

Lower Little River Watershed Coalition

DRAFT Final Report

Project 1400 Lower Little River Watershed Project FY 2000, CWA Section 319(h)

The most significant water quality problem in the Lower Little River watershed is turbidity and sedimentation. This directly impacts the seven top priorities for restoration included in the Arkansas Unified Watershed Assessment because the Watershed contains:

- Streams with federal and state scenic river designations.
- Four imperiled aquatic species.
- Three state waters of concern.
- One USDA EQIP project.
- Drinking water supplies serving a population of over 100,000.
- One state extraordinary water resource.
- Interstate waters of concern.

To comply with the action items outlined in the President' Clean Water Action Plan, the Lower Little River Watershed Coalition (LLRWC) has a Watershed Restoration Action Strategy (WRAS). This workplan proposed to organize local agencies within the watershed, develop the WRAS and to begin implementation of the WRAS. The LLRWC has completed these activities but at this time lacks the funding to begin to fully implement the WRAS for the Lower Little River Watershed.

Five stream reaches within the Lower Little River watershed are identified in the Arkansas Department of Environmental Quality's (ADEQ) 1998 Water Quality Inventory Report (305(b) Report) as "Waters of Concern". These streams are the Holly Creek, three reaches of the Rolling Fork River and the Bear Creek.

The Holly Creek, reach 013, is also an impaired stream because of non-support of the swimming designated use. Pathogens and sediment cause the impairment of Holly Creek. These pollutants are primarily from a municipal and an industrial point source. The LLRWC has cooperated with state and local authorities to discuss the situation on Holly Creek and the industrial point source problem appears to have been remedied with modifications to the industrial point source outfall which was an overflow spillway to a retention and re-circulation pond. Elevated pathogens continue in this reach and the LLRWC has noted to official at ADEQ that based on a careful assessment of the area a major part of the problem could be endemic to the geomorphology of Holly Creek where the flow during low flow periods is simply not enough to sustain the outfall from the city of Dierks. The LLRWC hopes to assist in facilitation and monitoring efforts to abate the excess pathogens problems on Holly Creek.

The cause of the "Concern" in the other four reaches is nutrients. Agriculture, primarily livestock in this area, is identified as the major source in reaches 024 and 027. Point sources are the major source in reaches 025 and 028. In all, 704 miles of stream are either "Waters of Concern" or "Impaired". Nonpoint Sources account for 21.4 of these miles. The 305(b) Report

also states, "Several stream segments in the basin display degradation that is the result of agricultural nonpoint pollution". The ADEQ has given the Holly Creek "medium priority" for development of a Total Maximum Daily Load during fiscal year 1999-2000, but no TMDL was set in that time frame or is currently set in 2005. A TMDL is scheduled to be set for phosphorus and nitrogen on the Upper Rolling Fork in 2006 by EPA Region 6. This TMDL is primarily driven by an industrial point source discharge and not a NPS issue. In general, however, water quality in the basin is fair with the exceptions noted above.

A summary of assessments conducted within the watershed is given below:

ADEQ NPS Pollution Assessment Summaries for Red River Basin

1. Erosion from roads and ditches is causing elevated sediment concentrations. The LLRWC has developed relationships with county judges to educate local government in possible abatement projects such as sedimentation lagoons, turnouts and other road and ditch BMPs to reduce road and ditch erosion. County Judges in Little River, Sevier and Polk counties have indicated they would like to participate in cost share programs with the LLRWC or the local Conservation District to reduce this source of sedimentation.
2. Erosion from agricultural lands, resulting from steep slopes, highly erodible soils, and poor tillage practices, is causing elevated sediment concentrations. The LLRWC has identified areas where this is a particular problem. Education has been provided to local property owners on BMPs that can reduce erosion from their property and Conservation District resources that can be utilized in this effort.
3. Erosion from forested lands, resulting from improper forest management, is causing elevated sediment concentrations. The LLRWC has participated in property owner workshops and educated the public on how forestry practices directly impact water quality on their property and how they can insure the impact is minimized. Based on overwhelming response to the workshops it appears there is need for more of these types of meetings.
4. Erosion from construction sites is causing elevated sediment concentrations. This concern has been well addressed by new ADEQ regulation directly concerning storm water runoff from construction sites. The LLRWC has noted specific concerns at some road building sites and ADEQ has responded quickly. Of greatest concern on this topic is the impending construction of the I-49 corridor through the very center of the watershed. The LLRWC has expressed concerns to the Arkansas Highway and Transportation Department on this matter and how the I-49 project may potentially damage water quality if improperly implemented.
5. Improper land applications of waste from confined animal operations (chickens, cattle, and hogs) are causing elevated nutrient concentrations. The conservation district members of the LLRWC in cooperation with ASWCC and the NRCS provide confined animal operations with nutrient management plans. The LLRWC works closely with technicians writing the plans to provide them with areas where NPS nutrients are a concern in the aquatic systems and where un-favorable trends may be developing so they can concentrate their efforts to maximize the protection of water resources.
6. Animal grazing and poor management practices are causing increased nutrient, sediment, and pathogen concentrations. The member conservation districts of the LLRWC work with area property owners to assist in grazing management and its impacts on sediment and pathogen levels in local water resources.
7. Septic tanks are causing increased nutrient and pathogen levels. The LLRWC has worked to educate local officials in city and county governments on the areas near streams most sensitive to septic tank influence. While the concerns were noted, it appears there is little

commitment on the part of local government to do anything to mitigate this potential detriment to local water quality. The LLRWC continues to cooperate with Arkansas Rural Water in the development of source water protection plans that will hopefully mitigate this influence.

