

THE RETURN OF THE CUYAHOGA

Teacher's Guide

The Return of the Cuyahoga invites students to take a close look at the present state of our natural environment as they examine the story of one river's demise and rebirth.

Like many American rivers, the Cuyahoga serves widely varying interests. Thus the dilemma: how to maintain commercial uses as a navigation channel, encourage recreation and entertainment, provide water for people and agriculture, and preserve nature in and around the river.

Ultimately, the story of the Cuyahoga — which is symbolic of myriad environmental challenges — is a story of the relationship between nature and human nature.

This Teacher's Guide accompanies *The Return of the Cuyahoga*, a 2008 documentary film on PBS. It builds on the documentary's key themes: industrialization's impact on the environment; the environmental movement and advocacy; the American government's involvement in environmental protection; and the American people's role in the contamination and preservation of the natural environment.

Designed for 9th -12th graders (and adaptable for use with younger students), the guide provides a selection of stand-alone, standards-supported learning activities that build on aspects of the Cuyahoga River's story. The activities encourage students to study and take action on current environmental issues, particularly in their communities. Accompanying each learning activity are:

- Pre- and post-viewing discussion questions that challenge students to look beyond the Cuyahoga and think more broadly about the current condition of the environment.
- Relevant clips from *The Return of the Cuyahoga*. However, students may watch the film in its entirety. Be sure to watch the documentary before presenting it to the class.
- Online and print resources that support the activities.
- Extended learning activities that further student knowledge.

STANDARDS

Social Studies

[Curriculum Standards for Social Studies,](#)

[National Council for the Social Studies](#)

(High School)

II. Time, Continuity and Change

Social studies programs should include experiences that provide for the study of the ways human beings view themselves in and over time, so that the learner can:

- f. apply ideas, theories, and modes of historical inquiry to analyze historical and contemporary developments, and to inform and evaluate actions concerning public policy issues.

III. Science, Technology, & Society

Social studies programs should include experiences that provide for the study of relationships among science, technology, and society, so that the learner can:

- b. make judgments about how science and technology have transformed the physical world and human society and our understanding of time, space, place, and human-environment interactions.
- f. formulate strategies and develop policies for influencing public discussions associated with technology-society issues, such as the greenhouse effect.



Photo by: Len Materman

X. Civic Ideals & Practices

Social studies programs should include experiences that provide for the study of the ideals, principles, and practices in a democratic republic, so that the learner can:

- i. construct a policy statement and an action plan to achieve one or more goals related to an issue of public concern;
- j. participate in activities to strengthen the “common good” based upon careful evaluation of possible actions for citizen action.

History

National Center for History in the School

Era 6: The Development of the Industrial United States (1870-1900)

Standard 1: How the rise of corporations, heavy industry, and mechanized farming transformed the American people

Science

National Science Education Standards

National Academies and Project 2061 of the American Association for the Advancement of Science

Content Standard F: As a result of activities in grades 9-12, all students should develop understanding of:

- Natural resources
- Environmental quality
- Natural and human-induced hazards
- Science and technology in local, national, and global challenges

INDUSTRIALIZATION’S ENVIRONMENTAL IMPACT, HISTORIC AND CURRENT

Overview

In the 19th century, the industrial revolution modernized American society. It was a period of great change and discovery that grew big business, propelled urban growth, and stimulated the economy. During this time, many in the United States believed that economic progress was the key to a better life and that America’s natural resources should serve that goal. Thus, while this industrial boom was occurring, the environment suffered. And while the environmental movement, with its advocates and activists, has turned around much of what was undone, industrialization continues to leave its destructive mark on our natural environs.

The Return of the Cuyahoga film clips:

Clip I: Begin at DVD Chapter Title “Center of Industrial Activity”

Clip time code: 1:05.40-1:08.28

Clip II: Begin at DVD Chapter Title “Introduction”

Clip time code: 1:00.56–1:11.58

Clip III: Begin at DVD Chapter Title “Shipping is Priority”

Clip time code: 1:34.09-1:41.56



Pre-viewing Discussion Questions

1. When did industrialization begin in the United States?
2. What other important events occurred during this period of time?
3. If you led an industrial company around 1900, would you have acted differently? If so, why do you think so?
4. How do you think it affected the environment? Give examples.
5. What is the nature of contemporary industrialization? What impact has it had on nature?

