



Discovering Alabama

Teacher's Guide

Bear Creek Watershed

Suggested Curriculum Areas

- Civics
- Social Studies
- Environmental Studies

Suggested Grade Levels

2–12

Key Concepts

- Watershed
- Non-Point Source Pollution
- Natural Heritage

Key Skills

- Map Reading
- Scientific Inquiry
- Philosophical Analysis

Synopsis

This video presents the natural qualities of the Bear Creek Watershed in northwest Alabama and tells the story of how local residents rallied together to address pollution problems affecting the creek. The success of this effort, known as the Bear Creek Watershed Project, has gained wide recognition as a model partnership in correcting “non-point source” water pollution problems.

The video features many of the local landowners, agency representatives, and others who participated in the Bear Creek Watershed Project as they describe their concerns for the Bear Creek area. The video also highlights the assistance made available to the project via Section 319 of the Clean Water Act.



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:

*The Salon and Martha
Dixon Foundation*



Before Viewing

Consider the many environmental issues (local, state, and national) that are often marked by angry conflict between different interest groups—environmental groups against industry groups, preservationists battling developers, private-property owners versus government regulatory agencies, etc. Such conflict is often fueled by human difficulties in achieving effective communication. Therefore, the Bear Creek Watershed Project is a special story, not only because of its environmental success, but also because of the project's uncommon level of local cooperation among interest groups. This presents an opportunity to actively engage students in exploring the environment *and* the human dimensions of the Bear Creek story.

1. Conduct a role-play simulation in which your students can experience difficulties that often hinder communication and cooperation between differing interests. Begin by preparing written descriptions of such key roles as, for example, a) a landowner/farmer committed to guarding his/her “private property rights” and “freedom to make a living,” and opposed to “costly environmental regulations”; b) an environmental activist committed to “the rights of nature” and “saving endangered species,” and opposed to profiteers that “poison the Earth”; c) a politician committed to “growth” and “economic development,” and opposed to “tree-hugger extremists”; and d) an agency official committed to “helping the community” and “following the law,” and opposed to “opposing anyone.” Develop the written descriptions to amplify each role's stereotypical beliefs/attitudes such that each role is devoted entirely to expressing and defending its own special interests. Distribute the role descriptions to the class so that no one knows another's assigned role and so that the number of students representing each role is roughly equal.

2. Next, arrange the class in small groups, taking care that all the various roles are represented in each group. Explain that each group of students should pretend that

they are a mix of people who live in a large rural area with lots of wild woodlands, pleasant countryside, and a beautiful stream flowing for miles through the heart of the area. The water in the stream has become badly polluted and a solution must be found to the problem. Ask the students in each group to assume their assigned roles and spend 10–15 minutes a) discussing their concerns about the problem and b) trying to reach consensus on what should be done about the problem.

3. This simulation is, of course, designed to pose built-in obstacles to cooperation among the different roles. Predictably, students should feel a sense of frustration over the difficulties experienced in trying to communicate and reach consensus. Discuss with the class their thoughts regarding why real-life situations are often plagued by similar difficulties and how these barriers to cooperation might be overcome.

While Viewing

Have students a) identify people featured in the video who fit such careers as farmer, landowner, agency official, etc. and b) watch for how these people have dealt with their local pollution problems.

Video Mystery Question: The video reveals that, for many years, Bear Creek suffered from serious *water* pollution. Why then did this problem require a *land* solution? (Answer: As the video explains, the quality of water in a stream is directly affected by the environmental quality of the land in the surrounding watershed. To correct pollution affecting Bear Creek, landowners sought to improve land practices pertaining to soil retention, crop production, and animal waste disposal.

After Viewing

1. List the different roles/interests represented in the video. Discuss how and why they put aside immediate self-interests to seek a solution to Bear Creek's pollution problems.

2. Return students to small groups. This time, however, ask them to work *co-operatively* in trying to understand each other's concerns and in developing a written step-wise plan for addressing their stream's pollution problem. Have each group present its plan to the class.

Extensions

Invite representatives of local interest groups and organizations, similar to those in the video, to visit the class and present their perspectives on environmental quality and economic development. Help the class be prepared with a list of probing (even difficult) questions.

Philosophical Reflections

There are different philosophies of how best to protect lands with appealing natural qualities. For example, one view maintains that property held in common, i.e., property that is publicly owned rather than privately owned, inevitably meets with deterioration and ruin. This view suggests that property “owned” by everyone is, in effect, owned by no one, and therefore susceptible to neglect and even to public vandalism and abuse. Such perspective is often shared by interest groups who argue against designating special lands to the public domain as parks, nature preserves, etc.

Countering this perspective is another view maintaining that native, natural lands, when left entirely to the free market system, are often of little worth until these lands and their natural values become diminished or in short supply, whereupon the opportunity to secure their protection is no longer available. This view is frequently central to the arguments of interest groups working to add special lands to the public domain.

In the US, our way of life is based on a free-market system, yet our national policies have historically enabled public domain protection for lands of special natural qualities. How might this seeming philosophical contradiction be justified? Is this justification reflected in the Bear Creek Watershed Project?

Nature in Art

The video presents several natural settings—mountainous terrain, valleys, lakes, forestlands, creek scenes, waterfalls, etc.—that are among popular subjects for photographers and landscape artists. Also shown in the video are various settings shaped by human presence—fields, pastures, roadways, farm buildings, homesites, etc.—that can often provide additional richness and appeal to artistic renderings of local landscapes. In fact, much art is inspired either by nature itself or by human relationships with nature. Have your class organize and conduct a photography project capturing both aspects of your local area/community.