8. Landfills are causing various kinds of contamination. There are a number of closed land fills in the Lower Little River watershed that are monitored by ADEQ. The LLRWC would like to see their impact on surface water evaluated at sometime.
9. Mining operations are causing various kinds of contamination. Mining operations within the watershed are directly regulated by ADEQ. If the LLRWC receives a complaint or notices problems that could be traced back to these sources ADEQ is immediately notified. ADEQ has been quick to act on any concerns noted by the LLRWC.
10. Streambank erosion is causing increased sediment levels. This problem seems to be most pronounced at locations on the Little River, Mine Creek and the Plum Creek watershed. Stream bank erosion is pronounced in the blackland prairie regions in the watershed, and at a few points on the south side of the Little River both above and below the Millwood Lake dam. The LLRWC has facilitated cooperation between local land owners and the NRCS and AGFC to evaluate areas of streambank erosion and develop potential solutions. The LLRWC has assisted directly in educating property owners on the planting of local native vegetation to stabilize streambanks with information on cutting and planting willow stakes and assisted in several of those projects with some success.
11. Various types of contamination from urban NPS. Urban NPS is not having a major effect on the overall watershed, but is having a detrimental effect in several local areas noted in the LLRWC Final Water Quality Report and other Annual Water Quality Reports completed by the LLRWC. Areas most affected by urban runoff appear to be portions of Mine Creek that receive flows from the city of Nashville, and Bear Creek that receives flows from the city of De Queen. The LLRWC has provided educational programs to local schools and city officials on urban NPS.

The Lower Little River basin covers parts of five counties in Southwest Arkansas. In addition, the majority of the residents in Miller County depend on the watershed for their water supply. Millwood Lake is also a major source of recreation for the area. Residents of the area have expressed an interest in development of a watershed wide approach to protecting their water supply.

Water Quality Goals and Objectives

Objective: Provide for local leadership of the Lower Little River watershed program.

The six Conservation Districts in the Lower Little River watershed are to take the lead in the formation of a local watershed Coalition. The Coalition initially formed a steering committee that drafted a plan for a formal governing board to be made up of the six member conservation districts with each district having one vote. Each district asked one board member to be the regular representative to the Coalition board, but any board member could attend the Coalition meetings and many often did, but regardless of how many individual district members attended the Coalition meeting each district retains one vote out of six on Coalition matters. Since the board is made up of an even number of votes a split vote is possible, and in that event the chairman of the Coalition board retains the ability to cast a deciding vote. With the high degree of cooperation exhibited by the Coalition members at this point no split votes have occurred, and to that end almost all board decisions have been unanimous. The Coalition is to be

representative of the stakeholders in the watershed, and since each Conservation District is set up to be representative of its area, the make up of the Coalition board accomplishes this same aim. The function of this Coalition is to improve communication between various stakeholders in the watershed, compile necessary data for watershed management, develop a WRAS, assist each other in securing resources to implement the WRAS, and report annually on progress in completion of the WRAS. Technical and administrative leadership to this group has provided by the NRCS.

The LLRWC has successfully organized and has 501c3 non-profit status. The Conservation Districts continue to supply leadership by contributing to quarterly meetings held by the coalition. District directors and personnel also provide data when requested and make suggestions as to potential projects, project areas and community needs that could be fulfilled by the LLRWC.

Task 2: Data Compilation and Presentation

Objective: To provide the Local Watershed Coalition with information necessary to compile the Watershed Restoration Action Strategy

Local, State and Federal agencies can provide a great deal of data in information to the Coalition for completion of the WRAS. At the request of the Coalition, agency personnel have made presentations concerning reports and assessments compiled by their agency regarding the Lower Little River watershed. Agency personnel also assisted in providing interpretation of the data to the Coordinator. Agencies that provided data and interpretations were ASWCC, U of A Cooperative Extension, ADEQ, AGFC, US Fish and Wildlife, and NRCS. While all of the agencies did provide reports and data interpretation, none of the agency personnel had adequate time to give a detailed account of water quality issues in the watershed so that Coalition board could make significant strategic decisions for water quality management. The Coordinator hired by the Coalition was able to take the data provided by various agencies and create a detailed water quality report that has been utilized by the Coalition to make strategic decisions to protect and improve water quality in the Lower Little River Watershed.

