

Discovering Alabama

Teacher's Guide

Alabama Wetlands

Suggested Curriculum Areas

Science
Social Studies
Environmental Studies

Suggested Grade Levels

4–12

Key Concepts

Wetland
Ecosystem
Natural Heritage

Key Skills

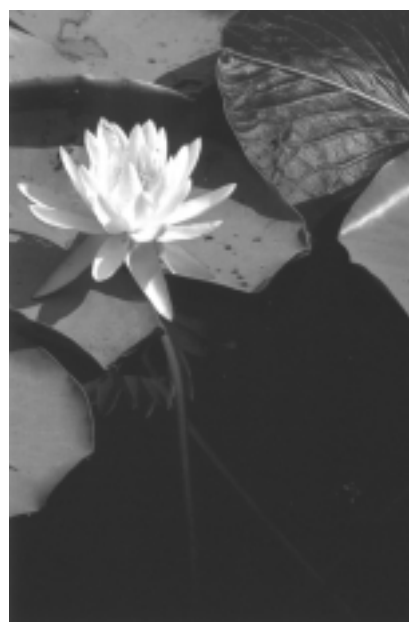
Map Reading
Scientific Inquiry
Philosophical Analysis

Synopsis

Since colonial times, our nation has lost more than half of its native wetlands, largely as a consequence of historically accepted practices of draining, filling, polluting, and otherwise altering these important resources. Alabama too has experienced similar environmental losses, and today faces the challenge of how to protect and perpetuate its remaining wetland habitats.

This video presents Alabama's uncommon diversity of wetlands as it occurs in association with the state's diverse physiography. Guest experts provide additional information and insights regarding the scientific description of wetlands, the many values and benefits of wetlands, and the need for greater wetlands protection.

This video is suitable for classroom use in conjunction with the informative book, *Discovering Alabama Wetlands* (The University of Alabama Press, 2002), photographed by nature photographer Robert Falls, authored by *Discovering Alabama* host Dr. Doug Phillips, and available at local book stores.



Fragrant water lily (*Nymphaea odorata*), common to Alabama wetlands



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.

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*The Solon and Martha
Dixon Foundation*



Alabama
Wildlife
Federation



Before Viewing

1. Ask students to describe/define the term “wetland” by completing the sentence, *A wetland is...* This might be a difficult assignment for some students, but avoid assisting them with descriptive clues. Each child should reflect quietly and generate their own impressions/ideas. Next, invite students to share their written descriptions with the class.
2. Conduct a brainstorm to produce a list of all the types/names of features your students think might qualify as being wetlands (for example, the names “marsh,” “bog,” “swamp,” “bayou,” etc.). This activity also can be difficult for some students, especially those having no previous opportunity to consider the subject of wetlands. In such case, you might wish to augment the brainstorm a bit by offering hints as necessary to help the class produce an adequate list of wetland types/names. (Consult *Discovering Alabama Wetlands* for pertinent information regarding wetland names, types, and scientific classification.)
3. Ask whether your students know of any local wetlands that might match one or more of the types listed in the brainstorm. Discuss the possible benefits provided by such local wetlands. Introduce the video by explaining that, historically, society has not been fully aware of how wetlands benefit our daily lives. Explain to the class that, because Alabama has an uncommon abundance and variety of wetlands, scientists today are studying Alabama wetlands to learn more about the important role of these resources.

While Viewing

Ask students to note information presented in the video that a) might improve their individual definitions/descriptions of the term “wetland,” b) add to their brainstorm list of wetland types, and c) contribute to our knowledge and understanding of wetland benefits.

Video Mystery Question: If we have laws today for environmental protection, why is there no official protection for many of Alabama’s wetlands? (Answer: Federal wetlands provisions apply mainly to the regulation of such activities as dredging and filling along primary waterways. Therefore, many wetlands do not qualify for federal oversight. Furthermore, except in regard to designated “coastal zone” wetlands, Alabama has no state laws giving specific priority/emphasis to wetlands protection.

After Viewing

1. Place students in small groups and have each group work to develop a consensus description/definition of the term “wetland” and a summary of wetland types and regions in Alabama.
2. Conduct a brainstorm to solicit student input in listing the many values/benefits provided by wetlands. Discuss how these might apply in your local area/community.

Extensions

1. Obtain topographical maps of your local community or county and, if needed, invite the assistance of conservationists or other knowledgeable sources in reviewing the maps and locating wetlands in your area. (Topographic maps are available from the Geological Survey of Alabama, see **Additional References & Resources** for contact information.) Select a large, wild wetland and calculate/estimate its dimensions, acreage, and elevation, as well as determine other land or water features in the watershed.
2. Take a field trip to an accessible local wetland and conduct environmental assessments to gather information about landforms, water quality, wildlife, and vegetation at the wetland site. Investigate whether there are adjoining bodies of water that the wetland affects ecologically.

