



Arkansas Water Primer Series: Partners in Protecting Arkansas' Waterbodies

Introduction

From the time Arkansas became a state in 1836, it has followed the riparian doctrine of water allocation. The basic concept of the riparian doctrine is that private water rights are tied to the ownership of land bordering a natural river or stream. Thus, water rights are controlled by land ownership. Beginning in the 1950s, questions of water rights and use began to emerge. Over time, Arkansas has established a governmental administrative system of water allocation called a regulated riparian system. Traditional riparian concepts still apply in the state; however, there is a regulatory or permit/administrative structure superimposed on those traditional riparian rights.

Today, there are more than 20 organizations with responsibility for ensuring Arkansas' water quality, water quantity and public health are maintained. Generally, water quantity is the responsibility of the Arkansas Natural Resources Commission (ANRC). Water quality issues fall under the authority of the Arkansas Department of Environmental Quality (ADEQ) and the Arkansas Department of Health (ADH). The Arkansas Natural Heritage Commission (ANHC) protects unique and rare wetland types. The Arkansas Game and Fish Commission (AGFC) monitors wetland-dependent wildlife habitat while the Arkansas Forestry Commission (AFC) manages forested wetlands subject to timber harvest.

Partnerships with private organizations such as Ducks Unlimited (DU) and The Nature Conservancy (TNC) have been critical to water protection. The Arkansas Highway and

Transportation Department (AHTD) even plays a role in protecting the state's waterbodies by planning transportation projects to avoid negative affects on wetlands.

The Arkansas Natural Resources Commission

ANRC was established in 1963 "to manage and protect our water and land resources for the health, safety and economic benefit of the State of Arkansas." It has the primary regulatory authority for many of the issues related to water rights, water conservation and water quality.

Registering Water Usage with ANRC

Arkansas Act 81 of 1957 mandates water users to register annually with ANRC the diversion of surface water by quantity, location and type of use. ANRC issues Certificates of Registration, which the Commission uses to determine water allocations and for gauging the state's overall water usage and water needs. Users of groundwater are required to register quantity, location and type of use annually

There are exemptions to registering water usage with ANRC.

Surface water – withdrawals of less than one acre-foot per year, diffused surface water or natural lakes or ponds exclusively owned by one person do not need to be registered.

Groundwater – withdrawals from individual household wells used exclusively for domestic use and wells with a maximum potential flow rate of less than 50,000 gallons a day do not need to be registered.

with ANRC. All users of surface and groundwater are assessed an annual water use fee of \$10 per registered-surface water diversion and \$10 per registered well. The fees collected are utilized for cost-share on water conservation practices, administration and information/education programs.

Arkansas Surface Water Laws

ANRC has authority for:

- Allocating surface water from streams during times of shortage based on the reasonable use concept
- Determining preferential surface water allocations during times of shortage based on sustaining life, maintaining health and increasing wealth, in that order
- Mandating registration of any diversions of surface water from streams, lakes and ponds and
- Issuing dam construction permits.

Arkansas Groundwater Laws

In 1991, the state enacted the Arkansas Groundwater Protection and Management Act. The Act allows ANRC to first designate critical groundwater areas and then, if necessary, to initiate a regulatory program requiring that anyone who wants to withdraw groundwater from an existing well or construct a new well within the area obtain a water right from the Commission. Before ANRC can make the designation of a critical groundwater area, it must hold public hearings in the affected counties describing the proposed action, the reasons for the action and the recommended boundaries of the identified area.

Laws Specific to Aquifers

In 1997, the Arkansas General Assembly determined that the Sparta Aquifer was “being depleted and damaged by salt water intrusion.” The legislature passed Act 237, which expanded ANRC’s authority to enter into negotiations with adjoining states relating to the protection and use of interstate waters to include underground aquifers. The Commission already had such power relating to streams, lakes, reservoirs, channels and impoundments.

Arkansas Act 1426 of 2001 mandated that any well constructed after September 30, 2001, to withdraw

groundwater from a sustaining aquifer must be equipped with a properly functioning metering device deemed acceptable by ANRC. Domestic wells are exempt. Also exempt from the Act are wells for which a water right was grandfathered under the provisions of the Groundwater Protection and Management Act, unless alternative surface supplies are available. The Act defines sustaining aquifers as any aquifer “which is used as a significant source for water supply including, but not limited to, the Cockfield, Sparta, Memphis, Cane River, Carrizo, Wilcox, Nacatoch, Roubidoux and Gunter aquifers.” The Alluvial Aquifer is not listed in the legislation because it is not considered a sustaining aquifer. ANRC may consider voluntary reductions, water use efficiencies and implementation of water conservation measures in determining limitations or reduction of withdrawals from a sustaining aquifer. Data gathered by the metering is incorporated into ANRC’s annual water use reports.

