

# Discovering Alabama

Teacher's Guide

## Alabama Rivers

### Suggested Curriculum Areas

Science  
Social Studies  
Art  
Environmental Studies

### Suggested Grade Levels

4–12

### Key Concepts

Freshwater  
Watershed  
Biodiversity

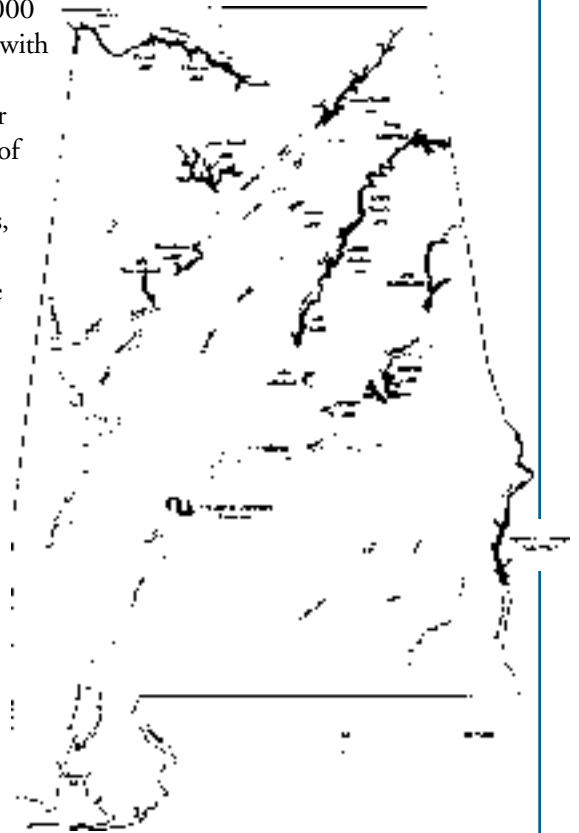
### Key Skills

Map Reading  
Scientific Inquiry  
Measuring, Calculating, &  
Predicting

### Synopsis

Alabama has more than 70,000 miles of streams and rivers with an annual freshwater flow greatly exceeding that of all but a few other states. This remarkable abundance of water resources has attracted the attention of many leading scientists, who today proclaim Alabama the “aquatic state.” These experts have determined that Alabama’s river habitats are among the most biologically diverse in the world. However, experts also warn that these habitats are suffering environmental stress and are among the most highly threatened of the nation’s aquatic systems.

This video overviews Alabama’s major rivers, highlights their significance in Alabama’s history, and with commentary from numerous guest experts, explores key issues confronting the environmental health and biodiversity of the state’s streams and freshwater resources.



THE UNIVERSITY OF  
ALABAMA



*Discovering Alabama* is a production of the Alabama Museum of Natural History in cooperation with Alabama Public Television. For a complete list of titles in the *Discovering Alabama* series, as well as for information about ordering videos and accompanying Teacher’s Guides, contact us at either: *Discovering Alabama*, Box 870340, Tuscaloosa AL 35487–0340; phone: 205–348–2036; fax: 205–348–4219; or email: [orders@discoveringalabama.org](mailto:orders@discoveringalabama.org). Also visit our website: [www.discoveringalabama.org](http://www.discoveringalabama.org).

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*The Solon and Martha  
Dixon Foundation*



## Before Viewing

1. Conduct a class brainstorm to develop a list of ways/examples of how water benefits our lives. Prompt the class for ideas/thoughts as needed to make this a *long* list, i.e., the list should contain much more than commonly-considered uses (drinking, bathing, etc.) and should include many large-scale aspects (the role of water in atmospheric cycles, underground aquifers, polar influence on sea levels, etc.), and as many specific aspects as possible (the use of water in making paper, growing vegetables, enabling the function of every cell in our bodies, etc.).

Next, discuss the wonders of water (the water molecule, water in the human body, etc.) and have the class imagine living in a desert region where freshwater is extremely scarce. Compare and contrast daily life in such a waterless region with life in Alabama. Ask your students to share what they might know about the sources of freshwater for your community and other communities across the state. See **Additional References & Resources** for helpful information.

2. Have students each work quietly for a few minutes to draw individual Alabama maps with major rivers located and named as accurately as possible. Next, place students in small groups and have each group share individual maps, discuss, and work together to create a group map representing their combined input.

## While Viewing

Have students note river facts (numbers, percentages, descriptive features, etc.) presented in the video.

**Video Mystery Question:** Our warm blue Earth is considered the “water planet” because it is the only known body in the universe to have abundant water (indeed, to be largely *covered* with water). So, if our Earth has such a supply

of water, why then is there not plentiful clean, fresh water for all communities and all the people of the Earth? (Answer: Though the Earth is largely covered with water, less than 1% of this is freshwater—more than 99% is saltwater. Also, most of the freshwater on Earth is trapped and inaccessible as ice in the polar caps. Add to this the fact that, in many parts of the world, local water resources are scant and/or polluted.)

