

Arkansas Water Plan 2014 Update

Appendix K Statewide Institutional Setting Report



water resources / environmental consultants



ARKANSAS WATER PLAN UPDATE TASK 4: STATEWIDE INSTITUTIONAL SETTING

MAY 5, 2014

ARKANSAS WATER PLAN UPDATE
TASK 4: STATEWIDE INSTITUTIONAL SETTING

Prepared for

Arkansas Natural Resources Commission
101 East Capitol Avenue, Suite 350
Little Rock, AR 72201-3813

Prepared by

FTN Associates, Ltd.
3 Innwood Circle, Suite 220
Little Rock, AR 72211

FTN No. 03015-0003-001

May 5, 2014

TABLE OF CONTENTS

| | | |
|-------|--|------|
| 1.0 | INTRODUCTION | 1-1 |
| 2.0 | LEGAL FRAMEWORK | 2-1 |
| 2.1 | Federal Laws and Regulatory Programs | 2-1 |
| 2.1.1 | Water Quality | 2-1 |
| 2.1.2 | Water Resources Management | 2-4 |
| 2.2 | Federal Laws and Assistance Programs..... | 2-5 |
| 2.2.1 | Water Quality..... | 2-7 |
| 2.2.2 | Water Resources Management | 2-10 |
| 2.3 | State Laws and Regulatory Programs..... | 2-12 |
| 2.3.1 | Water Use Regulations | 2-13 |
| 2.3.2 | Water Quality Regulations..... | 2-16 |
| 2.3.3 | Floodplain Management | 2-25 |
| 2.3.4 | Water Management..... | 2-25 |
| 2.4 | State Financial Assistance Programs | 2-26 |
| 2.4.1 | Financial Assistance for Public Water and Wastewater Projects | 2-26 |
| 2.4.2 | State Financial Incentive and Assistance Programs for Promoting Water Quality and Water Resource Management | 2-27 |
| 2.5 | Local Regulations | 2-29 |
| 2.6 | Interstate Water Compacts..... | 2-29 |
| 2.6.1 | Arkansas River Compact | 2-30 |
| 2.6.2 | Red River Compact..... | 2-32 |
| 3.0 | INSTITUTIONAL FRAMEWORK..... | 3-1 |
| 4.0 | REFERENCES | 4-1 |

LIST OF TABLES

| | | |
|-------------|---|------|
| Table 2.1. | Federal laws and regulatory programs that affect Arkansas water quality | 2-2 |
| Table 2.2. | Federal laws and regulatory programs that affect aspects of Arkansas water resources other than water quality | 2-6 |
| Table 2.3. | Federal water quality programs | 2-9 |
| Table 2.4. | Federal assistance programs for managing aspects of water resources other than water quality | 2-11 |
| Table 2.5. | State regulations related to water use..... | 2-14 |
| Table 2.6. | State regulations that protect water quality..... | 2-20 |
| Table 2.7. | State regulations relating to water management..... | 2-25 |
| Table 2.8. | Federal water supply assistance programs managed by ANRC | 2-26 |
| Table 2.9. | State programs for public water system assistance (administered by ANRC). | 2-27 |
| Table 2.10. | State and incentive and assistance programs for promoting water quality and water resources management | 2-28 |
| Table 3.1. | Federal agencies with water resources related responsibilities in Arkansas..... | 3-2 |
| Table 3.2. | Arkansas state agencies and entities with responsibilities related to water resources..... | 3-4 |
| Table 3.3. | Some of the regional and local entities involved in water resources management in Arkansas | 3-7 |
| Table 3.4. | Selected interactions of federal, state, and local entities in water resources management | 3-8 |

LIST OF FIGURES

| | | |
|------------|---|------|
| Figure 2.1 | Designated critical groundwater areas | 2-18 |
| Figure 2.2 | Sustaining aquifers for which the use of water meters is required | 2-19 |
| Figure 2.3 | Area of Arkansas included in the Arkansas-Oklahoma Arkansas River Compact | 2-31 |
| Figure 2.4 | Boundaries of Reaches II through V of the Red River Compact..... | 2-33 |

1.0 INTRODUCTION

The Arkansas Natural Resources Commission (ANRC) is responsible for preparing and periodically updating a statewide water resources planning document. The previous update of the Arkansas Water Plan (AWP) was completed in 1990. In 2012, ANRC initiated an update of the 1990 AWP to be completed in 2014.

This document was prepared as part of the 2014 update of the AWP (Project Task 4). It provides a description of the regulatory and institutional framework for water resources management in Arkansas. This overview of the regulations and institutions associated with water resources management in the state will serve as background for updated discussion and analysis of state water supplies, demands, and management alternatives. It includes general descriptions of federal and state laws, regulations, and programs that deal with water resources, as well as a listing of federal, state, and local governmental and non-governmental institutions that are involved in water resources management. In addition, the interrelationships between regulations and institutions at the federal, state, and local levels are illustrated.

2.0 LEGAL FRAMEWORK

The legal framework for management and use of water resources in Arkansas is based on court case law, laws enacted by the Arkansas General Assembly, and rules and regulations enacted by state agencies. Federal laws and regulations also influence the regulation of water resources in the state (ANRC 2011). This section identifies and summarizes the laws, regulations, and programs that guide water management in Arkansas. Information is also provided on the changes that have occurred in this legal framework since the 1990 AWP update.

2.1 Federal Laws and Regulatory Programs

Federal policy recognizes that states have primary authority for regulation of water usage within their borders. Therefore, the federal laws, regulations, and programs that influence water resources management in Arkansas primarily relate to water quality. Federal legislation and programs also deal with other aspects of management of Arkansas water resources, such as conservation and protection of waterbodies, flood control, and navigation.

2.1.1 Water Quality

Several federal laws and regulatory programs directly or indirectly guide management of ambient water quality in Arkansas. These laws and programs are summarized in Table 2.1. The US Environmental Protection Agency (EPA) is responsible for administering the majority of these laws and programs; however, EPA has delegated some of this authority to state agencies, such as the Arkansas Department of Environmental Quality (ADEQ), ANRC, and the Arkansas Department of Health. Legislation related to forest conservation, such as the Cooperative Forestry Assistance Act, is included here because forests can protect and improve water quality. The Clean Water Act (CWA) of 1972 (most recently amended in 2002) and the Safe Drinking Water Act (SDWA) of 1974 (most recently amended in 1996) have the greatest influence on drinking water in Arkansas.

Table 2.1. Federal laws and regulatory programs that affect Arkansas water quality (USFWS 2013a, USFWS 2013b, EPA 2013d).

| Federal Law | Federal Water Quality Regulatory Programs | Responsible Federal Agency |
|--|---|---|
| Arkansas Wilderness Act | National forests | US Department of Agriculture (USDA) Forest Service |
| National Forest Management Act | | |
| Weeks Act | | |
| Clean Water Act | Biosolids regulations | EPA |
| | Ambient nutrient water quality standards | |
| | Impaired waters | |
| | NPDES confined animal feeding operations permitting | |
| | NPDES pesticide application permitting | |
| | NPDES point source permitting | |
| | State biennial water quality assessment | |
| | State surface water quality standards | |
| | Surface water nutrient water quality standards | |
| | Total maximum daily loads (TMDLs) | |
| | Dredge and fill permitting | US Army Corps of Engineers (USACE) |
| Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) | Hazardous waste site clean up | EPA |
| Federal Insecticide, Fungicide, and Rodenticide Act | Labeling requirements | EPA |
| | Registration | |
| | Endangered species protection program | |
| National Environmental Policy Act (NEPA) | Environmental impact statements/assessments | Council on Environmental Quality (CEQ) |
| Oil Pollution Act | Oil spill response planning | EPA |
| | Spill prevention, control, and countermeasures | |
| Pollution Prevention Act | Pollution prevention planning | EPA |
| Resource Conservation and Recovery Act (RCRA) | Hazardous waste management | EPA |
| | Solid waste management | |
| | Subtitle D non-hazardous solid waste management | |
| Safe Drinking Water Act | Underground injection wells | EPA |
| | Source water protection | |
| Soil and Water Resources Conservation Act | Conservation Effects Assessment Program | USDA |
| Surface Mining Control and Reclamation Act | Surface mining control | US Department of the Interior (USDI) |
| | Mine reclamation | |
| Toxic Substances Control Act | Polychlorinated biphenyls (PCBs) program | EPA |
| Underground storage tank regulations | Underground storage tank program | EPA |

Note: Highlighted laws and programs were promulgated after the 1990 AWP update.

The CWA of 1972 established the National Pollutant Discharge Elimination System (NPDES) that regulates point source discharges through a permit program. The NPDES program is managed by EPA, but EPA has delegated the authority to issue NPDES permits to the state (ADEQ). NPDES permits are based on a combination of technology-based and water quality-based standards. Technology-based standards are developed by EPA for certain categories based on the performance of pollution control technologies available to the industry without regard for the receiving waterbody. Water quality-based standards are developed after consideration of the designated uses of the receiving waterbody and the water quality criteria necessary to protect those uses. In 1987, Congress amended the CWA to broaden the definition of a point source to include stormwater runoff from industries, construction sites, and municipalities. The 1987 amendments also addressed management of biosolids (sewage sludge). The CWA also requires permits for dredge and fill activities in wetlands, lakes, streams, rivers, and other waters of the US. These permits are issued by the US Army Corps of Engineers.

The TMDL program was established by the CWA in 1972; however, TMDLs were rarely developed for waterbodies until the 1990s, after environmental groups began suing EPA over the lack of TMDLs being performed (EPA 2008). The CWA requires that a TMDL study be conducted for waterbodies identified as having impaired water quality. The TMDL study is conducted to determine the maximum amount of a pollutant that a waterbody can receive and still meet surface water quality standards. This maximum load is split between point sources and nonpoint sources. These loads are then compared to the estimated existing point source and nonpoint source loads to determine the amount of reduction required for the waterbody to meet its water quality standards. The first TMDLs for Arkansas waterbodies were completed in 2001. Prior to this, beginning in the 1980s, ADEQ routinely performed wasteload allocation studies as part of the NPDES permitting process to determine the amount of a pollutant that could be discharged to a waterbody. Since 2001, over 270 TMDLs have been completed for Arkansas waterbodies (EPA 2013e).

In 1998, EPA initiated a program to develop ambient water quality criteria for nutrients, i.e., nitrogen and phosphorus. At the time, nutrients were identified as a leading cause of water quality issues across the nation, including such high-profile events as the hypoxic zone in the

Gulf of Mexico and algal blooms along the national seacoast. In 2001, EPA published recommended criteria development plans (EPA 2013c).

The SDWA regulates public drinking water supplies in the United States. Under the SDWA, EPA establishes national health-based standards for drinking water and works with states to ensure that these standards are met. The SDWA of 1974 focused mainly on treatment as the means to meet drinking water standards at the tap. The 1996 amendments to the SDWA expanded the focus to include source water protection. EPA has delegated authority to Arkansas for implementation of SDWA requirements within the state.

The drinking water source water protection program was initiated as a result of the 1996 amendment to the SDWA. The purpose of this program is to prevent the need for increased treatment of drinking water (resulting in increased treatment costs and costs to customers) due to water quality degradation, by protecting the quality of the drinking water source. In the majority of cases, the cost of protecting drinking water sources from pollution is far lower than the cost of upgrading water treatment to remove increased pollution.

Subtitle D of the 1991 amendment of the Resource Conservation and Recovery Act (RCRA) introduced specifications for how landfills were to be constructed and managed to protect water quality. This led to sweeping changes in solid waste management across the country and in Arkansas (ADEQ 2011).

The Conservation Effects Assessment Program was initiated in 2004 by USDA to provide scientific documentation of benefits from Farm Bill conservation programs (Duriancik, et al. 2008).

2.1.2 Water Resources Management

Federal laws and regulatory programs also address non-water quality aspects of water resources management, such as water conservation, protection of aquatic habitat, navigation, flooding, and water-based recreation. Table 2.2 summarizes these laws and programs. Some of the legislation and programs that address water quality also address non-water quality aspects of water resources; as a result, there is some duplication between Tables 2.1 and 2.2. Federally appropriated water, such as the water required to maintain navigation on the McClellan-Kerr

Arkansas River Navigation System, is not available for other uses. Federal water requirements preempt other beneficial water uses, such as irrigation.

An important program for conservation of water resources is the dredge and fill permitting program of the CWA. In 1990, EPA and USACE signed a memorandum of agreement establishing a process for determining the need for mitigation of impacts to wetlands, streams, and other water resources under the CWA dredge and fill permitting program. This program provides a means for dredge and fill permit applicants to compensate for unavoidable destruction of aquatic habitat either by restoring or creating similar habitat either on-site or at another location. There are 23 sites in Arkansas that have been designated as mitigation banks for CWA dredge and fill permitting (USACE n.d.). The program is a mechanism for implementing the federal policy of no-net-loss of wetlands. Revised regulations governing this mitigation program were issued in 2008 (EPA 2013a).

