Study Guide

WOLVES IN PARADISE

Ranchers & Wolves in the New West

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Introduction

Wolves in Paradise is a 56 minute documentary aimed at a general audience, as well as students of social studies, environmental studies, geography, wildlife biology, natural history, political science and sociology from grades 9 through 12 and college.

Set in the soaring mountains and majestic valleys of southwest Montana, **Wolves in Paradise** is a tale of survival as ranchers face the challenge of living with wolves in the decade after the top predator was restored to Yellowstone National Park (YNP). This documentary tells the inside story of wolf reintroduction from all points of view, from livestock growers to park biologists to conservationists to politicians, and weighs its impact on both the ecology of the region and the lives of its residents.

What happens in the Greater Yellowstone Ecosystem (GYE) matters to people everywhere. What is learned there can be applied to many other regions around the world. **Wolves in Paradise** takes place in the Northern Rockies, yet its message can be applied in any community where population growth and commerce come in conflict with the environment. Behind the specific issues raised in **Wolves in Paradise** are larger questions that affect us all: Are we any closer to finding the proper equation that will balance the rights of property owners with the requirements of animals to exist as wild species? Can we reconcile our need for healthy ecosystems with our urge to expand into untamed places and change them forever?

This study guide is intended to help teachers lead discussions of the issues raised in **Wolves in Paradise.** It provides a brief history of wolf reintroduction, a synopsis of the documentary, and a list of questions to be asked before and after viewing. There is extra material provided for lesson planning, including a glossary, learning objectives and key concepts, a cast of participants, a map of the region, wolf facts, advanced activities for the classroom, a bibliography and a guide to further resources.

Background: Yellowstone and the Return of the Wolf

Yellowstone National Park covers 2.2 million acres of peaks and plains where the states of Wyoming, Montana and Idaho come together along the spine of the Rocky Mountains. Established in 1872 as the nation's first national park, Yellowstone is surrounded by 13 million more acres of national forest, making the area, known as Greater Yellowstone, one of the last intact ecosystems in the lower 48 states. Teeming with elk, eagles, grizzly bears and bison, it is the only place where visitors can see the western landscape as it appeared to the explorers Lewis and Clark 200 years ago. But for most of the 20th century, there was one essential species missing: The gray wolf, top predator in the food chain, had been exterminated by government trappers and bounty hunters to make the area safe for livestock.

"A lot of people thought wolves were eradicated for a good reason," says Doug Smith, a government biologist and head of the Yellowstone Wolf Project. "They felt the West was settled on the idea of eradicating predators, primarily wolves." To Smith, the settler's persecution of wolves was not simply aimed at the predator, but at what the wolf represented: "Through history they have been a symbol of something else. To some, wolves symbolize waste and destruction and killing; to others they symbolize wilderness and a healthy ecosystem."

Hundreds of thousands of wolves once lived in the US below the Canadian border. By the time the Endangered Species Act (ESA) became law in 1973, only a few hundred gray wolves remained in northern Minnesota and on Isle Royale, Michigan. But with the passing of the ESA, conservationists and government biologists were given a legal mandate to try to restore species that had been exterminated by humans. Before long, plans were in motion to return the gray wolf to parts of its native range in Idaho, Montana and Wyoming. Livestock growers and western politicians fought the program in court, and lost.

In 1995 and 1996, agents of the US Fish and Wildlife Service and the National Park Service captured gray wolves in Canada, where they still are plentiful, and relocated them in remote areas of central Idaho and in Yellowstone National Park Sixty-six wolves were released. By the end of 2006, that population had grown to 1,300.

Film Synopsis

Wolves in Paradise begins in Yellowstone National Park, as government biologist Doug Smith shoots wolves with tranquilizer darts from a helicopter. Smith, who heads the Yellowstone Wolf Project, fits the drugged animals with radio collars in order to track and study their movements. He says that when wolves were restored to Yellowstone, they were never expected to stay within the boundaries of the park.

Conservationist Janelle Holden explains why wolves are needed both inside and outside of Yellowstone park. Wolves are a keystone species, at the top of the food chain and vital to the ecological health of the region. When you remove a keystone animal like the wolf, ecosystems fall out of balance. Since the wolf has returned to Yellowstone, smaller predators such as coyotes are less abundant, scavengers like ravens and bears have more to eat, and elk herds are healthier and more alert.

