



## Memorandum

*To: Issues and Recommendations Workgroup*  
*From: Arkansas Water Plan Planning Team*  
*Date: May 29, 2014*  
*Subject: Issues and Recommendations Workgroup Process and Outputs*

### **1.0. Purpose**

The purpose of this Technical Memorandum is to describe the process used to develop and prioritize water issues and associated recommendations for incorporation into the Arkansas Water Plan Executive Summary. This process included:

1. Nomination of members for the Issues and Recommendations Workgroup and selection of spokespersons
2. Issue identification and their prioritization
3. Recommendation identification and their prioritization
4. Summarization of priority water issues and recommendations resulting from the Workgroup process.

Each of these steps is discussed below.

### **2.0 Background**

The 1990 Arkansas Water Plan is in the process of being updated under the direction of the Arkansas Natural Resources Commission (ANRC). Reports have been completed on projected water demands, water availability through 2050, and gap analyses to identify areas or sectors where available water is projected to be insufficient to meet demand. These reports are available on the Arkansas Water Plan website (<http://www.arwaterplan.arkansas.gov/>) and served as background for identifying water issues and associated recommendations to resolve these issues. The process of identifying and prioritizing these issues was conducted through the Issues and Recommendations Workgroup.

### **3.0 Issues and Recommendations Workgroup**

The function of the Issues and Recommendations (I&R) Workgroup was to identify and prioritize water issues and recommendations for resolving the water issues within 5 Planning Regions in Arkansas (Attachment 1) and statewide. The I&R Workgroup was composed of representatives from the 11 major water use sectors within each of the 5 Planning Regions throughout the State:

1. Agricultural Irrigation
2. Agricultural Livestock/Poultry/Aquaculture
3. Fish and Wildlife
4. Recreation
5. Thermoelectric Utilities
6. Industry
7. Public Water/Wastewater Providers
8. Municipal Governments
9. County Governments
10. Navigation
11. Conservation Districts

A public nomination process was used to identify regional Workgroup members with backgrounds and interests in each of the 11 water use sectors. Nomination forms were distributed to public, professional, and nongovernmental organizations, and governmental agencies, in addition to being available on the [arwaterplan.arkansas.gov](http://arwaterplan.arkansas.gov) website. Any individual who submitted a nomination form was included in one of the sectors and became a member of the Workgroup. In addition, any individuals who attended the public meetings and were interested in participating in the process were added to the Workgroup. The final Workgroup included approximately 150 members. (See Attachment 2 for a list of Workgroup members and their sector representation).

As part of the process, a spokesperson was selected for each sector within each region. Each sector spokesperson served as a liaison to his or her respective sector and planning region for the purpose of eliciting additional water issues, recommendations, and comments and providing these to the I&R Workgroup for consideration. Each sector spokesperson had an equal voice in each of the 5 planning regions regardless of the number of representatives within that sector to ensure that all water users' issues and recommendations received equitable consideration. The spokesperson served to focus, not filter, issues and recommendations raised for that sector.

Responsibilities of each I&R Workgroup member were to:

1. Agree to attend all meetings and conference calls and represent that sector in the region in identifying and prioritizing water issues and recommendations for resolving these issues. If the representative could not attend or participate, they agreed to contact the spokesperson for their sector and provide comments. If a spokesperson could not attend, they agreed to find an alternate to represent that sector in the region.
2. Serve as a liaison for that sector within that region, solicit comments from others within their region who have an interest or stake in that sector, and provide these comments to the sector spokesperson.

3. Read information forwarded prior to each meeting, synthesize the comments received, and be prepared to summarize these comments for the sector spokesperson and/or other sector representatives.

## **4.0 Water Issues and Recommendations Identification and Prioritization**

### **4.1 Water Issue Identification**

The first I&R Workgroup meeting was held in January 2014 at the Arkansas Rural Water Association Headquarters in Lonoke, to explain both the process for identifying and prioritizing water issues and recommendations in each planning region and the ground rules for the process. Approximately 175 individuals participated in the January meeting.

