scheduled to conclude December 2018.

16-700 Strawberry River Watershed Monitoring - The Strawberry River Watershed is a designated priority watershed in the 2018-2023 NPS Pollution Management Plan. The main objective of this project is to measure the effectiveness of BMP's implemented over time by the 319 program and other partners and will hopefully help glean data that will help delist impaired stream segments in the watershed. A total of 384 samples were taken and analyzed during FY 2018 for a project total of 768 samples.

16-800 Bayou DeView Watershed Monitoring - Bayou DeView is a portion of the Cache River Watershed which was once again designated a priority watershed in the 2018-2023 NPS Pollution Management Plan. The main objective of this project is to measure the effectiveness of BMP's implemented over time by the 319 program and other partners and will hopefully help glean data that will help delist impaired stream

segments in the watershed. A total of 329 samples were taken and analyzed during FY 2018 for a project total of 679 samples.

16-1000 Water Quality Monitoring in the Lower Ouachita Smackover Watershed - The Lower Ouachita Smackover watershed was designated as a priority by ANRC in the 2011-2016 NPS Pollution Management Plan and remained a priority for the 2018-2023 NPS Pollution Management Plan. This project aims for monitoring water quality in the Lower Ouachita Smackover Hydrologic Unit to better understand the possible deficiencies in this watershed. The accomplishments that have been made for FY 2018 are as follows: There were 462 grab samples and 98 QAQC samples collected, in-situ data and any deviations were recorded during sampling, 675 samples were analyzed, 25% of the daily discharge was estimated, data was imported and validated into the STORET (WQX) database, and reporting requirements were met. This project is scheduled to conclude in December 2020.

16-1100 Poteau River Monitoring and Assessment - The goal of the project is to complete monitoring and assessment on the Poteau River and its major tributaries in Arkansas. The Poteau River is a priority watershed in Arkansas and is listed on the Arkansas 303(d) list for nutrients and metals. The City of Waldron and GBMc and Associates have partnered with ANRC to complete the necessary work in this project. The accomplishments that have been made for FY 2018 are as follows: A Financial Review was completed, two baseflow samples and three storm flow samples were collected from each of the 9 sampling locations, in-situ measurements were collected, data from all sampling gauges have been downloaded, unified stream assessments were made, desktop watershed analysis was conducted, data was imported and validated in the STORET (WQX) database, and all reporting requirements were made including the final report that was submitted to EPA October 30, 2018.

17-200 Upper Cache River Watershed Monitoring - The Cache River Watershed is designated as a priority watershed in the 2018-2023 NPS Pollution Management Plan. The main objective of this project is to measure the effectiveness of BMP's implemented over time by the 319 program and other partners and will hopefully help glean data that will help delist impaired stream segments in the watershed. A total of 825 samples were taken and analyzed during FY 2018 which was the first year of the project

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

ANRC has employed a review process with several projects in FY 2018. Demonstration projects were the focus this year in ANRC's inspections but there are also other projects that continue to be validated and reviewed. Projects 14-500/17-700, 15-600, 15-1100, 16-300, and 17-800 were just some of the projects that were chosen for review. These inspections that were conducted aimed at verifying specific BMPs that were installed through all three projects. A minimum of 10% of practices are inspected each year for every demonstration project. There are field visits that are conducted but also in-office reviews as well. The in-office reviews consist of verification of farm plans, review of proper documentation, and discussion with project management in regards to the status and success of the project. Visits were made on April 25th (Crooked Creek CD, 16-300), August 21st (St. Francis Co. CD, 14-500/17-700), September 13th (Boone Co. CD, 15-600), September 20th (Poteau River CD, 17-800), and October 31st (Fulton County CD, 15-1100). Results from the visits were all positive. All projects were able to validate

the inspected BMPs and display the needed in-office paperwork. These inspections have been a great benefit in improving project effectiveness.

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 Abandoned Pesticide Program has been conducted in all 75 counties in the state, successfully recovering over 3.6 million pounds of left over agricultural pesticides. Over the past year, NPS staff has participated in quarterly meetings of the Abandoned Pesticide Collection Advisory Committee, giving input as to where and when collection events should be held. Collection events safely removed over 493,000 pounds of chemicals from the environment over the last fiscal year.

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

The 2017 Arkansas Annual Report was submitted January 25, 2018 to EPA Region VI. ANRC received correspondence dated March 2, 2018 from the Region related to receipt, review, acceptance and suggestions to the report. Comments on the report were very positive and complimentary. The letter received regarding the Annual Report mentioned that it was well organized, concise, and a great summary of the success of the program for FY 2017. Difficulties that the program faced that year were acknowledged and confirmed. The lack of a success story was mentioned and there was also a commitment to assisting in finding success stories. EPA mentioned in the letter how they looked forward to the review of the Buffalo River Watershed Management plan in the upcoming year. ANRC is appreciative of EPA's timely and helpful review of the 2017 NPS Annual Report. The 2018 Annual Report will be submitted by January 22, 2019.