Post-viewing Discussion Questions

1. Given your understanding of industrialization and its impact, how would you classify, or rank, its value to society? What are its merits and deficits?
2. How did people, when interacting with the Cuyahoga, “rearrange nature”? Was this rearranging deliberate or unintentional? Were people conscious of their actions’ impact on the environment? Explain.
3. What environmental hazards continue to exist in the Cuyahoga? How is Northeast Ohio trying to curb these hazards? What additional steps should the region take to improve environmental conditions?
4. Do you think the region’s residents, business owners, public officials, etc., have learned how to protect the environment, based on their experience with or understanding of the Cuyahoga? Explain.
5. Think about your immediate natural environment, or larger environmental concerns, such as global warming/climate change. Given America’s knowledge of industrialization’s impact, why do these types of issues continue to exist? What should we be thinking about, in terms of the natural environment, as citizens, business leaders, policy makers, developers, etc.?



Learning Activities

Activity I: Analyzing Industrialization over Time

Have students create timelines representing key events in the industrialization of America, beginning in the 19th century onward to the current year. Groups may be assigned time periods to cover, as well as specific topics. For example, groups may research industries that primarily polluted rivers and other bodies of water, new technologies that led to the destruction of forests, etc. Once students have completed the timelines, have the class analyze the data using some or all of the following investigative questions:

- What prompted industrialization? Are the incentives from long ago similar to those that propel economic growth today?
- How did industry's impact primarily thinking about during this growth and progress?
- What impact did this growth and progress have on the environment?
- How did industry impact on the environment change over time? Did business/industry reevaluate and reshape technologies to lessen its effect on the environment?
- What aspects of our natural environment have been hardest hit?
- What does the interaction between industry and the environment look like for the future?

Once students have completed their analysis, have them project the future (20-50 years from the current year) relationship between industry and the environment. Will there be more eco-industries? Will the environment continue to decline? Invite students to share their thoughts.

Activity II: Community Industrialization

Invite students to step into their community's industrial past and present through all or some of the following activities. (Students might want to focus on a local river, lake, or other body of water as a way to link directly to the documentary.)

- Search for primary and secondary resource documents that reflect industrial progress over time. Students may visit/contact local historical societies, museums, libraries, the Chamber of Commerce, etc., to locate such materials. The artifacts, where possible, should be able to reflect industry's relationship with the local environment.
- Interview/videotape historians, professors, environmental professionals, etc., to learn about the community's industrial growth and its impact on the natural environment. Interview/videotape community residents who worked for local industries and can speak to their impact, particularly on the local environment. *Be sure to get more than one point of view.*

Students draw from their research to create a visual project that reflects the historic and current relationship between industry and the environment in the community. Sample projects include:

- An interactive digital exhibit of primary and secondary resource documents;
- A "You Tube" type video of edited interviews with historians, etc.
- An oral history presented through a narrated slideshow.
- A news broadcast on the current state of environmental and industrial affairs in their community.

In their presentations, students discuss whether environmental damage is permanent or has been rectified, whether industries continue to negatively affect the environment, and whether the community has done what it should or can to improve troubled areas.

Extended Activities

Students can:

- Compare and contrast select American rivers or other water bodies, with histories and conditions similar to those of the Cuyahoga.
- Assess John D. Rockefeller's influence on the industrial age.
- Research and write profiles on businesses that, during the industrial revolution, most harmed the U.S. natural environment, describing actions they took, if any, to reduce their impact on the environment.
- Explore and write a news analysis on what is emerging in what is known as "the eco-industrial revolution."
- Research and write an article about how animals living in polluted water bodies "adapt" to their environs and/or are affected by pollutants.
- Explore the impact of industrialization around the globe, particularly in emerging economies, such as China and India. Students write a news analysis of what is occurring on the environmental front in these nations and discuss what the role of the United States should be with regard to informing environmental practices and policies (keeping in mind how the US has been engaged in its environmental preservation).