A preliminary set of water issues were identified from:

1. 1990 Arkansas Water Plan
2. 2013 Arkansas Water Plan public meetings
3. ANRC Commissioners and staff
4. Conservation District assessments, and
5. Winthrop Rockefeller Foundation Water Issues in Arkansas Report.

These issues were assigned to one of 10 different issue categories:

1. Groundwater Quantity
2. Surface Water Quantity
3. Water Conservation and Shortage
4. Water Quality
5. Infrastructure
6. Funding and Incentives
7. Water Law and Regulations
8. Measurement and Assessment
9. Planning
10. Public Awareness of Water Resources Issues.

This preliminary list of water issues was distributed to each of the I&R Workgroup members prior to the January 2014 meeting for review and consideration. This first meeting initiated the process.

The Workgroup members representing the 11 sectors were combined as follows to facilitate discussion:

1. Agriculture – Irrigation + Livestock/Poultry/Aquaculture
2. Fish and Wildlife + Recreation
3. Thermoelectric Utilities + Industry
4. Public Water/Wastewater Providers
5. Municipal + County Governments
6. Navigation
7. Conservation Districts.

The Workgroup members met in these combined sector subgroups to discuss the preliminary list of water issues and identify additional issues. Additional issues identified at the meeting were integrated with the preliminary list and this combined issues list was provided to each member following the meeting (Attachment 3).

#### **4.2 Water Issue Prioritization**

Meetings were held in each of the 5 planning regions in February to review and discuss the revised list of issues resulting from the first meeting, as well as incorporate additional issues suggested by others within that sector and region since the January meeting. A total of about 300 individuals participated in these meetings. These discussions occurred within the 7 combined sector groups listed in Section 4.1 above. Following discussion within each of the sector groups, the regional spokesperson for each of the 11 sectors listed the 5 highest priority issues within their sector on flip charts.

Following a review of each of the 5 highest priority issues identified by each sector, the spokesperson for each of the 11 sectors was given 10 votes to cast for the issues that sector considered to be the highest priority issue(s) in the region. The distribution of these votes could range from all the votes cast for one issue considered by that sector to far outweigh all other issues, to one vote for an issue in each category. The spokesperson caucused with her or his respective sector representatives at the meeting to identify and vote for the highest priority regional issues. The purpose of prioritization was to identify and focus on those water issues that were considered highest priority by workgroup members statewide and within each region. Resources will always be limited, so not all issues can be addressed simultaneously. This exercise helped identify those issues that were of highest priority. All the issues are retained (See Attachment 3). In general, as priority issues are addressed, other issues will also be addressed because many of these issues are subsets of the priority issues. A summary of the priority issues and votes from all of the February regional meetings can be found in Attachment 4.

### **4.3 Priority Water Issue Recommendation Identification**

Meetings were also held in each of the 5 planning regions in March to brainstorm recommendations to resolve the priority issues within the regions or statewide. A preliminary set of recommendations was prepared from the same information sources as those used to develop the preliminary set of water issues (See 4.1 Water Issue Identification above) and sent to each of the I&R Workgroup members prior to the regional meetings. A list of the priority issues that was generated within each of the planning regions and statewide during the February regional meetings was also included. A total of about 240 individuals participated in these meetings. During these meetings, each sector spokesperson for that region, or a designated reporter, compiled a list of recommendations addressing the priority issues for his or her respective sectors on recommendation forms provided to each of the sector subgroups. These recommendations were synthesized to develop a consolidated list of recommendations. This list of recommendations was provided to I&R Workgroup members for review and comment prior to the prioritization of these recommendations within their regions and statewide. Additional recommendations were received after the regional March Workgroup meetings concluded. An open process guided the Workgroup deliberations so these additional recommendations were incorporated into this consolidated recommendation list. This consolidated list was distributed to all Workgroup members (Attachment 5)

### **4.4 Priority Water Issue Recommendation Prioritization**

A statewide meeting was held in April in North Little Rock to prioritize recommendations for resolving priority regional and statewide water issues. About 130 members attended this meeting. At this statewide meeting, the regional representatives for each of the sectors met in their respective combined sector groups to discuss the consolidated list of recommendations and identify the highest priority recommendations within each region as well as statewide. Additional recommendations were proposed by some of these groups, listed on flipcharts for consideration by other sectors, and described to the Workgroup. As with the prioritization of the water issues, each sector spokesperson received 10 votes to cast for the highest priority recommendations within their region and an additional 10 votes to cast for the highest priority recommendations addressing statewide issues.