The 1996 amendments to the Safe Drinking Water Act directed EPA and the states to develop requirements for certification of water treatment system operators (EPA 2012). These amendments also initiated a program where public water suppliers that operate community water systems provide annual reports to drinking water utility customers on the quality of their drinking water (EPA 2013b).

Federal laws have also established a number of programs to provide technical and financial assistance for water resources management, that are available in Arkansas. Assistance programs for management of water quality and other aspects of water resources are discussed in the following sections.

2.2 Federal Laws and Assistance Programs

Federal laws have also established a number of programs to provide technical and financial assistance for water resources management, that are available in Arkansas. Assistance programs for management of water quality and other aspects of water resources are discussed in the following sections.

Table 2.2. Federal laws and regulatory programs that affect aspects of Arkansas water resources other than water quality.

| Federal Law | Federal Regulatory Program | Responsible Federal Agency | Water Plan Relevance |
|---|---|--|--|
| Arkansas Wilderness Act | National forests | USDA Forest Service | Well-managed forestlands improve and protect water resources |
| National Forest Management Act | | | |
| Weeks Act | | | |
| Clean Water Act | Wetland and stream mitigation | USACE | Physical protection of waterbodies, including wetlands |
| Dam Safety and Security Act | National Dam Safety Program | FEMA | Protection of lives and property |
| Emergency Wetlands Resources Act | National Wetlands Inventory | USFWS | Track wetland resources |
| Endangered Species Act | Freshwater species protection | USFWS | Mechanism for physical protection of waterbodies that are habitats for endangered species |
| | Waterfowl protection | | |
| Flood Control Act/Water Resources Development Act | Dam safety | USACE | Water storage, water supply, flood reduction, flow management, restoration of physical aquatic habitat |
| | Flood control reservoirs | | |
| | Levees | | |
| Navigation systems | | | |
| Land and Water Conservation Fund Act | Funding for purchase of public lands | USDI | Preservation of water resources for recreation |
| Migratory Bird Conservation Act | Acquisition of lands for wildlife refuges | Migratory Bird Conservation Commission | Preservation of water resources for bird habitat |
| Migratory Bird Hunting and Conservation Stamp Act | Small wetland acquisition program | USFWS | Protects wetlands |
| National Flood Insurance Act | Flood Insurance Program | Federal Emergency Management Agency (FEMA) | Flood recovery, flood reduction |
| | Floodplain Mapping Program | | |
| National Parks Acts | National Parks | USDI | Protection of water resources associated with national parks |
| National Wildlife Refuge System Improvement Act | National Wildlife Refuges | USFWS | Preservation of water resources for habitat |

Table 2.2. Federal laws and regulatory programs that affect aspects of Arkansas water resources other than water quality (continued).

| Federal Law | Federal Regulatory Program | Responsible Federal Agency | Water Plan Relevance |
|---|---|--|--|
| National Environmental Policy Act | Environmental impact statement/ environmental assessment | EPA, Council on Environmental Quality | Preservation of water resources |
| Rivers and Harbors Act | Navigation | USACE | Federal navigation systems in Arkansas |
| | Section 10 | | Protects waterbodies, including wetlands |
| Safe Drinking Water Act | Consumer confidence reports | EPA | Informs the public |
| | Finished water criteria | EPA | Protects human health |
| | Operator certification | EPA | Protects human health |
| Soil and Water Resources Conservation Act | Census of Agriculture | USDA | Irrigation and agriculture |
| | Conservation Effects Assessment Program | USDA | Water resources protection/improvement |
| | Natural Resources Inventory | USDA | Characterize water resources |
| None | Climate monitoring | National Oceanic and Atmospheric Administration (NOAA) | Tracking precipitation and evaporation for water availability |
| | Climate prediction | NOAA | Future water availability |
| | Drought status | NOAA | Enactment of water shortage specific management |
| Wild and Scenic Rivers Act | National Wild and Scenic Rivers | USDA Forest Service | Preservation of water resources for recreation |

Note: Highlighted programs were initiated after the 1990 AWP update

2.2.1 Water Quality

Table 2.3 summarizes current federal assistance programs available in Arkansas, and the associated federal laws. The majority of the federal assistance programs listed in Table 2.3 originated through the Farm Bill. The Farm Bill has been amended four times since 1990, most recently in 2013 (National Agricultural Law Center 2012). New conservation programs that are intended to assist farmers in protecting and restoring water quality have been added with each amendment (see Table 2.3). In 2012, over 1 million acres in Arkansas were enrolled in Farm Bill

programs, and over \$ 77 million in funding provided to Arkansans for water quality practices (USDA NRCS 2012).

The CWA authorizes EPA to provide federal funding assistance to states and local entities through three funding programs. Through the Clean Water State Revolving Fund, federal funds are provided to ANRC to fund a low interest loan program for wastewater treatment, nonpoint source pollution control, and watershed management projects in the state. Grants for nonpoint source pollution control projects are authorized under Section 319 of the CWA. Finally, Section 106 of the CWA authorizes federal funding assistance to states and interstate agencies through grants for pollution control programs such as discharge permitting and water quality monitoring.

There are two more federal laws that authorize programs that provide federal assistance for community waste treatment and management. HUD grants for construction and upgrading wastewater infrastructure were authorized by the Housing and Community Development Act. During its 2011 fiscal year, HUD distributed a little over \$6 million to water and sewer improvement projects in Arkansas (HUD 2013). Several programs to provide financial assistance for solid waste and wastewater systems in rural areas were authorized by the Consolidated Farm and Rural Development Act. In 2012, Arkansas received over \$15 million in assistance from these programs (USDA Rural Utilities Service 2012).

The American Recovery and Reinvestment Act was promulgated in 2009 to save and create jobs during the recession that began in 2008. This act initiated several programs that provide money to states for a range of activities, including improvements to wastewater treatment systems and cleanup of leaking underground storage tanks and hazardous waste sites (EPA 2013f). Over \$25 million of recovery money was awarded to the Arkansas Clean Water State Revolving Loan Fund. Over \$1.6 million of recovery money was awarded to ADEQ for cleanup of leaking underground storage tanks (EPA n.d.).

The Clean Vessel Act was promulgated in 1992. This act established a program to provide grants to states to pay for construction, maintenance, operation, or renovation of boat pump-out stations and waste reception facilities (US Congress 1992).

Forestry assistance programs are included in Table 2.3 because forest improvements can improve and protect water quality.

Table 2.3. Federal water quality assistance programs.

| Federal Law | Federal Water Quality Funding Assistance Programs | Responsible Federal Agency |
|--|--|--|
| American Recovery and Reinvestment Act | Clean Water State Revolving Fund, Funding for cleanup of leaking underground storage tanks and hazardous waste sites | Recovery Accountability and Transparency Board |
| Clean Vessel Act | Funding for pump-out stations and waste reception facilities for recreational boaters | US Fish and Wildlife Service (USFWS) |
| Clean Water Act | Clean water state revolving loan fund | EPA |
| | Nonpoint source pollution management and grants | |
| | Water pollution control program grants for pretreatment | |
| Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) | Hazardous waste site clean up | EPA |
| Cooperative Forestry Assistance Act | Urban and Community Forestry Program | USDA Forest Service |
| | Forest Stewardship Program | |
| | Forest Legacy Program | |
| Consolidated Farm and Rural Development Act | Water and waste disposal systems for rural communities | USDA Rural Utilities Service |
| | Water and waste disposal loans and grants | |
| | Solid Waste Management Grants | |
| | Grant program to establish a fund for financing water and wastewater projects | |
| Farm Bill | Conservation Reserve Program (CRP) | USDA Farm Services Agency |
| | Conservation Reserve Enhancement Program (CREP) | |
| | Agricultural Water Enhancement Program | USDA Natural Resources Conservation Service (NRCS) |
| | Conservation Innovation Grants Program | |
| | Conservation Stewardship Program (CSP) | |
| | Cooperative Conservation Partnership Initiative | |
| | Environmental Quality Incentives Program (EQIP) | |
| | Farm and Ranch Land Protection Program | |
| | Grassland Reserve Program | |
| | Grazing Lands Conservation Initiative | |
| | Illinois River Sub-basin and Eucha-Spavinaw Lake Watershed Initiative | |
| | Mississippi River Basin Healthy Watersheds Initiative | |
| | National Water Management Center | |
| | National Water Quality Initiative | |
| | Organic Initiative | |
| Wetlands Reserve Program | | |
| Wildlife Habitat Incentives Program | | |
| Housing and Community Development Act | Community Development Block Grant program | US Department of Housing and Urban Development (HUD) |

2.2.2 Water Resources Management

The federal assistance programs that address non-water quality aspects of water resources management are summarized in Table 2.4. These include programs that address flood control, water conservation, water supply systems, fisheries, and aquatic habitat for wildlife. Some of the programs that provide assistance for addressing water quality, also address other aspects of water resources management. For example, HUD Community Development Block Grants are authorized for drinking water projects, as well as wastewater projects. As a result, there is some duplication in Tables 2.3 and 2.4.

The Farm Bill provides programs to assist farmers in controlling flooding, conserving water, water resources development, and creating, restoring, and protecting aquatic habitat. Many of the same programs that support agricultural activities to protect and restore water quality also support agricultural water management activities, e.g., EQIP. Programs that support wetland preservation and restoration improve water quality, in addition to reducing wetland loss and improving flood control. There are also a number of water management practices, such as tailwater recovery systems, that also help reduce sediment and nutrient loads to waterbodies, improving water quality.

The 1996 amendment of the Safe Drinking Water Act established the Drinking Water State Revolving Fund to assist drinking water utilities in financing infrastructure improvements. Through this fund, states can offer utilities low-cost loans and other types of assistance for funding improvements. Approximately \$1.9 billion of American Recovery and Reinvestment funds were awarded to the Arkansas Drinking Water State Revolving Fund (EPA n.d.).

The Water Resources Development Act (WRDA) is the main vehicle for authorizing and funding federal water projects such as construction of reservoirs and navigation systems. USACE usually implements the projects authorized by WRDA. Several water resources projects have been authorized in Arkansas since 1990 under the WRDA. (Historically, a new WRDA was promulgated every 2 years.) A large number of current WRDA projects consist of upgrades of river crossings constructed by the Arkansas State Highway and Transportation Department (AHTD) (USACE Little Rock District 2013). Other projects authorized and funded through WRDA since 1990 include the Grand Prairie Region irrigation project; flood control, irrigation

water supply, and habitat restoration in the Bayou Meto basin; restoration of flow in the lower Cache River; flood control on the St. Francis River; and a comprehensive study of the White River basin (USACE Memphis District 2010).

Table 2.4. Federal assistance programs for managing aspects of water resources other than water quality.

| Federal Law | Federal Funding Assistance Program | Responsible Federal Agency | Water Plan Relevance |
|---|---|--|--|
| American Recovery and Reinvestment Act | Funding for Drinking Water State Revolving Fund | Recovery Accountability & Transparency Board | Protects/improves public water supply |
| Consolidated Farm and Rural Development Act | Water and waste disposal systems for rural communities | USDA Rural Development | Protects/improves public water supply |
| | Water and waste disposal loans and grants | | |
| | Household water well system grant program | | |
| | Grant program to establish a fund for financing water and wastewater projects | | |
| | Emergency community water assistance grants | | |
| Cooperative Forestry Assistance Act | Forest Legacy Program | USDA Forest Service | Well-managed forestlands improve and protect water resources |
| | Forest Stewardship Program | | |
| | Urban and Community Forestry Program | USDA Forest Service | Trees in communities reduce stormwater runoff, improving hydrology |
| Farm Bill | Agricultural Water Enhancement Program | NRCS | Water conservation |
| | Conservation Innovation Grants Program | NRCS | Water conservation |
| | Conservation Stewardship Program | NRCS | Shallow water habitat creation |
| | Cooperative Conservation Partnership Initiative | NRCS | Water conservation |
| | Emergency Watershed Protection | NRCS | Flooding reduction, recovery |
| | EQIP | NRCS | Irrigation systems, water supply, wetland restoration |
| | Mississippi River Basin Healthy Watersheds Initiative | NRCS | Wetland preservation and restoration |
| | National Water Management Center | NRCS | Waterbody protection and restoration |
| | On-farm Energy Initiative | NRCS | Water conservation |
| | Watershed protection and flood prevention | NRCS | Flooding management |
| | Wetlands Reserve Program | NRCS | Physical waterbody protection and restoration |
| | Wildlife Habitat Incentives Program | NRCS | Physical waterbody protection and restoration |

Table 2.4. Federal assistance programs for managing aspects of water resources other than water quality (continued).

| Federal Law | Federal Funding Assistance Program | Responsible Federal Agency | Water Plan Relevance |
|---|---|----------------------------|--|
| Flood Control Act/Water Resources Development Act | Habitat restoration | USACE | Water storage, water supply, flood reduction, flow management, restoration of physical aquatic habitat |
| | Irrigation projects | | |
| Housing and Community Development Act | Community Development Block Grant Program | HUD | Protects/improves public water supply |
| Land and Water Conservation Fund Act | Matching grants for acquisition and development of public recreation areas and facilities | USDI | Preservation of water resources for recreation |
| Pittman-Robertson Wildlife Restoration Act | Wildlife restoration | USFWS | Preservation of water resources for wildlife habitat |
| Safe Drinking Water Act | Drinking water state revolving fund | EPA | Protects/improves public water supply |
| Sport Fish Restoration Act | Boating infrastructure grants | USFWS | Recreational boating and fishing |
| | Multistate conservation grants | USFWS | Aquatic habitat research and education |
| | Sport fish restoration grants | USFWS | Preservation and enhancement of recreational fishing |

2.3 State Laws and Regulatory Programs

Arkansas water use law is based on the Riparian Doctrine of water rights where riparian land owners, i.e., persons owning land that abuts a waterbody, have the right to reasonable use of the water within that waterbody. The reasonable use policy means that, for example, all landowners along a stream have the right to free and unrestricted use of the stream flow, provided that their use does not negatively affect the availability of water for other riparian users. Similarly, landowners have the right to reasonable use of groundwater under their property, as long as that use does not adversely affect the ability of other landowners to use the groundwater. The Riparian Doctrine also traditionally prohibits transport of water outside of the watershed (i.e., interbasin transfer).