## After Viewing

1. With students in their small groups, have them work collaboratively to a) improve/add to their group maps of Alabama’s rivers, and b) develop group lists of new information learned from the video. Allow each group to present their respective map and list to the class. Discuss.

2. Obtain topographical maps of your local area and review them to identify local streams that flow through your area (see **Additional References & Resources**). Determine which major river(s) these streams feed.

## Extensions

As this video notes, Alabama’s rivers are etched prominently on the state seal, reflecting official sentiments that Alabama rivers are a grand natural feature of our state. Indeed, as the video also celebrates, Alabama rivers *are* a grand wonder of

the state. However, Alabama streams and rivers are best understood in the grander context of the overall natural diversity of our state. You can help students gain this broader understanding by also showing such *Discovering Alabama* videos as “Alabama’s Natural Diversity,” “Geological History of Alabama,” “Alabama Forests,” “Alabama Soils,” and “Alabama Wetlands.” Likewise, activities in the Teacher’s Guides for these videos are also very helpful.

## Philosophical Reflections

It has been said that we humans are “brothers and sisters to our rivers,” a conception probably derived from Native American experiences and beliefs living in close relationship with nature. Indeed, the human body is mostly water, thus we are literally bonded to water in biological kinship. Moreover, many cultures value water for spiritual anointing and renewal of the soul. Therefore, just as we should dutifully care for our sibling brothers and sisters, might we also bear responsibility to care for our rivers? Just as we feel spiritual love for our sibling brothers and sisters, might we also feel profound respect for such wonders of creation as freshwater? In doing so, might we be bound by the ethics of good stewardship to protect the watersheds that enable nature to give us fresh water?



## Nature in Art

The video includes a segment featuring nature photographer Beth Maynor Young and several of her beautiful river photographs. (For further information about Beth's published work, she can be contacted at [www.cahabariverpublishing.com](http://www.cahabariverpublishing.com).) This segment is an example of the artistic opportunities associated with Alabama streams. Invite your students to produce a photo album of a stream in your part of the state.

## Community Connections

1. Conduct a class project to research the school's water use. Determine the source of your water (river, lake, well, etc.), the environmental conditions in the watershed of this source, how the water is obtained, treated, and supplied for school/community use, the purity of water at the school tap, and all aspects of school use (amount used, amount wasted, annual costs, etc.). Prepare a report presenting findings to the community.
2. Identify a local stream pollution problem and conduct a class project to address the problem. Such a project might be to organize a trash clean-up day, to plant trees or other vegetation in barren or eroding areas, or perhaps to prepare a public education campaign promoting community awareness for stream protection and water conservation.

## Complementary Aids and Activities

- **Project WILD:** middle students: "Water's Going On?"; middle and secondary students: "Riparian Zone."
- **Project WET:** elementary students, 3–5: "Branching Out," "The Incredible Journey"; middle students, 6–8: "Old Water," "Reaching Your Limits"; secondary students: "Whose Problem is It?"
- **Project Aquatic WILD:** mid-elementary to secondary students: "Deadly Waters", "To Dam or Not to Dam", "Where have All the Salmon Gone?" For information about all of the above, contact: Alabama Department of Conservation & Natural Resources, 64 N. Union Street, Montgomery, AL 36130; also visit their Website: [www.dcnr.state.al.us/administrative/ie/edprograms.html](http://www.dcnr.state.al.us/administrative/ie/edprograms.html) or [www.projectwild.org](http://www.projectwild.org)

- **Alabama's Environmental Legacy Guide**, grades 3–5, "No Salt, Please," "The Value of Water," "Energy from Water—Free for the Taking."

- **Water Sourcebook**, Activity Guide, grades 3–5, "Water, Water Everywhere," "Watery Words and Places," "Cleaning Up." Both are available from Legacy, Inc.: Partners In Environmental Education, Legacy, Inc., P.O. Box 3813, Montgomery AL 35109; call (800) 240–5115, fax (334) 270–5527, or email: [info@legacyenvd.org](mailto:info@legacyenvd.org). Visit their Website: [www.legacyenvd.org](http://www.legacyenvd.org)

## Additional References and Resources

- **Alabama, the River State: A Collection of Historical Essays Exploring Alabama Rivers**, 1998. Published by ADECA–OWR (see Website address below) and Natura Press.
- **A Golden Guide to Pond Life** by George K. Reid & Herbert S. Zim, 1995. The single, most useful book on aquatic plants and animals for beginners.
- **Discovering Alabama's Wetlands** by Doug Phillips, photographs by Robert P. Falls, 2002.
- **Geological Survey of Alabama:** Topographical maps and "Special Map #241: Rivers and Streams of Alabama Including Mobile Basin Tributaries in Adjacent States," 1998. Contact: GSA, Box 869999, Tuscaloosa AL 35486–6999; Website: [www.gsa.state.al.us/](http://www.gsa.state.al.us/)
- **Pond & Brook: A Guide to Nature in Freshwater Environments** by Michael J. Caduto, 1990. A guide to the plants and animals associated with ponds, lakes, streams, rivers, and wetlands.
- **Wading into Wetlands (Ranger Rick's NatureScope)** from National Wildlife Federation, 1997. A photography-based book that gives a realistic view into the world of wetlands.