The purpose of prioritization was to identify and focus on those recommendations that were considered highest priority by workgroup members statewide and within each region. Resources will always be limited, so not all recommendations can be implemented simultaneously. This exercise helped identify those recommendations that were considered the highest priority by the Workgroup. All the recommendations are retained (See Attachment 5). In general, as priority recommendations are implemented, other recommendations will also be implemented because many of same actions or activities needed to implement the priority recommendations are needed to implement the non-priority recommendations. The highest priority water issue recommendations, statewide

and by region, are listed in Table 1. The full set of prioritized recommendations, listed in descending order of priority, can be found in Attachment 6.

In general, priority recommendations were raised for issues related to:

- Use and decline of groundwater
- Greater use of and quantification of excess surface water
- Considerations of water quality as well as water quantity
- Water conservation and drought contingency planning
- Repair, replacement, and maintenance of infrastructure, including navigation
- Funding and incentives for all water projects
- Drinking water priority and availability
- Increased public awareness, outreach and education on water and water resources issues and management.

The next steps will be to review the high priority recommendations, evaluate the technical, socioeconomic, and statutorily/regulatory feasibility of these recommendations, and reframe or reformulate the recommendations, if necessary, so they reflect the underlying intent of the I&R Workgroup, and can also be implemented. Some of the recommendations will require legislative action. The proposed recommendations, and the proposed legislative action, will be identified and included in the Draft Executive Summary of the Arkansas Water Plan.

## **5.0 Arkansas Water Plan Executive Summary**

### **5.1 Draft Arkansas Water Plan Executive Summary**

A Draft Executive Summary will be prepared by the end of June. This Draft Executive Summary will include a list of the high priority water issues and associated recommendations for resolving these issues statewide and for each of the 5 planning regions, as well as proposed legislative actions for implementing these recommendations.

A subsequent series of public meetings will be held around the State for additional comment on the Draft Executive Summary. This information will be integrated into the Executive Summary during October and the Final Executive Summary, and associated technical supporting documents, will be provided to the ANRC in November 2014 as the Arkansas Water Plan Update for rule-making consideration.

### **5.2 Final Arkansas Water Plan Executive Summary**

The ANRC will begin the process of rule-making to implement the Arkansas Water Plan following final submission in November 2014. This updated Plan will serve as the vehicle for moving toward sustainable water resources management throughout the State, including the five Planning Regions.



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

STATEWIDE	
Category	Recommendation
Groundwater Quantity	<ul style="list-style-type: none"> <li>Establish a statewide groundwater monitoring network to determine the rate of decline and provide the basis for management recommendations to eliminate the decline, particularly in planning regions without groundwater models.</li> </ul>
Surface Water Quantity	<ul style="list-style-type: none"> <li>Recommendations for establishing excess surface water ranged from below 25% to as high as 75%. Because of these differences, it is recommended that the proportion of stream flow designated as excess surface water be determined by an independent entity for all perennial streams in Arkansas using a risk-based, flow-fisheries framework as the scientific approach for estimating the fish and wildlife component of instream flow uses through a stakeholder-driven process. Basins with estimated water gaps should receive higher priority for application of this approach. Intermittent streams should be evaluated through a different process to allow use during periods of high flow. The study should be conducted through an open and transparent process. ANRC and other state and federal grant monies should be sought to fund this scientific study.</li> </ul>
Water Conservation and Shortage	<ul style="list-style-type: none"> <li>ANRC Rule 14 should be amended to reduce the required storage volume to 1-2 ac-ft so additional entities are eligible for cost share of on-farm storage systems.</li> </ul>
	<ul style="list-style-type: none"> <li>ANRC should create a state drought and shortage response team that develops drought and shortage contingency plans for each planning region. The team should establish regional priorities for water use during droughts and shortages. The prioritization should include established inter and intra basin transfers. Allocation during drought should be tied to nearby stream gages.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