Since the 1990 AWP update, Arkansas has adopted a body of administrative laws that address water use questions previously dealt with through case-by-case adjudication. Thus, water use rights in Arkansas are more regulated than in the past. In addition to water rights related to water withdrawals and consumptive use, Arkansas regulations address water rights related to public recreational uses of surface water such as boating and fishing (ANRC 2011).

2.3.1 Water Use Regulations

Many modifications have been made to the legal framework of water quantity management in the past. However, two significant changes (described below) enacted by the Arkansas legislature generally are not characteristic of water law based on riparian use rights. Both of these modifications were in place at the time of the 1990 AWP update.

The first major modification was introduced by Act 81 of 1957 (Arkansas Code §15-22-217), which authorized the state to allocate surface water among water users during periods of shortage. Rules and regulations governing surface-water allocation have been developed so that when a shortage of streamflow exists, the available streamflow may be allocated equitably among the registered water users affected by the shortage. During a period of shortage, water uses are prioritized for water allocations as follows (listed in order of highest priority to lowest): (1) uses that sustain human life, (2) uses required to maintain human health, and (3) uses that solely “increase wealth” (ANRC 2011).

A second major change in the legal framework was made with the enactment of Act 1051 of 1985 (Arkansas Code §15-22-304), which authorized the interbasin transfer of surplus water and the transportation of excess surface water to non-riparian land owners for their use. These two changes in the water law have modified the Arkansas riparian rights policy and have provided water management agencies with additional guidelines and opportunities for the protection, management, and development of the state's water resources (ANRC 2011).

In Arkansas, at the state level, regulations and programs authorized by the General Assembly that are related to water use are generally administered by ANRC. In addition, the Arkansas Water Well Construction Commission promulgates rules for construction of wells, and the Arkansas Public Service Commission regulates private water utility fees. State incentive

programs for water conservation, as well as funding for water resources development projects, have also been legislated. Table 2.5 summarizes selected state water use regulations.

Table 2.5. State regulations related to water use.

| Water Use Regulations | Subjects Addressed by Regulations | Related State Legislation |
|--|---|---|
| Title 3: Rules for the Utilization of Surface Water ¹ | Registration of surface water withdrawals | Arkansas Code §15-22-215 |
| | Minimum streamflows | Arkansas Code §15-22-222 |
| | Surface water transfers to non-riparian users | Arkansas Code §15-22-304 |
| | Regulation of dam construction | Arkansas Code §15-22-210 - 214 |
| | Allocation during periods of water shortage | Arkansas Code §15-22-217 |
| Title 4: Rules for the Protection and Management of Groundwater ¹ | Registration of groundwater withdrawals | Arkansas Code §15-22-302 |
| | Groundwater protection program | Arkansas Groundwater Protection and Management Act (Arkansas Code §15-22-901 et seq.) |
| Arkansas Water Well Construction Commission Rules and Regulations ² | Licensing of water well contractors Construction requirements Well reporting requirements | Arkansas Code §17-50-201 et seq. |
| Affiliate Transaction Rules ³ | Requirements for utility rates | Arkansas Code §23-2-101 et seq. |
| General Service Rules ³ | Standards of service for utilities | |
| Special Rules Water ³ | Standards of service for water utilities | |

1 Enforcement by ANRC

2 Enforcement by Arkansas Water Well Construction Commission

3 Enforcement by Arkansas Public Service Commission

State law requires ANRC to “establish and enforce minimum stream flows for the protection of instream water needs” (Arkansas Code § 15-22-222). Minimum streamflow is defined by Arkansas Code §15-22-202(6) as “...the quantity of water required to meet the largest of [specified] instream flow needs as determined on a case-by-case basis.” The needs to be met that are specified in the statute are interstate compacts, navigation, fish and wildlife, water quality, and aquifer recharge. This definition is used to set minimum streamflows by rulemaking under Arkansas Code §15-22-222. Where no minimum flow is set by rule, these factors are used to make a case-by-case determination of minimum flow. ANRC has adopted minimum

streamflow by rule for the main stem of the Arkansas River (1990) and the main stem of the White River (2009).

The minimum streamflow, set by rule or determined on a case-by-case basis, represents the trigger point for a “shortage” requiring allocation of water use. Because of the critical low flow conditions which may exist at the minimum streamflow level, the 1990 AWP recommended taking steps to reduce water withdrawals before water levels drop to minimum streamflow levels. The ANRC may allocate water among uses during a shortage.

Prior to adoption of Act 593 of 2013, minimum streamflows were classified as a “reserved” use when allocating water during a shortage, along with drinking water use and federal water rights. The legislation removed this reserved status and demoted minimum streamflows to a position below agriculture and industry in the allocation hierarchy, and ahead of hydropower and recreation. The intent was to ensure that agricultural and industrial surface water use is not curtailed during a shortage in an effort to protect instream flow needs (interstate compacts, navigation, fish and wildlife, water quality, and aquifer recharge). This change, especially as it applies a state law limitation on federal interests in navigation, interstate compacts and water quality, including wastewater discharge permits for sewer systems and industries, has not been tested.

In 1985, the Arkansas General Assembly adopted a departure from traditional riparian law by allowing transfer of water for use on non-riparian land. Prior to determining how much water is available to transfer, ANRC must first calculate the amount of water that must remain in the stream. The amount of water that must remain in the stream must be enough to cover: (1) existing riparian water rights as of June 28, 1985; (2) water needs of federal water projects as they existed on June 28, 1985; (3) firm yield of all reservoirs in existence on June 28, 1985; (4) maintenance of instream flows for fish and wildlife, water quality, aquifer recharge requirements, and navigation; and (5) future water needs of the basin of origin as projected in the AWP. The General Assembly limited the amount of excess surface water that may be permitted for non-riparian transfer to 25% of the average annual yield from the watershed after the greatest of the instream needs listed above is met. In the White River Basin, Arkansas Code§15-22-

304(e) further limits excess to an amount not to “exceed on a monthly basis an amount which is 50% of the monthly average of each individual month of excess surface water.”

Minimum streamflow is often mistakenly equated with fish and wildlife flow requirements. Fish and wildlife flows are one of the 5 elements of minimum streamflow, which also includes interstate compacts, navigation, water quality, and aquifer recharge. Two different methods are used to calculate fish and wildlife flows for different situations. For case-by-case determinations of minimum flow for use in characterizing shortage and allocating water during a shortage, fish and wildlife flow requirements are estimated using a modified Tennant Method (Arkansas Soil and Water Conservation Commission 1988). To calculate fish and wildlife flow requirements when determining the amount of excess water available for transfer to nonriparian users, the “Arkansas Method” (Filipek, Keith and Giese 1987) is used.

In 1991, the Arkansas Ground Water Protection and Management Act (Arkansas Code §15-22-901 et seq.) was signed into law, providing ANRC with authority to designate critical groundwater areas. As of 2013, three critical groundwater areas have been designated, covering all or part of 18 counties in eastern and southern Arkansas (Figure 2.1). ANRC publishes annual groundwater reports on the condition of the state’s groundwater resources, including recommendations concerning aquifer safe yield and designation of critical groundwater areas.

Legislation passed in 2001 (Arkansas Code §15-22-915) requires the use of water meters on all non-domestic wells withdrawing water from sustaining aquifers, beginning in 2006. Sustaining aquifers include the Roubidoux and Gunter in northwest Arkansas, and the Nacatoch, Wilcox, Carrizo, Cane River, Memphis, Sparta, and Cockfield aquifers in southern and northeastern Arkansas (Figure 2.2).

2.3.2 Water Quality Regulations

Many of the state laws and agency regulations related to water quality implement federal laws. The federal government has delegated authority to the state for a number of the administrative activities of both the CWA and the SDWA. Water quality regulations are promulgated by the General Assembly, Arkansas Pollution Control and Ecology Commission

(APCEC), the State Board of Health, and ANRC. Table 2.6 identifies state regulations and laws, along with the associated federal laws, that address water quality.

Table 2.6 shows that there are myriad state regulations, covering a range of activities, that address water quality. The most basic of these are the regulations that set the state's surface water quality standards. These regulations identify the uses that state waterbodies are designated to support and specify narrative and numeric criteria for water quality to ensure that those designated uses are supported. In Arkansas, numeric water quality criteria for dissolved oxygen, turbidity, temperature, and minerals are ecoregion-based (APCEC 2011). Arkansas is in the process of developing numeric criteria for nutrients in surface water to meet federal requirements (ADEQ 2012). State numeric water quality criteria for groundwater are in development.

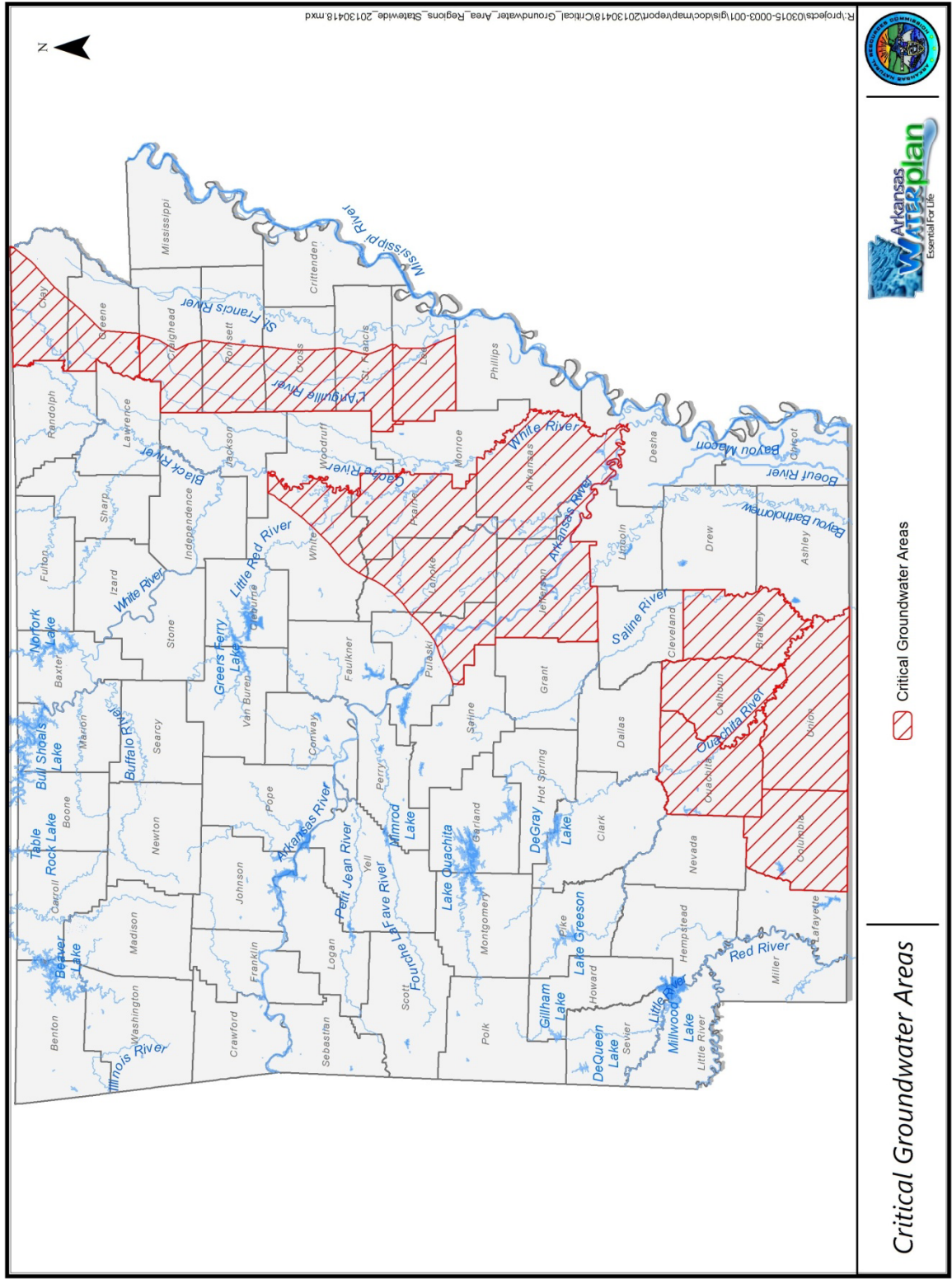


Figure 2.1. Designated critical groundwater areas.