The available data is generally on a regional basis and may not be adequate for completion of the WRAS. Local inventory of pollutant sources will be necessary. If additional environmental data is collected, then a Quality Assurance Project Plan **has been developed** and data collection will be in conformance with the plan.

The LLRWC has compiled annual water quality reports and expanded the report in each successive year to include more accurate and usable information for the Conservation Districts to use in evaluating their water quality protection efforts and be aware of both areas of high and low water quality. Special note is also made in these reports as to the trends toward increasing or decreasing water quality so measures can be adopted to support changing conditions.

Subtask 2.1: Presentations of Available Data by State and Federal Agencies.

The LLRWC works closely with ADEQ on the compilation of data for water quality in the Lower Little River watershed. This relationship has been mutually beneficial as the LLRWC has

received the needed data and ADEQ receives a detailed QC of the data and supplemental data gathered by LLRWC personnel. The LLRWC also had acted as a local educational liaison between private property owners, industry and municipal resource users to assist them in their resource management. The LLRWC also cooperates with the Oklahoma Water Resources Board (OWRB) to evaluate data gathered by them and by ADEQ in order to correlate water quality gathering activities on both sides of the state line. The LLRWC also works directly with the Little River Conservation District (McCurtain County, Oklahoma) in water resource management. The LLRWC has arranged and sponsored a meeting between the LLRWC, Oklahoma Association of Conservation Districts, Arkansas Association of Conservation Districts, Oklahoma Soil and Water Conservation Commission, Oklahoma Water Resources Board, NRCS and RC&D in Oklahoma and Arkansas to discuss increasing cooperation on water quality programs. As a result of this meeting Oklahoma authorities have expressed a desire to form a coalition of Oklahoma Conservation Districts in the Upper Little River watershed to cooperate with the Lower Little River watershed in water quality management projects.

Task 3: Watershed Restoration Action Strategy

Objective: To develop a plan to restore designated uses of impaired streams or waters of concern in the watershed and to maintain use support in all other waters.

With leadership from the Watershed Coordinator, the Coalition has developed a WRAS for the watershed meeting the requirements set in guidance from the EPA. This WRAS includes a public awareness component, development of important issues as identified by the Coalition, management measures for each issue a schedule for implementation including the resource needs and an evaluation and monitoring plan.

Task 4: Implementation

Objective: To implement components of the Watershed Restoration Action Strategy

It is well documented that there is an immediate need for technical assistance to animal feeding operations and confined animal feeding operations in the Lower Little River Watershed. According to the ASWCC's 1999 Annual Report on Nonpoint Source Pollution, only about a half to two-thirds of the poultry farms in the watershed had complete nutrient management plans. In addition, the new requirements of the AFO/CAFO strategy made most of the existing plans obsolete therefore tremendously increasing the workload of the Water Quality Technicians in the Watershed. The goal of each technician is thirty to thirty-five plans per year. Based on this rate of completion a goal was set for preparing approximately 300 comprehensive nutrient management plans over the three years of this project. **The actual number of completed plans in the three year span has actually been 417.** The anticipated cost of the Water Quality Technician program in the watershed was \$250,000. This amount came from the State line item for Water Quality Technicians and was considered as State or Local Matching for this project.

The LLRWC has identified areas that may be at risk for excess nutrients influencing water quality based on the data compiled for the annual and final water quality reports developed under this grant project. The LLRWC is perusing innovative strategies to protect and improve water quality in these and other regions sensitive to nutrient influence. These include:

- Developing cost share or other incentives for non-poultry farmers such as cattle farmers and row crop farmers along the Red River to construct stacking sheds for the storage of chicken litter so that they can utilize more of the product as a soil additive.
- Educating riparian land owners in BMPs to protect water quality in both nutrient protection and bank stabilization, and developing incentives for tax credits, cost share and protective easements.
- Identifying bank areas and watersheds with the highest levels of erosion and developing strategies and programs to reduce the level of erosion occurring. The primary watershed of concern is the Plum Creek watershed east of Millwood Lake, two areas of bank on the Little River at Sikes Ranch and Red Bluff, and an area of Mine Creek downstream from the rail road bridge crossing south of Mineral Springs.
- Provide information to water quality technicians on nutrient effects on local water resources in their area so that they can focus their efforts in areas that may be disturbed with excess nutrients.

Task 5: Reporting

Objective: To provide an annual update on the status of the Lower Little River Watershed

The Coalition, with technical and administrative assistance from the NRCS, ADEQ and U of A Cooperative Extension and in cooperation with the Oklahoma Water Resources Board has prepared quarterly progress reports and annual Watershed Status Report for inclusion in Arkansas' Nonpoint Source Program Annual Report. These reports have also been included in the Arkansas NPS Task Force development of the Arkansas NPS program and the AGFC Comprehensive Wildlife Conservation Strategy that has been submitted to the Fish and Wildlife Service.

Task 6: Coordination

Objective: To provide a clearinghouse for all matters related to the waters of the Little River Watershed.