STATEWIDE	
Category	Recommendation
Water Quality	<ul style="list-style-type: none"> <li>Water quality authority is shared by ADEQ and ANRC. The Arkansas Water Plan should reflect and integrate the water quality policies of ADEQ as the state's primary planning document regarding water quality policy. Both ADEQ and ANRC should collaborate to monitor, plan, and fund water quality improvement programs to reduce sediment and nutrient loading into state streams, lakes, rivers and wetlands with particular emphasis on maintaining the integrity of relatively unaltered, high quality streams. Increased water quality monitoring shall be implemented at a segment level to assess program implementation success.</li> </ul>
	<ul style="list-style-type: none"> <li>ANRC should work closely with state and federal agencies, conservation districts, and non-governmental organizations to remove streams from ADEQ's 303(d) list through education, and state and federal conservation programs.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>The State of Arkansas benefits greatly from navigation as a water resource. Municipal and industrial water supply, irrigation and other agricultural uses, fish and wildlife habitat, recreation, flood risk reduction, and thermoelectric/hydropower are all benefits received in part from navigation. The state should work to maximize the full development of the Arkansas, Mississippi, Ouachita, Red, and White Rivers for navigation and the other benefits it receives.</li> </ul>
	<ul style="list-style-type: none"> <li>Provide local/state funding support for repair, rehabilitation of PL566 dams and ongoing maintenance. These funds shall also be used to support technical assistance and equipment.</li> </ul>
Measurement and Assessment	<ul style="list-style-type: none"> <li>Critical streamflow gages should be identified and maintained through time in every planning region. Critical gages would be defined as those necessary for basin yield analysis, upstream flow requirements, drought allocation, and compact compliance.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

STATEWIDE	
Category	Recommendation
Public Awareness	<ul style="list-style-type: none"> <li>Public awareness should be elevated through public education seminars about agricultural water uses, needs, importance for food security, and the importance of agriculture to the Arkansas economy. These seminars should be provided by and promoted by University of Arkansas Division of Agriculture field agents working in cooperation with local NRCS, Farm Bureau, County Conservation Districts, and local governing bodies, and should include information on both water quantity and quality.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>EAST</b>	
<b>Category</b>	<b>Recommendation</b>
Groundwater Quantity	<ul style="list-style-type: none"> <li>Surface and groundwater should be managed conjunctively to address water needs for agriculture, drinking water, industry, recreation, and fish and wildlife. ANRC should develop and implement conjunctive management strategies in critical groundwater areas with specific goals to recover the aquifers in those areas.</li> </ul>
	<ul style="list-style-type: none"> <li>Reserve deep aquifers for use as municipal drinking water sources.</li> </ul>
Surface Water Quantity	<ul style="list-style-type: none"> <li>Recommendations for establishing excess surface water ranged from below 25% to as high as 75%. Because of these differences, it is recommended that the proportion of stream flow designated as excess surface water be determined by an independent entity for all perennial streams in Arkansas using a risk-based, flow-fisheries framework as the scientific approach for estimating the fish and wildlife component of instream flow uses through a stakeholder-driven process. Basins with estimated water gaps should receive higher priority for application of this approach. Intermittent streams should be evaluated through a different process to allow use during periods of high flow. The study should be conducted through an open and transparent process. ANRC and other state and federal grant monies should be sought to fund this scientific study.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

