



LESSON TITLE: Conservation Nation

GRADE LEVEL: Grades 9-12

TIME ALLOTMENT: Three 45-minute class periods

OVERVIEW: In the nineteenth-century Western frontier, the wolf was considered a menace - perpetually hunting farm animals and threatening frontier livelihoods. It was not unusual for bounty hunters to be hired to rid communities of this scourge. But one such bounty hunter, Ernest Thompson Seton, was influential in changing popular perspective on wild animals. Seton was hired to kill wolves - but one particular wolf, named Lobo, challenged Seton's hunting abilities and piqued his more naturalistic interests. As his chase of Lobo stretched on, Seton came to believe that future generations of animals like the wolf should be protected. His focus became less on destruction and more on conservation. Seton was instrumental in spearheading environmental movements in the United States.

In this lesson, students will first learn about the "success stories" of species whose protection under the Endangered Species Act of 1973 saved them from extinction. They will then engage their knowledge of US History during the latter half of the nineteenth century to brainstorm reasons why so many of our wild species' populations declined dramatically during this period. Students will use segments from NATURE's *The Wolf that Changed America* to explore nineteenth-century attitudes toward wolves in the western United States, and will learn of the groundbreaking efforts of Seton to change the popular view of the American wilderness and to launch organizations concerned with the environment. In the Culminating Activity, students will use web resources to research conservation organizations active today, sharing their findings with the class.

SUBJECT MATTER: Life Science, Biology, Environmental Science, U.S. History

LEARNING OBJECTIVES:

Students will be able to:



- Describe how Ernest Thomas Seton and his pursuit of Lobo the wolf changed America's view on predatory animals;
- Describe how public opinion on animal management and endangered species protection has changed from the 19th century to today;
- Understand the history of the Endangered Species Act of 1973, and name some of the species the Act has helped protect;
- Name a list of modern-day conservation organizations and describe their initiatives.

STANDARDS

National Science Education Standards (<http://www.nsta.org/publications/nses.aspx>)

Content Standard C: Life Science

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

THE INTERDEPENDENCE OF ORGANISMS

- Human beings live within the world's ecosystems. Increasingly, humans modify ecosystems as a result of population growth, technology, and consumption. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors are threatening current global stability, and if not addressed, ecosystems will be irreversibly affected.

Content Standard F: Science in Personal and Social Perspectives

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

SCIENCE AND TECHNOLOGY IN LOCAL, NATIONAL, AND GLOBAL CHALLENGES



- Humans have a major effect on other species. For example, the influence of humans on other organisms occurs through land use-which decreases space available to other species-and pollution-, which changes the chemical composition of air, soil, and water.

US History Standards

[National Center for History in the Schools](http://nchs.ucla.edu/standards/) (<http://nchs.ucla.edu/standards/>)

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.

Standard 1D: The student understands the effects of rapid industrialization on the environment and the emergence of the first conservation movement.

Therefore, the student is able to:

- Explain the origins of environmentalism and the conservation movement in the late 19th century.

MEDIA COMPONENTS

NATURE: *The Wolf That Changed America*, selected segments.

Clip 1

"1893 New Mexico"



Clip 2

"The wolf problem"

Clip 3

"Trapping Lobo"

Clip 4

"Seton's Legacy"

Web sites

The following are major US and international organizations active in the field of environmental conservation. Students will research these organizations in the Culminating Activity (or substitute others of your choice).

- [Conservation International](http://www.conservation.org/Pages/default.aspx) (http://www.conservation.org/Pages/default.aspx)
- [EarthWatch Institute](http://www.earthwatch.org/) (http://www.earthwatch.org/)
- [Greenpeace](http://www.greenpeace.org/usa/) (http://www.greenpeace.org/usa/)
- [National Audubon Society](http://www.audubon.org/) (http://www.audubon.org/)
- [Nature Conservancy](http://www.nature.org/) (http://www.nature.org/)
- [Sierra Club](http://www.sierraclub.org/) (http://www.sierraclub.org/)
- [Student Conservation Association](http://www.thesca.org/) (http://www.thesca.org/)



- [World Wildlife Fund](http://www.worldwildlife.org/) (<http://www.worldwildlife.org/>)

MATERIALS

For the teacher:

- Video Organizer Answer Key
- Computer with audiovisual projection system for showing video clips

For each student:

- Video Organizer
- Conservation Organizer
- Access to computer with Internet connection

PREP FOR TEACHERS

Preview all of the video segments and Web sites used in the lesson.