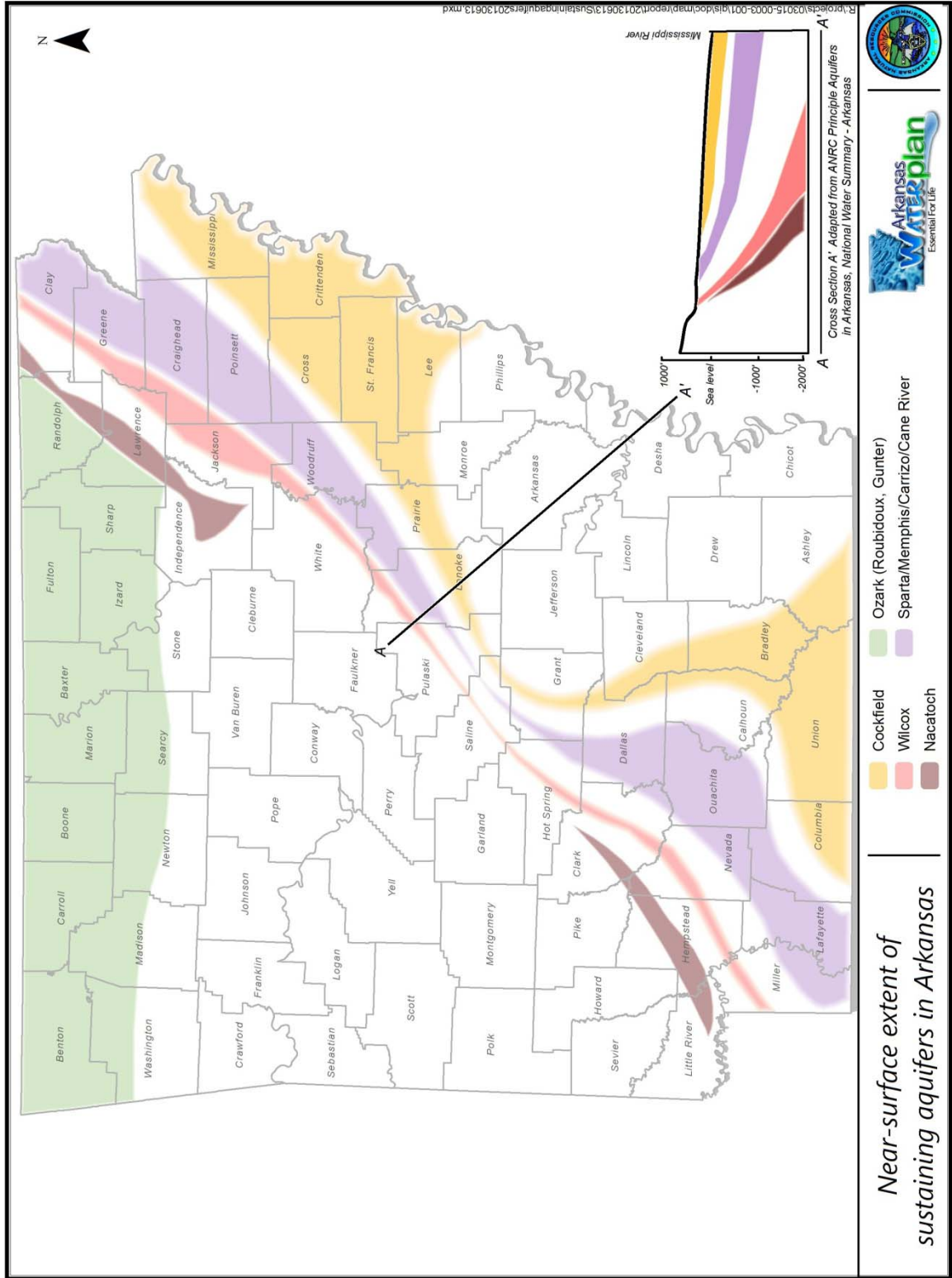


Figure 2.2. Sustaining aquifers for which the use of water meters is required.

Table 2.6. State regulations that protect water quality.

| Regulation | Subjects/Programs | Related State Legislation | Related Federal Legislation |
|--|--|--|--|
| Regulation 1: Prevention of Pollution by Salt Water and Other Oil Field Wastes Produced by Wells in All Fields or Pools ¹ | Environmental protection during oil drilling | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | CWA |
| Regulation 2: Water Quality Standards for Surface Waters of the State of Arkansas ¹ | Water quality standards (designated uses and numeric criteria) | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | CWA |
| Regulation 3: Licensing of Wastewater Treatment Operators ¹ | Licensing program for wastewater treatment operators | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | CWA |
| Regulation 4: Disposal Permits for Real Estate Subdivisions in Proximity to Lakes and Streams ¹ | State wastewater permit | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | CWA |
| Regulation 5: Liquid Animal Waste Systems ¹ | State wastewater permit | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | CWA |
| Regulation 6: Regulations for State Administration of the NPDES Program ¹ | Federal wastewater permits (NPDES) | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | CWA |
| Regulation 12: Storage Tank Regulations ¹ | Petroleum storage tank trust fund | Petroleum Storage Tank Trust Fund Act (Arkansas Code § 8-7-901 et seq.) | CWA, Underground Storage Tank Regulations, including Energy Policy Act of 2005 |
| Regulation 15: Open-Cut Mining and Land Reclamation Code ¹ | Environmental protection during non-coal mining activities, restoration of non-coal mining sites | Arkansas Open Cut Land Reclamation Act (Arkansas Code §15-57-301 et seq.) Arkansas Quarry Operation, Reclamation, and Safe Closure Act (Arkansas Code §15-57-401 et seq.) | None |
| Regulation 17: Underground Injection Control Code ¹ | Underground injection of wastewater | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | SDWA |
| Regulation 20: Surface Coal Mining and Reclamation Code ¹ | Environmental protection during coal mining activities, restoration of coal mining sites | Arkansas Surface Coal Mining and Reclamation Act (Arkansas Code § 15-58-101 et seq.) | Surface Mining Control and Reclamation Act |

| Regulation | Subjects/Programs | Related State Legislation | Related Federal Legislation |
|--|---|--|--|
| Regulation 22: Solid Waste Management Rules ¹ | Landfill construction specifications, acceptable materials for landfill disposal, regional solid waste management districts, pollution prevention | Arkansas Solid Waste Management Act (Arkansas Code § 8-6-201 et seq.), Arkansas Pollution Prevention Act (Arkansas Code § 8-10-201 et seq.) | RCRA, Pollution Prevention Act |
| Regulation 23: Hazardous Waste Management ¹ | Hazardous waste management, pollution prevention | Arkansas Hazardous Waste Act (Arkansas Code § 8-7-201 et seq.), Arkansas Hazardous Materials Transportation Act (Arkansas Code § 27-2-101 et seq.), Arkansas Pollution Prevention Act (Arkansas Code § 8-10-201 et seq.) | RCRA, Pollution Prevention Act |
| Regulation 27: Licensing of Landfill Operators and Illegal Dumps Control Officers ¹ | Licensing of landfill operators, licensing of illegal dumps control officers | Arkansas Code § 8-6-901 et seq., Illegal Dump Eradication and Corrective Action Program Act (Arkansas Code § 8-6-501 et seq.) | RCRA |
| Regulation 29: Brownfields Redevelopment ¹ | Clean-up and redevelopment of contaminated sites, clean-up funding | Arkansas Hazardous Waste Act (Arkansas Code § 8-7-201 et seq.), Remedial Action Trust Fund Act, Arkansas Voluntary Clean-up Act (Arkansas Code § 8-7-1101 et seq.) | Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) |
| Regulation 32: Environmental Professional Certification ¹ | Certification program for professionals involved in clean-up of contaminated sites | Phase I Environmental Site Assessment Consultant Act (Arkansas Code § 8-7-1301 et seq.) | CERCLA |
| Regulation 34: State Water Permit Regulation ¹ | Regulation of systems with the potential to pollute water resources, that are not otherwise regulated | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.) | CWA |
| Title 12: Rules Governing the Arkansas Wetlands Mitigation Bank Program ² | Wetland mitigation banks | Arkansas Wetlands Mitigation Bank Act (Arkansas Code § 15-22-1001 et seq.) | Rivers and Harbors Act, CWA |
| Title 19: Rules Governing the Poultry Feeding Operations Registration Program ² | Registration of poultry feeding operations | Arkansas Poultry Feeding Operations Registration Act (Arkansas Code § 15-20-901 et seq.) | CWA |

| Regulation | Subjects/Programs | Related State Legislation | Related Federal Legislation |
|---|--|--|-----------------------------|
| Title 20: Rules Governing the Arkansas Nutrient Management Planner Certification Program ² | Training and certification of nutrient management planners | Arkansas Soil Nutrient Management Planner and Applicator Certification Act (Arkansas Code § 15-20-1001 et seq.) | CWA |
| Title 21: Rules Governing the Arkansas Nutrient Management Applicator Certification Program ² | Training and certification of nutrient applicators | Arkansas Soil Nutrient Management Planner and Applicator Certification Act (Arkansas Code § 15-20-1001 et seq.) | CWA |
| Title 22: Rules Governing the Arkansas Soil Nutrient and Poultry Litter Application and Management Program ² | Nutrient surplus areas, nutrient management plans, poultry litter management plans, poultry litter transport | Arkansas Water and Air Pollution Control Act (Arkansas Code § 8-4-201 et seq.), Arkansas Poultry Feeding Operations Registration Act (Arkansas Code § 15-20-901 et seq.), Arkansas Soil Nutrient Management Planner and Applicator Certification Act (Arkansas Code § 15-20-1001 et seq.), Arkansas Soil Nutrient Application and Poultry Litter Utilization Act (Arkansas Code § 15-20-1101 et seq.) | CWA |
| Rules and regulations pertaining to general sanitation ³ | Groundwater pollution, surface water pollution, sewage treatment | Arkansas Sewage Disposal Systems Act (Arkansas Code § 14-236-101 et seq.) | CWA |
| Rules and regulations pertaining to public water systems ³ | Safety of drinking water supplied by public water systems | Arkansas Code § 20-7-101 et seq. | SDWA |
| Rules and regulations pertaining to semi-public water systems ³ | Safety of drinking water supplied by semi-public water systems | Arkansas Code § 20-7-101 et seq. | SDWA |
| Rules and regulations pertaining to water operator licensing ³ | Licensing for drinking water treatment systems | Arkansas Code § 17-51-101 et seq. | SDWA |

| Regulation | Subjects/Programs | Related State Legislation | Related Federal Legislation |
|---|---|---|---|
| Rules and regulations pertaining to onsite wastewater systems, designated representative, and installers ³ | Permitting of onsite wastewater treatment systems (septic systems), licensing of designated representatives for onsite wastewater treatment systems, licensing of installers of onsite wastewater treatment systems | Arkansas Sewage Disposal Systems Act (Arkansas Code § 14-236-101 et seq.) | CWA |
| Rules and regulations pertaining to mobile home and recreational vehicle parks ³ | Water supply, wastewater disposal, solid waste management | Arkansas Code § 20-7-101 et seq. | CWA, SDWA, RCRA |
| Arkansas regulations on pesticide classification ⁴ | Pesticide classification | Arkansas Pesticide Control Act (Arkansas Code § 2-16-401 et seq.), Arkansas Pesticide Use and Application Act (Arkansas Code § 20-20-201 et seq.) | Federal Insecticide, Fungicide, and Rodenticide Act |
| Arkansas regulations on pesticide applicator licensing ⁴ | Licensing of pesticide applicators | Arkansas Pesticide Use and Application Act (Arkansas Code § 20-20-201 et seq.) | Federal Insecticide, Fungicide, and Rodenticide Act |
| Arkansas Water Well Construction Commission Rules and Regulations ² | Specifications for construction of water wells to provide safe drinking water | Water Well Construction Act (Arkansas Code § 17-50-101 et seq.) | SDWA |
| Rules and regulations pertaining to outdoor bathing places ³ | Swim beach water quality | Arkansas Code § 20-7-101 et seq. | CWA |
| Marine sanitation ³ | Marine sanitation | Arkansas Code § 27-101-401 et seq. | CWA |

¹ Enforcement by ADEQ² Enforcement by ANRC³ Enforcement by Arkansas Department of Health⁴ Enforcement by Arkansas State Plant Board

Note: Highlighted regulations, programs, and legislation were promulgated after the 1990 AWP update.