### Rivers-related Websites

- Alabama Department of Economic and Community Affairs—Office of Water Resources: [www.adeca.alabama.gov/content/owr/](http://www.adeca.alabama.gov/content/owr/)
- Alabama Department of Environmental Management: [www.adem.state.al.us/](http://www.adem.state.al.us/)
- Alabama Department of Conservation & Natural Resources: [www.dcnr.state.al.us/](http://www.dcnr.state.al.us/)
- Alabama River Alliance: [www.alabamarivers.org](http://www.alabamarivers.org)
- Alabama Water Watch: [www.alabamawaterwatch.org](http://www.alabamawaterwatch.org)
- Cahaba River Society: [www.cahabariver.society.org/](http://www.cahabariver.society.org/)
- National Wildlife Federation: [www.nwf.org/wetlands/](http://www.nwf.org/wetlands/)
- U.S. Army Corps of Engineers. Basic Alabama river data for older students: <http://water.sam.usace.army.mil/>
- U.S. Geological Survey (USGS): <http://ga.water.usgs.gov/edu/index.html>

## Parting Thoughts

*In recent decades, Alabama has experienced significant improvements in water quality for many of the state's rivers, particularly with respect to "point source" water pollution. Likewise, there have been significant increases in government, industry, and citizen actions to address environmental issues associated with water quality in Alabama. Meanwhile, as the focus of environmental action turns more to problems of "nonpoint source" pollution, there is a major, overarching relationship that warrants reiteration: the environmental quality of waters in our lakes, rivers, and streams is determined largely by the environmental condition of the lands in the surrounding watersheds. Thus, the best way to maintain water quality and protect the health of our lakes, rivers, and streams is to maintain and protect the lands of the surrounding watersheds. In other words, future growth and development in Alabama should occur in coordination with environmental and land-use planning aimed at sustaining the long-term health of our river systems.*

*Oh yeah, I almost forgot. Alabamians today have several options to become active with river protection. For opportunities associated with state government, you can contact such agencies as the Alabama Department of Environmental Management (ADEM), the Alabama Department of Conservation and Natural Resources (ADCNR), and the Alabama Department of Economic and Community Affairs—Office of Water Resources (ADECA–OWR, also see back page). For opportunities associated with citizen groups, you can contact such organizations as Alabama Water Watch and the Alabama Rivers Alliance. (See **Additional References & Resources** for contact information.)*

Happy outings,

*Dr. Long*





## Discovering Alabama

Activity/Information Sheet

### Alabama Rivers

*Discovering Alabama* is pleased to acknowledge and thank the Alabama Department of Economic and Community Affairs—Office of Water Resources (OWR) for its support in the production of “Alabama Rivers.”

OWR administers programs for river basin management, river assessment, water supply assistance, water conservation, and water resources development. Further, OWR serves as the State liaison with federal agencies on major water resources-related projects and conducts special studies on instream flow needs, as well as administers environmental education and outreach programs to increase awareness of Alabama’s water resources.

#### ADECA—OWR

##### Mission Statement

The Office of Water Resources plans, coordinates, develops, and manages Alabama’s water resources, both ground and surface water in a manner

that is in the best interest of the State of Alabama. This includes recommending policies and legislation, conducting technical studies, implementing and participating in programs and projects, and actively representing Alabama’s intra- and interstate water resource interests.

We are implementing this mission through the establishment goals in three primary areas. They include:

- **Planning and Negotiation**

Act as the lead agency in the State that is responsible for developing long-term strategic plans and water resources policy. This includes implementation of water resources programs and projects for the coordination, protection, conservation, development, and management of the waters of the State. This office also acts on behalf of Alabama in the negotiation and consummation of any interstate compact and represents the State’s intra- and interstate water resources interests.

- **Data Management & Analytical Capabilities**

Develop and maintain state-of-the-art tools either through internal efforts or contracted support that will allow us to serve as a repository for water resources data and other data developed in support of ongoing census and demographic compilations. This includes the study, analysis, and evaluation of water resources including the hydrologic analysis and modeling support applied to basin planning efforts and other water resources studies, such as reservoir relicensing. Data developed in various water resources programs and studies

are maintained for better management and protection of water resources.

- **Community Services and Support**

Develop and maintain capabilities in coordinating, supporting, sponsoring, encouraging, and facilitating plans, projects, policies, and programs that relate to water resources and statistical data. Included in this task are public education and awareness programs and participation in various organizations and working groups. A large part of this outreach function is the support provided to the Census Bureau and to Alabama agencies, organizations, and citizens requesting population and other statistical data. The Alabama County Data Book and the Alabama Municipal Data Book are published in support of these efforts.

—From the ADECA—OWR webpage  
[www.adeca.alabama.gov/content/owr/](http://www.adeca.alabama.gov/content/owr/)

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