

8

History-Social
Science Standard
8.12.5.



Industrialization, Urbanization, and the Conservation Movement

California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency
California Natural Resources Agency
Office of the Secretary of Education
California State Board of Education
California Department of Education
California Integrated Waste Management Board

Key Leadership for the Education and Environment Initiative:

Linda Adams, Secretary, California Environmental Protection Agency
Patty Zwarts, Deputy Secretary for Policy and Legislation, California Environmental Protection Agency
Andrea Lewis, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency
Mark Leary, Executive Director, California Integrated Waste Management Board
Mindy Fox, Director, Office of Education and the Environment, California Integrated Waste Management Board

Key Partners:

Special thanks to **Heal the Bay**, sponsor of the EEI law, for their partnership and participation in reviewing portions of the EEI curriculum.

Valuable assistance with maps, photos, videos and design was provided by the **National Geographic Society** under a contract with the State of California.

Office of Education and the Environment
1001 I Street • Sacramento, California 95812 • (916) 341-6769
<http://www.calepa.ca.gov/Education/EEI/>

© Copyright 2010 by the State of California
All rights reserved.

This publication, or parts thereof, may not be used or reproduced without permission from the Office of Education and the Environment.

These materials may be reproduced by teachers for educational purposes.



Contents

Lesson 1 California's Conservation Movement

Key Unit Vocabulary	2
Chronology of the American Conservation Movement	3

Lesson 2 The Growth of a City

Watching a City Grow	7
--------------------------------	---

Lesson 3 The Reach of a City

Chicago's Surroundings, 1907	8
--	---

Lesson 4 Cities and Natural Systems

Effects of Urbanization	9
-----------------------------------	---

Lesson 5 America's Conservation Movement

Studying Natural Resources in the 21 st Century	11
--	----

Key Unit Vocabulary

Lesson 1

Conservation: The management, protection, and use of resources and natural systems in a way that can meet current and future needs.

Conserve: To use a resource in a way that keeps it available for the future.

Deforestation: Clearing an area of trees with no replanting.

Ecosystem goods: Tangible materials, such as timber and food, produced by natural systems, that are essential to human life, economies, and cultures.

Ecosystem services: The functions and processes that occur in natural systems, such as pollination, that support or produce ecosystem goods and help sustain human life, economies, and cultures.

Extinct: No longer existing as a species or subspecies.

Flume: A channel that diverts and carries water.

Frontier line: A line drawn on maps that indicates where wilderness and populated areas meet.

Immigrate: To move to a new country or region in order to settle there.

Industrialization: Transformation of an economy from production of goods by human and animal labor to production by powered machines.

Industry: The manufacturing or production of goods and services for sale.

Inventory: (noun) The stock of goods and property of a business. (verb) To make a list of the goods and property of a business.

Marine: Related to the ocean or a sea.

Natural system: The interacting components, processes, and cycles within an environment, as well as the interactions among organisms and their environment.

Pollution: The contamination of the environment (including air, water, and soil) with chemicals or other damaging materials.

Population density: The number of individuals of a certain species per unit of land, such as the number of people per square mile or square kilometer.

Population distribution: The pattern of how individuals of a species are located over one or more areas.

Preservation: The protection of natural resources and natural systems so that they are not disturbed.

Preserve: To protect natural resources and natural systems so that they are not disturbed.

Sustainable: Managing natural resources, natural systems, and populations in ways that can lead to their long-term availability or survival.

Urban: Relating to a city or densely populated area.

Urbanization: The changing of rural and natural areas to densely populated urban areas.

Westward expansion: The movement of people westward beyond the Appalachian mountains during the 1800s.

Chronology of the American Conservation Movement

Lesson 1 | page 1 of 4

Name: _____

Instructions: Record details about important dates and events in the history of the conservation movement in the chart below.

Date	What Happened
1840s	
1847	
1848	
1849	
1850s	
1850	
1854	
1858	
1860s	
1864	

Chronology of the American Conservation Movement

Lesson 1 | page 2 of 4

Name: _____

Date	What Happened
1865	
1869	
1870s	
1871	
1872	
1880s	
1889	
1890s	
1890	
1891	

Chronology of the American Conservation Movement

Lesson 1 | page 3 of 4

Name: _____

Date	What Happened
1892	
1893	
1897	
1899	
1900s	
1901	
1902	
1905	
1906	

Chronology of the American Conservation Movement

Lesson 1 | page 4 of 4

Name: _____

Date	What Happened
1908	
1909	
1910s	
1910	
1913	
1914	
1916	

Watching a City Grow

Lesson 2

Name: _____

Instructions: Use the table of New York City's population from 1830 to 1910 and **City of New York, 1850 and 1890** (Student Edition, page 8) to answer the following questions. (3 points each)

1. Looking at the map of 1850, what natural resources do you think were available to the people of New York?

2. During which decade did New York's population double? Based on what you learned in this lesson, why do you think that happened?