To protect surface water and groundwater quality, there are state regulations and laws that regulate discharge of wastewater, discharge of stormwater, underground storage tanks, underground injection of fluids, management of livestock, and disposal of solid waste. The state Source Water Protection Program and Wellhead Protection Program address protection of the quality of surface waters and aquifers used as public drinking water supplies.

The Arkansas Wetland Mitigation Banking Program (Arkansas Code §15-22-1002), authorized in 1995, is a state-sponsored initiative that promotes, in cooperation with federal, state, non-profit, and other interested entities, the restoration, creation, enhancement, and conservation of aquatic resources, including wetlands, streams, and deep-water aquatic habitat. This legislation authorizes ANRC to operate wetland and stream mitigation banks and to sell mitigation “credits” to private, nonprofit, and public entities required to provide mitigation for dredge and fill activities under the Clean Water Act. The “credits” represent the accrual or attainment of aquatic resource function at the mitigation bank site which results from restoration, creation, enhancement, or conservation efforts. The state wetland mitigation bank provides a cost-effective alternative for mitigating impacts. The Corps of Engineers regulates both public and private mitigation banking and is responsible for approving the number of “credits” available within any individual bank. When an individual or entity is required to provide compensatory mitigation for unavoidable loss of function, the Corps of Engineers can approve the purchase of “credits” from the state mitigation bank to satisfy all regulatory mitigation requirements.

State regulations and programs for conservation and protection of natural areas, wildlife habitat, and wetlands; and mitigation of wetland and stream alteration also influence quality of state waters. A state wildlife action plan was approved by USFWS in 2007. This plan prioritizes activities to protect species of concern and their habitats throughout the state (Anderson 2006). A state wetland conservation plan was adopted in 1995 (Arkansas Multi-agency Wetlands Planning Team 1995). This plan established the state policy of “no-net-loss” of wetlands. The plan identifies wetland issues in Arkansas and outlines strategies for addressing these issues. The Arkansas Forestry Commission provides guidelines for forestry best management practices (BMPs) that protect water quality through protection of streambanks and proper road construction, harvesting practices, and use of forest chemicals (Arkansas Forestry Commission 2002). A team consisting of multiple agencies has developed BMPs for natural gas activities in the Fayetteville Shale intended to protect natural resources, including water quality. Activities addressed in this document include conservation of wetlands, disposal of wastewater, stormwater management, and site restoration (USFWS 2007).

2.3.3 Floodplain Management

Arkansas Code provides that it is the policy of the state to encourage and support actions to prevent and lessen flood hazards and losses. The state has the authority to adopt measures that will discourage development in flood-prone land, assist in reducing damage caused by floods, and improve long-range land management in flood-prone areas (Arkansas Code §14-268-101 et seq.).

Arkansas statute also requires each county, city, or town that is participating in the National Flood Insurance Program to designate a “person to serve as the floodplain administrator to administer and implement the ordinance and any local codes and regulations relating to the management of flood-prone areas” (Arkansas Code §14-268-106(a)). The designated floodplain administrator must also be accredited by ANRC under the commission’s authority regarding flood control. Continuing education for the floodplain administrator is an especially important component of the state’s accreditation program (Arkansas Code §14-268-106, §15-24-102, and §15-24-109).

2.3.4 Water Management

Other state regulations and programs address additional aspects of water resources and their management. Table 2.7 summarizes these regulations and the associated federal legislation. ANRC is responsible for state water resources planning and dam safety. The Arkansas Natural History Commission oversees the Arkansas Natural and Scenic Rivers System.

Table 2.7. State regulations relating to water management.

| Water Resources Regulation | Subjects/Programs | Related State Legislation | Related Federal Legislation |
|--|---------------------|-----------------------------------|---|
| Title 6: Water Plan Compliance Review Procedures ¹ | Arkansas Water Plan | Arkansas Code § 15-22-503 and 504 | None |
| Title 7: Rules Governing Design and Operation of Dams ¹ | Dam safety | Arkansas Code § 15-22-201 et seq. | Water Resources Development Act/Dam Safety and Security Act |

| Water Resources Regulation | Subjects/Programs | Related State Legislation | Related Federal Legislation |
|---|---|---|---|
| Title 18: Rules governing the Floodplain Administrator Accreditation Program ¹ | Procedure for accrediting floodplain administrators | Arkansas Code §15-24-109 | Flood Control Act/Water Resources Control Act |
| Rules and regulations of the Arkansas Natural Heritage Commission ² | Preservation of natural/wild and scenic rivers for recreation | Arkansas Natural and Scenic Rivers System Act (Arkansas Code § 15-23-301 et seq.) | Wild and Scenic Rivers Act |
| Arkansas Wildlife Resources Regulations ³ | Allowance for fish passage at dams. | Arkansas Code § 15-44-110 | |
| | Screens required on surface water intakes to protect fish | Arkansas Code § 15-44-111 | |

1 Enforcement by ANRC

2 Enforcement by Arkansas Natural Heritage Commission

3 Enforcement by Arkansas Game and Fish Commission

2.4 State Financial Assistance Programs

Arkansas has several state programs that provide financial incentives and assistance for water resources management. The federal government has also delegated authority to the state to administer federal assistance programs such as those authorized by the Clean Water Act, and the Safe Drinking Water Act.

2.4.1 Financial Assistance for Public Water and Wastewater Projects

ANRC is responsible for managing and distributing monies from several federal assistance programs intended to assist communities in constructing and maintaining drinking water and wastewater systems (Table 2.8). There are also state-funded programs that provide financial assistance for drinking water and wastewater systems (Table 2.9). Programs shown in both Table 2.8 and 2.9 utilize both federal and state funds.

Table 2.8. Federal water supply assistance programs managed by ANRC.

| Federal program | Federal funding source | State Program |
|---|-------------------------------|--|
| Community Development Block Grant Program | Housing and Urban Development | Arkansas Community and Economic Development Program |
| Drinking water state revolving fund, Clean water state revolving fund | EPA | Water resources cost share revolving fund program, Construction assistance revolving loan fund |

Table 2.9. State programs for public water system assistance (administered by ANRC).

| State Water Use Regulations | State Assistance Programs | Related State Legislation |
|--|--|---|
| Title 5: Administrative rules and regulations for financial assistance | Water resources development general obligation bond fund; Water development fund program; Water resources cost share revolving fund program; Water, sewer, and solid waste management systems program; Water, waste disposal, and pollution abatement facilities general obligation bond program | Arkansas Water Resources Cost Share Finance Act (Arkansas Code § 15-22-801 et seq.), Arkansas Water, Waste Disposal, and Pollution Abatement Facilities Financing Act (Arkansas Code § 15-20-1301 et seq.) |
| Title 15: Rules governing loans from the safe drinking water revolving loan fund | Safe drinking water revolving loan fund program; Construction assistance revolving loan fund | Arkansas Code § 15-5-901 et seq. Arkansas Code § 15-22-1101 et seq. |
| Title 16: Rules governing the Arkansas Clean Water Revolving Fund program | Clean water revolving loan fund program, Construction assistance revolving loan fund | Arkansas Code §15-5-901 et seq. |
| Title 23: Rules governing water and wastewater project funding through the Arkansas community and economic development program | Funding for construction or improvement of community treatment facilities for drinking water and wastewater treatment | Arkansas Code § 15-5-901 et seq. |

2.4.2 State Financial Incentive and Assistance Programs for Promoting Water Quality and Water Resource Management

ADEQ and ANRC administer a number of incentive and assistance programs related to water resources management (Table 2.10). These include programs to assist with clean-up of hazardous waste contamination, reduction of nonpoint source pollution, and management of solid wastes to protect water quality. In addition, there are state programs to encourage water conservation and preservation of wetlands. All but one of the programs listed in Table 2.10 are funded by state sources. The state nonpoint source pollution management grant program is federally funded under the authority of the Clean Water Act Section 319.

Table 2.10. State incentive and assistance programs for promoting water quality and water resources management.

| State Regulation | State Assistance Programs | Related State Legislation | Related Federal Legislation |
|--|--|---|--|
| Regulation 11: Solid Waste Disposal Fees, Landfill Post-Closure Trust Fund, and Recycling Grants Programs ¹ | Recycling Fund | Solid Waste Management Recycling Fund Act (Arkansas Code §§8-6-601 et seq.) | Resource Conservation and Recovery Act |
| Regulation 12: Storage Tank Regulations ¹ | Petroleum storage tank trust fund | Petroleum Storage Tank Trust Fund Act (Arkansas Code § 8-7-901 et seq.) | Clean Water Act, Underground Storage Tank Regulations, including Energy Policy Act of 2005 |
| Regulation 29: Brownfields Redevelopment ¹ | Clean-up funding | Arkansas Hazardous Waste Management Act (Arkansas Code § 8-7-201 et seq.), Remedial Action Trust Fund Act (Arkansas Code § 8-7-501 et seq.) | Comprehensive Environmental Response, Compensation, and Liability Act |
| Regulation 30: Remedial Action Trust Fund, Site Priority List ¹ | Clean-up funding, prioritization of contaminated sites for clean-up | Remedial Action Trust Fund Act (Arkansas Code § 8-7-501 et seq.) | Comprehensive Environmental Response, Compensation, and Liability Act |
| Title 5: Administrative rules and regulations for financial assistance ² | Sewer and solid waste management systems program; Waste disposal and pollution abatement facilities general obligation bond program; Water, waste disposal, and pollution abatement facilities general obligation bond program | Arkansas Code § 14-230-101 et seq., § 15-22-601 et seq., § 15-22-701 et seq. | None |
| Title 10: Rules governing the Arkansas water resource agricultural cost-share program ² | Arkansas water resources agricultural cost-share program | Arkansas Code § 15-22-913 through 914, § 15-22-507 | Title 10: Rules governing the Arkansas water resource agricultural cost-share program |
| Title 13: Rules governing the tax credit program for the creation and restoration of private wetland and riparian zones ² | Wetlands and Riparian Zone Tax Credit Program | Arkansas Private Wetland Riparian Zone Creation and Restoration Incentive Act (Arkansas Code § 26-51-1501 et seq.) | None |

Table 2.10. State incentive and assistance programs for promoting water quality and water resources management (continued).

| State Regulation | State Assistance Programs | Related State Legislation | Related Federal Legislation |
|--|--|---|--|
| Title 14: Rules for implementing the Water Resources Conservation and Development Incentives Act | Groundwater conservation tax incentives | Water Resource Conservation and Development Incentives Act (Arkansas Code § 26-51-1001 et seq.) | Title 14: Rules for implementing the Water Resources Conservation and Development Incentives Act |
| None | Nonpoint source pollution grant program ² | None | Clean Water Act (Section 319) |

Note: Highlighted regulations, programs, and legislation were promulgated after the 1990 AWP update.

1 Responsible state agency is ADEQ

2 Responsible state agency is ANRC

2.5 Local Regulations

There are also local regulations that influence management of water resources. These can include zoning laws; regulations promulgated by municipalities, counties, and water and wastewater utilities; and regulations promulgated by irrigation, drainage, water, and sewer districts.

2.6 Interstate Water Compacts

Arkansas is a member of two interstate water compacts, the Arkansas-Oklahoma Arkansas River Compact and the Red River Compact. Negotiation of interstate water compacts involves both federal and state agencies. Compacts are adopted into both state and federal law.

In the 1990 update of the AWP, it was recognized that the amount of water required to satisfy compact requirements could not be quantified for multiple reasons. The first reason is that for certain reaches, compact compliance is based on a percentage of total runoff in a basin. Runoff, as defined in the compacts, includes flow in the streams and water that has been diverted from the streams for other uses. The amount of water that is diverted from streams is not accurately quantified (on a real-time basis); therefore, the amount of runoff in the basins is unknown.

