

Discovering Alabama

Teacher's Guide

Mobile River Basin

Suggested Curriculum Areas

Science
Geography
Social Studies

Suggested Grade Levels

4–12

Key Concepts

River Basin
Natural Diversity
Ecosystem

Key Skills

Map Reading
Research & Reporting

Synopsis

The Mobile River Basin is the drainage basin for the majority of Alabama's landscape. It includes seven major river systems that drain portions of ten physiographic regions in four states, Alabama, Georgia, Mississippi, and Tennessee. This video takes viewers on a journey across the reaches of the Mobile River Basin to highlight its history and examine why it is considered one of the most naturally-diverse areas in the world.

Along the way, various experts describe the fauna of the Basin and explain environmental changes that today make the Basin one of the most rapidly declining natural systems in the United States. The program features guest appearances by former U.S. Secretary of the Interior, Bruce Babbitt, and representatives of several Alabama environmental organizations including the Mobile River Basin Coalition, a unique collaborative of differing interest groups working for consensus solutions to problems affecting the Basin.



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. Also visit our website: www.discoveringalabama.org.

This program was produced with support from the following organizations:



Before Viewing

1. Using a map of Alabama rivers (see **Additional References and Resources**) or a good road map, have the class determine the closest major river to your school. Identify tributaries to this river that may flow very near the school or local community. Trace the routes of these tributaries, taking note of significant features along the routes (significant land features, bridges, highways, industrial parks, subdivisions, etc.).
2. Conduct a brainstorm session to identify various kinds of problems and pollution that might affect your major river as a consequence of land-use activity along its tributaries. Discuss whether these harmful effects are preventable. Place students in small groups with the assignment that each group write recommendations for preventing such problems along the river and its tributaries. Excellent resources to augment this exercise are the *Discovering Alabama* videos, “Cahaba River Watershed,” “Village Creek,” “Locust Fork River,” and “Black Warrior River,” and their accompanying Teacher’s Guides.

While Viewing

Have students note reasons why the Mobile River Basin is a special region and reasons why it is considered to be in environmental decline.

Video Mystery Question: Tell the class that “the Mobile River Basin has lots of muscle.” The mystery question they are to solve is: Why does the Basin have “lots of muscle”? (Answer: The Basin has lots of *mussel* species.)

After Viewing

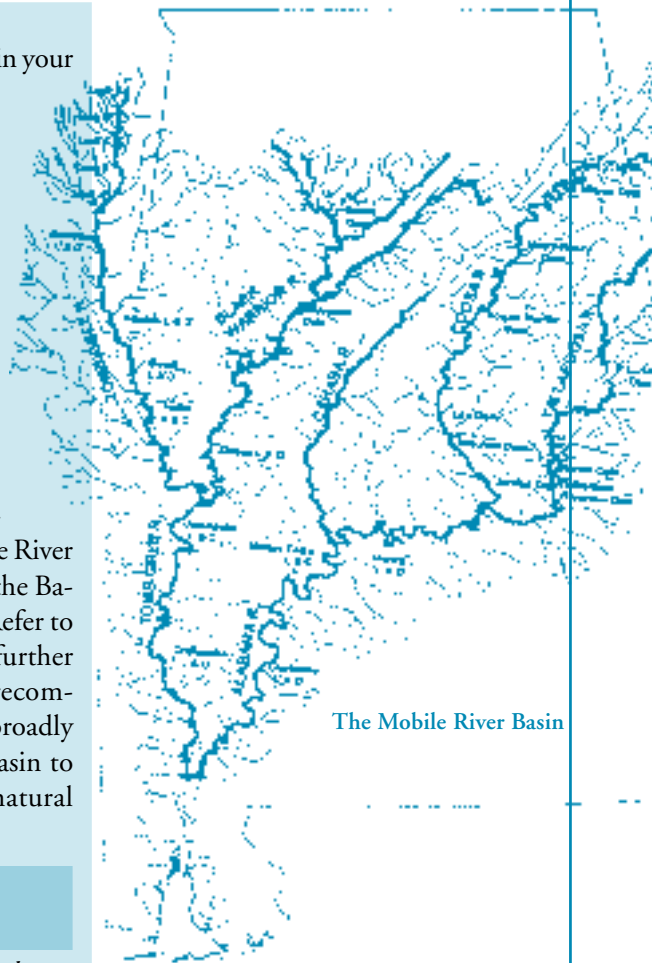
1. Have students once again examine the map of Alabama rivers. This time ask them to note not only

local tributaries to the major river in your area, but also to trace the major river along its entire course to the Gulf of Mexico. Does your community lie within the Mobile River Basin (does your river eventually join with the Mobile River thus making its way to the Gulf via Mobile Bay)? What can you determine about land-use conditions along the route your river follows to the Gulf?