Resources

Web Sites

[America's River Communities, Inc.](#)

[American Rivers](#)

[Clean Water Network](#)

Cleveland State University

[Cuyahoga River Online Exhibition](#)

[Cuyahoga River Community Planning Organization](#)

[Industrialization Timeline](#) (pdf)

Irondequoit High School

[Man's Impact on His Environment](#)

Library of Congress: American Memory

[American Environmental Photographs of 1891-1936](#)

PBS: American Experience

- [The Alaska Pipeline](#)
- [America 1900](#)
- [Chicago: City of the Century](#)

[PBS: Journey to Planet Earth](#)

PBS: Nightly Business Report

[Commentary-The Eco-Industrial Revolution, 3/20/07](#)

PBS: NOW

[Robert Redford: Business Warming Up To Environment](#)

PBS: Online NewsHour

[Environment Archive](#)

PBS: Scientific American Frontiers

[Forever Wild?](#)

Radford University:

[Environmental History Timeline Oil Pollution and the](#)

[National Coast Anti-Pollution League](#)

Smithsonian; The Lemelson Center for the Study of Invention and Innovation

[Early Industrialization](#)

[U.S. Environmental Protection Agency](#)

Print

Rivertown: Rethinking Urban Rivers, Paul Stanton Kibel, ed. The MIT Press, 2007.

Silent Spring [SPECIAL EDITION], by Rachel Carson, Mariner Books, 104 edition, 2002.

The Genesis of Industrial America, 1870-1920, by Maury Klein. Cambridge University Press, 2007.

The Human Impact on the Natural Environment: Past, Present, and Future, by Andrew S. Goudie. Wiley-Blackwell; 6 edition, 2005.

"The Industrial Revolution," *Magazine of History*, Volume 15, no 1, Fall 2000. Organization of American Historians.

PROACTIVE CHANGE: THE ENVIRONMENTAL MOVEMENT

Overview

The 1969 fire on the Cuyahoga was not extraordinary, certainly not as damaging as other fires on the river had been, nor a phenomenon, as fires were occurring on rivers across the U.S. It happened at a time when Americans were becoming aware of the environmental impacts of industrialization, and beginning to take a stand to protect our natural resources.

As Jonathan H. Adler states in the film: "The image that everyone associated with the 1969 fire seared itself into the environmental consciousness." And thus a fledgling environmental movement burgeoned, leading to groundbreaking environmental federal legislation, as well as to citizen-driven activism toward environmental restoration and preservation.

The Return of the Cuyahoga film clips:

Clip I: Begin at DVD Chapter Title "River as Cauldron"

Clip time code: 1:13.37-1:28.14

Clip II: Begin at DVD Chapter Title "The Parma Story"

Clip time code: 1:43.28-1:50.56



Pre-viewing Discussion Questions

1. Define activism. Would you characterize you as an activist? Explain.
2. Describe environmental preservation activities (from picking up trash at the local playground to planting trees) in which you have been involved. What motivated you to participate in the activity?
3. What is the role of American citizens in environmental preservation?
4. Can environmental change occur without citizen involvement? Explain.
5. Talk about any environmental issues in your community that have been addressed/resolved by citizen action and advocacy groups.
6. How have public officials and government entities been involved in community environmental protection efforts?

