

Discovering Alabama

Teacher's Guide

Flint River

Suggested Curriculum Areas

History
Social Studies
Science
Environmental Studies

Suggested Grade Levels

4–12

Key Concepts

Biosphere
Watershed
Land-use Planning
Sustainability

Key Skills

Map Reading
Forecasting
Problem Solving
Research

Synopsis

Numerous rivers and streams across the nation are being encroached upon by sprawling development. Such is the case with Flint River, a beautiful mountain-fed stream in north Alabama. Historically the Flint had been surrounded by hardwood forests and abundant wildlife, which provided food and shelter for early tribes of hunter-gatherers.

During settlement the area attracted newcomers seeking fertile valleys for growing crops and grazing livestock. The Flint watershed was soon dotted with homesteads, small farms, and the pioneer beginnings that would eventually become a major agricultural area.

Today the Flint faces a different kind of economic activity with more permanent environmental consequences. Sprawling growth in Madison County and surrounding areas is bringing accelerating change in the form of new roadways, expanding subdivisions, and a proliferation of commercial businesses and shopping districts. Despite the efforts of local environmental advocates, the new growth is rapidly encroaching on the natural character of the Flint watershed.

This video explores the Flint River from near its mountainous headwaters to its juncture with the Tennessee River. Along the way, interviews with various experts and residents highlight the impressive history of the Flint and the pressing changes that threaten the river today.



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; (205) 348-2036; fax: (205) 348-4219; or email: orders@discoveringalabama.org. Also visit our website: www.discoveringalabama.org.

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Alabama Department Of
Conservation and Natural Resources
State Lands Division

Before Viewing

1. Use the videos and Teacher Guides of such *Discovering Alabama* shows as “Cahaba River Watershed,” “Bear Creek Watershed,” and “Mobile River Basin” to help students understand the meaning and importance of the environmental terms *watershed* and *biosphere*.
2. Determine which topographic map(s) represent the watershed in your locale. Contact the Geological Survey of Alabama for assistance—see **Additional References and Resources**. Obtain enough copies of these map(s) so that, after dividing your class into small groups of four-five students per group, each group can have its own map set for the complete watershed area. Help students to interpret the map symbols and topography. Then have them work together in their respective teams to a) use a dark-color highlighting marker to outline the boundaries of the watershed, b) use a light-color marker to shade the entire watershed, and c) roughly calculate the portion/percentage of the watershed that, according to the map(s), is shown in each of such land-use categories as forestland, farmland, residential subdivision, urban development, etc. Introduce the Flint River show by explaining that the show features a watershed currently experiencing change similar to trends in several Alabama watersheds today.

While Viewing

Have students note land use changes that have affected the Flint River watershed over the years, including those changes occurring in the watershed today. Also, have them note any references pertaining to projected future change in the watershed.

Video Mystery Question: The Flint River has experienced environmental impacts in earlier periods of Alabama history. In what way might present changes in land use pose environmental impacts of more enduring significance? (**Answer:** The river was able to eventually recover from earlier environmental impacts, such as those from abusive forest exploitation

and from the abusive application of toxic chemical pesticides, when these destructive practices were stopped and natural systems were allowed to rebound. However, today’s trends in expanding urban and suburban development often result in large-scale conversion of natural habitats, forests, soils, flora and fauna to artificial environs, essentially causing the permanent loss of natural systems vital to environmental recovery and environmental health.)

After Viewing

1. Discuss land-use changes occurring today in the Flint River Watershed and consider how these changes differ from past land-use conditions. Guest comments in the video refer to projections for the further expansion of commercial development in this part of Alabama. Discuss related implications of these projections for the long term future of the Flint River and its watershed.
2. Conduct a brainstorm session inviting students to offer their thoughts and ideas of why present land-use changes are occurring in the Flint River watershed. Encourage the class to consider all possibilities, from the obvious economic factors to shifting cultural norms, lifestyles, values, etc. List these on a flip easel or blackboard and discuss how/whether these reasons might also apply to trends in land-use affecting other Alabama streams.
3. Ask students to imagine land-use conditions that might affect your local watershed 50 years or more into the future. Have them work in their small groups and develop recommendations to promote land-use patterns and practices protective of Alabama streams and watersheds. Invite each group to present their recommendations to the class. Discuss relevant career opportunities that are associated with community planning, environmental protection, governmental leadership, etc.

Extensions

1. Use the videos and Teacher Guides of such *Discovering Alabama* shows as “Alabama Forests” and “Alabama Wetlands” to help students understand important relationships between natural systems and environmentally healthy streams and watersheds. Use videos and Teacher Guides of such *Discovering Alabama* shows as “Tuscaloosa County,” “Village Creek,” and “Weeks Bay” to help students explore concepts of community planning and sustainability.
2. Invite someone from your local government (preferably from the planning division or environmental division) to discuss trends and projections for land use in your area and your selected watershed. Have the class prepare questions in advance so they can ask the invited guest about issues pertaining to local environmental protection.