Philosophical Reflections

“Wetlands Mitigation” is a subject of environmental controversy. Essentially, the term means allowing the destruction of a native, wild wetland at one location if this environmental loss is offset by mechanically “creating” a “new wetland” or working to restore a damaged wetland at another location. Mitigation proponents contend that human progress often requires the disruption of native wetlands, and that environmental laws accommodate mitigation as a viable alternative to preserving native wetlands. Opponents to mitigation argue that this practice rarely succeeds in producing wetlands that are as naturally diverse and ecologically functional as naturally-occurring native wetlands.

Meanwhile, some observers suggest that, at the core of this debate, there are underlying philosophical differences: one side believing that humankind has complete superiority and dominion over nature, and the other side believing that humans are but one member in the larger Community of Life and therefore, not entitled to such superior rule over nature.

Which philosophical viewpoint do you feel is most appropriate? Might there be a stance in-between, a viewpoint giving humankind decision-making dominion over nature but also requiring responsible stewardship of nature? Which viewpoint do you think is held by the famed conservationist, Aldo Leopold, who warned, “Now we face the question whether a still higher standard of living is worth its cost in things natural, wild, and free.”



Winter in a freshwater marsh, central Alabama.

Nature in Art

Examine the splendid photographs of nature photographer Robert Falls in the book, *Discovering Alabama Wetlands*. Invite your students to produce a similarly-designed photographic portrayal of a local wetland.

Community Connections

1. Find a significant wetland in your area that is at risk of environmental harm. Conduct a study of the wetland to learn about its history, ownership, environmental condition, and existing or potential environmental impacts. Develop a suitable questionnaire and survey the wetland landowner and surrounding landowners regarding their views and preferences about the wetland. With the landowner's permission/assistance, have the class develop an educational program (video, slides, articles, etc.) about the wetland. Use the educational program in promoting community awareness for wetlands protection.
2. Work with the landowner and/or local officials in exploring ways to encourage/achieve long-term protection for the wetland.

Complementary Aids and Activities

- **Project Learning Tree: Environmental Education Pre K–8 Activity Guide:** grades 4–8: “Water Wonders” and grades 7–8 and up: “Watch on Wetlands.” Contact: Alabama Forestry Association, 555 Alabama Street, Montgomery AL 36104; also visit their Website: www.ptl.org; email: info@alaforestry.org
- **Project WET:** elementary students, grades 3–5: “Salt Marsh Players,” middle students, grades 6–8: “Life in the Fast Lane,” secondary students: “Wetland Soils in Living Color.”
- **Project Aquatic WILD:** elementary students: “Deadly Waters,” middle and secondary students: “Dragonfly Pond” and “Migration Headaches.” For both resources, 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.

- **Water Sourcebook,** Activity Guide, grades 3–5, “Wonderful, Waterful Wetlands,” “Home, Wet Home,” “You Must Have Been a Beautiful “Bay-Bee.” Contact: Legacy, Inc., Partners in Environmental Education, P.O. Box 3813, Montgomery AL 36109; also visit: www.legacyenved.org

Additional References and Resources

- **Discovering Alabama Wetlands** by Doug Phillips; photography by Robert P. Falls, 2002.
- **A Golden Guide to Pond Life** by George K. Reid and Herbert S. Zim, 1995. The single, most useful book on aquatic plants and animals for beginners.
- **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; (205) 349–2852; visit Website: www.gsa.state.al.us/.
- **National Wildlife Federation: Wading into Wetlands (Ranger Rick’s NatureScope),** 1997. A great K–8 resource that focuses on swamps, marshes, and fresh- and saltwater wetlands.
- **Pond Life** by Barbara Taylor; photography by Frank Greenaway, 1998. An attractive photography-based book for beginners.
- **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.
- **Pond Life (Pocket Naturalist Series)** by James Kavanaugh, 2002. Filled with educational games and activities for kids of all ages.
- **Rabbit’s Big Splash,** a Project CATE wetlands activity, multimedia CD. Contact: Educational Concepts, 6163 Bayou Road, Mobile AL 36605; visit Website: www.projectcate.com/big.htm

Wetlands-related Websites

- Alabama Environmental Education Resource Database: www.alenviroed.com/
- Cahaba River Society: www.cahabariversociety.org/
- Environmental Protection Agency: www.epa.gov/owow/index.html
- National Wildlife Federation: www.nwf.org/wetlands/
- US Geological Survey: <http://ga.water.usgs.gov/edu/index.html>
- Wetland’s Edge Environmental Center, Decatur City schools’ Website: www.weec.dcs.edu/1WEEChome.htm

Parting Thoughts

As noted in the Synopsis, this video was produced as a compliment to the book, Discovering Alabama Wetlands. I am most grateful to photographer Robert Falls for inviting me to write the text of this book. The text is careful to explain that human society is not the only cause of wetland losses. The effects of storms, changing climate patterns, and other aspects of nature have been at work continuously, both diminishing wetlands and forming wetlands in various places around the world. However, as the book also explains, expanding human populations today pose an array of unprecedented threats to wetlands, with the potential for increased wetland losses in the future.