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.

14-500 Sediment & Nutrient Management in the L'Anguille River Watershed in St. Francis County Cost-Share project- St. Francis County has assisted 75 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 prevent 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 addressed water quality concerns in the Upper White River watershed. The project offered eligible landowners technical and financial assistance to implement BMPs on their property. At project end, 16 applicants had received assistance and implemented BMPs such as cross fencing, brush management, and alternative water sources for cattle. This project started in October 2015 and concluded at the end of September 2018. Load reductions for the project have been calculated and entered into the GRTS database.

15-700 Cross County-L'Anguille River Watershed Water Quality Project-Cross County has assisted 46 landowners 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 prevent non-point source pollution. BMPs implemented include: Cover Crops, Irrigation Water Conveyance, Nutrient Management, and Grade Stabilization.

15-1100 Strawberry River Sub Watershed Project-Fulton County Conservation District has assisted 77 applicants in helping improve 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.

16-200 Hicks Creek – White River Watershed Project- Baxter County Conservation District has assisted 66 applicants in helping maintain water quality in the Hicks Creek-White River Watershed in Baxter County. BMPs implemented include: Brush Management, Fencing, Forage and Biomass Planting, Livestock pipeline, Heavy Use Areas and Watering Facilities.

16-300 Big Creek – White River Watershed Project-Crooked Creek Conservation District has assisted 78 applicants in helping maintain water quality in the Big Creek-White River Watershed in Marion County. BMPs implemented include: Brush Management, Fencing, Forage and Biomass Planting, Livestock pipeline, Heavy Use Areas, Watering Facilities, and Spring Development.

16-400 Strawberry River Pasture Improvement Project - This project with the Izard County Conservation District is trying to address water quality concerns in the Strawberry River watershed. The project offers eligible landowners technical and financial assistance to implement BMPs on their property. At this writing, 10 applicants have received assistance and implemented BMPs such as cross fencing, brush management, pasture planting and heavy use areas for cattle. This project started in October 2016 and will continue thru September 2019. Load reductions for the project have been calculated and entered into the GRTS database.

16-900 Strawberry River Improvement Project - This project with the Sharp County Conservation District is trying to address water quality concerns in the Strawberry River watershed. The project offers eligible landowners technical and financial assistance to implement BMPs on their property. At this writing, 17 applicants have received assistance and implemented BMPs such as cross fencing, brush management, pasture planting and heavy use areas for cattle. This project started in October 2016 and will continue thru September 2019. Load reductions for the project have been calculated and entered into the GRTS database.

The table below is a reflection of the load reductions that have been accomplished during FY 2018. 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. This table depicts active projects that had a quantifiable reported load reduction during the period of FY 2018.

FY 2018 ACTIVE PROJECT LOAD REDUCTIONS

	Nitrogen Reduced (lbs./year)		Phosphorus Reduced (lbs./year)		Sediment Reduced (tons/year)	
Project #	FY 18	Project Life	FY 18	Project Life	FY 18	Project Life
14-500	17,887	29,802	8,941	14,897	6,867	11,637
15-600	3,303	5,110	1,650	2,552	1,330	15,406
15-700	4,325	6,118	2,161	3,057	1,726	11,000*
15-1100	23,763	37,674	11,874	18,824	9,450	62,864*
16-200	10,288	29,513	5,141	14,750	4,182	11,622
16-300	10,576	28,725	5,204	14,272	4,186	11,470
16-400	1,713	2,286	856	1,142	709	946
16-900	498	7,186	249	3,591	207	2,842
17-700	6,684	6,684	3,340	3,340	2,664	2,664
17-800	7,723	7,723	3,696	3,696	2,995	2,995
Totals	**86,760**	**160,821**	**43,112**	**80,121**	**34,316**	**133,446**

*Load Reductions taken from project's final report using (RUSLE) model

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 conservation programs that will improve or enhance water quality in watersheds on an annual basis. ANRC also will participate in the State Technical Committee and it's Water Quality sub-committee annually or as it convenes. ANRC will monitor (in-stream WQ monitoring) a minimum of 2-4 NRCS Program Initiatives (MRBI, RCPP or NWQI) 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 for FY 2018. Monitoring has concluded in the three 12 digit HUCs in the Bayou Bartholomew watershed. This monitoring project gathered 2,420 samples from 10 monitoring stations over a four year timeframe and provided evidence of the impairment and why the Bayou Bartholomew Watershed is still a priority for the ANRC 319 Management Program.