Nonpoint Source Pollution Program

Nonpoint Source Pollution (NSP) occurs when water runs overland or through the ground, picks up pollutants and deposits them in surface water or introduces them to groundwater. These pollutants are both natural and man-made, and they can have a harmful effect on drinking water supplies, recreation, fisheries and wildlife. According to the U.S. Environmental Protection Agency (EPA), NSP is the leading cause of impaired water quality among states. Sources of NSP include, but are not limited to:

- Oil, grease and toxic chemicals from urban runoff and energy production
- Bacteria and nutrients from livestock, pet wastes and faulty septic systems
- Sediment from crop and forest lands and eroding stream banks
- Rural roads and ditches with little or no cover
- Atmospheric deposits in which pollutants in the air fall on the land or water and
- Hydrologic modifications that alter the flow of water (e.g., channelization, dewatering, damming and dredging).

Since 1990, ANRC has been the lead agency for NSP pollution management. ANRC is responsible for implementing Best Management Practices (BMPs) to prevent Nonpoint Source Pollution and enforce Water Well Construction Commission rules and regulations. Through grants funded by EPA, the Commission provides assistance to conservation districts, academic institutions, state government agencies and other organizations, groups or entities.

Floodplain Management Program

Act 629 of 1969 authorized ANRC to develop a Floodplain Management Program. The purpose of the program is to minimize public and private losses due to flood conditions. The Act allows ANRC as well as cities, towns and counties to enact and enforce land use measures that will prevent and alleviate flood hazards and losses in flood-prone areas of the state.

As part of the Floodplain Management Program, ANRC:

- Provides general and technical assistance to towns, cities and counties
- Conducts training and educational workshops
- Disseminates information to the public about floodplain management and
- Provides assistance for mitigation during the recovery phases of disaster operations.

Dam Safety Program

ANRC is responsible for developing and enforcing rules and regulations governing the design and operation of dams as well as the proper planning, design, construction, maintenance, monitoring and supervision of dams.

All dams that are at least 25-feet high and contain 50 acre-feet or more of storage at normal pool level must have a valid construction and operation permit from ANRC, unless the dams

*An **acre-foot** is a basic measure of water used or stored. It equals the volume of water covering one acre to a depth of one foot. There are 326,851 gallons in one acre-foot.*

are owned by the U.S. government. If smaller dams pose a threat to life or property, ANRC may also require regulation contingent upon a petition by downstream landowners and a public hearing.

As part of the Dam Safety Program, ANRC:

- Reviews permit applications to ensure proper safety standards are met
- Issues permits to construct and operate a dam in the state
- Inspects dams under state jurisdiction
- Provides information and education to dam owners and the public
- Oversees the development and implementation of emergency action plans for high hazard dams
- Responds to dam emergencies
- Maintains a database and files on dams in the state and
- Collects annual dam permit fees.

The Arkansas Department of Environmental Quality

ADEQ is charged with improving the quality of the state's waterbodies. Its Water Division is divided into four branches:

- The Inspection Branch, which serves as the enforcement arm of the Water Division
- The National Pollutant Discharge Elimination System (NPDES) Branch, which approves all permits relating to water discharge of any sort within the state
- The No Discharge Permits Branch, which issues permits relating to waste disposal systems that do not discharge directly into the state's waterbodies and salt water disposal systems requiring a federal permit or license and
- The Water Quality Planning Branch, which deals with issues related to Water Quality Standards development, groundwater and wasteload allocations.

Water Quality Standards are pollution limits that take into account human exposure to water as well as the well-being of animals that live in the water. Standards relate to water temperature, turbidity (water clarity), bacteria, minerals, toxic substances and other criteria. ADEQ, in collaboration with the Pollution Control and Ecology Commission, develops pollution limits that reflect the historic use of the state's waters.

Arkansas' Water Quality Standards set pollution limits based on each waterway's designated uses. Different uses require different types and levels of water protection. The designation and protection of specific uses are required by the federal Clean Water Act and the Arkansas General Assembly. Federal law requires ADEQ to review every three years its plans for protecting water quality in the state. Water quality monitoring data is analyzed to identify trends, levels of pollutants or changes in water quality. From the data, ADEQ determines whether revisions are needed to better protect water quality.