The Watershed Coordinator has represented the LLRWC at meeting with the Oklahoma Conservation Districts as reflected by data collected and meetings attended. The Coordinator has also facilitated coordination between the Sevier County Water Association, ADEQ, ADOH, ARW and the USCOE during an algae bloom on De Queen Lake in early may of 2005. Prompt action on the part of the LLRWC to coordinate activities and borrow equipment during a three week period averted the need for substantial chemical treatment addition by Sevier County Rural Water and there by averted a substantial cost to be incurred in water treatment and avoided the occurrence of odor and taste problems with the drinking water.

The LLRWC coordinates public awareness and education activities between local, state and federal agencies. The largest event was the Lower Little River Watershed Awareness day sponsored in part by ADEQ. Agencies participating were:

Pond Creek NWR

ASWCC – NPS Education

ADEQ – Educational Outreach

Point Source Protection Program

Arkansas Department of Health
US Corps of Engineers Southwest
US Geological Survey
USDA FSA
USDA NRCS
USDA Forest Service
U of A Cooperative Extension
Sevier County 4H
Southwest Arkansas Water District
Arkansas Forestry Commission
Arkansas Game and Fish Commission
Cossatot River State Park and Natural Area
Arkansas Natural Heritage Commission
Arkansas Farm Bureau
University of Arkansas Cossatot Community College

The Coordinator represented the Coalition at one National Watershed Conference, one USCOE/ASWCC stream bank protection class, two Arkansas Watershed Awareness Group conferences, two Arkansas Waterworks conventions and one Waterworks Southwest Regional meeting, three AACD annual meetings, and two Arkansas Environmental Federation annual meetings.

All water utilities in the watershed have been contacted and meetings with a number of the superintendents have been held. These include Dierks, Nashville, Sevier County Rural water, De Queen, Mena, Gillham Regional water and wastewater, Wickes, Hope water and light and Southwest Arkansas Regional water district. A meeting for the water utilities in the watershed is planned for the future based on the interest of the local utilities to work with the Coalition to better protect and utilize their local water sources. The Coalition has also cooperated with Arkansas Rural Water to develop source water protection plans for the area.

A number of activities have occurred with the cities and counties through out the watershed. The Coordinator is currently working with Polk County to develop erosion protection projects for several bridge areas that are prone to wash out, and the city of Mena has had the coordinator give several presentations on water resource management and recreation in the area. The LLRWC has also supported Sevier County and the AGFC in the building of a recreational area and boat ramp on the Little River known as the Highway 41 access. Sevier County looks to coordinate with the LLRWC to develop areas in the public domain that are being used for recreation but are damaging bank and riparian zones. The Coordinator has assisted the city of De Queen in a consultant role as they have embarked on a project to upgrade their sewer treatment facilities. As a result of the efforts of the Coordinator and the environmental commitment of the board of directors of the city of De Queen they have chosen to install a state of the art activated sludge waste water treatment facility, the first in the watershed. The Coordinator has also met with Howard and Little River County officials to discuss road damage caused by erosion and identify particular problem areas. The LLRWC plans to cooperate with these officials on future projects.

Task 7: Public Awareness

Objective: To make the non-farm population and the area's water users aware of the NPS situation in the watershed.

The Coordinator met with many private property owners and industries inside and outside the watershed that are stakeholders with interests in the watershed. The largest private property owner in the watershed is John Hendricks. Mr. Hendricks has diverse property holdings that include timber, poultry production and a variety of other uses and does business as Hendricks Corporation. Mr. Hendricks owns a significant majority of the riparian property on the Saline River. The largest corporate property owner in the watershed is the Weyerhaeuser Corporation, owning significant properties in all six conservation districts as well as a number of commercial timber manufacturing facilities. Domtar Incorporated is the largest consumer of water in the watershed, permitted to use up to 70 million gallons of water per day, and also consumes a majority of the hardwood utilized through out the area for commercial paper production. Pilgrims Inc. and Tyson Inc are also major industrial stakeholders in the watershed with 3 processing plants in the watershed located in Grannis, De Queen and Nashville. These two companies supply their commercial poultry processing plants with live poultry by securing contracts with local independent growers. The growers are responsible for maintenance of their property and the proper management of the waste generated by the poultry.

The Coordinator has performed regular public presentations on a variety of water quality and watershed management issues throughout the watershed, and generally receives two requests per month from local schools and other organizations such as Lions Club, Rotary Club, Arkansas Association of Retired Persons, De Queen/Mena Educational Cooperative, Farm Bureau, Arkansas Cattlemen and others.

The Coordinator has also participated in area forestry contests sponsored by the local Conservation Districts and has participated in two Arkansas Forestry contests, and the Arkansas Envirothon competition as both a judge and team facilitator.

Area radio has also been a popular supporter of the LLRWC as the Coordinator has been a frequent guest on the KDQN morning show with Steve and Loren. Radio has been an effective outlet to reach the non-farm population with the message of water quality management for non-farm property owners.