Community Connections

Obtain a topographical map for your school area (see **Additional References and Resources**). Determine the primary stream associated with the watershed in which your school is located. Invite the assistance of local agencies in helping the class assess the environmental conditions of the land in the watershed and the environmental quality of the water in the stream.

Complementary Aids and Activities

Project Learning Tree: Environmental Education Pre-K–8 Activity Guide: activities: early elementary: “Pollution Search”; upper elementary and middle students: “Every Drop Counts?,” “We Can Work it Out.” Contact: Alabama Forestry Association, 555 Alabama Street, Montgomery AL 36104; also visit their website: www.ptl.org; email: info@alaforestry.org

Project WET: activities: elementary students: “A-maze-ing Water”; upper-elementary/middle-school students: “Rainy Day Hike,” “Sum of the Parts”; secondary students: “Color Me a Watershed.” **Project Aquatic WILD:** activities: elementary students: “Wetlands Metaphors”; middle school to secondary students: “Living Research: Aquatic Heroes and

Heroines,” “Facts and Falsehoods.” **Project WILD:** activities: middle students: “Water’s Going On?”; middle and secondary students: “Riparian Zone.” For all three, contact: Alabama Department of Conservation & Natural Resources, 64 N. Union Street, Montgomery AL 36130; website: www.dcnr.state.al.us/administrative/ieledprograms.html

Additional References and Resources

- **Legacy, Inc.** Lots of water and environmental information; see their **Water Sourcebooks** (for different age groups), and water-related posters. Contact: Legacy, Inc., P.O. Box 3813, Montgomery, AL 36109; website: www.legacyenvd.org
- **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; website: www.gsa.state.al.us/
- **Discovering Alabama.** Related videos and Teacher’s Guides: “Cahaba River Watershed,” “Locust Fork River,” “Village Creek,” “Sipsey River Swamp,” and others (check www.discoveringalabama.org for a complete list).

River and Watershed-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 Army Corps of Engineers,
Mobile District Water Management Section
water.sam.usace.army.mil

US Geological Survey (USGS)
ga.water.usgs.gov/edu/index.html

Parting Thoughts

As the video presents, the restoration of water quality in Bear Creek is an impressive story of local leaders and landowners working together to correct pollution problems affecting the creek. However, a complete portrayal of change in the Bear Creek Watershed involves additional concerns that could not be fitted into the limited time available for the video.

For example, there are the painful recollections of landowners like Larry Bailey, who endured great anguish as portions of his family farm were taken by government condemnation to meet Tennessee Valley Authority (TVA) plans for the region. Anguish was again experienced by these landowners as they watched their confiscated farmlands and woodlands inundated to become government-controlled impoundments.

Also missing from the video are the private apprehensions of area residents such as Dale Baker. Mr. Baker is representative of local folks who feel a personal bond with the untamed landscapes of Bear Creek and who worry that modern trends of growth and development might eventually erode a special way of life enriched through daily closeness to the native wilds.

These concerns, though missing from the video, are nevertheless of significant relevance to the future of the Bear Creek Watershed. Protecting the native qualities and native landscapes in the watershed will require enlightened government leadership, aided and informed by the values and insights provided through citizen participation. Congratulations to those who have demonstrated the effectiveness of such collaboration in correcting past problems in the Bear Creek Watershed. May local officials, landowners, and residents be equally successful in addressing new challenges that lie ahead.

Oh yeah, I almost forgot. Every Alabama community is within a watershed of a nearby creek or river. And, every Alabama community has access to the expertise of the US Natural Resources Conservation Service, the Alabama Department of Environmental Management, and local conservation districts. Therefore, every Alabama community can pursue opportunities to organize partnerships similar to the successful Bear Creek Watershed Project. Contact local conservation district officials to learn more about such opportunities.

Happy outings,

D. Long





Discovering *Alabama*

Activity/Information Sheet

Bear Creek Watershed

As you have seen in the video, Bear Creek is a model of how a community, even one with very diverse viewpoints, can band together to solve a mutual problem. The key, of course, is communication—actually talking to one another and helping each other solve a complicated problem.

Discovering Alabama recognizes the special contributions and support of the following organizations in the production of “Bear Creek Watershed.”

Alabama Department of Environmental Management
Bear Creek Development Authority
Bear Creek Millennium Group
Franklin County Water Service Authority
Russellville Water & Sewer Board
USDA Natural Resources Conservation Service
Colbert County Soil & Water Conservation District
Franklin County Soil & Water Conservation District
Marion County Soil & Water Conservation District
Winston County Soil & Water Conservation District
US Environmental Protection Agency
Tennessee Valley Authority

If you are considering a watershed project, the lead agency for soil and water conservation projects is the Natural Resources Conservation Service (NRCS, formerly the Soil & Water Conservation Service). Contact them through your local Soil & Water Conservation District.

To find out where your nearest district office is, look in your local telephone book under:

US Government—
Agriculture Department of—
Natural Resources Conservation Service—
Area Office

Conservation Districts are also listed on the Alabama Soil and Water Conservation Committee website at www.swcc.state.al.us/directory.htm. Those Alabama districts that have websites are also listed on the National Association of Conservation Districts website at www.nacdnet.org/resources/al.htm and on the Alabama Association of Conservation District website at www.swcc.state.al.us/aacd.htm. You may also contact the Alabama state NRCS office at:

US Department of Agriculture
Natural Resources Conservation Service
P.O. Box 311
Auburn AL 36830
telephone: 334-887-4500
www.al.nrcs.usda.gov