Post-viewing Discussion Questions

1. What was the significance of the 1969 fire on the Cuyahoga?
2. What issues were driving the growing environmental movement during the late 60s? What impact did the movement have as it unfolded?
3. Describe what efforts the federal government initiated to begin cleaning up American rivers and lakes. What was the result/impact of these efforts?
4. In your opinion and in light of current environmental issues, has the federal government succeeded or failed in its environmental protection efforts? Cite specific examples.
5. What role did citizens have (and continue to have) in cleaning up/restoring the Cuyahoga and West Creek, in Parma? How much headway have they made? What drives their commitment?
6. What is the status of the contemporary environmental movement? What are some of the outstanding issues citizens, environmentalists, advocacy groups, public officials, and others are currently addressing?
7. What is the relationship between American citizens and the government with regard to environmental preservation? Can one succeed without the other? Explain.

Learning Activity

Activity I: Environmental Issues, Here and Now

Students work in small groups to generate a list of top environmental issues in the United States. Groups share their lists; the class identifies 10 critical national concerns.

Assign one topic each to small groups or pairs. Instruct the groups to research the issue to:

- determine its impact (what and whom it is affecting, for example);
- identify the key figures in the issue (from industrialists to environmentalists) and their roles in either exacerbating or rectifying the problem;
- report on legislation designed to address the issue;
- analyze the issue's status and recommend action steps toward rectifying the problem (steps might include new legislation, for example)

Groups assume the role of national environmental policy makers who present their findings at an annual conference. As a full class, the policy makers come to consensus on what the nation must do to address these issues, including pushing for new legislation.

Activity II: Environmental Action: The Community Connection

Have students research environmental issues in their community. These can include issues that are already being addressed and ones that students view as problematic and might want to address.

Students work in small groups to learn more about the environmental problem they have selected. If it is one that already exists, they should gather information on its history, its current status, and the people involved in either turning the problem around, as well as exacerbating it. Students present their information to the full class in the roles of community newspaper reporters.

Encourage students to become involved with community efforts tackling the environmental issues they have studied. Steps they might take to develop this relationship include:

- Identify and reach out to individuals overseeing or managing the programs.
- Meet with the individuals to learn more about the program's work.
- Determine with program representatives how the students can partner with the organization in and out of school.

If the issue students noted is not currently being addressed, the class devises an action plan that will enable them to address the problem with community support. This might involve researching the issue to present a clear case for addressing it, enlisting the support of public officials and environmentalists, recruiting community volunteers, etc. Students present the action plan to individuals responsible for community decision-making. And, they must be prepared for assertive advocacy should their plan be denied or scaled back.

Activity III: Let's Talk: Communicating about the Environment

Invite students to communicate with others around the country by adding comments to the blog of the [**America's River Communities, Inc.**](#) Their first entries might be reactions to The Return of the Cuyahoga or questions about what others are doing to preserve the environment in their communities. Have students consider ways to use the blog to establish joint environmental protection initiatives with other communities.

Extended Activities

Students can:

- Research and read books, reports, etc., by the pioneering environmental author Rachel Carson
- Compare and contrast the "return" of major U.S. rivers around the country: how the rivers were cleaned up, how the processes differed and were the same; who spearheaded the efforts, etc.
- Identify various environmental organizations in their community and write a journal review reflecting the groups' activities and impact. Students may focus on a specific environmental cause/effort.
- Create "snapshot" profiles of major "dying industrial cities," like Cleveland, during the 60s and 70s. Students note their similarities and differences, as well as the causes that resulted in the urban decay, their social problems, and the environmental challenges that exacerbated their plight.

Resources

Web Sites

[**America's River Communities, Inc.**](#)

[**American Rivers**](#)

[**Clean Water Action**](#)

[**Clean Water Network**](#)

[**Clean Water Partners**](#)

[**Cleveland State University**](#)

[**Cuyahoga River Online Exhibition**](#)

[**Cuyahoga River Community Planning Organization**](#)

[**Environmental Defense Fund**](#)

[**PBS: NOW with Bill Moyers**](#)

[**Troubled Waters**](#)

[**PBS: Online NewsHour**](#)

[**Environment Archive**](#)

[**Save Our Environment**](#)

[**The Conservation Fund**](#)

[**U.S. Environmental Protection Agency**](#)

[**Laws and E.O.s that Influence Environmental Protection**](#)

[**West Creek Preservation Committee**](#)

[**PBS: People's Century**](#)

[**Endangered Planet**](#)

[**PBS: Journey to Planet Earth**](#)

[**Worldwatch Institute**](#)

[**Environmental Milestones: A Worldwatch Perspective**](#)

Print

A Fierce Green Fire: The American Environmental Movement, by Philip Shabecoff. Island Press; REV edition, 2003.