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 also partners with the National Water Quality Initiative (NWQI) program. The accomplishments that have been made for FY 2018 are as follows: Statistical analysis was performed comparing results between all monitoring stations,

data was prepared, imported, and validated into the WQX database, and reporting was finalized. This project concluded early 2018 with the submission and approval of the final report.

14-400 Little River Ditches Monitoring - This project tried to ascertain the effectiveness of BMPs implemented by MRBI partners in the Little River Ditches watershed. Results showed that implementation did have impacts on constituent loadings. This monitoring began in January of 2015 and concluded in June of 2018. The project had a goal of collecting 450 samples. The project surpassed that goal with 479 samples collected and analyzed.

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

ANRC continues to send baseline monitoring data to ADEQ annually and at the conclusion of monitoring projects. The data is sent by October 1 of every year but can be sent at other times of the year depending on when projects are completed. ANRC also requires all monitoring projects to be uploaded to the WQX database and in turn ADEQ can access the data there as well. The following projects have had data submitted to ADEQ during FY 2018: 13-400, 13-500, 14-400, 15-200, 15-300, 15-400, 16-700, 16-800, 16-1000, 16-1100, 17-200, and 17-1200.

9. Review ADEQ's 305(b) report and subsequent 303(d) list approved by EPA for delisted streams or stream segments and determine if 319(h) funded projects assisted in the delisting or improvement of water quality. 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 and submit two to three success stories within the time frame of this management plan.

ANRC used the draft 2018 stream segment delistings for determining potential waterbodies coming off the list. The 2018 New Listings and De-listings were reviewed by ANRC and there were several stream segments that were possibilities for success stories. A public hearing was conducted by ADEQ on August 17, 2018 and comments were submitted. At the time of this writing, ANRC was informed that the proposed delistings would not be eligible for success story status, due to lack of data.

10. 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.

For FY 2018, ANRC received notice from EPA of acceptance of the Buffalo River Watershed Management Plan. The Buffalo River Watershed Management plan was initiated in FY 2017 through the BBRAC Commission.

14-1000 Watershed-Based Management Plan for the Middle White Watershed, AR (HUC 11010004) - This project's goal is to prepare an EPA-acceptable nine element watershed-based plan for the Middle White Watershed, while developing local support for the plan and its implementation. These objectives are planned steps toward the goal of reducing pollutants to levels that will restore the designated uses of the waterbodies within the Middle White Watershed.

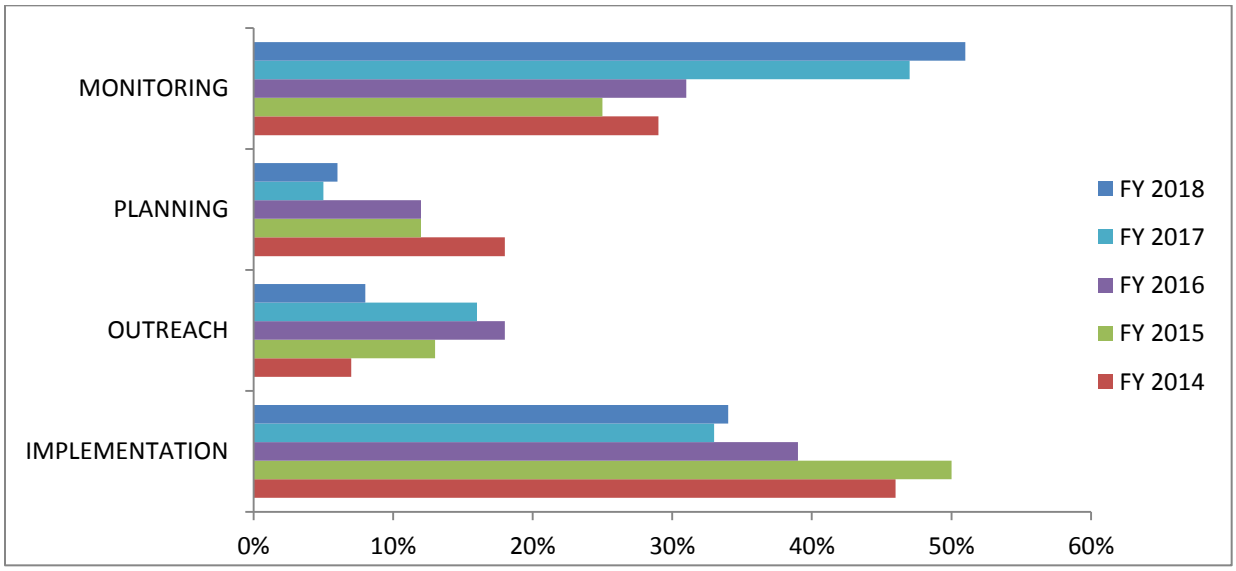
Three public meetings with stakeholders and partners have been held to seeking input from the stakeholders within the watershed. One final public meeting will be held and the plan is anticipated to be complete by March 2019.