Philosophical Reflections

Some years ago, a popular magazine carried a two-page advertisement in which the first page featured a beautiful pastoral setting with cows grazing contentedly and a caption ruefully proclaiming, “Some people look at this scene and see only cows.” The opposite page of the ad featured the same tract of land, but now with a sprawling new shopping mall in place of the pastoral setting, and with a new caption happily proclaiming, “We look, and we see *opportunity!*” This caption was accompanied, of course, by the corporate logo of the development company sponsoring the ad.

Pros and cons of mall development aside, what might this ad suggest about the mind-set of those who would devise a marketing pitch with such apparent indifference to the values of farming, farmland, and natural countryside? What does it suggest about changing perceptions and values in society today?

Nature in Art

Perhaps this section should have been given the dual title, "Nature in Art—Art in Nature" to more clearly reflect the interactive connections linking nature and the arts. Have students consider this duality through individual projects (photography, visits to art museums, nature observations, creative writing, etc.) that explore the relationship between art and nature.

Community Connections

As most teachers know, a well-planned field trip conducted early in the school term is a great way to provide a memorable and meaningful learning experience as a springboard for further learning during the year. Conduct such an outing to a special natural area in your selected watershed. Seek assistance from local environmental or conservation agencies/organizations. In the Flint River area, assistance is being offered, for example, by the Flint River Conservation Association, www.flintriver.org. Have students perform a variety of environmental assessments (soil tests, water tests, forest inventories, etc.) to sample environmental conditions in the study site. Later have the class do further research and compile a public awareness presentation (news article, video, slide show, or other format) to inform the local community about the environmental importance of your selected stream and watershed.

Complementary Aids and Activities

- From *Alabama's Environmental Legacy Guide*, "The Value of Water." Legacy, Inc.: Partners in Environmental Education, Legacy, Inc., P.O. Box 3813, Montgomery, AL 35109; phone (800) 240-5115, website: www.legacyenvd.org.
- *Aquatic Project Wild*: Activity "Riparian Retreat," available through Alabama Department of Conservation and Natural Resources, 64 N. Union St., Montgomery, AL 36130.

- *Project Learning Tree*: Activities: "Planning the Ideal Community" and "Field, Forest, and Stream." Contact: Alabama Forestry Association, 555 Alabama Street, Montgomery, AL 36104; also visit www.plt.org.

Additional References and Resources

- *Where We Live: A Citizen's Guide to Conducting a Community Environmental Inventory* by Donald F. Harker and Elizabeth Ungar Natter (Island Press, 1995). Island Press, 1718 Connecticut Ave., NW, Ste. 300, Washington, DC 20009.

Stream- and Water-Information Websites for Alabama

Alabama Department of Economic and Community Affairs, Office of Water Resources
www.adeca.alabama.gov/content/owr

Alabama Department of Environmental Management
www.adem.state.al.us

Alabama Department of Conservation and Natural Resources
www.dcnr.state.al.us

Alabama Rivers Alliance
www.alabamarivers.org

Alabama Water Watch
www.alabamawaterwatch.org

Alabama Association of Conservation Districts
www.swcc.state.al.us/aacd.htm

Alabama Soil and Water Committee
www.swcc.state.al.us/directory.htm

Geological Survey of Alabama
www.gsa.state.al.us

U.S. Geological Survey
<http://www.usgs.gov/>

U.S. Natural Resources Conservation Service
www.al.nrcs.usda.gov

Parting Thoughts

Today the emphasis in education is on "raising test scores" and preparing students for a "competitive world." Of course, academic preparation is an essential priority of our schools, as is preparing students for the competitive realities of life. But I would suggest that the educational bureaucracy is often myopic in this pursuit—often failing to give students the broader preparation to help promote a cooperative world of better problem-solving for economic, cultural, and environmental sustainability.

Indeed, the disconnection of classroom instruction from active study and involvement with real-world community issues also leaves schools increasingly vulnerable to problems from uncontrolled change. For example, in many sprawling urban communities, the dilemmas faced by schools eventually multiply to extreme levels—crowded classrooms, zoning conflicts, political conflicts, rising rates of family transience, rising numbers of students with emotional adjustment difficulties, more drugs and crime, mounting expenses associated with efforts to cope with these problems, etc., etc.—not to mention a declining natural environment increasingly void of the wonders of nature that can excite and inspire the minds of children.