Environmental Planning Handbook, by Tom Daniels and Katherine Daniels. APA Planners Press, 2003.

Rivertown: Rethinking Urban Rivers, Paul Stanton Kibel, ed. The MIT Press, 2007.

Silent Spring [SPECIAL EDITION], by Rachel Carson, Mariner Books, 104 edition, 2002.

The Human Impact on the Natural Environment: Past, Present, and Future, by Andrew S. Goudie. Wiley-Blackwell; 6 edition, 2005.

PEOPLE AND THE ENVIRONMENT: IMPROVING THE QUALITY OF LIFE

Overview

Since people and nature are so closely connected, it seems logical for us to want a healthy environment. In fact, it is probably one of our key “quality of life” concerns. Yet, people (we) often inadvertently — and sometimes quite deliberately — harm our natural environs. It could be by littering, building homes in an environmentally sensitive area, or improperly disposing of cleaning products with harmful chemicals. Moreover, we are largely uninformed about environmental issues, even those that directly affect us. So, not only do we not understand how we are harming the environment (and ourselves), we don’t even have the knowledge that enables us to contribute to local, state, or even national environmental preservation solutions. What becomes of our “quality of life” under these circumstances?

The Return of the Cuyahoga film clips:

Clip I: Begin at DVD Chapter Title “Non-Point Pollution”

Clip time code: 1:28.17-1:43.27

Clip II: Begin at DVD Chapter Title “Fish Shocking”

Clip time code: 1:30.39-1:41.56

Pre-viewing Discussion Questions

1. How does environmental decline occur? Who contributes to it?
2. In what ways have you contributed to environmental degradation (intentionally and unwittingly)?
3. What does it take for environmental preservation to occur?
4. What environmental problems are present in your community? How are they being addressed?

Post-viewing Discussion Questions

1. What are some of the things people do that harm the environment? Do you think these are deliberate or unintentional acts? Explain.
2. What personal decisions do families make related to work, transportation, or recreation that can either help or hurt the environment.
3. What are some concrete measures that can be taken by people, industry, and others to reduce environmental hazards? What obstacles do such projects encounter?
4. How does a community balance its competing needs with the natural environment? Can there be a healthy and productive balance for all, one that ultimately preserves the environment?
5. How much additional work has to be undertaken to restore the Cuyahoga? On a grander scale, looking at environmental decline across the nation, what has to be done to improve our environment?

Learning Activity

Activity I: Thinking about What We Do to the Environment

Have students think about how people, both intentionally and unwittingly, harm the environment. Students chart their thoughts on a two-column graphic organizer. Then, ask students to put themselves in the shoes of the “people” to reflect on how they (as “people”) have deliberately or unintentionally harmed the environment. The goal is for students to see themselves as part of the collective rather than as the “other” in order to recognize their role in environmental decline.

Divide students into small groups to read and discuss the article “[People pollution is wearing out Earth, study says](#)”.

Invite groups to share their thoughts on and reactions to the article’s key points.

Ask the students to think about what they can do — individually and collectively — to reduce their negative impact on the environment, particularly in their community. They can base their choices on the film, the article, and their knowledge of/experience with environmental issues/problems.

Share with students resources that highlight how people pollute the environment, mostly through products they use or things they do with chemicals, refuse, etc. Web resources to reference include:

- University of the Western Cape: [Internet Bio-ed Project Pollution](#)
- [livingthing.net](#)
- [Children’s Health Environmental Coalition: HealthHouse](#)
- [Your Environment. Your Choice.](#)

Ask students to carefully observe and chart their daily home activities for one week to record ways they have potentially harmed the environment. At the end of the week, they should review their activities and share any “revelations” they have about their contributions to environmental decline (it is likely that many of them will be surprised).