Outside the park, some residents are less enthusiastic about the return of the wolf, particularly livestock growers who see the wolf as a threat to their livelihoods.

Wolves in Paradise follows two very different ranching operations through a grazing season in wolf country. The relatively small Davis ranch is a family business, clinging to tradition in a valley that is quickly turning from rangeland to vacation homes and subdivisions. Although ranchers like Davis had feared that wolves would pick off their herds as easy prey, there has been relatively little depredation of his livestock. Still, in the past wolves killed a couple of Davis's heifers, and one year they harassed the cattle so badly that they didn't gain weight. Another attack like that could wipe Davis out, and he approaches the summer with some apprehension. "How can we have both the rancher and the wolf together?" Davis asks. "That's the part we need to get figured out."

But in nearby Madison Valley, a California-born multimillionaire conservation rancher named Roger Lang welcomes both wolves and cattle on his 18,000 acre spread. "We look at the Sun Ranch as one big experiment," says Lang. At the beginning of the summer, ranch managers discover that they are grazing 1500 head of cattle right in "wolf central," where the Wedge pack has chosen to den and raise pups. Lang and his team hope they can work with these wolves, teaching them not to prey on livestock, while using their presence to deter other packs from settling on the ranch. As the days grow shorter,

the experiment becomes more interesting, and then more deadly to both cows and wolves.

As the film follows both ranchers through the changing seasons, it also documents the growing alliance between conservationists, government agencies and ranchers who seek creative solutions to allow livestock and wolves to coexist. Wildlife professionals such as Val Asher are looking for ways to help the ranchers to keep wolves away from livestock without killing them. She trains ranch hands to use cracker shells and rubber bullets to scare wolves away. She destroys wolf dens when she finds them too close to areas where cattle graze. Meanwhile, other conservation groups pay for fencing or subsidize "range riders," who watch over the herds and deter the wolves with their human presence.

Conservationists and ranchers have also discovered common ground in trying to protect open range from uncontrolled development. When it comes to preserving the land, what's good for the wolf can be good for the rancher, too.

Montana's current wolf management plan ensures that viable wolf populations will be able to live outside Yellowstone Park with the removal of the wolf from protection under the Endangered Species Act. However, now that wolves are a fact of life in southwest Montana, ranchers are working with politicians, conservationists and wildlife professionals to develop new ways to prevent livestock losses and provide more options for livestock producers to control the predators.

In the end, the survival of the wolf will depend on how willing people are to protect and to share some of the last wild places in the American west. "The best wolf habitat resides in the human heart," says Ed Bangs, Gray Wolf Recovery Coordinator of the US Fish and Wildlife Service. "You have to leave a little space for them to live."

Learning Objectives and Key Concepts

Students should be able to:

—Locate the Greater Yellowstone region on a map of the Northern Rockies.

—Understand the concept of an ecosystem, and why the gray wolf is such an important species in the Yellowstone ecosystem.

—Explain why the gray wolf was exterminated from this region, and why the species was restored by the US government.

—Explain why local ranchers objected to the return of the gray wolf, and how the project affected their livelihoods.

—Understand the concept of habitat, and how real estate development and expanding human populations in the West have an impact on both wildlife habitat and traditional ranching operations.

—Explain how traditional adversaries—ranchers and wolf advocates—could learn to work together for a common purpose.

Main Participants

Doug Smith: Biologist and director, Yellowstone Wolf Project

Janelle Holden: Wildlife advocate, Keystone Conservation

Martin Davis: Family rancher, Paradise Valley, MT

Roger Lang: Owner of the Sun Ranch, a large "conservation ranch" in Madison Valley, MT

Bruce Malcolm: State Representative and rancher in Paradise Valley, MT

Lane Adams: Former rancher and realtor who now works for the Madison Valley Ranchlands Group

Val Asher: Biologist and wolf expert

Glossary of terms

Biologist: A scientist who studies life and all its processes.

Conservation: The controlled utilization or official supervision of natural resources in order to preserve or protect them or to prevent depletion.