Subtask 7.3: Six fact sheets targeted at the non-farm community will be prepared.

Two fact sheets on the Lower Little River watershed were prepared. One in a single page format and the other in a pamphlet form describing the watershed and the mission of the Coalition. A fact sheet explaining bank stabilization using willow stakes was prepared and has encouraged a number of riparian property owners to encourage natural bank stabilization using this method. A fact sheet in pamphlet form was also made for the Mountain Fork watershed nutrient surplus zone to explain what this designation means to property owners in the Mountain Fork watershed and resources they could utilize to insure their compliance with ASWCC rules and encouraged them to be good stewards of their property for nutrient management. A fact sheet was prepared for the Plum Creek watershed to educate residents of the watershed and others about the high erodibility of this black land prairie soil and its other characteristics that appear to be adding significantly to the sedimentation of Millwood Lake. A fact sheet on the Saline River was also prepared for residents and property owners of that

watershed to educate them on its unique characteristics and their role in maintaining the Saline River's water quality.

Subtask 7.4: Eighteen radio spots targeted at the non-farm community will be prepared.

Educational radio spots were prepared as well as guest appearances made by the coordinator on local radio stations in the Bunyard Communications family of stations. These include KNAS-Nashville, KDQN-De Queen, and KENA-Mena. Spots covered the mission of the Coalition, stream bank stabilization, watershed awareness days, the role of nutrients in water quality, the current status of water quality in the watershed, riparian property owner responsibilities, federal and state programs for environmental restoration to improve water quality, the role of upper watershed lakes in the watershed.

Subtask 7.5: Eighteen newspaper articles targeted at the non-farm community will be prepared.

The Coordinator prepared approximately 32 newspaper articles for publication by newspapers in the watershed. Participating newspapers were, De Queen Bee, Mena Star, Nashville News, Nashville Leader, Little River News, Texarkana Gazette and the Hope Star. Articles were written on the activities of the Coalition, the mission of the Coalition, stream bank stabilization utilizing willow stakes, the role of nutrients in water quality, the educational activities of the Coalition, Watershed Awareness day activities, the role of riparian property owners in water quality preservation as well as the promotion of responsible use of material in water based recreation. Special attention was made to educate the public in their role in maintaining water quality in their watershed and how they can play a part.

Original Time Frame

January 26, 2000, representatives of the Rich Mountain, Cossatot, Mine Creek, Sevier County and Little River County Conservation Districts met and agreed to be local leadership for the development of a Watershed Restoration Action Strategy (WRAS) for the Lower Little River watershed. They also agreed that the Miller County Conservation District should be asked to take part in the project. A steering committee is to be formed from the six Conservation Districts that will perform the following tasks:

- Develop a list of potential groups or stakeholders to be asked to participate.
- Investigate and select a form of organization for the Coalition.
- Secure input on the water quality issues from appropriate sources including State and Federal agencies.
- Make recommendations on additional assessments and inventories to be completed.
- Develop management measures to be implemented for each issue.
- Complete an implementation schedule including the estimated costs.
- Assist Coalition members in seeking resources to implement the schedule.
- Prepare an annual Watershed Status Report for submittal to the ASWCC and the Public.

The findings, recommendations and schedules will be combined into a document referred to as the Lower Little River Watershed Restoration Action Strategy.

The original time frame was originally scheduled to run from July 1, 2000 to June 30, 2003. In June of 2002 the schedule was revised to continue from July 1, 2002 through December 31, 2005.

Cooperators Involved

In the original plan NRCS was to provide administrative and technical support through out the program by means of a professional services agreement between NRCS and ASWCC. As the project developed it became impossible for NRCS to provide all the work necessary to continue the project. At that point a Watershed Coordinator was hired by the Lower Little River Watershed Coalition in order to complete the work required under the grant. NRCS has maintained technical support to the Watershed Coalition, and the Conservation Districts have provided administrative support to the Coordinator. The University of Arkansas Cooperative Extension Service has also actively participated in the formation of the Coalition and provided various educational projects on NPS contamination and water quality. In addition the LLRWC has cooperated with the Arkansas Forestry Commission, Arkansas Department of Health, Arkansas Department of Environmental Quality, Arkansas Association of Conservation Districts, US Forest Service and various other county and city local governments in educational, planning and stabilization projects. In addition the LLRWC has cooperated with the Little River Conservation District in Oklahoma along with the Oklahoma Water Resources Board, Oklahoma Soil and Water Conservation Commission and Oklahoma Resource and Development to increase cooperation on NPS projects within the Little River Watershed.

Major Project Highlights

The project has had a number of highlights. The Lower Little River Watershed Awareness Day was a high light in public awareness events. Seventeen local state and federal agencies did presentations and met with over 150 members of the general public at the De Queen Country Club. The event effectively publicized the mission of the LLRWC and involved the adult public and school aged children in learning about their watershed, NPS pollution, plants and animals though out the Lower Little River watershed. In addition to Watershed Awareness Day, the LLRWC has participated in a number of events including Wings and Things, Arbor Day, Earth Day, Forestry Contests, County Fairs, Arkansas Watershed Awareness Group Bi-Annual meetings, National Watershed Coalition Bi-Annual conference, ADEQ WET program and AGFC Stream Team.