Designated Water Uses

Extraordinary Resource Waters

Ecologically Sensitive Waterbodies

Natural and Scenic Waterways

Primary Contact Recreation (swimmable)

Secondary Contact Recreation (wadeable)

Fisheries (fishable)

Domestic Water Supply

Industrial Water Supply

ADEQ's Permit Programs

ADEQ is the regulatory agency authorized to issue permits to individuals and organizations whose activities could harm the state's water quality. NPDES permits are issued to municipalities, industries or others that discharge point source wastewater into the waters of the state. There are two types of NPDES permits. Individual permits are typically issued to municipal sewer systems, factories and large-scale animal-feeding operations. General permits are issued to such businesses as public laundries and car washes.

ADEQ issues three types of stormwater permits: industrial, construction and municipal separate storm sewer systems through the NPDES Branch. The No Discharge Permits Branch issues permits for confined animal operations and land application of beneficial process wastes. To be considered beneficial, the

applicant must show that the land application will result in agronomic improvement such as crop nutrients or crop irrigation. The most common types of beneficial wastes include grease trap wastes, water treatment residuals and some food processing wastes.

ADEQ requires permits for owners or operators of reserve pits related to oil and gas drilling. The discharge of fluids generated by any activity associated with oil and natural gas exploration or production into surface water, groundwater or any designated waters of the state is prohibited. In addition, permits must be obtained from ADEQ for land application of drilling fluids produced during the exploration and production of oil and gas.

Other permits issued through this branch include those for subsurface wastewater disposal such as septic tanks and leach fields and permits for the construction and operation of the surface facilities associated with the disposal of salt water generated by petroleum-producing wells.

The Water Quality Planning Branch focuses on issues related to water quality monitoring and standards development as well as groundwater and wasteload allocations.

Arkansas Department of Health

ADH's Division of Engineering is responsible for the regulation and oversight of public water systems throughout the state. ADH engineers review plans of new water system facility construction, inspect water system facilities, troubleshoot water treatment and distribution problems, investigate complaints, and collect and analyze samples to determine water quality.

Source Water Assessments

In 1974, Congress passed the Safe Drinking Water Act (SDWA) which directed EPA to establish minimum drinking water standards. In 1996, the Act was amended to require source-water assessment programs (SWAP) for all U.S. public drinking water supplies to determine susceptibility to both naturally-occurring and man-made contaminants. In Arkansas, ADH oversees SWAP. Source Water Assessment is a process of gathering information about a community's drinking water source. The assessment should provide residents with information on exactly where their water supply

comes from and what conditions and/or practices may develop strategies to protect the community's water supply. Assessments must:

- Identify the drinking water source area
- Identify potential contamination sources
- Assess how susceptible the drinking water source is to contamination and
- Ensure assessments are made available to the public.

Because education and involvement is an important component in protecting sources of drinking water, EPA mandated that the public must be involved in the development of the states' SWAPs. Each state must establish a citizen's advisory committee and hold a public hearing on the state's program before it is submitted to EPA for approval. If the public is not involved, the program will not be approved.

Subsurface Wastewater Disposal Permits

ADH assists ADEQ with the subsurface wastewater disposal permit process. ADEQ issues permits to facilities that utilize subsurface wastewater disposal such as septic tanks and leach fields. Regulatory jurisdiction of a subsurface wastewater disposal system depends on the type and volume of waste. Subsurface disposal of domestic wastewater only with a flow rate of less than 5,000 gallons per day requires approval from ADH. A permit from ADEQ is not required. Subsurface disposal of domestic wastewater only with a flow rate greater than 5,000 gallons per day requires a permit from ADEQ and approval from ADH. Subsurface disposal of non-domestic wastewater only, regardless of flow rate, requires a permit from ADEQ. Subsurface disposal of combined domestic and non-domestic wastewater requires a permit from ADEQ and approval from ADH.

Non-domestic wastewater is any wastewater that is commercial, industrial or agricultural in origin, excluding food establishments. The most common types of facilities permitted for subsurface disposal of non-domestic wastewater are car and truck washes, slaughter houses and Laundromats.

Arkansas Game and Fish Commission

AGFC is the primary agency responsible for the protection and management of Arkansas' fish and wildlife resources, many of which are wholly or partially dependent upon waters of the United States. The Commission's River Basins and Governmental Relations Division is responsible for the coordination of fish and wildlife resource review and comment on various water-related development activities and proposals, as well as developing opportunities to protect, enhance and restore fish and wildlife habitat in Arkansas.

Arkansas Stream Teams

AGFC sponsors the Arkansas Stream Team program, which provides opportunities for citizens to become involved in stream and watershed conservation. The program provides information to increase understanding and appreciation of the state's stream systems. Volunteers receive training in water-quality monitoring and stream bank maintenance and restoration techniques. It also teaches volunteers how to work for the proper conservation of Arkansas' water resources and helps landowners and stream users plan and carry out projects by matching them with the appropriate agency or ongoing organizational efforts.