Delist: To remove an animal or plant species from the federal list of endangered and threatened wildlife and plants.

Den: An above or under-ground shelter where wolves give birth to pups and raise them until about 8 weeks of age.

Development: The introduction of human settlements and businesses in natural or unpopulated areas.

Ecosystem: A dynamic and interrelating complex of plant and animal communities and their associated environment.

Endangered species: An animal or plant that is in danger of extinction throughout all or a significant portion of its range.

Endangered Species Act: The federal law, passed by Congress in 1973, that requires US agencies to protect threatened and endangered species, and to restore those species that have been eradicated by human activity.

Extirpated species: A species that no longer survives in regions that were once part of its range, but that still exist elsewhere in the wild or in captivity.

Extirpation: The act of eliminating something, taking it out of existence.

Gray wolf: *Canis lupus*, a predator native to North America and the largest member of the canine family.

Habitat: The place or environment where a plant or animal naturally lives and grows

Keystone species: A species with a special importance to maintain the health and balance within an ecosystem.

Livestock growers: Farmers and ranchers who raise large animals, such as cows and sheep, to breed or sell.

Predator: An animal that hunts other animals for food.

Range: The geographic area a species is known to or believed to occupy.

Range riders: Ranch employees or volunteers who, like old-fashioned cowboys, stay close to cattle herds, day and night, to protect them from predators.

Recovery: The process by which the decline of an endangered or threatened species is stopped or reversed, or threats to its survival neutralized so that its long-term survival in the wild can be ensured.

Rendezvous site: An above ground area that includes a "nest" or nests where pups huddle together, a network of trails, and various play areas for pups typically 8 to 20 weeks old.

Rubber bullets: Non-lethal projectiles used to deter wolves from getting too close to livestock

Species: A distinct population of plant or animal which interbreeds when mature.

Subspecies: A genetically distinct geographical subunit of a species.

Threatened species: An animal or plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

US Fish and Wildlife Service: The agency within the US Department of Interior that is responsible for implementing the Endangered Species Act in cooperation other agencies and organizations.

Gray Wolf Facts

Species: *Canis lupus*

Subspecies living in the GYE*: Canis lupus occidentalis*

Lifespan: Up to 13 years, but average in the wild of 6-8 years (this depends on geography; wolves in YNP live an average of 3-4 years); wolves may breed up to age 10

Weight: From 55 to 125 pounds

Height at shoulder: 26 to 34 inches

Speed: Average 36-38 mph, Up to 40 mph in short bursts

Diet: Mostly wild ungulates (hoofed animals) such as deer, elk, moose and caribou including bison in some areas.

Range: Most of North America, from Alaska to Mexico, before they were exterminated in the 19th and 20th centuries.

US Population: 7,000 to 11,000 in Alaska; and an estimated 5,000 in the lower 48 states.

Size of territory: From 50 square miles up to 1000 square miles, depending on the availability of prey. Lone wolves have been known to travel over 600 miles in search of a new home.