May I suggest further that test-score driven programs such as "No Child Left Behind," despite having genuine educational aims, are inadequate to address the compounding problems confronting schools today. Rather, solutions are better found through comprehensive community planning that addresses the range of issues affecting the overall quality of life in the community—planning that explores creative strategies to achieve sustainable economic well-being and sustainable environmental quality. This is a big challenge involving social, environmental, and other kinds of assessments. But this challenge also presents a prime opportunity to involve students in the applied study of science, social studies, and environmental studies—to engage students in "real-world," "inquiry-based," "hands-on" study of local needs and issues.

Oh yeah, I almost forgot. In addition to the *Discovering Alabama* series, several other special resources and programs are available to assist teachers interested in local community studies. Visit our website, <http://www.discoveringalabama.org>, for information about Project Community, Discovering Our Heritage, and Ask the Expert.



Happy outings,

Dr. Doug



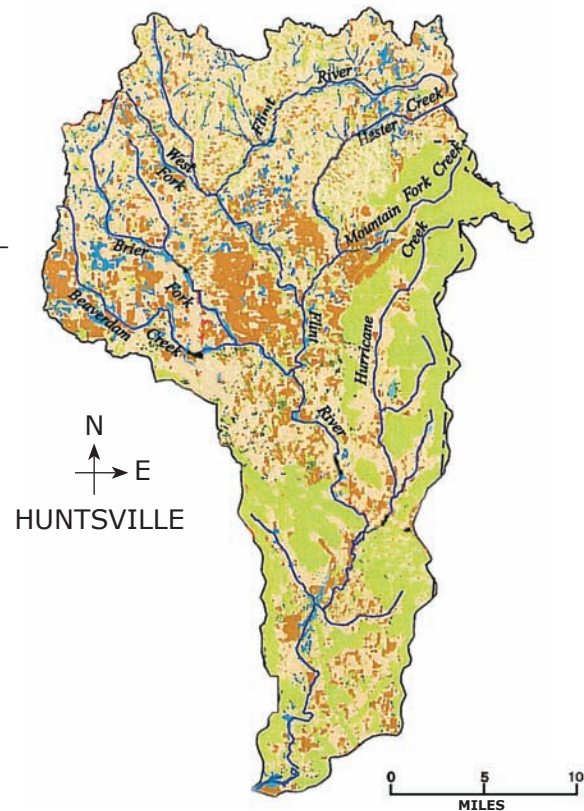
Discovering Alabama

Activity/Information Sheet

Flint River

The Flint River Watershed

- River Length—almost 50 miles
- Area of Watershed—568 square miles, 342 of which are contained in Madison County northeast and east of Huntsville



What Will Be the Future of the Flint?

The magazine ad referred to in **Philosophical Reflections** has proven to be a harbinger of escalating impacts to U.S. farmland, including farmland in the Flint River area. The ad was published on several occasions over several years until a farmland advocacy group voiced their concern about the ad's condescending tone against farming. Nevertheless, similar versions of the ad have appeared in various publications since that time, and prime American farmlands continue to be converted to commercial development at an accelerating pace.

The ad is symptomatic of an affliction of the present age, an imperceptive mindset that is comfortable with the indifferent dismissal of farming, farmland, and natural countryside in preference for yet another "shopping experience." And this indifference seems to be on the increase in our rapidly urbanizing society. A recent federal study reports that the nation is losing more than 6,000 acres of rural land and open space *each day*. This equates to a total area roughly the size of New Jersey that is converted to urban/suburban development every two years.

Today the South is the nation's fastest growing region. And such growth is often promoted for Alabama as the means to "escape the state's rural backwater image," to "achieve cultural diversity," and to "catch up with competing growth centers," like Atlanta, elsewhere in the South.

Once again, an imperceptive, short-term mindset invites blindness to the mounting long-term problems that plague so many high growth regions. For example, many U.S. communities, Atlanta included, are struggling with the phenomenon of rapid rainwater runoff across

expanding landscapes of concrete, asphalt, and the disturbed soils of ever-spreading development. The accumulated sediments, varied wastes, discarded trash and residues of gasoline, oil, and other substances are ruinous to the water quality of streams and lakes. The natural function of watersheds in providing "free services," such as filtering and cleaning rainwater, and recharging groundwater, are thereby exchanged for costly governmental services now required to maintain community water supplies. In fact, this problem is a major reason for the unprecedented water shortages affecting Atlanta, Georgia today, and thus also a primary cause behind the infamous Georgia-Alabama "water wars."

As we look to Alabama's future and the future of the Flint River, water issues are but one concern associated with accelerating urban growth and development. An ultimate, long-term consequence could be the loss of rural character, abundant countryside, and native wilds of our state. How might such extensive environmental change affect traditional lifeways in Alabama? How might such change affect the mindsets and values of future generations in Alabama? And what will happen to regional cultural diversity when all regions become homogenized by the same commercially developed landscapes and a prevailing perspective of life no longer closely connected to the land?