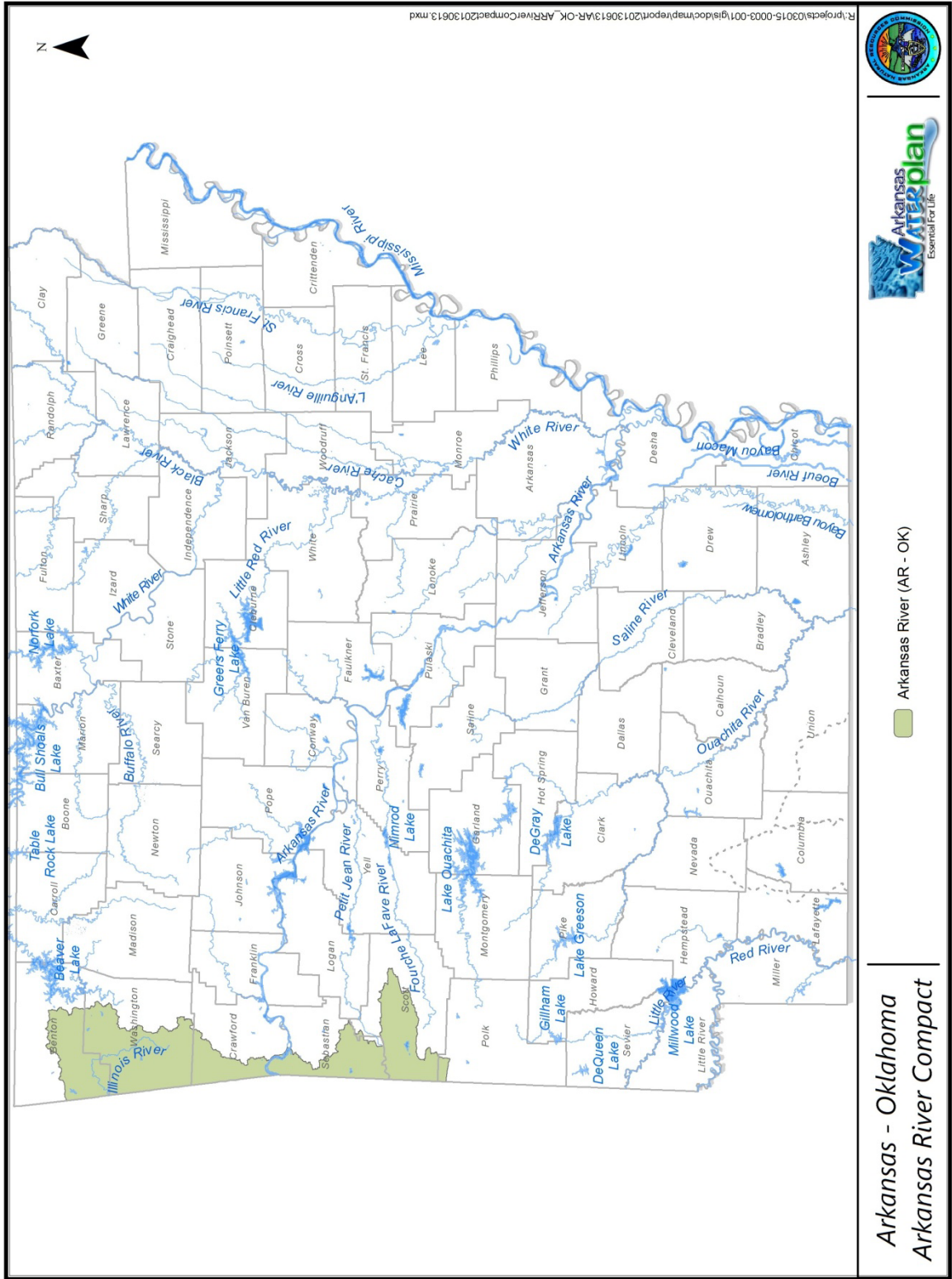
Another reason compact requirements cannot be quantified is because the requirements are based on the previous week's runoff and diversions. Therefore, compact requirements change from week to week, depending on the runoff available in a basin during the previous week. Using average weekly discharge for the period of record would give an idea of the weekly discharges that could be expected at a specific location (where such data are available). However, compact requirements cannot be determined using these data since the requirements are based on a percentage of the actual weekly runoff for a basin.

2.6.1 Arkansas River Compact

Arkansas is a member of the Arkansas-Oklahoma Arkansas River Compact with Oklahoma. The area involved in the compact is shown on Figure 2.3.

This compact has multiple purposes, including to provide for an equitable apportionment of the waters of the Arkansas River between the states of Arkansas and Oklahoma, and to promote orderly development of the river resources. The apportionment of the waters of the Arkansas River Basin is defined in Article IV of the compact. This article identifies each state's rights to develop and use the waters of particular sub-basins, with limitations that the annual yield (as defined in the compact) shall not be depleted beyond specific percentages.

Each year, the annual yield of the interstate compact areas is to be determined by December 31 of that year. The annual yield is used to determine if depletion of the flows is within the limits specified in the compact. This information is included in the annual Arkansas Compact Commission Report (Arkansas River Compact Committee 1970).



Arkansas - Oklahoma
Arkansas River Compact

Figure 2.3. Area of Arkansas included in the Arkansas-Oklahoma Arkansas River Compact.

2.6.2 Red River Compact

Arkansas is also part of the Red River Compact, an interstate compact agreement among the states of Arkansas, Oklahoma, Texas, and Louisiana. One purpose of the compact is to promote the equitable apportionment and development of the water in the river basin among the participating states. There are five defined reaches in the Red River Basin. Various watersheds in Arkansas are included in parts of Reaches II, III and IV (Figure 2.4). The area covered by the compact includes essentially all watersheds in Arkansas located south of the Arkansas River watershed boundary.

The compact provides specific criteria for the apportionment of water in each reach to the various states. According to Article II, Section 2.01 of the compact, each affected state may use the water allocated to it by the compact in any manner deemed beneficial by that state. Each state may freely administer water rights and uses in accordance with the laws of that state, but such uses shall be subject to availability of water in accordance with the apportionments made by the compact.

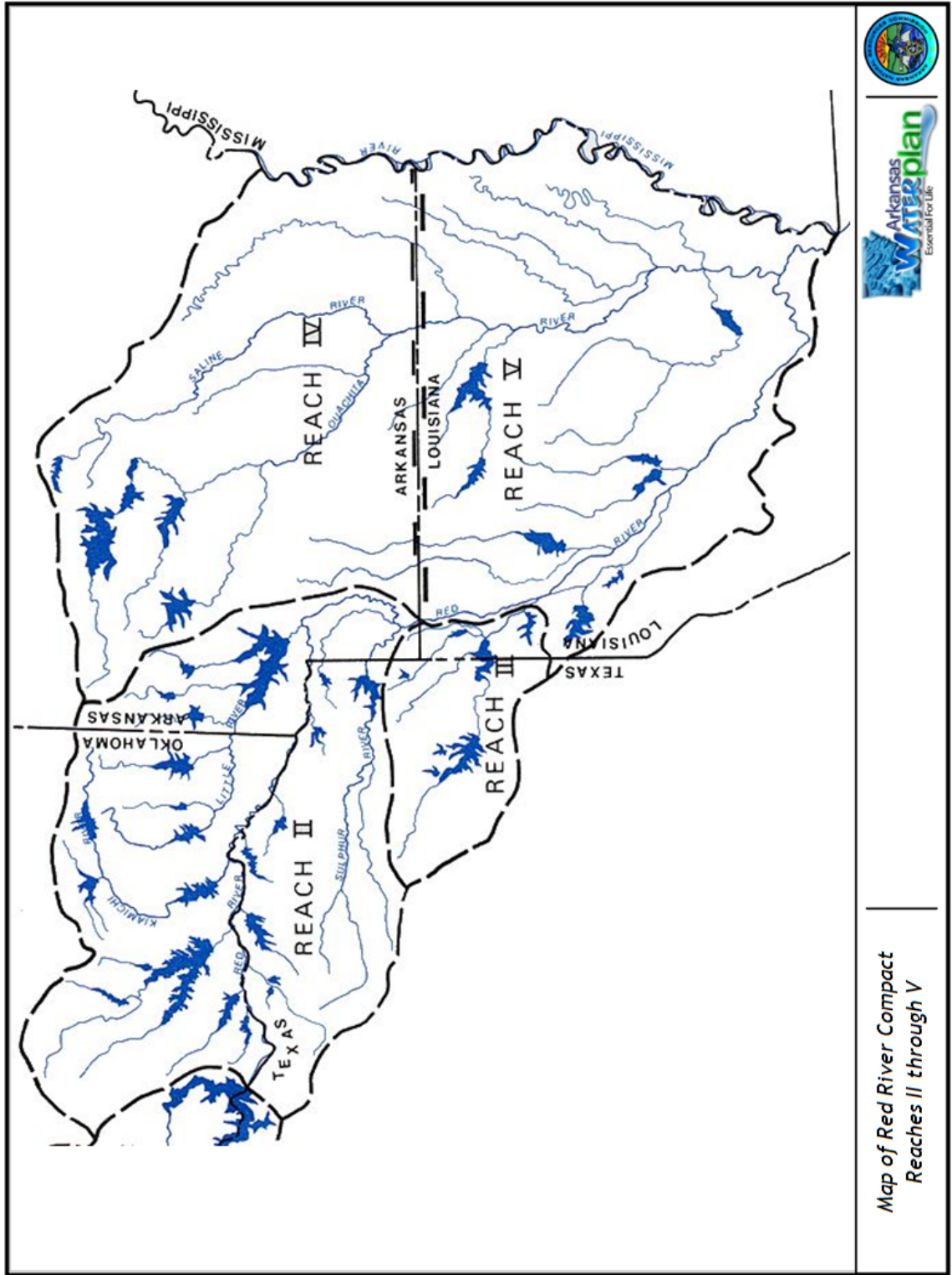


Figure 2.4. Boundaries of Reaches II through V of the Red River Compact (Oklahoma Water Resources Board n.d.)

3.0 INSTITUTIONAL FRAMEWORK

Governmental responsibility for water resources management in Arkansas is split among many agencies on three levels (federal, state, and local). As a result, management of water resources can require coordination among a number of government entities. Responsibilities of federal agencies are described in Table 3.1. Responsibilities of state agencies are described in Table 3.2. Responsibilities of local entities are described in Table 3.3.

In addition, there are nonprofit organizations that are involved in water resources management in the state. As of February 2013, there are at least 20 citizen watershed groups active in the state, created to address water resources concerns. The Arkansas Public Policy Panel is a state nonprofit organization that is involved in water resources issues as part of its mission to achieve social and economic justice. The Arkansas Urban Forestry Council promotes good urban forest policies and management principals which protect water quality. National organizations, such as Farm Bureau, Ducks Unlimited, The Nature Conservancy, Audubon Society, and Sierra Club, have chapters in Arkansas and are involved in projects to protect and improve the condition of water resources in the state. The Arkansas' Water Future Coalition is a coalition that includes state chapters of two of these national organizations: The Nature Conservancy's Arkansas field office and Audubon Arkansas.

Examples of the interactions among federal, state, and local entities that occur in water resources management are presented in Table 3.4.