Wildlife Habitat Incentive Program

AGFC assists the Natural Resources Conservation Service (NRCS) with the Wildlife Habitat Incentive Program (WHIP). WHIP is a voluntary federal program for people interested in developing and improving wildlife habitat. AGFC biologists work with applicants to conduct a habitat evaluation of the proposed area, prioritize the habitat needs and develop appropriate management plans.

The Arkansas Forestry Commission

Fifty-five percent of the state's land is covered in commercial forest. Arkansas ranks first among southern states in softwood lumber production and fourth in the nation. The total economic value of forest industries in Arkansas exceeds \$12 billion per year and employs approximately 100,000 workers. Such large-scale dedicated land use requires an assessment of sustainable practices and environmental impacts.

From the 1950s through the 1970s, studies of clear-cut logging frequently demonstrated impairment

of stream ecosystems lying adjacent to harvest areas. The Clean Water Act directed states to develop silviculture Best Management Practices (BMPs) to address this problem. The Arkansas Forestry Commission (AFC) is the lead agency for interpreting, monitoring and updating forestry BMPs in Arkansas.

***Silviculture** is the art and science of sustainably growing trees to meet needs. These needs may be human needs for scenery, wood products or safe places to recreate. The needs may be ecological or environmental, such as providing a suitable habitat for a particular type of animal or maintaining water quality within a forest.*

Forestry BMPs help prevent or reduce the amount of erosion generated by forest management activities. BMPs include structural and nonstructural controls, operations and maintenance procedures that can be applied before, during and after forest management activities.

AFC's publication *Best Management Practices for Water Quality Protection* is available on the Internet at http://www.forestry.state.ar.us/bmp/bmp_review.html or a request can be sent to AFC State Office, 3821 West Roosevelt Road, Little Rock, AR 72204.

The Arkansas State Plant Board

Using pesticides effectively while maintaining water quality presents an important challenge. The Arkansas State Plant Board is responsible for enforcing regulations against water pollution from agricultural and other sources. The Plant Board's Pesticide Division ensures the proper labeling, distribution, storage, transportation, use, application and disposal of pesticides within the state. Before a pesticide can be sold in Arkansas, it must first be registered with the Plant Board. Each year the Pesticide Division registers approximately 10,000 pesticides for use in the state.

The Division enforces the Arkansas Pesticide Control Act, which makes it unlawful for any person to "dispose of, discard, or store pesticides or pesticide containers in a manner as to . . . pollute any water supply or waterway." The Plant Board conducts inspections to determine whether or not violations exist and is authorized to file injunctions within the state court system. Violating the Pesticide Control Act is a misdemeanor, punishable by fines ranging from \$100 to \$1,000 for first offenses and \$500 to \$2,000 for subsequent convictions.

The Arkansas Pesticide Use and Application Act authorizes the Plant Board to "issue regulations relating to the conditions under which pesticides may be applied and . . . restrict or prohibit use of pesticides to prevent unreasonable adverse effects" to plants, wildlife, fish, humans, animals or beneficial insects. The use of pesticides without a license or a violation of the regulations is a misdemeanor, subject to a fine of \$100-\$2,000 for "commercial parties" and \$100-\$500 for "private parties."

The Pesticide Division enforces the Worker Protection Standard in Arkansas as it applies to the use of pesticides. The Division is also involved in monitoring groundwater for contamination by pesticides and the impact of pesticides on endangered species in the state.

Additional Resources

More information about the Arkansas government agencies mentioned in this fact sheet can be found at http://www.state.ar.us/government_name.php or by calling 501-682-3000.

Fact Sheet 109 (FSPPC109) – *Glossary of Water-Related Terms* – contains a comprehensive list of terms used in the Arkansas Water Primer Fact Sheet Series.

The University of Arkansas Division of Agriculture's Public Policy Center provides timely, credible, unbiased research, analyses and education on current and emerging public issues.

The Arkansas Water Primer Fact Sheet Series was funded by a grant from the U.S. Department of Agriculture with additional financial assistance from the University of Arkansas Division of Agriculture. Original research for the Series was provided by Janie Hipp, LL.M., and adapted by Tom Riley, associate professor and director of the University of Arkansas Division of Agriculture's Public Policy Center, and Lorrie Barr, program associate, University of Arkansas Division of Agriculture's Public Policy Center.

Pursuant to 7 CFR § 15.3, the University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services (including employment) without regard to race, color, sex, national origin, religion, age, disability, marital or veteran status, genetic information, sexual preference, pregnancy or any other legally protected status, and is an equal opportunity institution.