Mating season: January to February in the YNP area

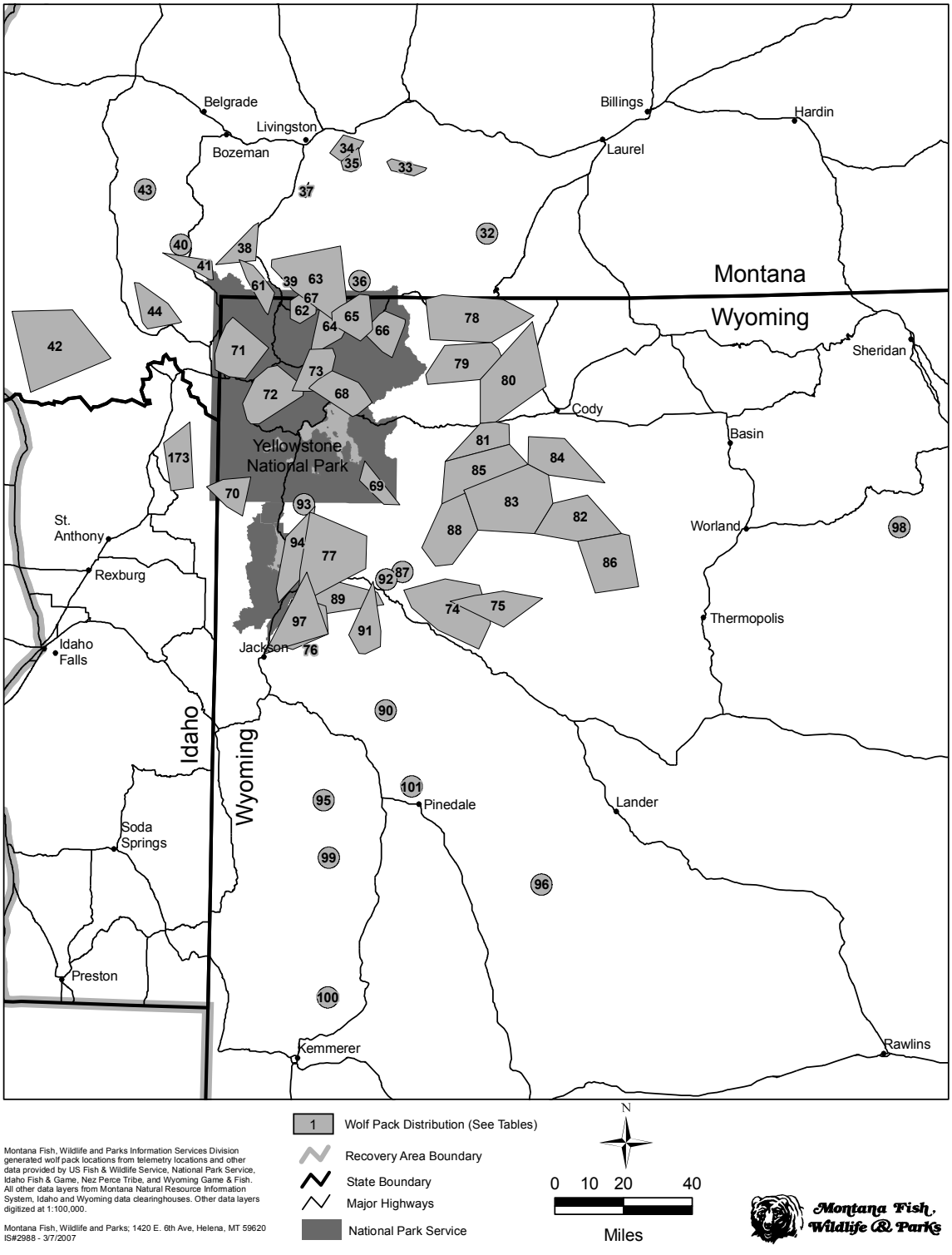
Gestation: 63 days

Litter size: Average of 4 to 6 pups; there is usually a 50% mortality rate within the first year of the litter's life.

Behavior: Gray wolves usually live in family groups or packs that consist of a breeding pair and their offspring. Packs are typically comprised of 4 to 12 wolves of various ages that are usually led by the breeding pair. This breeding pair is often the dominant pair of the pack that leads the others. Much larger packs of 30 or more wolves have been seen in Yellowstone National Park. Wolves have strong social bonds; biologists believe that their distinctive howls reinforce the relationships between wolves and their territories.

Sources: US Fish and Wildlife Service; Defenders of Wildlife (http://www.defenders.org); International Wolf Center (http://www.wolf.org)

Map of wolf packs in the Yellowstone reintroduction area- 2006



Montana Fish, Wildlife and Parks Information Services Division generated wolf pack locations from telemetry locations and other data provided by US Fish & Wildlife Service, National Park Service, Idaho Fish & Game, Nez Perce Tribe, and Wyoming Game & Fish. All other data layers from Montana Natural Resource Information System, Idaho and Wyoming data clearinghouses. Other data layers digitized at 1:100,000.

Montana Fish, Wildlife and Parks; 1420 E. 6th Ave, Helena, MT 59620
IS#2988 - 3/7/2007

Table 1a: Montana Portion of Northwest Montana Wolf Recovery Area: wolf packs and population data, 2006.