Table 3.1. Federal agencies with water resources-related responsibilities in Arkansas.

| Federal Agency | Responsibility in Arkansas |
|---------------------------------------|--|
| EPA | <ul style="list-style-type: none"> • Oversees state agencies in implementation of management and funding programs under the following programs/laws: <ul style="list-style-type: none"> ○ CWA, ○ SDWA, ○ RCRA, ○ Superfund, ○ Federal Insecticide, Fungicide, and Rodenticide Act, and ○ Surface Mining Control and Reclamation Act. • Conducts TMDL studies and other water quality studies in the state. • Implements programs under the Toxic Substances Control Act. |
| Federal Energy Regulatory Commission | <ul style="list-style-type: none"> • Oversees environmental matters related to natural gas and hydropower projects in the state. |
| FEMA | <ul style="list-style-type: none"> • Prepares flood hazard maps for the state and encourages state and local governments to guide development decisions away from defined flood hazard risk areas through participation in the National Flood Insurance Program. |
| HUD | <ul style="list-style-type: none"> • Provides funding for water and wastewater infrastructure improvements. |
| NOAA | <ul style="list-style-type: none"> • Participates in monitoring precipitation and climate in the state. |
| NRCS National Water Management Center | <ul style="list-style-type: none"> • Located in Little Rock. • Serves as a water resources information exchange. • Provides support and training related to the following: <ul style="list-style-type: none"> ○ Environmental compliance, ○ Hydrology and hydraulics, ○ Stream geomorphology and restoration, ○ Water quality and quantity, ○ Watershed and dam rehabilitation, and ○ Technology outreach. |
| Nuclear Regulatory Commission | <ul style="list-style-type: none"> • Regulates nuclear power plants in Arkansas to protect the environment, including disaster preparedness planning for flood events. |
| Southwestern Power Administration | <ul style="list-style-type: none"> • Markets and delivers hydroelectric power produced at USACE hydropower projects in the state. |
| US Department of Defense | <ul style="list-style-type: none"> • Manages land and surface water resources within the boundaries of the military installations located in the state. |
| USACE | <ul style="list-style-type: none"> • Manages federal water, navigation, flood control, and hydropower projects in the state. • Implements sections of the CWA related to impacts to navigable waters and wetlands. • Constructs flood control, irrigation, and water supply projects authorized by the Water Resources Development Act. • Oversees dam safety for federal dams. |

Table 3.1. Federal agencies with water resources-related responsibilities in Arkansas (continued).

| Federal Agency | Responsibility in Arkansas |
|----------------------------|--|
| USDA | <ul style="list-style-type: none"> • Conducts the Census of Agriculture. • Conducts the Natural Resources Inventory. • Manages Conservation Effects Assessment Projects (watershed and regional). |
| USDA Farm Services Agency | <ul style="list-style-type: none"> • Implements the Conservation Reserve Program for erosion control and habitat restoration in the state. |
| USDA Forest Service | <ul style="list-style-type: none"> • Manages the Ozark-St. Francis National Forest and the Ouachita National Forest and associated surface waters. • Forest management incentive programs. • Participates in forest inventory. • Manages Urban and Community Forestry Program. |
| USDA NRCS | <ul style="list-style-type: none"> • Implements over 25 Farm Bill erosion control and habitat restoration funding and technical assistance programs in the state. • Appraises the status and trends of soil, water, and related resources on non-federal land in the state and assesses their capability to meet present and future demands. |
| USDA Rural Development | <ul style="list-style-type: none"> • Implements USDA rural utilities financial assistance programs. |
| USDI National Park Service | <ul style="list-style-type: none"> • Manages the seven national parks within Arkansas, including the Buffalo National River, and their associated water resources. • Provides funds for land and water conservation projects. |
| USFWS | <ul style="list-style-type: none"> • Implements the Endangered Species Act and programs for the following purposes: <ul style="list-style-type: none"> ○ To promote management of ecosystems, ○ To promote conservation of migratory birds, ○ To promote preservation of wildlife habitat, ○ To promote restoration of fisheries, ○ To combat invasive species, and ○ To promote international wildlife conservation. • Manages ten national wildlife refuges in the state. • Implements the Partners For Wildlife Program for restoration of bottomland hardwood forests. • Conducts the National Wetland Inventory. • Oversees state wildlife planning through the State Wildlife Grant Program. |
| USGS | <ul style="list-style-type: none"> • Flow and stage monitoring of rivers and streams. • Groundwater level monitoring. • Water quality monitoring. • Groundwater modeling. • Water quality modeling. • Water data storage and management. |

Table 3.2. Arkansas state agencies and entities with responsibilities related to water resources.

| State Agency | Responsibility |
|--------------|--|
| ADEQ | <ul style="list-style-type: none"> • Implements state water quality policy and the NPDES program. • Enforces water quality standards. • Investigates citizen complaints regarding water pollution. • Oversees solid waste management. • Operates the hazardous waste management program. • Manages contaminated site clean-up and redevelopment programs. • Develops and enforces mining and mine site reclamation regulations. • Manages the storage tank regulation program. • Permits no-discharge facilities and underground injection operations. • Performs water quality monitoring and assessment. |
| ADH | <ul style="list-style-type: none"> • Regulates public water supply systems. • Implements the SDWA source water protection programs. • Issues fish consumption advisories. • Implements state health rules and regulations that apply to water resources. • Regulates septic tanks and licenses septic tank cleaners. • Regulates outdoor bathing and swimming. • Implements state marine sanitation program. |
| AHTD | <ul style="list-style-type: none"> • Issues hazardous waste transportation permits. • Oversees stormwater management associated with roadways. • Develops and implements construction BMPs. |
| ANHC | <ul style="list-style-type: none"> • Surveys and conducts research on natural communities in the state. • Acquires natural areas for preservation. • Manages the Arkansas Natural and Scenic Rivers system. |
| ANRC | <ul style="list-style-type: none"> • Regulates, permits, and tracks water use and dam construction. • Monitors climate (State climatologist). • Administers federal water resources funding programs. • Prepares water resources and nonpoint source pollution management plans. • Develops and administers mitigation banking and conservation and restoration incentive programs for aquatic resources. • Supports conservation districts. • Registers poultry feeding operations. • Certifies nutrient management planners and applicators. • Promotes public health and safety and minimizes flood losses through the following: <ul style="list-style-type: none"> ○ Training, ○ Education, ○ Technical assistance in floodplain management, and ○ Accrediting floodplain administrators. • Administers state nonpoint source pollution management program and federal grants. • Designates critical groundwater areas. • Authorized to set groundwater quality standards. |
| APCEC | <ul style="list-style-type: none"> • Serves as the environmental policy-making body for the state. • Develops state surface water quality standards. |

Table 3.2. State agencies and entities with responsibilities related to water resources (continued).

| State Agency | Responsibility |
|---|--|
| Arkansas Department of Parks and Tourism | <ul style="list-style-type: none"> • Manages the 52 state parks and associated water resources. • Prepares comprehensive outdoor recreation plan. • Manages outdoor recreation grant program. |
| Arkansas Forestry Commission | <ul style="list-style-type: none"> • Provides guidelines for protection of water resources in forestry operations. • Monitors the use of forestry BMPs. • Participates in forest inventory. • Implements forest management incentive programs. • Implements the Urban and Community Forestry program. • Designates and manages state forests for a variety of purposes, including the following: <ul style="list-style-type: none"> ○ Watershed protection, and ○ Erosion and flood control. |
| Arkansas Game and Fish Commission (AGFC) | <ul style="list-style-type: none"> • Manages protection, conservation and preservation of fish and wildlife biodiversity in Arkansas through the following: <ul style="list-style-type: none"> ○ Habitat management, ○ Wildlife management areas, ○ Fish stocking, ○ Hunting and fishing regulations, and ○ Education and outreach programs. • Prepares state Wildlife Action Plan. • Implements state wildlife resources regulations. • Implements conservation grant programs. • Manages public waters. |
| Arkansas Geological Survey | <ul style="list-style-type: none"> • Participates in research of, and provides information and education about, state water resources. • Performs mapping. • Maintains water well construction records. |
| Arkansas Livestock and Poultry Commission | <ul style="list-style-type: none"> • Regulates disposal of livestock carcasses. |
| Arkansas Multi-Agency Wetland Planning Team | <ul style="list-style-type: none"> • Developed the State Wetland Strategy and is the lead for developing state numeric nutrient criteria for wetlands. |
| Military Department Arkansas National Guard | <ul style="list-style-type: none"> • Manages land and surface water resources within the boundaries of the two training centers located in the state. |
| Arkansas Oil and Gas Commission | <ul style="list-style-type: none"> • Provides technical assistance related to protection of water resources from wastes associated with production of the following: <ul style="list-style-type: none"> ○ Oil, ○ Natural gas, and ○ Brine. • Issues permits for drilling and operation of the following: <ul style="list-style-type: none"> ○ Oil, natural gas, and brine production wells, and ○ Injection and disposal wells. |
| Arkansas Public Service Commission | <ul style="list-style-type: none"> • Regulates rates and services of private water utilities, as well as water crossings by utilities. |
| Arkansas State Board of Health | <ul style="list-style-type: none"> • Promulgates health rules and regulations for the state. |

Table 3.2. State agencies and entities with responsibilities related to water resources (continued).

| State Agency | Responsibility |
|---|--|
| Arkansas State Plant Board | <ul style="list-style-type: none"> • Implements the following Insecticide, Fungicide, and Rodenticide Act programs: <ul style="list-style-type: none"> ○ Pesticide registration, ○ User and applicator training, and ○ Dealer licensing. • State pesticide management plan for groundwater protection. • Performs groundwater quality monitoring. • Performs climate/weather monitoring. |
| Arkansas Water Well Construction Commission | <ul style="list-style-type: none"> • Regulates development of groundwater through licensing water well contractors and registering drillers and pump installers. • Regulates specifications for construction of wells. • Maintains water well construction records. |
| Arkansas Waterways Commission | <ul style="list-style-type: none"> • Studies and promotes navigable waterways for transportation and economic development. |
| University of Arkansas (U of A) Cooperative Extension Service | <ul style="list-style-type: none"> • Provides technical assistance to Arkansans related to water conservation, and protection and restoration of water quality. |
| U of A Water Resources Center | <ul style="list-style-type: none"> • Participates in research related to water resources, and in water resources management projects. |

Table 3.3. Some of the regional and local entities involved in water resources management in Arkansas.

| Regional or Local Entity | Water Resources Involvement |
|--|---|
| Arkansas-Oklahoma Arkansas River Compact Commission | <ul style="list-style-type: none"> • Administers the Arkansas-Oklahoma Arkansas River Compact. |
| Local Conservation Districts (75 in Arkansas) | <ul style="list-style-type: none"> • Work with state and federal agencies to implement measures for the control of erosion and flooding, and for conservation of soil and water resources. |
| County Government | <ul style="list-style-type: none"> • Oversees unincorporated areas, sometimes including floodplain management and zoning. |
| Drainage Districts | <ul style="list-style-type: none"> • Usually created by circuit court order. • Plan, construct, and maintain a system to drain lands. |
| Improvement Districts | <ul style="list-style-type: none"> • Created by circuit court order. • Implement federal projects for improvement of any river, tributary, or stream bordering the state. |
| Irrigation Districts | <ul style="list-style-type: none"> • Created by circuit court order. • Distribute water resources. |
| Levee Districts | <ul style="list-style-type: none"> • Provide for the construction and maintenance of levees for flood protection. • Created by circuit or county court order or by the General Assembly. |
| Nonprofit organizations | <ul style="list-style-type: none"> • Conserve and protect water resources and habitats. • Restore water resources and habitats. • Water resources development. • Participate in setting water policy. |
| Red River Compact Commission | <ul style="list-style-type: none"> • Administers the Red River Compact. |
| Regional Planning and Economic Development Districts | <ul style="list-style-type: none"> • Assist with planning water supply and wastewater infrastructure improvements. • Assist Regional Solid Waste Management Districts. |
| Regional Solid Waste Management Districts | <ul style="list-style-type: none"> • Manage collection, disposal, and recycling of solid waste. |
| Regional Water Distribution Districts | <ul style="list-style-type: none"> • Distribute water from USACE reservoirs and other sources. |
| Universities | <ul style="list-style-type: none"> • Conduct water resources and management research, education, and outreach. |
| Water districts and associations | <ul style="list-style-type: none"> • Perform water supply planning and management. • Supply water and wastewater services. |
| Nonprofit organizations | <ul style="list-style-type: none"> • Conserve and protect water resources and habitats. • Restore water resources and habitats. • Water resources development. • Participate in setting water policy |

Table 3.4. Selected interactions of federal, state, and local entities in water resources management.

| State Water Resources Responsibility/Program | Involves: | | |
|---|---|---|---|
| | Federal Agencies and National Organizations | State Agencies and Organizations | Regional or Local Entities |
| Water use registration | USGS (houses registration database) | ANRC (program lead) | Water utilities, irrigation districts (water withdrawers) |
| Dam safety | USACE (federal dams), FEMA (oversight), National Park Service (dam builder), USDA Forest Service (dam builder) | ANRC (program lead), AGFC (dam builder), Arkansas Department of Parks and Tourism (dam builder) | Water utilities, municipalities, counties (dam builders) |
| State climate monitoring | NOAA National Weather Service, NOAA National Climatic Data Center, USGS (precipitation monitoring), USACE (climate monitoring), Community Collaborative Rain, Hail & Snow Network | ANRC (State Climatologist), Arkansas State Plant Board (monitoring) | Community Collaborative Rail, Hail, and Snow Network |
| SDWA funding | EPA (funding) | ANRC (program lead) | Water utilities, municipalities/communities, water districts |
| Interstate water compacts | NRCS, USGS, USACE | ANRC (state representative) | Arkansas-Oklahoma Arkansas River Compact Commission, Red River Compact Commission |
| Water resources conservation tax incentives | NRCS | ANRC (program lead), U of A Cooperative Extension Service | Conservation districts |
| Conservation district grants program | None | ANRC (program lead) | Conservation districts |
| Nutrient surplus areas | NRCS | ANRC (program lead) | Conservation districts (planning) |
| Nutrient management applicator certification | None | ANRC (certification), U of A Cooperative Extension Service (training) | None |
| Nutrient management planner certification | None | ANRC (certification), U of A Cooperative Extension Service (training) | None |
| Poultry feeding operation registration | None | ANRC (registration) | Conservation districts |
| Community development block water and wastewater grants | HUD (funding) | ANRC (program lead), Arkansas Economic Development Commission | Water utilities, wastewater utilities, water districts, sewer districts |
| Floodplain management | FEMA | ANRC (certification) | Levee districts, counties, and municipalities |