2. Have students work in their small groups to compile lists of reasons why the Mobile River Basin is special and reasons why the Basin is in environmental decline. Refer to the back page of this Guide for further information. Discuss student recommendations that can be applied broadly across the entire Mobile River Basin to help restore and maintain its natural qualities and native species.

Extensions

1. View other *Discovering Alabama* videos that pertain to streams in the Mobile River Basin. Use your map to locate and trace these streams from their origins, or sources, to convergence with the Mobile River. Each Alabama river has its own interesting history. Have students pretend to be investigative reporters and take on the assignment of researching and reporting the history of a stream in your area.
2. Invite someone from a local environmental agency or organization to come to class and discuss ideas for maintaining the environmental health of streams and watersheds in your area. Be sure that students’ recommendations/ideas are considered in the discussion.



Philosophical Reflections

The video presents the Mobile River Basin’s significant size and natural diversity and makes the point that, because of such an abundance of nature, the Basin is at special risk of suffering environmental losses as human activities occur in the Basin. This observation has been used on occasion by those who contend that environmental losses in the Basin are therefore inevitable (because human activities are inevitable). Do you think this also means that environmental losses in the Basin are unavoidable and excusable? What underlying assumptions about man and nature might apply to different perspectives on this question? What might be the logical extension (ultimate consequences) of these differing perspectives with regard to the long term future of the Mobile River Basin?

Nature in Art

As our nation was settled and developed, artists worked to capture the wild beauty of native America. For example, Albert Bierstadt is known for his grand paintings of the Western landscape and John James Audubon for his intricate, life-size renderings of birds.

Today, such inspiring artistry continues to be produced by a number of Alabamians, each with his/her own special talents. One of these is photographer Beth Maynor Young, who has spent part of her career capturing the wonders of Alabama rivers, including rivers within the Mobile River Basin. Contact Beth at www.cahabariverpublishing.com to find out more about her work.

Community Connections

1. Arrange to become a certified member of the Alabama Water Watch Program (see **Additional References and Resources**). With Water Watch assistance, have your class “adopt” a local stream and conduct regular monitoring of stream/water conditions. Contact the U.S. Fish and Wildlife Service, the Geological Survey of Alabama, and the Alabama Department of Conservation and Natural Resources (see **Complementary Aids and Activities & Additional References and Resources**) for information about the status of aquatic species that inhabit your local stream.

2. Have the class produce a slide or video program featuring your local stream and its watershed. The program might highlight special natural qualities and existing environmental problems, and include student recommendations to the community for protecting local water resources. Arrange for students to present their program to community leaders, civic groups, etc.

Complementary Aids and Activities

Project Learning Tree, Activity Guide, grades 7–12; Activity: “Water We Doing.” *Project Learning Tree*, Activity Guide, grades Pre-K–8; Activities: “Water Wonders” and “Watch on Wetlands.” Alabama Forestry Association, 555 Alabama Street, Montgomery AL 36104.

Project WILD Aquatic, Grades 6–12, “Riparian Retreat.” Alabama Department of Conservation & Natural Resources, 64 N. Union Street, Montgomery AL 36130; 334-242-3623.

Ground Truth Studies Project, Unit III, Activity #2: “Make a Watershed Model.” Environmental Studies, The University of Alabama–Huntsville, Room 201, Wilson Hall, Huntsville AL 35899.

Alabama’s Environmental Legacy Guide, grades 3–5, “How Strong are Your ‘Muscles?’” *Water Sourcebook*, Activity Guide, grades 3–5, “Shedding Light on Watersheds.” Both from Legacy, Inc., P.O. Box 3813, Montgomery AL 36109; 800-240-5115.

Additional References and Resources

Alabama Water Watch, c/o Water Division, Alabama Department of Environmental Management, 1751 Cong. W.L. Dickinson Drive, Montgomery AL 36130.

“Alabama’s Water Resources,” a poster featuring Alabama’s rivers. Available from Legacy, Inc., P.O. Box 3813, Montgomery AL 36109; 800-240-5115.

The Fishes of Alabama and the Mobile Basin by Maurice Mettee, et al (1996).

Mobile River Basin Aquatic Ecosystem Recovery Plan, available from Fish and Wildlife Reference Service, 5430 Grosvenor Lane, Suite 110, Bethesda MD 20814; 800-582-3421.

U.S. Department of the Interior, Fish and Wildlife Service, Division of Ecological Services, P.O. Drawer 1190, Daphne AL 36526. Also see: www.fws.gov

Geological Survey of Alabama, Box 869999, Tuscaloosa AL 35486-9999; 205-349-2852.

NatureSouth, Vol. 3, no. 1, is devoted to Alabama rivers. Order from Alabama Museum of Natural History, Box 870340, Tuscaloosa AL 35487-0340.

