

# Using the Watershed Approach to Maintain and Enhance Water Quality

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## Introduction

The state motto of Arkansas is “The Natural State.” All Arkansans can help keep Arkansas “The Natural State” by being part of a team effort to protect our water resources.

In Arkansas, as well as many other states, watershed management plans are developed locally by many individuals and groups who are interested in maintaining and improving water quality at the watershed level. These management plans are driven by and give power to a diversity of watershed stakeholders. A stakeholder-developed management plan gives decision-making power to the local groups most closely connected to a specific watershed. This approach of utilizing an inclusive and diverse membership of interested stakeholders to form a watershed management plan is known as the watershed approach.

The watershed approach is endorsed by the Environmental Protection Agency (EPA) as well as many other conservation professionals and practitioners. The EPA backs this approach to maintaining and improving water quality because its use has been successful in obtaining results in an effective and voluntary manner.

## What Is a Watershed?

A watershed is the land area where all surface and groundwaters drain into a common body of water. Each watershed has boundaries that divide one drainage area from another, and larger watersheds can be divided into smaller sub-watersheds. Watershed boundaries often cross political boundaries such as county or state

lines. There are no two watersheds exactly alike, due to many inherent differences such as topography, geology, climate, land use, etc. This means that a watershed approach will be unique for any given watershed.

In general, watersheds include forests, cities, pastures and residential areas. All activities in a watershed affect the water quality within the watershed. So, wherever you live, work or play, you, the stakeholder, can have an impact on the quantity and quality of water in that watershed.

Watersheds in Arkansas are identified by their name and by a grouping of numbers. The grouping of numbers is called the Hydrologic Unit Code or HUC. In Arkansas, the HUC can range from two to eight digits long. The more digits there are in a code, the smaller the watershed that is represented.

To find out more about watersheds here in Arkansas, you can go to Arkansas Watershed Information System <https://watersheds.cast.uark.edu/> and also the Arkansas Department of Energy and Environment – Division of Environmental Quality <https://www.adeq.state.ar.us/poa/watershed/>.

## Who Is a Stakeholder?

The people who live in, work in and have an interest in the watershed are called stakeholders. Examples of stakeholders are landowners, homeowners and residents of a watershed. Businesses, industries and representatives from city, county, state and federal governments and agencies also have an impact within a watershed, and they are also considered stakeholders. Realizing

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we all are stakeholders and we all impact the watersheds we live, work and play in, we must take steps to reduce the potential negative impacts we all can leave behind. Without inclusive stakeholder involvement, the solutions to natural resource problems are much more difficult to accomplish. Besides providing a sizable workforce, inclusive stakeholder involvement or partnerships promote a team atmosphere. This team atmosphere is essential for all parties involved to better understand the problems, identify priorities and buy into the methods used to improve water quality.

## What Is the Watershed Approach?

The watershed approach is a decision-making process that reflects a common strategy for information collection, analysis and understanding of the roles, priorities and responsibilities of all stakeholders within a watershed. The watershed approach is based on the concept that many water quality problems are best addressed at the watershed level by all stakeholders. In addition, a watershed focus helps identify the most cost-effective pollution control strategies to meet or maintain clean water goals. There are many different elements involved with a watershed approach, but there are three main components of the watershed approach that will not change:

- **Partnerships** – Ensure a diverse membership working towards a common goal that is understood and accepted by all stakeholders. Partnerships increase the viability of the watershed approach effort and provide increased avenues for participation, awareness and success. Partnerships that promote the active participation of all concerned parties from all levels of government and a wide cross-section of public and private entities are essential to the watershed approach.
- **Geographic Focus** – The entire watershed or just part of a watershed can be the area in which watershed management activities are targeted. The size of the watershed area addressed will often influence the parties involved in the watershed effort. For example, the White River Watershed encompasses multiple counties in both Arkansas and

Missouri. Within the White River Watershed, there are several groups that focus on smaller subwatersheds such as the Beaver Reservoir Kings River and Buffalo River watersheds. These sub-watersheds have different parties involved with the watershed effort as compared to the entire Upper White River Watershed in Arkansas.

- **Management** – Management techniques allow for organization of watershed efforts including assessment of the targeted watershed area, identification of potential problems and goals, development of management options and plans, implementation of appropriate actions, procurement of resources and measurement of success.

## Who Can Help Identify a Watershed Group in Which I Can Participate?

Not all watersheds have established stakeholder organizations. To determine if your watershed has such an organization or if you are interested in beginning one check in with your local county extension office or conservation district.

## Summary

The watershed approach has proven to be an effective means of voluntarily protecting our water resources. Stakeholder-led watershed organizations can play a vital, non-threatening role in protecting our water resources by empowering a diverse group of stakeholders through partnerships to find common goals and joint solutions.

## References

- Daniels, M.B., B.E. Haggard and A.N. Sharpley. 2007. *Arkansas Watersheds*. Arkansas Cooperative Extension Service Publication FSA9521.
- U.S. Environmental Protection Agency. 2008. <http://www.epa.gov/owow/watershed/approach.html>.
- U.S. Environmental Protection Agency. 2008. <http://www.epa.gov/owow/watershed/framework.html>.

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