Most of Alabama’s remaining native wetlands are not protected from the possible impacts of predictable population growth, commercial development, etc., in the years ahead. Furthermore, Alabama is unlikely any time soon to see new laws or regulations for wetlands protection. The answer, therefore, lies with private landowners, the leadership of environmental organizations, and general public awareness and support for wetlands protection. Central to this solution is the need to protect whole natural systems rather than fragmented remnants.

Oh yeah, I almost forgot. Alabamians can be proud of many examples of wetlands protection in the state. These include sizeable tracts in the Mobile–Tensaw Delta and in the Sipsey River Swamp, acquired with the assistance of the Alabama Forever Wild Program.



Happy outings,

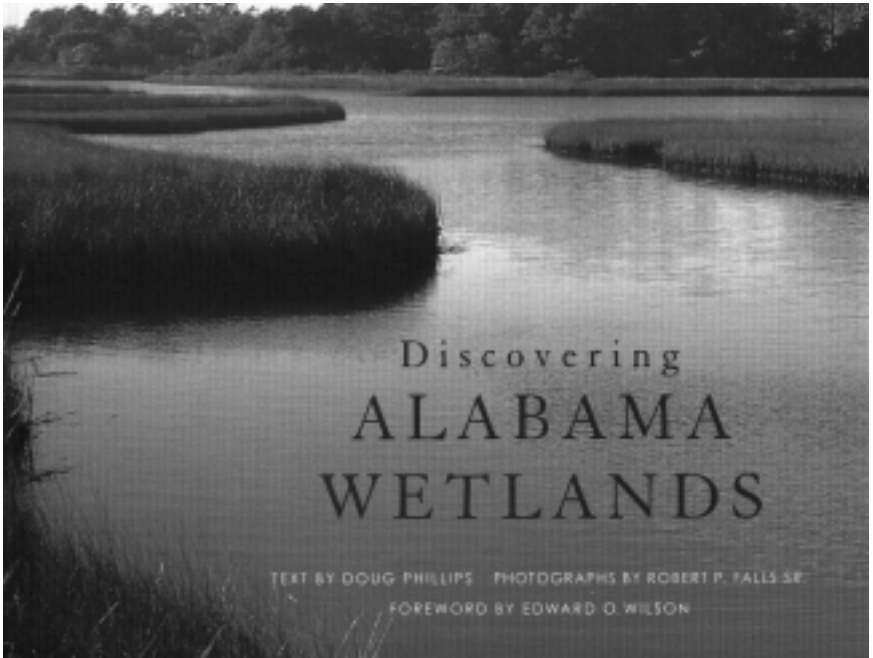
Dr. George



Discovering Alabama

Activity/Information Sheet

Alabama Wetlands



*Great blue heron (Ardea herodias)
silently eyeing its next meal,
Gulf State Park.*

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The University of Alabama Press.

Discovering Alabama Wetlands

Text by Doug Phillips

Photographs by Robert P. Falls Sr.

Foreword by Edward O. Wilson

(The University of Alabama Press, 2002)

Alabama could easily be called the “Aquatic State.” It has an abundant supply of rain with countless streams, rivers, lakes, swamps, bogs, bottomlands, and bays that capture and release this freshwater. An estimated 20 percent of the nation’s total freshwater works its way through this small physical land area that ranges from the temperate foothills of the Appalachians to the semitropical Gulf Coast. Alabama’s varied watery realms have harbored and continue to sustain a rich diversity of plant and animal species virtually unequaled on the continent....

This book sounds a strong warning for these fragile, dwindling wetlands....

[M]ore than half of the original area of Alabama wetlands—four million acres—has already been lost to two centuries of excessive timbering practices, agricultural drainage, suburban sprawl, and siltation. In reasoned, direct prose, [Phillips] encourages readers to adopt a proactive attitude in protecting their nearby wetland areas, areas that will be essential to economic stability and the quality of life in Alabama for generations. With this beautifully illustrated album, Phillips and Falls offer their eloquent statement for wetlands protection.

—from book jacket