Alabama Rivers Alliance, 700 28th Street South, Suite 202G, Birmingham AL 35233; 205-322-6395; www.alabamarivers.org

Parting Thoughts

Toward the end of the video, a guest scientist asserts that preserving selected portions of rivers is not enough to protect overall river health. He adds that Alabama rivers and river ecosystems will continue to decline if uncontrolled growth and development are allowed to proliferate in the surrounding watersheds.

No doubt this scientist’s views are in conflict with the views of at least a few folks who seek expanded development in our state. After all, Alabama has many struggling communities in great need of economic development. And certainly, it would be ill-advised to hastily establish new restrictions to hinder needed development. However, given all indications for potential growth and change coming our way, the time may be past due to acknowledge the validity of the scientist’s core point—our rivers will continue to decline if we fail to maintain the extensive wildlands and rural countrysides that are essential to the environmental health of river systems.

Oh yeah, I almost forgot. Allow me to offer some unconventional advice to fellow Alabamians concerned about environmental quality: You might find it helpful to check out the makeup of local governing bodies. Frequently, development interests are the dominating influence on city councils and county commissions. Obviously, an important step is to broaden this representation and include environmentally active leadership.



Happy outings,

D. Long



Discovering Alabama

Activity/Information Sheet

Mobile River Basin

THREATENED & ENDANGERED AQUATIC SPECIES IN THE MOBILE RIVER BASIN

Turtles

Alabama redbelly turtle
Flattened musk turtle

Fish

Cherokee darter
Etowah darter
Goldline darter
Amber darter
Blue shiner
Cahaba shiner
Conasauga logperch
Gulf sturgeon
Pygmy sculpin
Watercress darter
Alabama sturgeon

Mussels

Alabama moccasinshell
Coosa moccasinshell
Dark pigtoe
Fine-lined pocketbook
Orange-nacre mucket
Ovate clubshell
Southern acornshell
Southern clubshell
Southern pigtoe
Triangular kidneyshell
Upland combshell
Black clubshell
Flat pigtoe
Inflated heelsplitter
Heavy pigtoe
Southern combshell
Stirrupshell

Snails

Tulotoma
Cylindrical lioplax
Flat pebblesnail
Plicate rocksnail
Painted rocksnail
Round rocksnail
Lacy elimia

Plants

Harperella
Kral's water-plantain

SPECIES OF CONCERN

(status is in significant decline; may need to be listed as threatened or endangered in the foreseeable future)

Reptiles & Amphibians

Alligator snapping turtle
Mississippi diamondback terrapin
Gulf salt marsh snake
Black Warrior waterdog

Fish

Alabama shad
Blue sucker
Coldwater darter
Trispot darter
Alabama channel darter
Warrior bridled darter
Paddlefish
Walleye
Gulf striped bass (populations are currently maintained by hatchery stocking)

Mussels

Alabama clubshell
Georgia pigtoe
Painted clubshell
Tennessee heelsplitter
Alabama pearlshell

Snails

Antrorbis breweri
Sculpin snail
Knotty pebblesnail
Sticky pebblesnail
Hidden pebblesnail
Fluted pebblesnail
Pygmy pebblesnail
Granite pebblesnail
Dwarf pebblesnail
Moon pebblesnail
Tallapoosa pebblesnail
Coosa pebblesnail
Spindle elimia
Puzzle elimia
Caper elimia
Gladiator elimia
Black mudalia
Spotted rocksnail
Upland hornsnail
Rough hornsnail
Ringed hornsnail
Domed ancyliid
Wicker ancyliid

Insects

American sandburrowing mayfly
Cahaba sandfiltering mayfly
Septima's clubtail dragonfly
Cherokee clubtail dragonfly
Alleghany snaketail dragonfly
Cheaha beloneurian stonefly
Cobblestone tiger beetle
Stark's false water penny beetle
Folkert's hydroporus diving beetle
Red Hills unique whirligig beetle
Caddisfly *Agarodes alabamensis*
Caddisfly *Hydroptila lagoi*
Caddisfly *Ochrotrichia elongiralla*
Caddisfly *Polycentropus harrisi*
Cahaba saddle-case caddisfly
Caddisfly *Stactiobiella cahaba*
Caddisfly *Theliopsyche tallapoosa*

Crayfish

Crayfish *Cambarus englishi*
Crayfish *Cambarus miltus*
Crayfish *Procambarus lagniappe*
Spinytail crayfish

Plant

Cahaba lily

The above information was provided by the U.S. Department of the Interior's Fish and Wildlife Service, which works "to conserve and restore endangered and threatened species and the ecosystems upon which they depend." The U.S. Fish and Wildlife Service provided financial support for this *Discovering Alabama* video.