8 FEDERAL RESOURCE ALLOCATION

Program Expenditures for FY 2018:

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 2018, ANRC and its project partners spent approximately 2.5 M 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 3% of federal expenditures from FY2017 to 2018. Planning expenditures increased slightly to 6% while outreach expenditures decreased considerably to 8%. Implementation expenditures increased to 34% in FY 2018. This is due to favorable conditions for allowing BMPs to be installed.



9 Best Management Practices

Best Management Practices Implemented in FY 2018

The table below contains BMPs that have been implemented during FY 2018 and the quantity of each practice.

		Demonstration Projects										
Best Management Practices	NRCS #	14-500	15-600	15-700	15-1100/1101	16-200	16-300	16-400	16-900	17-700	17-800	**Total**
Irrigation Pipeline (feet)	430	3,370		408								3,778
Critical Area Planting (acres)	342				2							2
Pond (units)	378				3	1						4
Cover Crop (acres)	340	1,913		252						615		2,780
Grade Stabilization Structure (feet)	410	440		389								829
Fencing (feet)	382		16,706		33,620	12,084	10,186	6,205	5,855		3,638	88,294
Forage and Biomass Planting (acres)	512		414		672	164	193	50	117		24	1,634
Heavy Use Area (units)	561		5		14	2		1	1		1	24
Watering Facility (units)	614		4		13	2	3	1	1		1	25
Brush Management (acres)	314				410	747	835		272		641	2,905
Herbaceous Weed Control (acres)	315				949							949
Pipeline (feet)	516		3,424		7,047	210	380	180	595		1,096	12,932
Spring Development (each)	574					1						1
Mulch Till (acres)	345									3,350		3,350
Structure for Water Control (each)	587									1		1

10 FY 2018 Non-point Source Program Accomplishments

- **Watershed Management Plans**- The Buffalo River Watershed Management Plan was initiated in FY 2017 and completed in FY 2018. The Middle White River WMP was initiated in FY 2018 and is currently under development.

- **Education and Outreach-** Projects 15-900 "Connecting NPS Management to Receiving Streams through BMP Education and Demonstration" and 16-500 "White River and Richland Creek Watershed Opportunity Assessment" were two examples of the continuation of efforts to educate stakeholders of Arkansas.

  Also included in this year's report was project 15-1200 "Arkansas Silvicultural Non-point Source (NPS) Project ", which is a valuable project in educating technical and non-technical forestry stakeholders in the application of BMPs on forest lands of Arkansas.

  Through projects like these, ANRC is seeing the public "buy" into LID/GI techniques for their aesthetic and water quality benefits and seeing an increase in forestry BMP implementation and effectiveness.

- **Enhancing Partnerships-**Partnerships continued to be strengthened for FY 2018. With the help of partners such as: NRCS, ADEQ, TNC, IRWP, BWA, FTN, the City of Little Rock, Conservation Districts, The Soil Health Alliance, and various others, several initiatives and programs reducing nonpoint source pollution have been initiated and/or completed.

- **GRTS Reporting**- For FY 2018, there were load reductions made that directly related to 319(h) funded projects. Load reductions were found in many of the priority watersheds around the State. Total load reductions for FY 2018 were 34,316 tons/acre for sediment, 43,112 lbs./acre for phosphorus, and 86,760 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 Arkansas.

Tony Ramick,
Fiscal/Program Manager

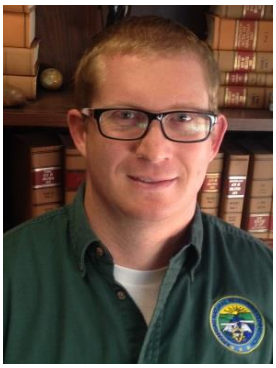
- Program Administration
- NPS Management Plan Update
- Project Development and Management
- Partnership Coordination and Development
- LID/GI, BMP Implementation and Education/Outreach

Kevin McGaughey,
Program Coordinator

- Project Development and Management
- BMP Implementation, Monitoring, GRTS, Conservation District Coordination and Technical writing

Allen Brown,
Program Coordinator

- Project Development and Management
- LID/GI, BMP Implementation, Education/Outreach, Streambank Stabilization and WMP Development



Robbie Alberson,
Program Coordinator

- Project Development and Management
- Agricultural Demonstration development, in-field BMP site inspection, BMP implementation, Monitoring, GRTS and Technical writing

Steve Stake,
Program Coordinator

- Project Development and Management
- BMP Implementation, LID/GI, Streambank Stabilization, Conservation District coordination and WMP Development

To efficiently and responsibly manage and protect our water and land resources for the sustainability, health, safety and economic benefit of the State of Arkansas