EAST	
Category	Recommendation
Water Conservation and Shortage	<ul style="list-style-type: none"> <li>Shortage and drought contingency plans should be developed for the Bayou Bartholomew, Bayou Macon, Bayou DeView, St. Francis, Cache, and Beouf River basins. The Fish and Wildlife Flow Framework should serve as the stakeholder process for scientifically determining appropriate <b>minimum</b> flow levels for different classes of streams statewide. Priorities of use during a drought or shortage should be regionally determined by local landowners, recreationists, industry and fish/wildlife scientists before those shortages occur to reflect regional priorities.</li> <li>ANRC must develop water conservation plans to encourage more efficient use of water resources. Water Conservation plans must be based on scientific research and include user interaction to determine practical Best Management Practices (BMP) in water use and water conservation. ANRC must provide detailed user (profile based) action plans that water users can modify and implement in their respective daily operations. Water Conservation plans should be developed for the full water user profile including Domestic, Agricultural, Irrigation, Industrial, and Commercial, Mining, and Irrigation District water supply, power supply, municipal and county. ARNC should periodically survey a sampling of water users (by profile) to assess what BMPs are practical, successful and what is impractical. Surveys should ask users for new BMPs that might need research to determine viability or they have found useful. The ANRC website should encourage users to submit new ideas and critique present BMPs.</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>Incremental costs and benefits associated with water quality improvements should be understood and quantified. A cost/benefit analysis should be required for any water quality changes.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>The State of Arkansas benefits greatly from navigation as a water resource. Municipal and industrial water supply, irrigation and other agricultural uses, fish and wildlife habitat, recreation, flood risk reduction, and thermoelectric/hydropower are all benefits received in part from navigation. The state should work to maximize the full development of the Arkansas, Mississippi, and White Rivers for navigation and the other benefits it receives.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