The Lower Little River Watershed Coalition held a joint meeting with the Little River Conservation District, Oklahoma in May of 2004 at Beavers Bend Oklahoma State Park on the Mountain Fork River north of Broken Bow Oklahoma. Increased cooperation on water quality programs between conservation districts was discussed, as well how the conservation districts in Arkansas could work with the conservation Districts in Oklahoma to more effectively manage water quality for the entire watershed. Little River (Oklahoma) Conservation District expressed a desire to form a coalition of conservation districts in the Little River Watershed in Oklahoma similar to the Lower Little River Watershed Coalition in Arkansas, and then work together in some sort of comprehensive watershed effort.

The Watershed Coordinator has done a number of presentations on water quality data in the watershed, but one particular meeting does stand out. The Arkansas Water Resource Center

annual meeting in Fayetteville, Arkansas was definitely one of the most beneficial meetings for a presentation on technical data in the watershed. The number and knowledge of persons attending the meeting made for a lively and informative discussion on NPS levels monitored in the watershed causes and effects of those monitored levels.

Educational projects have been a key part of the work of the LLRWC over the project period. One particularly good project involved the Foreman EAST lab and involved learning about stream bank erosion and led to a willow planting on a section of river bank to encourage natural stabilization. One lesson learned both for the class and the presenter is the importance of planting the entire depth of the bank in willow stakes from the water line up over the top of bank area. Flood waters that occurred late in the spring and continued to be high for over one month eroded most of the willow stakes away and the planting concentrated in the immediate bank area and did not go far enough up the bank for any but two to three stakes to survive the flood event. Mena High School WET team participated in the Lower Little River Watershed Awareness Day and a number of classrooms with the Watershed Coordinator. Wickes High School Science Club also participated in a number of classrooms with the coordinator. The Wickes group made frequent use of equipment and personnel provided by the LLRWC at the Cossatot River State Park and Natural Area. Mena High School participates in the ADEQ WET program and has hosted a number of classrooms with the LLRW Coordinator.

Monitoring Data Quality Objectives

Monitoring data quality objectives is not applicable to this project, however the project may be having an affect on water quality. Overall the region has seen a notable improvement in the last five years as nutrient levels in monitored water sources have become more stable. This improvement and stability are no-doubt a combination of efforts, most notably the nutrient management work done by the Conservation Districts in conjunction with ASWCC and NRCS. While this effort could account for some of the gains, areas with little or no poultry or other animal agriculture have also seen a higher level of stability in the last three to five years. This overall improvement in NPS pollution could be attributed to the public awareness and education efforts by the LLRWC in conjunction with other local, state and federal agencies.

BMPs Implemented and Why

Due to the planning and development nature of this project BMP implementation has not occurred, however BMP work has occurred as a result of LLRWC encouragement. A number of property owners are limiting development of their riparian zones, these include: Allen Ray, Bobby Bailey, Skipper Davis, Mike Cranford, Jonnie Estes, and Floyd and Betty Lacefield. These property owners implemented BMPs on their property primarily for two reasons: 1) Wildlife management and recreational improvement, 2) Stream bank stabilization and erosion reduction. The purpose of this project was to establish recommended BMPs to be implemented in the WRAS by follow on projects.

Obstacles

Obstacles to the project have been obstacles that are often encountered by any new work. The work was a bit slow to get off the ground as the Coordinator worked with the LLRWC board of directors to develop effective manners to implement public awareness work. The initial

Conservation District that hosted the Coordinator determined it did not have the facilities or personnel to adequately support the Coordinator and so this precipitated a change of sponsoring Conservation District after the first year of the program. All participating Conservation District Directors worked hard to develop an atmosphere of trust and cooperation to support the Coordinator and the change in sponsoring district was an excellent solution to the problem.

Measure of Success

The WRAS is completed and outlines possibilities for BMP implementation and potential projects in most of the sub-watershed basins of the Lower Little River watershed. The WRAS is also a living document that needs to be further refined and tuned to changes noted in water quality monitoring data that results from natural and man made changes to the watersheds, as well as economic and social changes that also effect the quality of water resources. In addition the public is much more aware of what a watershed is and its function in the environment, this mission of the local Conservation District and the role of the LLRWC in water resource management.

The success of this project was made possible by the dedication of Conservation District directors and cooperation with ASWCC, ADEQ and the NRCS. Without local interest from the six conservation districts involved this project would not have been possible. The directors assisted the Coordinator in meeting members of the local community and suggesting local events and hosting presentations on NPS pollution. Little River Conservation District provided excellent facilities and cooperated with the Coordinator to develop the position and provide administrative support. Minnie Goldman, district manager for the Little River Conservation District provided outstanding administrative support to the Watershed Coordinator as an employee of Little River CD and to the LLRWC as treasurer of the Coalition. Otto Cowling, chairman of the LLRWC and Don Mitchell vice chairman of LLRWC were also of great assistance and encouragement to the Coordinator.