Table 3.4. Interactions of federal, state, and local entities in water resources management (continued).

| State Water Resources Responsibility/Program | Involves: | | |
|---|--|---|--|
| | Federal Agencies and National Organizations | State Agencies and Organizations | Regional or Local Entities |
| Nonpoint source pollution management | EPA (funding), NRCS (conservation programs), USDA Forest Service (BMPs), The Nature Conservancy (projects), USDA Farm Services Agency (conservation program) | ANRC (program lead), Universities, Arkansas Water Resources Center, Audubon Arkansas, U of A Cooperative Extension Service, Arkansas Farm Bureau, ADEQ (TMDLs) | Watershed organizations, Conservation districts, Nonprofit organizations |
| CWA funding (including nonpoint source and clean water revolving loan fund) | EPA (funding) | ANRC (program lead) | Watershed organizations, Conservation districts, Nonprofit organizations |
| Groundwater protection and management | USGS, USACE (water projects) | ANRC (program lead), Water Well Construction Commission | Counties in critical groundwater areas, irrigation districts, water districts, water utilities, industries |
| Wetland and riparian zone tax credit program | None | ANRC (program lead) | Watershed organizations |
| Wetland and stream mitigation | USACE (lead) | ANRC (state mitigation bank), AHTD, AGFC, ADEQ, ANHC | Local conservation districts, Nonprofit organizations, Watershed organizations |
| Non-riparian water use permitting | None | ANRC (program lead) | Water utilities |
| Arkansas Recovery Act water and wastewater funding | Recovery Accountability and Transparency Board | ANRC (program lead) | Water utilities, wastewater utilities, water districts, sewer districts |
| State water utility funding | None | ANRC (program lead) | Water utilities, water districts |
| State wastewater utility funding | None | ANRC (program lead) | Wastewater utilities, sewer districts |
| NPDES discharge permits | EPA (oversight, guidance) | ADEQ (program lead) | Dischargers |
| Underground injection control | EPA | ADEQ (program lead), Arkansas Oil and Gas Commission (program lead) | Dischargers |
| Wastewater pretreatment program | EPA | ADEQ (program lead) | Dischargers |
| Water quality standards | EPA | APCEC (surface water regulations), ADEQ (implementation, enforcement), ANRC (groundwater standards), Multi-agency Wetland Planning Team (nutrients in wetlands) | Local governments, regulated entities, interest groups |

Table 3.4. Interactions of federal, state, and local entities in water resources management (continued).

| State Water Resources Responsibility/Program | Involves: | | |
|---|---|---|---|
| | Federal Agencies and National Organizations | State Agencies and Organizations | Regional or Local Entities |
| Water quality assessment | EPA (oversight, guidance), USGS (data), USACE (data) | ADEQ (implementation) | None |
| TMDLs | EPA (oversight, guidance), USGS (data), USACE (data) | ADEQ (program lead) | None |
| Storage tank regulation | EPA | ADEQ (program lead) | None |
| Solid waste management | EPA (oversight) | ADEQ (program lead) | Regional solid waste management districts |
| Landfill post-closure trust fund | None | ADEQ (program lead) | Regional solid waste management districts |
| Hazardous waste management | EPA | ADEQ (program lead), AHTD (transport) | Interest groups |
| Remedial action trust fund | None | ADEQ | Interest groups |
| Brownfields | EPA | ADEQ | Municipalities |
| Superfund | EPA | ADEQ | Interest groups |
| Mining reclamation | US Department of the Interior | ADEQ | Interest groups |
| Water quality monitoring | EPA (oversight, studies), USGS (monitoring, studies), USACE (monitoring, studies) | ADEQ, ANRC, U of A Water Resources Center (studies), AGFC (stream teams), Arkansas State Plant Board (groundwater monitoring) | Stream teams (monitoring), water utilities (monitoring) |
| Fish tissue sampling | None | ADEQ (program lead), ADH (consumption advisories), AGFC (sampling) | None |
| Stormwater management | EPA | ADEQ, U of A Cooperative Extension Service | Counties, municipalities |
| Spill prevention | EPA | ADEQ | None |
| Finished drinking water criteria | EPA | ADH | Water utilities, water districts |
| Source Water Protection | EPA | ADH, Arkansas Water Well Construction Commission | Water utilities (planning) |
| Consumer Information | EPA | ADH | Water utilities |
| Regulation of drinking water utilities | EPA | ADH, Arkansas Public Service Commission | Water utilities |
| Pesticide registration, labeling and classification | EPA | Arkansas State Plant Board | Pesticide distributors and users |
| Community Forestry | USDA Forest Service | Arkansas Forestry Commission, Arkansas Urban Forestry Council | Municipalities |

Table 3.4. Interactions of federal, state, and local entities in water resources management (continued).

| State Water Resources Responsibility/Program | Involves: | | |
|--|---|--|----------------------------|
| | Federal Agencies and National Organizations | State Agencies and Organizations | Regional or Local Entities |
| Forest Stewardship Program | USDA Forest Service, USDA Farm Services Agency, USDA NRCS | Arkansas Forestry Commission, AGFC, ANRC, Arkansas Historic Preservation Program, U of A Cooperative Extension Service, ANHC | Landowners |
| Forest Legacy | USDA Forest Service (funding), Land Trust Alliance | Arkansas Forestry Commission | Landowners |
| State parks | USACE, National Park Service (funding) | Arkansas Department of Parks and Tourism | Volunteer Organizations |
| Stream teams | None | AGFC | Stream teams |
| Wildlife management areas, refuges | USFWS | AGFC | Nonprofit organizations |
| Fishing and boating programs | USACE, USFWS | AGFC, Arkansas Department of Parks and Tourism | None |
| Wild/Natural and Scenic Rivers Systems | USDA Forest Service | Arkansas Natural and Scenic Rivers Commission, ANHC, ADEQ, Arkansas Department of Parks and Tourism | Watershed organizations |
| Pollution prevention program | EPA | ADEQ, ANRC | Municipalities |
| Commercial navigation | USACE | Arkansas Waterways Commission | None |

4.0 REFERENCES

- ADEQ. 2011. *Timeline of Historical Events of Arkansas Solid Waste Management, 1971 – 2011*. Little Rock, AR: Arkansas Department of Environmental Quality.
- ADEQ. 2012. *State of Arkansas Nutrient Criteria Development Plan*. Little Rock, AR: Arkansas Department of Environmental Quality.
- Anderson, J.E. (editor). 2006. *Arkansas Wildlife Action Plan*. Little Rock, AR: Arkansas Game and Fish Commission.
- ANRC. 2011. *Water Law in Arkansas*. Little Rock, AR: Arkansas Natural Resources Commission.
- ANRC. 2012. “Rules and Regulations.” Retrieved 24 May 2013 from http://www.anrc.arkansas.gov/Rules%20and%20Regulations/rules_and_regulations.html
- APCEC. 2011. *Regulation No. 2, Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas*. Little Rock, AR: Arkansas Pollution Control and Ecology Commission.
- Arkansas Forestry Commission. 2002. *Arkansas Forestry Best Management Practices for Water Quality Protection*. Little Rock, AR: Arkansas Forestry Commission.
- Arkansas Multi-agency Wetlands Planning Team. 1995. “Arkansas Wetland Resource Information System, Arkansas State Wetland Strategy.” Retrieved March 2013 from <http://awrims.cast.uark.edu/home/ar-wetland-strategy.aspx>
- Arkansas River Compact Committee. 1970. *Arkansas River Basin Compact Arkansas-Oklahoma*. Austin, TX: Office of US Representative.
- Arkansas Soil and Water Conservation Commission (now ANRC). 1988. *Arkansas State Water Plan Eastern Arkansas Basin*. Little Rock, AR: Arkansas Soil and Water Conservation Commission.
- Duriancik, L.F., D. Bucks, J.P. Dobrowolski, T. Drewes, S.D. Eckles, L. Jolley, R.L. Kellogg, D. Lund, J.R. Makuch, M.P. O’Neill, C.A. Rewa, M.R. Walbridge, R. Parry, and M.A. Weltz. 2008. The first five years of the Conservation Effects Assessment Project. *Journal of Soil and Water Conservation* 63(6):185A-197A.
- EPA. n.d. “EPA Recovery Mapper.” <http://epamap17.epa.gov/arra/#>. Accessed April 2014
- EPA. 2008. *Handbook for Developing Watershed TMDLs*. Washington, DC: US Environmental Protection Agency, Office of Wetlands, Oceans & Watersheds.
- EPA. 2012. “Basic Information.” *Water: Drinking Water Operator Certification*. Retrieved 11 June 2013 from <http://water.epa.gov/infrastructure/drinkingwater/pws/dwoperator/cert/basicinformation.cfm>
-

-
- EPA. 2013a. "Compensatory Mitigation." Retrieved 17 June 2013 from http://water.epa.gov/lawsregs/guidance/wetlands/wetlandsmitigation_index.cfm
- EPA. 2013b. "Consumer Confidence Reports." *Water: Consumer Confidence Reports Rule*. Retrieved 11 June 2013 from <http://water.epa.gov/lawsregs/rulesregs/sdwa/ccr/index.cfm>
- EPA. 2013c. "What EPA is Doing." *Nutrient Policy Data*. Retrieved 12 July 2013 from <http://www2.epa.gov/nutrient-policy-data/what-epa-doing>
- EPA. 2013d. "Regulatory Topics." Retrieved March 2013 from <http://www.epa.gov/lawsregs/topics/#water>
- EPA. 2013e. "Watershed Assessment, Tracking, and Environmental Results." Retrieved April 12, 2013, from http://iaspub.epa.gov/waters10/attains_state.control?p_state=AR#tmdl_by_pollutant
- EPA. 2013f. "EPA Information Related to the American Recovery and Reinvestment Act of 2009." Retrieved April 1, 2014, from <http://epa.gov/recovery/basic.html>
- FindTheData. 2013. *Compare Arkansas American Recovery and Reinvestment Act*. Retrieved July 2013 from <http://recovery-and-reinvestment-act.findthedata.org/d/d/AR>
- HUD. 2013. *Expenditure Report. Use of CBDG Funds by Arkansas from 07-01-2011 to 06-31-2012*. Retrieved April 16, 2014 from portal.hud.gov/hudportal/HUD/src=/program_offices/comm_planning/communitydevelopment/budget/disbursementreports.
- National Agricultural Law Center. 2012. "United States Farm Bills." Retrieved 11 June 2013 from National Agricultural Law Center: <http://www.nationalaglawcenter.org/farmbills/>
- Oklahoma Water Resources Board. (n.d.). "Compact Area Map, Reach II-V." *Red River Compact Commission*. Retrieved 14 June 2013 from http://www.owrb.ok.gov/rrccommission/graphics/reach_2_5.jpg
- US Congress. 1992. *Clean Vessel Act of 1992*. Retrieved July 2013 from <http://www.fws.gov/laws/lawsdigest/cleaves.html>
- USACE. n.d. *Regulatory In-lieu Fee and Banking Information Tracking System*. <http://rsgisias.crrel.usace.army.mil/ribits/index.html>. Accessed April 2014.
- USACE Little Rock District. 2013. "Water Resources Development Act." Retrieved June 11, 2013, from US Army Corps of Engineers Little Rock District: <http://www.swl.usace.army.mil/Missions/Regulatory/WaterResourcesDevelopmentAct.aspx>
- USACE Memphis District. 2010. *Arkansas Fact Sheets and Maps*. US Army Corps of Engineers.
- USDA Rural Utilities Service. 2012. *Water and Environmental Programs Annual Activity Report Fiscal Year 2012*. USDA Rural Development. Washington, DC.
-

USFWS. 2007. *Best Management Practices for Fayetteville Shale Natural Gas Activities*. Conway, AR: US Fish and Wildlife Service.

USFWS. 2013a. *Digest of Federal Resource Laws of Interest to the US Fish and Wildlife Service, Surface Mining Control and Reclamation Act*. Retrieved March 13, 2013, from <http://www.fws.gov/laws/lawsdigest/SURFMIN.HTML>

USFWS. 2013b. "Endangered Species Act: Overview." Retrieved March 13, 2013, from <http://www.fws.gov/endangered/laws-policies/index.html>