Download the video clips used in the lesson to your classroom computer, or prepare to watch them using your classroom's Internet connection.

Bookmark the Web sites used in the lesson on each computer in your classroom. Using a social bookmarking tool such as [del.icio.us](http://delicious.com/) (<http://delicious.com/>) or www.diigo.com (or an online bookmarking utility such as www.portaportal.com) will allow you to organize all the links in a central location.

Make copies of the Video Organizer and Conservation Organizer for each student, and copy the Answer Key for yourself.



INTRODUCTORY ACTIVITY

1. Tell the students that you are going to write a list on the board. The students' task is to try to deduce what the items on the list have in common.
2. Begin writing the following list of species from the column on the left on the board (don't share the rest of the chart yet). Allow the students to make guesses at any time as to how the species are related (*the correct answer is that they are species whose protection under the Endangered Species Act allowed for their recovery - they are Endangered Species Act "success stories"*).

	Population - From:	Population - To:
Hawaiian Goose	400 in 1980	1,275 in 2003
Whooping crane	54 in 1967	513 in 2006
Peregrine Falcon	324 pairs in 1975	1,700 pairs in 2000
Bald eagle	416 pairs in 1963	9,789 pairs in 2006
Virginia big-eared bat	3,500 in 1979	18,442 in 2004
Gray Whale	13,095 in 1968	26,635 in 1998
Florida Key Deer	200 in 1971	750 in 2001
California southern sea otter	1,789 in 1976	2,735 in 2005
Grizzly Bear	224 in 1975	500 in 2005 (Yellowstone Area)
San Clemente Indian Paintbrush	500 in 1979	3,500 in 1997

(source: 100 Success Stories for Endangered Species Day 2007, <http://www.esasuccess.org/reports/>, 3/31/2009.)

3. Explain the list you wrote on the board - these are all species whose protection under the Endangered Species Act has led to recovery. Share some of the data from the right two columns of the chart as examples of the recovery.



4. Explain that the facts you've shared track the population since the 1960s and 1970s, when data became available as the government passed laws to protect species. But going back further in time to the 19th century, some of the species that are exceedingly rare today were once extremely common. Species populations have changed dramatically from the 19th century to today (for example, the now-extinct passenger pigeon was once one of the most abundant birds in North America, with a population that may have reached 6 billion individuals. During the 19th century these numbers declined dramatically, and by 1900, the bird was extinct in the wild).
5. Ask the students to brainstorm a list of factors that might have led to these species' decline from the 19th century to today. What was going on in late 19th century America that would have led to these dramatic declines in species' population? *(This was an era of westward expansion and intense development of industry and agriculture on a grand scale. Also, attitudes toward species other than humans were generally very different. There was largely no public concept that species should be protected - and no laws or governmental agencies that tried to protect animals or plants other than humans. Excessive hunting and rampant habitat destruction had an adverse effect on many, many species.)*

LEARNING ACTIVITY

1. Explain that in the next activities, students will be learning about the gray wolf. This is an example of a species that was once very common and declined precipitously in the 19th century. Historically, wolves were common throughout the American West. By 1973, wolves had been completely exterminated from the western lower 48 states, existing only in small pockets in Minnesota and Michigan.
2. Distribute the Video Organizer to each student. This contains focus questions for each of the four video segments the students will watch. The students should read the questions for each segment prior to watching it, and after each segment should write (or discuss) their responses.
3. FRAME Video Segment 1: "1893 New Mexico" by telling the students that they will be introduced to a man named Ernest Thompson Seton, who was hired to do a job in New Mexico in 1893. Have the students read the FOCUS questions for the segment, then PLAY it for the class. FOLLOW UP by allowing the students some time to compose their responses to the focus questions, then discuss as a class. A Video Organizer Answer Key is provided.