EAST	
Category	Recommendation
Funding and Incentives	<ul style="list-style-type: none"> <li>Propose legislation to increase allowable percentages of ANRC's tax credit program to landowners to encourage construction of on-farm reservoirs thereby reducing the dependence on groundwater and surface stream flow.</li> </ul>
	<ul style="list-style-type: none"> <li>Propose legislation to increase the bond funding authority under the existing Arkansas General Obligations Bond programs so monies can be utilized to cost share with federal or state programs for water projects.</li> </ul>
Planning	<ul style="list-style-type: none"> <li>Recommendations <b>should not</b> include restrictions, mandates, taxes or assessments applicable to groundwater use without sound data and contemporaneously providing viable, timely and economical solutions in lieu such restrictions or added costs.</li> </ul>
	<ul style="list-style-type: none"> <li>Designate Conservation Districts as the repository for various records, including but not limited to utility system records, and make that information accessible to those that may need to use it.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>NORTH</b>	
<b>Category</b>	<b>Recommendation</b>
Groundwater Quantity	<ul style="list-style-type: none"> <li>• ANRC should improve groundwater well reporting to include ground elevation, GPS coordinates, yield, as well as depth to groundwater.</li> <li>• Surface and groundwater should be managed together to address water needs of all sectors.</li> </ul>
Surface Water Quantity	<ul style="list-style-type: none"> <li>• Reasonable use of excess surface water should be determined by an independent entity in basins containing surface water gaps using the Fish and Wildlife Flow Framework as the scientific process to improve information about stream flow needs of fish and wildlife with a stakeholder process to determine basin specific priorities on the in stream and out of stream of water use. Intermittent streams should be evaluated through a different process to allow use during periods of high flow. ANRC and other state and federal grant monies should be sought to fund this scientific study.</li> </ul>
	<ul style="list-style-type: none"> <li>• Propose legislation that designates the highest and best use of any Arkansas water be for human consumption and that any Arkansas agency's permitting or program decisions first consider the effects of decision on the availability, quantity or quality of existing drinking water supplies.</li> </ul>
	<ul style="list-style-type: none"> <li>• ANRC should re-evaluate the non-riparian water permitting process associated with the shale industry assuring the consideration of seasonal flows and cumulative impacts.</li> </ul>
	<ul style="list-style-type: none"> <li>• Reallocation of storage in Corps of Engineer reservoirs needs to occur</li> </ul>
Water Conservation and Shortage	<ul style="list-style-type: none"> <li>• Water in the form of rainfall must be slowed in its travel from the time it hits the ground until it reaches the Gulf. ANRC should promote public education in the wise use and conservation of water. More funding would be needed for conservation organizations and conservation districts.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>NORTH</b>	
<b>Category</b>	<b>Recommendation</b>
Water Quality	<ul style="list-style-type: none"> <li>Arkansas Water Plan should include a Healthy Streams policy statement for flow alterations and non-point source pollution, similar to, and complimentary of, ADEQ's Regulation 2 anti-degradation policy for point source discharges. ANRC will develop the Healthy Streams policy statement in collaboration with ADEQ and sector stakeholders. Encourage ANRC to work with private landowners to remove barriers to the implementation of Best Management Practices.</li> </ul>
	<ul style="list-style-type: none"> <li>ANRC should develop solutions to the "impaired water" designation for the water below Bull Shoals and Norfolk Dams caused by low dissolved oxygen water passed through the dams.</li> </ul>
	<ul style="list-style-type: none"> <li>BMP economics and effectiveness are important to adoption across the state. The Discovery Farm Program at the U of A is an excellent way to truly determine potential impacts and to realize actual benefits of BMP implementation. Funding for this program should continue and be expanded to address potential impacts from agriculture, to educate farmers on BMP effectiveness, and to educate the general public on the importance of agriculture to the state's economy and feeding the world.</li> </ul>
Funding and Incentives	<ul style="list-style-type: none"> <li>Propose legislation to establish a sustainable funding source dedicated to maintain, repair, and upgrade infrastructure for public water and sewerage treatment, and addressing MS4 by implementing green infrastructure as defined by the EPA and the US Forest Service to manage rainwater where it falls.</li> </ul>
Water Law and Regulations	<ul style="list-style-type: none"> <li>ANRC should streamline permitting requirements (more user friendly) for efforts to improve stream stability, e.g., allow short term deviations, with specific stipulations and requirements. Long term benefits can be achieved through cooperative efforts with regulatory agencies.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>NORTH</b>	
<b>Category</b>	<b>Recommendation</b>
Public Awareness	<ul style="list-style-type: none"> <li>Public awareness should be elevated through public education seminars about agricultural water uses, needs, importance for food security, and the importance of agriculture to the Arkansas economy. These seminars should be provided by and promoted by University of Arkansas Division of Agriculture field agents working in cooperation with local NRCS, Farm Bureau, Ag Council, County Conservation Districts, and local governing bodies, and should include information on both water quantity and quality.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>WEST-CENTRAL</b>	
<b>Category</b>	<b>Recommendation</b>
Groundwater Quantity	<ul style="list-style-type: none"> <li>The sandy alluvial aquifer along the Arkansas River Valley should be evaluated for quantity and quality as a source of water supply. Locate funding to study and evaluate this aquifer. This would alleviate the need for building new surface water impoundments on flowing waters in the highlands.</li> </ul>
	<ul style="list-style-type: none"> <li>Public outreach and education is needed to improve groundwater well reporting/monitoring to get a greater understanding of the sustainability and condition of our aquifers in the West-central Region of the state.</li> </ul>
Surface Water Quantity	<ul style="list-style-type: none"> <li>Reasonable use of excess surface water should be determined by an independent entity in basins containing surface water gaps using the Fish and Wildlife Flow Framework as the scientific process to improve information about stream flow needs of fish and wildlife with a stakeholder process to determine basin specific priorities on the in stream and out of stream of water use. Intermittent streams should be evaluated through a different process to allow use during periods of high flow. ANRC and other state and federal grant monies should be sought to fund this scientific study.</li> </ul>
	<ul style="list-style-type: none"> <li>ANRC should support development and construction of new water supply projects in areas of critical need, or where projected demand exceeds projected water availability.</li> </ul>
	<ul style="list-style-type: none"> <li>ANRC shall pursue reallocation of storage in federal impoundments in areas where there is a critical need, or projected increased demand, for additional water supply.</li> </ul>
Water Conservation and Shortage	<ul style="list-style-type: none"> <li>Excess surface water should be captured during times of abundance, stored in on-farm reservoir, and used during low flow/shortage situations for livestock watering, irrigation, and other uses.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>WEST-CENTRAL</b>	
<b>Category</b>	<b>Recommendation</b>
Water Quality	<ul style="list-style-type: none"> <li>The water authorities of our State are shared by ANRC and ADEQ. Both ANRC and ADEQ should collaborate to monitor, plan, and fund water quality improvement programs to reduce sediment and nutrient loading into our state streams, rivers, wetlands, and lakes with particular emphasis on maintaining the integrity of relatively unaltered, high quality streams. In importance of water quality and quantity, the Arkansas State Water Plan revision and ANRC should support the existing ADEQ regulations.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>A federal match of 65% is available for rehabilitation of PL566, but is not being accessed because local entities cannot generate the 35% match. Propose legislation for dedicated State funds to offset a portion of the 35% so local entities can upgrade and maintain these structures. PL566 funding needs to be appropriate for development of new sources for drinking water, agriculture, flood control, etc. Watershed assessments should be updated.</li> </ul>
Funding and Incentives	<ul style="list-style-type: none"> <li>Propose legislation to increase allowable percentages via ANRC's tax credit program to landowners to encourage construction of on-farm reservoirs thereby reducing the dependence on groundwater and surface stream flow, from 2015 through 2050.</li> </ul>
Public Awareness	<ul style="list-style-type: none"> <li>Support expanded research and hiring of researchers by U of A Extension and Conservation Districts for discovery of new conservation practices.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>SOUTH-CENTRAL</b>	
<b>Category</b>	<b>Recommendation</b>
Surface Water Quantity	<ul style="list-style-type: none"> <li>Reasonable use of excess surface water should be determined by an independent entity in basins containing surface water gaps using the Fish and Wildlife Flow Framework as the scientific process to improve information about stream flow needs of fish and wildlife with a stakeholder process to determine basin specific priorities on the in stream and out of stream water use. Intermittent streams should be evaluated through a different process to allow removal/diversion during periods of high flow. ANRC and other state and federal grant monies should be sought to fund this scientific study.</li> </ul>
	<ul style="list-style-type: none"> <li>ANRC should encourage industry, agriculture, others to use surface water in Critical Groundwater Areas by proposing legislation to amend Act 341 of 1995 as amended (ACA 26-51-1001 et seq.) to apply the tax credit to industries and agriculture that choose to construct surface use infrastructure rather than use groundwater.</li> </ul>
Water Conservation and Shortage	<ul style="list-style-type: none"> <li>ANRC should create a state drought and shortage response team with representatives from all pertinent state agencies that develops adaptive drought and shortage contingency plans for each planning region. The team should establish regional priorities for water use during droughts and shortages.</li> </ul>
	<ul style="list-style-type: none"> <li>Propose legislation to make state and federal tax incentives and cost-share funds even more available to farmers and landowners so that water conservation measures are economically feasible and desirable in all regions of the state. Partner state and federal agencies should also aggressively promote increased use of effective management techniques already available. This could include funding for outreach and education and technical assistance to reduce impediments to management.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>SOUTH-CENTRAL</b>	
<b>Category</b>	<b>Recommendation</b>
Water Quality	<ul style="list-style-type: none"> <li>Responsibility and authority for maintaining and improving water quality is shared by ADEQ and ANRC. The Arkansas Water Plan should reflect and integrate the water quality policies of ADEQ as the state's primary planning document regarding water quality policy. ADEQ and ANRC should collaborate to develop policies and regulations that improve water quality by reducing sediment and nutrient loading into streams, lakes, and rivers with particular emphasis on maintaining the integrity of unaltered, high quality streams. Removing streams from ADEQ's 303(d) list should be a major goal of the Arkansas Water Plan.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>The State of Arkansas benefits greatly from navigation as a water resource. Municipal and industrial water supply, irrigation and other agricultural uses, fish and wildlife habitat, recreation, flood risk reduction, and thermoelectric/hydropower are all benefits received in part from navigation. The state should work to maximize the full development of the Ouachita River for navigation and the other benefits it receives.</li> </ul>
Funding and Incentives	<ul style="list-style-type: none"> <li>Propose legislation to increase allowable percentages via ANRC's tax credit program to landowners to encourage construction of on-farm reservoirs thereby reducing the dependence on groundwater and surface stream flow, from 2015 through 2050.</li> <li>Propose legislation to increase Federal and State funding for on-farm storage. Projects should include normal practices such as ponds for livestock water but funds should also be available for rainwater harvesting and storage for use in poultry houses.</li> <li>Propose legislation to sustain and increase tax incentives &amp; cost sharing options for constructing more on-farm storage systems.</li> </ul>