REF.		RECOV		PACK SIZE DEC 2006			MORTALITIES			KNOWN		CONTROL		CONFIRMED LOSSES [6]			
#	WOLF PACK [1]	AREA	STATE	ADULT	PUP	TOT	NAT	HUMAN [2]	UNKN [3]	DISPERSED	MISSING [4]	KILLED [5]	MOVED	CATTLE	SHEEP	DOGS	OTHER
1	Ashley	NWMT	MT	?	?	4											
2	Candy Mountain	NWMT	MT	7	4	11				1							
3	DeBorgia #	NWMT	MT	2	4	6											
4	Elevation Mountain	NWMT	MT	?	?	5		1									
5	Fishtrap	NWMT	MT	6	2	8											
6	Flathead Alps	NWMT	MT	?	?	12											
7	Great Bear	NWMT	MT	?	?	6											
	~~Halfway~~ [7]	NWMT	MT	0	0	0						2		1	1		
8	Hewolf Mountain	NWMT	MT	4	2	6						2		1			1
9	Hog Heaven	NWMT	MT	5	1	6					1						
10	Kintla	NWMT	MT	?	?	4											
11	Kootenai South	NWMT	MT	4	?	4		1		2							
12	Ksanka	NWMT	MT	2	1	3											
13	Lazy Creek	NWMT	MT	8	?	8											
14	Livermore	NWMT	MT	2	4	6											
15	Lost Soul	NWMT	MT	2	?	2											
16	Lydia	NWMT	MT	2	3	5											
17	Marias	NWMT	MT	?	?	4											
18	McMillan	NWMT	MT	?	?	4											
19	Meadow Peak	NWMT	MT	3	2	5											
20	Murphy Lake	NWMT	MT	?	?	?					1						
21	Ninemile	NWMT	MT	5	1	6										1	1
22	Nyack	NWMT	MT	?	?	2											
23	Pulpit Mountain	NWMT	MT	3	5	8		1									
24	Red Shale	NWMT	MT	?	?	4											
25	Spotted Bear	NWMT	MT	4	?	4					1						
26	Spotted Dog	NWMT	MT	3	4	7						11		3			
27	Squeezer	NWMT	MT	?	?	4											
28	Superior #	NWMT	MT	?	?	2											
29	Thompson Peak	NWMT	MT	6	4	10											

Table 1b: Montana Portion of the Greater Yellowstone Experimental Area: wolf packs and population data, 2006

Montana Portion of Greater Yellowstone Experimental Area

REF.		RECOV		PACK SIZE DEC 2006			MORTALITIES			KNOWN		CONTROL		CONFIRMED LOSSES 6			
#	WOLF PACK 1	AREA	STATE	ADULT	PUP	TOT	NAT	HUMAN 2	UNKN 3	DISPERSED	MISSING 4	KILLED 5	MOVED	CATTLE	SHEEP	DOGS	OTHER
32	Rosebud	GYA	MT	2	0	2											
33	Moccasin Lake	GYA	MT	2	2	4											
34	Mission Creek	GYA	MT	3	0	3											
35	Baker Mountain	GYA	MT	2	5	7											
	~~Carbonate Mountain~~ [7]	GYA	MT	0	0	0											
36	Buffalo Fork (Mystery)	GYA	MT	10	0	10											
37	Mill Creek	GYA	MT	1	3	4	1										
	~~Donohue~~ [7]	GYA	MT	0	0	0						2		1			
38	Chief Joe	GYA	MT	5	3	8											
39	Eagle creek	GYA	MT	2	2	4											
	~~Casey Lake~~ [7]	GYA	MT	0	0	0											
40	Deadhorse	GYA	MT	?	?	?		1									
41	Cougar II %	GYA	MT	7	3	10											
42	Freezeout	GYA	MT	3	0	3						3		1			
43	Beartrap	GYA	MT	8	0	8											
44	Wedge	GYA	MT	5	1	6						5		4			
	Misc/Lone	GYA	MT	4	0	4	1	1		2				5	3		
	MT Total in GYA	GYA	MT	54	19	73	2	2	0	2	0	10	0	11	3	0	0