4. FRAME Video Segment 2: The "wolf problem," by explaining that Seton thought that killing Lobo would be an easy task, but became increasingly frustrated as weeks passed and all his trapping methods were outsmarted by the wolf. Remind students to read the FOCUS questions. After playing the clip, FOLLOW UP as a class.
5. FRAME Video Segment 3: "Trapping Lobo:" Explain that Lobo, who was known as the "King of the Carrumpaw," continued to evade Seton as the weeks dragged into months. Each method Seton tried failed - first he planted poisoned meat all around Lobo's territory, but the wolf never took the bait. Then he buried metal traps in all of Lobo's haunts, but he would return to find each trap set off but the wolf nowhere to be found. Fall turned to winter and Seton STILL hadn't managed to fulfill the task he was hired to do. Eventually, however, Seton did trap the elusive wolf. This clip will show how he did it. (Remind the students to read the FOCUS questions. Then FOLLOW UP after playing the segment).
6. Provide the students with a brief synopsis of how Lobo's final days ended. Seton did not kill Lobo after he was trapped with four traps. Seton's resolve to shoot Lobo faltered, and he brought the animal back to his camp alive. It was, however, too late for Lobo. The wolf died within days, according to Seton of "a broken heart." Seton later said that he strongly regretted killing Lobo and his mate, Blanca - and the bounty hunter never killed another wolf.
7. FRAME Video Segment 4: "Seton's Legacy." Explain that Seton's experience with Lobo greatly changed him and the course of his life. Have students read the FOCUS questions, and FOLLOW UP with a class discussion about Seton's groundbreaking environmental accomplishments after playing the last segment.
8. Fill the students in on the gray wolf's story in the 20th century: despite the efforts of Seton and others, bounty hunting of wolves continued until as late as 1965. While the wolf once ranged free throughout all of North America, by 1973 wolves had been exterminated from the lower 48 states of the US, with the exception of small populations in Minnesota and Michigan. In 1973, the gray wolf was protected by the Endangered Species Act. The state of wolves remained precarious for decades, but the ESA protections enabled a slow recovery of wolf populations, especially in Yellowstone National Park and the Rocky Mountain region.



CULMINATING ACTIVITY

1. Ask the students to recall the last video segment, "Seton's legacy." Discuss the laws and organizations that came about in part because of Seton's advocacy (*Interstate legislation protecting migrating birds, Woodcraft Indians, Boy Scouts of the UK and the US*). Explain that in the late nineteenth century, organizations whose goal was to protect the environment and wild animals were few and far between, as were laws to protect the environment (such as the Endangered Species Act, only enacted in 1973). Ask what might have happened if these laws and organizations had never come into being? (*Most likely, there would be many more extinct species today, and fewer natural places for us to appreciate*).
2. Explain that due to a surge in environmental action from the 1960s to today, there are now hundreds of non-profit conservation organizations active throughout the world. Have the students name some environmental and/or conservation organizations they know about.
3. Distribute the "Conservation Organization" Research Organizer to each student. Assign students (individually or in groups) to research the web site of a conservation organization active today, using the organizer to collect their research (a list follows, but feel free to add or substitute other conservation organizations). The students should prepare to give a 5-minute oral report on their organization to the class. Possible organizations include:
 - [Conservation International](http://www.conservation.org/Pages/default.aspx) (<http://www.conservation.org/Pages/default.aspx>)
 - [EarthWatch Institute](http://www.earthwatch.org/) (<http://www.earthwatch.org/>)
 - [Greenpeace](http://www.greenpeace.org/usa/) (<http://www.greenpeace.org/usa/>)
 - [National Audubon Society](http://www.audubon.org/) (<http://www.audubon.org/>)
 - [Nature Conservancy](http://www.nature.org/) (<http://www.nature.org/>)



- [Sierra Club](http://www.sierraclub.org/) (http://www.sierraclub.org/)
 - [Student Conservation Association](http://www.thesca.org/) (http://www.thesca.org/)
 - [World Wildlife Fund](http://www.worldwildlife.org/) (http://www.worldwildlife.org/)
4. After the oral reports have been given, collect the organizers and assemble them in a binder for future student reference.