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**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>SOUTH-CENTRAL</b>	
<b>Category</b>	<b>Recommendation</b>
Planning	<ul style="list-style-type: none"> <li>Retain the Planning Region Work Groups for implementation of the Arkansas Water Plan, particularly related to subregional issues and considerations.</li> </ul>
Public Awareness	<ul style="list-style-type: none"> <li>Support expanded research and hiring of researchers by U of A Extension and Conservation Districts for discovery of new conservation practices.</li> </ul>
	<ul style="list-style-type: none"> <li>Educate the public in water issues pertaining to Sparta &amp; Alluvial Aquifers.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>SOUTHWEST</b>	
<b>Category</b>	<b>Recommendation</b>
Surface Water Quantity	<ul style="list-style-type: none"> <li>Reasonable use of excess surface water should be determined by an independent entity in basins containing surface water gaps using the Fish and Wildlife Flow Framework as the scientific process to improve information about stream flow needs of fish and wildlife with a stakeholder process to determine basin specific priorities on the in stream and out of stream of water use. Intermittent streams should be evaluated through a different process to allow use during periods of high flow. ANRC and other state and federal grant monies should be sought to fund this scientific study.</li> <li>Increase water storage capacity of the Red River upstream from Shreveport, LA through construction of locks and dams for river navigation funded by usage fees on bulk transport, recreation usage, water sales to urban areas, and outside funding.</li> </ul>
Water Conservation and Shortage	<ul style="list-style-type: none"> <li>During drought, water needs to be allocated based on a state prioritization basis. For instance, the highest priority always must be municipal and domestic uses, but beyond that a prioritization is needed for industrial, agriculture, and instream uses. The prioritization should include established inter and intra basin transfers which may be affected by local circumstances</li> <li>Allocation during drought should be tied to nearby stream gages.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>The State of Arkansas benefits greatly from navigation as a water resource. Municipal and industrial water supply, irrigation and other agricultural uses, fish and wildlife habitat, recreation, flood risk reduction, and thermoelectric/hydropower are all benefits received in part from navigation. The state should work to maximize the full development of the Red River for navigation and the other benefits it receives.</li> </ul>