1 Underlined packs are counted as breeding pairs toward recovery goals.

2 Excludes wolves killed in control actions.

3 Does not include pups that disappeared before winter.

4 Collared wolves that ceased transmitting in 2006.

5 Includes agency lethal control and take by private citizens under 10j regulation.

6 Includes only domestic animals confirmed killed by wolves.

7 Pack did not exist on December 31, 2006 and is not displayed on the map; see pack narrative.

% Dens just inside the Yellowstone National Park boundary but nearly 100% of the territory is within the State of Montana.

file: FINAL SWMT Table 1b 3-12-07.xls

Table 2: Wyoming wolf packs and population data 2006, and totals for Greater Yellowstone Recovery Area

REF.		RECOV		PACK SIZE DEC 2006			MORTALITIES			KNOWN		CONTROL		CONFIRMED LOSSES 6			
#	WOLF PACK 1	AREA	STATE	ADULT	PUP	TOT	NAT	HUMAN 2	UNKN 3	DISPERSED	MISSING 4	KILLED 5	MOVED	CATTLE	SHEEP	DOGS	OTHER
	Yellowstone National Park Northern Range																
61	Swan Lake #	GYA	MT/WY	2	3	5											
62	Leopold #	GYA	MT/WY	7	12	19	1			1							
63	Hellroaring #	GYA	MT/WY	5	1	6	1										
64	Agate	GYA	WY	7	6	13											
65	Slough	GYA	WY	8	0	8	2			2	1						
66	Druid	GYA	WY	3	9	12											
67	Oxbow	GYA	WY	4	8	12											
	Pack Unknown						1										
	Yellowstone National Park Non-Northern Range																
68	Mollie's	GYA	WY	6	5	11											
69	Yellowstone Delta	GYA	WY	11	5	16	1			2	2						
70	Bechler #	GYA	WY/ID	8	5	13											
71	Cougar Creek #	GYA	MT/WY	4	0	4											
72	Gibbon Meadows	GYA	WY	8	4	12				1	2						
73	Hayden Valley	GYA	WY	3	2	5											
	Nez Perce (dissolved)	GYA	WY								2						
	Total Inside YNP	GYA	WY/MT/ID	76	60	136	6	0	0	6	7	0	0	0	0	0	0
	Wyoming Outside Yellowstone National Park																
74	Washakie	GYA	WY	4	3	7			1	1	2	1		4	0		
75	East Fork	GYA	WY	8	?	8						0		2	0		
76	Teton	GYA	WY	3	0	3				1	3	0		1	0		
77	Pacific Creek	GYA	WY	5	4	9			1	1		0		0	0		
78	Beartooth #	GYA	WY/MT	5	2	7						0		0	0		
79	Sunlight	GYA	WY	8	5	13			2			0		1	0		
80	Absaroka	GYA	WY	5	1	6					3	4		6	0		
81	South Fork	GYA	WY	2	4	6			1			4		19	0		
82	Gooseberry	GYA	WY	2	2	4						6		6	0		
83	Greybull River	GYA	WY	2	6	8					1	0		2	0		
84	Carter Mtn.	GYA	WY	5	0	5						4		1	0		
85	Rock Creek	GYA	WY	3	2	5						0		0	0		
86	Owl Creek	GYA	WY	2	3	5						0		1	0		
87	Cub Creek	GYA	WY	3	2	5						0		0	0		
88	Bliss Creek	GYA	WY	4	2	6						0		0	0		

Pre-viewing questions

—What do you know about wolves? How would you describe them?

—Brainstorm a list of folk tales or fairy tales about wolves.

—What is your perception of wolves?

—What are the positive and negative aspects of returning them to places where they had been exterminated by humans?

Post viewing questions

—Why was the wolf exterminated in the American west?

—Why do conservationists think it was important to restore wolves to parts of their native range?

—Why was Yellowstone National Park chosen as a place for wolf reintroduction?

—What changes took place in the park after the wolf returned?

—Why did livestock growers oppose the wolf restoration project?

—Compare and contrast ranchers Martin Davis and Roger Lang. What is different about their ranches, and what do they have in common? What does the return of the wolf mean to each rancher?

—What is being done to keep wolves from killing livestock? Which methods do you think work best and why?

—Which do you think threatens ranchers more: wolves or development and why?

—Why does the Davis family want to keep ranching, despite the hardships?

—What do you think the future holds for Martin Davis and his son, Taylor? Will Taylor be able to hold on to the ranch?