NAME: _____

DATE: _____

Conservation Nation: Video Organizer

Video Clip #1: 1893 New Mexico

1. What kind of “profound change” was happening in New Mexico in 1893?
2. What was the settlers’ attitude toward the wild wolves in the Carrumpaw valley?
3. Describe how Seton was emotionally ‘divided’ when it came to the task of finding and killing Lobo.

Video Clip #2: The “wolf problem”

1. What was referred to by Seton as an “ugly, overfed brat,” and why?
2. What changes in animal populations was Seton already noticing in 1893?
3. What did Seton mean when he said that the “wolf problem” was something we created?

Video Clip #3: Trapping Lobo



Learn more at www.pbs.org/nature.



NAME: _____

DATE: _____

1. How did Seton finally capture Lobo?

2. What example does the ranger give of a modern-day wolf pair that seems similar to the story of Lobo and Blanca?

Video Clip #4: Seton's legacy

1. How did Seton's hunting of Lobo make sense within the bigger plan for the "Wild West" at the time?

2. Seton helped push through many laws and started many programs to help protect the wilderness. List three of these efforts that have lasting impact today.

3. What are the two opposing viewpoints that are still held regarding wolves in the West?



NAME: _____

DATE: _____

Conservation Nation: Research Organizer

Name of Conservation Organization: _____

Organization's web site: _____

History:

When was the organization founded? How did it get started?

Mission:

Summarize the organization's key mission. What does it try to do? [Note – this information might be found in a section called "Mission," "About Us," "What We Do," or "How we work."]

Location and structure:

Where is the organization's main office? Where do its conservation activities take place (US-based or international)? Can you tell how many staff members work for the organization?



NAME: _____

DATE: _____

Suggestions for taking action:

*What are one or two actions the organization suggests that people can take to get involved in their conservation efforts?
[Note – one important action is to donate money – but what else do they suggest?]*

Selling Points:

Give your classmates a great reason to explore this organization. What features of this organization or its web site do you think would be most interesting to them



NAME: _____

DATE: _____

Conservation Nation: Video Organizer Answer Key

Video clip #1: “1893 New Mexico”

1. Settlers were pouring in to New Mexico by the trainload, bringing livestock for ranching, which had become big business.
2. Settlers referred to the wild wolves as “cattle killers” and were on a quest to exterminate them.
3. Seton was emotionally divided in the sense he was a hunter while at the same time serving as a naturalist. His love for the preservation of nature often conflicted with his task at hand, to kill Lobo.

Video clip #2: The “wolf problem”

1. Seton referred to America as growing like an ugly, overfed brat – too healthy to slow down; too young and ambitious to care about what it destroys along the way.
2. While Seton noted small groups of pronghorn antelope, the herds in the past had apparently been much more numerous. And a few years earlier, there had been buffalo on the plains, but by the time Seton arrived, there were none.
3. According to Seton, we created the “wolf problem” first by annihilating their greatest source of food (buffalo) and then by filling the prairie with defenseless cattle.

Video clip #3: Trapping Lobo

1. Seton finally captured Lobo by first capturing Blanca and placing her body in the barn. He then set traps around this area eventually capturing Lobo. Lobo was finally captured with 4 separate traps on each leg.
2. The ranger tells a story of a male wolf whose mate died – the male wolf seemed to mourn her, howling for days.

Video clip #4: Seton’s legacy

1. A big push in the late 19th century was to “clean up, civilize, and make safe” this region of the country. This included ridding the land of dangerous animal predators such as the wolf.
2. Three of the following:



NAME: _____

DATE: _____

- Pushed for creation of more National Parks
 - Helped push through laws to protect migrating birds (which laid the groundwork for every major piece of environmental legislation that followed)
 - Founded Woodcraft Indians to educate children about the wilderness
 - Founding father of the Boy Scouts of America
3. Viewpoint 1: Wolves are bad, and predators – getting rid of them makes life easier for humans. Viewpoint 2: We made a mistake in killing wolves. They are an essential part of the ecosystem and we need to bring them back.