Local media outlets were also valuable in the success of this project. All local print news papers were always eager to print informational stories on watershed management and the LLRWC as well as event announcements. KDQN radio of De Queen, as all of the Bunyard Communications, was a valuable public awareness tool. KDQN gave frequent prime airtime to the Coordinator during the highest locally ranked morning show in the area, the Morning Breakfast with Steve and Loren.

NRCS gave notable technical assistance in the form of the Lower Little River Watershed Basin Study. This was a very valuable tool in determining sub-basins and their essential characteristics. Ray Erickson, water quality for NRCS was of great assistance to the Coordinator in learning field evaluation techniques and determining local sources of NPS pollution. The geospatial department at the NRCS state office in Little Rock also provided frequent support.

ADEQ surface water department provided water quality data, public awareness assistance and training to the Coordinator. Jim Wise, Ellen McNulty, Philip Osborne and Rob Beadle at ADEQ were particularly helpful with any request made by the Coordinator for data, public awareness, technical assistance or to borrow equipment.

Starting out with a new project of this nature was difficult. With no real background work to go on and only general recommendations, the Coordinator had to make many cold contacts, attend meetings and determine their profitability, and develop relationships with area leaders and develop some means of public identification. Each watershed is a unique geographical/geological unit, and they are just as unique socially. What works in one area can be applied to another area, but careful attention must be paid to the unique integrity of the local area and how it differs from other areas. This necessitates the spending of time throughout the watershed and developing relationships with various people throughout the region to listen to their needs and what they would like to do/see done to preserve and protect their water quality. This project did a good job of collecting basic information and getting a good idea of what local property owners would like to do, but it failed to follow up with a direct means of accomplishing those desires. Additional projects or a program needs to continue where this one finishes in order continuing the work of the Coalition now that the Coordinator has developed sufficient relationships to continue the work. The greatest asset gained by this project has been the relationships that have been built with key persons throughout the watershed. These are property owners, water utility superintendents, mayors and county judges. While a single contact can establish a means of communication, a number of contacts over time builds trust, and with elected officials and potential projects for the community that would cost thousands of dollars trust will be a key component in putting conservation projects in place.

A difficult funding obstacle for this project has been the inability of the Coalition to directly generate any revenue for match grant programs or to directly fund any activities. In cooperation with the Little River Conservation District \$10,000 dollars was generated in local industrial donations from Pilgrims Pride, Tyson, the Weyerhaeuser Foundation and Domtar Inc. These donations were given in the interest of providing education for area youth on aquatic riparian zones and NPS pollution effect on those aquatic areas and water quality. The donations were combined with funds from the ASWCC Mini-Grant program to provide equipment for schools to use in water quality outdoor classrooms and the project successfully met its goals. In the future more cash match can be generated from these industrial sources, but they are primarily interested in funding educational programs, not conservation projects. Due to this limitation the Coalition is being steered into educational work, and while this is certainly worthwhile, it makes the accomplishment or implementation of BMPs difficult. In addition, many grant programs are geared to fund the materials and equipment to accomplish a project, but are not geared to fund the person to do the work. It should be important in the future of this project and perhaps to the development of other projects to develop a means of supporting the Coordinator from local funds, and then use that revenue as match for other grants that can pay for the material and contractor costs.

In the initial grant funding agreement NRCS was to do a significant amount of the work involved along with Conservation District employees. NRCS found it very difficult to perform their obligations under this agreement due in large part to the workload already given local NRCS personnel and other staffing shortage issues. In the development stages of this project NRCS should have been able to augment personnel resources to fulfill their agreement with ASWCC, but it appears NRCS administrators may not have been fully aware of the expectations they were anticipated to meet, and therefore failed to accomplish their portion of the agreement. Due to this situation the grant was re-written in order to hire an additional Conservation District employee to accomplish the tasks under the grant. This position became

known as the Watershed Coordinator. The Watershed Coordinator then accomplished the tasks set forth in the re-written grant proposal in the allocated time. The inability of NRCS to complete their portion of the project was a significant problem, whether that occurred due to a lack of understanding on their part or a lack of communication with ASWCC is regardless.

Budget predictions made at the beginning of the project that were not as accurate as would have been hoped were a problem. The primary area that was a problem was travel. This might have been a problem no-matter what the budget for travel would have been as gas prices sky rocketed during the course of this project, however frequent travel was a necessity in the project. Travel around the state, while the opportunities were frequent, was not the major focus of travel for the Coordinator it was travel within the watershed. The size of the watershed is considerable. Frequent travel to Mena in Polk County and Texarkana in Miller County were common occurrences. In between this 110 mile distance were many frequent trips to field locations, property owners, public speaking engagements for local groups and schools as well as regular Conservation District meetings. Unfortunately not all requests could be developed as budget restraints did not allow for the frequent level of travel.