New York City Population

1830	202,589
1840	312,710
1850	515,547
1860	813,669
1870	942,292
1880	1,206,299
1890	1,515,301
1900	3,437,202
1910	4,766,883

3. Comparing the maps of 1850 and 1880, how did the city change to make room for all the new people living in it?

4. What happened to the forests in and around New York between 1850 and 1880? Why?

5. Based on what you see in the maps, where did people in New York get their food? How did this change between 1850 and 1880?

Chicago's Surroundings, 1907

Lesson 3

Name: _____

Instructions: Use your knowledge of population growth and urbanization in the early 19th century to answer the following questions about the use of ecosystem goods and ecosystem services, and the effects on natural systems. (5 points each)

1. How did the growth of Chicago affect its demands for ecosystem goods and ecosystem services?

2. What were the main effects of urbanization on the city of Chicago?

3. How were products transported into (and out of) Chicago? How did the need to produce and transport food and materials to Chicago affect natural systems in the area?

Effects of Urbanization

Lesson 4 | page 1 of 2

Name: _____

Part 1

Instructions: Think about the growth of Chicago and San Francisco. Each of the statements in the “Cause” column of the chart below is related to the growth of cities. Describe one “effect” of each “cause” on natural systems. (2 points each)

Cause	Effect
More food needs to be grown to feed an increasing population.	<hr/> <hr/> <hr/> <hr/>
Ships, buildings, houses, and fences are built.	<hr/> <hr/> <hr/> <hr/>
Railroads connect cities and transport goods.	<hr/> <hr/> <hr/> <hr/>
Salt marshes and tidelands are filled in to create more space for the growing population.	<hr/> <hr/> <hr/> <hr/>

Name: _____

Part 2

Instructions: Look at the cartoon and answer the following questions. (2 points each)

1. What industry is the subject of this cartoon?
Where was it located?

2. What effects did this industry have on the natural systems in the area?



What Man Does To One Of The Most Beautiful Gifts Of Nature—The River

3. How does this cartoon show that people were ready to start conserving natural resources?

Studying Natural Resources in the 21st Century

Lesson 5 | page 1 of 2

Name: _____

For many years, the National Oceanic and Atmospheric Administration (NOAA) has studied the oceans, relying on ships and other equipment to help it. NOAA has also worked to maintain sustainable supplies of the fish that are important to the fishing industry.

In the 21st century, NOAA is gathering scientific information about new problems. Today the human population is growing quickly on the coasts and elsewhere. There is more trade and more pollution. Our global climate is changing, as are plant and animal communities. NOAA needs to study these problems because each one affects marine plants, animals, and ecosystems.

To answer key questions about protecting, restoring, and sustainably using marine resources, we must study many related fields. We need to study not only the ocean and the fish, but also marine ecology, poisons that harm marine life, genetics, and even how people organize their societies and make use of ecosystem goods and services.

NOAA still needs to study the oceans and manage the supply of fish, but it cannot do so without a greater understanding of complex marine ecosystems.

Adapted from comments presented to the Science Advisory Board of the National Oceanic and Atmospheric Administration (NOAA): Elliott A. Norse, Ph.D. President, Marine Conservation Biology Institute. July 1998

Instructions: Answer the following questions comparing the NOAA statement with natural resource issues of 100 years ago.

1. What is the main difference between the natural resources described here and the ones the National Conservation Commission examined in 1908?

2. What conservation problems were present in 1909 that are like problems we have now, 100 years later?

Studying Natural Resources in the 21st Century

Lesson 5 | page 2 of 2

Name: _____

3. Why was there a need for scientific research about natural resources in the 1900s? What is an example of the government's role in conducting the research?

4. Why is there a need for scientific research about natural resources in the 21st century? What is an example of the government's role in conducting the research?



California STATE BOARD OF
EDUCATION

California Education and the Environment Initiative