# Arkansas Water Plan Update



**Table 1-High priority Statewide and Planning Region Recommendations for the Arkansas Water Plan**

<b>SOUTHWEST</b>	
<b>Category</b>	<b>Recommendation</b>
Funding and Incentives	<ul style="list-style-type: none"> <li>Propose legislation to increase allowable percentages via ANRC's tax credit program to landowners to encourage construction of on-farm reservoirs thereby reducing the dependence on groundwater and surface stream flow, from 2015 through 2050.</li> <li>On surface water: ANRC Title 10 should be adequately funded by the state as well as continue funding of federal 319 program. The funding should be equally distributed to all regions of the state. ANRC Title 14 should be modified to make it more applicable to livestock – 1 acre-foot storage.</li> </ul>
Water Law and Regulations	<ul style="list-style-type: none"> <li>ANRC Title 3 should be amended to state that surface water needs to be first priority for use, and Arkansas should be given first priority in using Arkansas water.</li> <li>Streamline regulations dealing with construction of dams and impoundments to provide additional surface water sources.</li> </ul>
Public Awareness	<ul style="list-style-type: none"> <li>Support expanded research and hiring of researchers by U of A Extension and Conservation Districts for discovery of new conservation practices.</li> <li>Incorporate education/awareness programs into the public schools K-12. Existing Aquatic Wild (educational frameworks) program has lesson plans already prepared. Statewide approach to the emphatic importance of the next generation understanding water conservation, issues, and problem solving. Focus on long term sustainability of water as a natural resource.</li> </ul>