To be more effective the LLRWC Coordinator could have concentrated more on writing the WRAS initially and then developing it throughout the project. As the Draft WRAS was written some halfway in the project more time could have been taken in its refinement had it been completed earlier on. While this would have made for the completion of a more effective WRAS, it is always difficult to develop a new document and format. In addition the Coordinator had a certain period of learning and adjustment as he had not previously been trained as a watershed coordinator. This is the problem of any new work however, as there are very few models to go by. To be more effective the Coordinator would have:

- 1) Written the WRAS sooner.
- 2) Implemented school educational programs based on ADEQ WET and Envirothon
- 3) Developed local property owner workshops throughout the watershed.

A program to generate a consistent source of match should have been developed as a part of this project. It could have been developed from fund raisers, fees for services, some sort of local tax or voluntary tax, membership fees, dues or something of the like, but a consistent local means of financial support is critical to the survival of any new non-profit work.

Technical Transfer

Watershed projects can benefit from what was learned on the project by focusing on smaller sub-basins, not large ones. An eight digit HUC watershed, or at least the Lower Little River watershed area, is too large and diverse to write a single WRAS to accurately address the environmental and NPS protection needs in close to 1.5 million acres. Overall strategy and goals for protecting and improving water quality can be determined for the entire basin, but implementation of that strategy and those goals must be determined at the sub-basin level. The Lower Little River WRAS breaks the basin down into the ten or eleven digit HUC sub-basins, and then writes a WRAS for each sub-basin. Restoration, protection and educational projects can also be more accurately tuned to meet the needs of the local area when applied on a smaller sub-basin area. The Lower Little River WRAS would be more accurate if it were now revised to reflect the most recent NRCS version of HUC sub-basins. The WRAS must be written

as a living document to be continually revised as there are changes within the sub-basins. Land use, urbanization, accidents and natural events can dramatically alter the water quality management concerns for surface water over a relatively short amount of time, and therefore frequent evaluation of monitoring data must be accomplished in order to continually revise the WRAS so it remains an accurate and effective source of guidance for water quality implementation projects.

Focus educational programs on the sub-basin areas so that local land owners get more involved in managing their property to maximize water quality. Most land owners (particularly agriculture) are keenly interested in protecting their properties resources, but educational efforts for these adults must be made relevant and practical to their immediate area. This does require additional effort on the part of the educator because BMP implementation can vary widely from sub-basin to sub-basin and even from stream to stream and different reaches within that stream, but it is the only manner of implementing a land owner education effort that will be effective. Educational efforts that are too general result in property owners not getting enough information to manage water quality within their property effectively, and worse yet could reinforce the opinion that BMPs for water quality management are either not relevant or effective for many property owners. School age children do well at absorbing general facts about water quality management, but they need to be shown the practical application of these facts in the environment. It is one thing to discuss and learn about a riparian area, it is another to discover and investigate one.

Currently there are a number of watershed groups in the formation stages that need to develop a WRAS or more currently known as a Watershed Implementation Plan (WIP) that could benefit from information contained in this Final Report. Particularly the Arkansas Watershed initiative being pursued by the Arkansas Association of Conservation Districts could utilize the experience gained from this project. In addition there are many organizations and efforts aimed at the environmental education of adults and children that can use information contained in this report.

EPA Feedback Loop

More standardized technical assistance with regard to WRAS or WIS development would be helpful. Early in the development of the Lower Little River WRAS there was considerable debate as to whether or not to use a twelve point plan or a nine point plan format. Eventually it appears the nine point plan has been the preferred format, but the actual writing of the WRAS was delayed while formatting was discussed. In addition based on the experience from this project it is recommended that the EPA encourage future WRAS authors to focus on sub-watersheds in the 10 or 11 digit HUC range rather than the six to eight digit range. Some areas might be given to such a very general management plan, but in any area it appears the plan would be subject to over generalization.

Conclusion

The project successfully initiated a watershed management program. The six participating Conservation Districts in the Lower Little River Watershed Coalition have a functional structure that meets every quarter to discuss events, set priorities and manage water quality resources throughout the Lower Little River Watershed basin. By forming the Coalition as a 501c3 non-

profit organization the Districts have also expanded their ability to work with various organizations and utilize resources throughout the watershed.

Formation of the Coalition has not been easy. Miscommunication and misunderstandings have occurred, but due to the commitment of the partners and their ability to cooperate this project has gotten successfully off the ground. A challenge that has yet to be met consistently is funding. The Coalition has not developed a consistent source of local revenue to fund activities and use as match for state, federal or private grants. Funds and resources have been provided by local industry on a donation basis and these partners will continue to cooperate with the Coalition in its activities, but additional revenue sources are needed. This project would benefit from additional funding to continue further development of the WRAS by developing more and more detailed implementation projects throughout the watershed.