—What does Roger Lang hope to learn from his "experiment" in ranching?

—Although conservationists and ranchers in southwest Montana disagreed over wolf reintroduction, what do they now have in common?

—Should the government compensate livestock producers for raising livestock in wolf country; why or why not? What is fair compensation? Should states or the federal government provide other assistance? If so, what type of assistance?

Classroom Activities

—Assign further readings about the history of the wolf in North America to learn how native cultures were able to coexist with wolves (http://www.wolf.org). Discuss what prevented European settlers from doing the same.

—Discuss what development means. How has development changed your neighborhood, town, city, state? Do you observe changes in the ecosystems there? If so, what are those changes? For example, the Wildlife population.

—Discuss the importance of wildland areas—extensive natural habitats such as forests, prairies, brushlands, tundra and deserts where human presence is minimal and human tolerance would allow coexistence with other species—to wolf survival and recovery. How does a "ranch" fit into a wildland? How can we support sustainable ecosystems?

—Have students look up the Endangered Species Act on the US Fish and Wildlife website (http://www.fws.gov/endangered/esa/content.html). Focus on Section 2, "Findings, Purposes and Policies." How might parts of this section be used to justify wolf reintroduction? Now look at Section 10 (J). Since the gray wolf was restored to Yellowstone as an "experimental population," how can the language of this section be used to justify killing wolves that prey on livestock?

—Divide the class into two groups representing ranchers and wolf advocates. Have each side research the issues surrounding wolf restoration in Yellowstone, then set up a debate to determine who has the strongest case for or against reintroduction. See if the debaters can find areas of agreement that might lead to a compromise or collaborative consensus that may offer solutions.

—Research other government projects to restore wolves in other parts of the USA: the red wolf in the southeast and the gray wolf subspecies known as the Mexican wolf in the southwest (http://www.fws.gov). How successful were those projects? How is the Mexican wolf project similar to the Yellowstone wolf restoration? How does it differ?

—For more ideas, visit the International Wolf Center website (http://www.wolf.org) to find a curriculum titled "Gray Wolves, Gray Matter." It has dozens of lessons, exercises and role-playing activities for all levels that comply with the National Science Education Standards.

Reference

For more information:

The International Wolf Center: http://www.wolf.org

US Fish and Wildlife Service: http://www.fws.gov

Suggested Reading:

The Wolves of Yellowstone, Michael K. Phillips and Douglas W. Smith, Voyageur Press,1996.

Decade of the Wolf: *Returning the Wild to Yellowstone*, Douglas W. Smith and Gary Ferguson, The Lyons Press, 2005.

War Against the Wolf: America's Campaign to Exterminate the Wolf, Rick McIntyre, ed., Voyageur Press, 1995.

The Greater Yellowstone Ecosystem: Redefining America's Wilderness Heritage, Robert B. Keiter and Mark S. Boyce, eds., Yale University Press, 1991.

The Wolf: Ecology and Behavior of an Endangered Species, L. David Mech, University of Minnesota Press, 1981

Academic Standards

Source: Mid-continent Research for Education and Learning (http://www.mcrel.org/compendium/topics)

Science
Standard 6: Understands relationships among organisms and the physical environment.

Geography: Environment and Society
Standard 14. Understands how human actions modify the physical environment
Standard 15. Understands how physical systems affect human systems

Geography: The World in Spatial Terms
Standard 1. Understands the characteristics and uses of maps, globes, and other geographic tools and technologies.
Standard 2. Knows the location of places, geographic features, and patterns of the environment

Geography: Places and Regions
Standard 4. Understands the physical and human characteristics of place
Standard 5. Understands the concept of a region
Standard 6. Understands that culture and experience influence people's perceptions of places and regions

Historical Understanding
Standard 1: Understands and knows how to analyze chronological relationships and patterns
Standard 2: Understands the historical perspective

Civics
Standard 21: Understands the formation and implementation of public policy

Language Arts
Standard 9. Uses viewing skills and strategies to understand and interpret visual media

Thinking and Reasoning
Standard 1. Understands and applies the basic principles of presenting an argument
Standard 3. Effectively uses mental processes that are based on identifying similarities and differences