Several programs offer strategies that might provide tools and ideas:

- [Carbon Calculator](#)
- [Green Guide: “Educator’s Toolkit: Healthy Children, Healthy Planet”](#)

Have students make an environmental “resolution” and list the immediate actions they will take to reduce their contributions to environmental problems. Have students chart their actions to ensure that they are actually changing their actions and contributing to environmental preservation.



Photo by: Florentine Films/Hott Productions

Activity II: What Are “They” Doing about the Environment?

Have students identify environmental issues in their community, and then select at least four that are of somewhat high profile. Assign different issues to small groups (or have students select an issue) to research. In particular, students should find out what solutions have been proposed to address the issue. For example, the film discusses the use of ecological bulkheads on the Cuyahoga that would include pockets of natural habitat for plants and fish. It also presents the option of tearing down a dam that has had significant negative environmental impact.

Once students have this information, and understand the multiple points of view on the issue, they become informed advocates who can consider whether the proposed methods will work and are ultimately environmentally beneficial. They might participate in hearings, planning meetings, and related events; gather signatures on a petition they create; write letters to the editor of local newspapers; or establish a youth environmental action group centered on policy and decision making. Whatever action they choose, students will recognize that being informed encourages proactive engagement that could lead to appropriate solutions.

Extended Activities

Students can:

- Create anti-pollution public service announcements that encourage their peers, community households, and/or other community members to monitor and reduce their contributions to environmental hazards and decline.
- Calculate their school’s waste and use that knowledge to implement an anti-pollution campaign in their school.

Resources

Web Sites

[AAAS Atlas of Population and Environment](#)

[American Rivers](#)

[Clean Water Action](#)

[Clean Water Network](#)

[Clean Water Partners](#)

Cleveland State University

[Cuyahoga River Online Exhibition](#)

[Cuyahoga River Community Planning Association](#)

[Environmental Defense Fund](#)

[Green Map](#)

[Meet the Greens](#)

MIT Press Journals

[Journal of Industrial Ecology: Special Issue on the Global Impact of Cities](#)

National Geographic

[The Jason Project](#)

[Natural Resources Defense Council](#)

PBS: People’s Century

[Endangered Planet](#)

[PBS: Journey to Planet Earth](#)

PBS: NOW with Bill Moyers

[Troubled Waters](#)

PBS: Online NewsHour

[Environment Archive](#)

[Save Our Environment](#)

Scientific American

[An Earth Without People](#)

[The Conservation Fund](#)

[The Millennium Ecosystem Assessment](#)

[U.S. Environmental Protection Agency](#)

[Your Environment, Your Choice](#)

[West Creek Preservation Committee](#)

Print

A Fierce Green Fire: The American Environmental Movement, by Philip Shabecoff. Island Press; REV edition, 2003.

Environmental Planning Handbook, by Tom Daniels and Katherine Daniels. APA Planners Press, 2003.

Humanity’s Footprint: Momentum, Impact, and Our Global Environment, by Walter Dodds. Columbia University Press, 2008.

Rivertown: Rethinking Urban Rivers, Paul Stanton Kibel, ed. The MIT Press, 2007.

The Human Impact on the Natural Environment: Past, Present, and Future, by Andrew S. Goudie. Wiley-Blackwell; 6 edition, 2005.

About the Author

Michele Israel has been in the education and non-profit fields for over 20 years. As an independent consultant and writer, she has produced myriad written and online instructional materials, including lesson plans, teacher and discussion guides, articles, newsletters, and training curricula. Among her clients are Newsweek, CNN, PBS and its affiliates, as well as numerous New York City-based non-profit organizations.

This Teacher's Guide was produced by America's River Communities, Inc. as a companion to *The Return of the Cuyahoga* documentary film. For questions or comments, please contact Len Materman, president of America's River Communities, Inc. at : Cuyahoga@RiverCommunities.org.

