

Stakeholder Activity

Stakeholder Group: Wolf Watching Ecotourism



For the stakeholder meeting, your group will represent Wolf Watching Ecotourism. Your job is to put yourself in the Wolf Watching Ecotourism's shoes and think about how wolf conservation affects them. To help you get started, we've put together some ARTICLES and other materials about Wolf Watching Ecotourism for you, which you will find in your **Wolf Watching Ecotourism Stakeholder Folder** available for free download on the Bear Trust website (<http://beartrust.org/gray-wolves-in-the-northern-rockies>). To ensure you have a solid understanding of the Wolf Watching Ecotourism perspective, you may also need to do some additional research.

During the stakeholder meeting, there will be three goals:

- 1) Understand the different perspectives of each stakeholder
- 2) Determine "common ground" among stakeholders
- 3) Work together to identify issues and possible solutions, and provide input on how we can collaboratively move forward to ensure all stakeholder perspectives/goals are considered in our wolf conservation efforts

To help with Goal # 1, each of the 6 stakeholder groups will give a 3-5 minute presentation about its stakeholder group at the beginning of the stakeholder meeting. You can use powerpoint, prezzi, or some other presentation format for your presentation. **Feel free to use photos provided at the end of these instructions in your presentation.**

For your 3-5 minute stakeholder group presentation, make sure to include AT LEAST the following information:

A. Describe the Wolf Watching Ecotourism perspective as it relates to wolf conservation. For this activity, the Wolf Watching Ecotourism perspective includes both the wolf watching BUSINESSES (wolf ecotourism businesses, hotel owners near Yellowstone, restaurant owners near Yellowstone, shop owners near Yellowstone) and the PEOPLE (clients) who do the wolf watching.

Here's a few ARTICLES and website addresses that will help you begin to understand the Wolf Watching Ecotourism perspective. All ARTICLES are located in your **Wolf Watching Ecotourism Stakeholder Folder**. Read the following ARTICLES and go to the following websites:

- Go to Yellowstone Wolf Tracker website to get an idea of wolf watching opportunities in Yellowstone National Park:
<http://www.wolftracker.com/guide.htm>
- Go to the "Yellowstone Reports" website and check out daily updates about Yellowstone wolves:
https://www.yellowstonereports.com/sample_reports.php
- Go to the New York Times to read about Yellowstone resident wolf 832F that was shot:
http://www.nytimes.com/2012/12/09/science/earth/famous-wolf-is-killed-outside-yellowstone.html?_r=0

Read more about this wolf at National Public Radio:
<http://www.npr.org/2012/12/12/167024477/scientists-mourn-popular-wolf-shot-by-a-hunter>

For many Wolf Watching Ecotourism folks, the death of wolf 832F was incredibly upsetting. Some people had been watching this wolf for 6 years. Provide a brief summary of this situation in your presentation.

Make sure the class knows this: Yellowstone wolves are the most visible in the world, which means that these wolves are viewed a lot and they are used to having humans watch them in relatively close proximity. Many wolf watchers believe that when a Yellowstone wolf leaves the Park boundary, that wolf is not equipped to deal with humans that hunt. Whereas most

non-Yellowstone wolves would instinctively run away from human hunters, Yellowstone wolves that are from packs exposed to lots of tourists may not. Many wolf watchers believe that the ethics of fair chase do not come into play when hunters try to hunt Yellowstone wolves at the boundary of Yellowstone National Park.

- **ARTICLE: "Weighing In on Wolves"**

In your presentation, include information about what this quote means: "every Park wolf that steps over the border into Montana and Wyoming and gets shot is money out of our pockets".

Who is "Outraged Over Killings", and why?

In your presentation, make sure to let classmates know that Wolf Watching Ecotourism is a business for some folks. For example, many folks who live in Gardiner, Montana rely on wolf watching tourism to make a living. People come from all over the world to view wildlife in Yellowstone, especially wolves. These tourists spend money on wolf tours, wolf education programs, they eat in Gardiner restaurants, and stay in Gardiner hotels.

- **ARTICLE: "Wolf Ecotourism"**

In your presentation, include information about the percentage of Americans who participate in wildlife watching annually. How much money do wildlife watching activities bring in each year?

Scroll down the article until you get to "Gray Wolves in Yellowstone National Park". How many people outside of Montana, Idaho, and Wyoming visited Yellowstone in 2005 specifically to see or hear wolves? How much money did these tourists spend in the communities surrounding Yellowstone National Park? Include this information in your presentation.

- Go to the Yellowstone National Park website and read the article called "More \$\$\$ to the Economy: Yellowstone Wolf Watching or Elk Hunting?" <http://www.yellowstonepark.com/yellowstone-wolves-bring-estimated-7-10-million-in-annual-tourism-revenue/>

How much money was LOST by hunters/outfitter businesses when wolves were reintroduced into Yellowstone National Park and how much money was GAINED by local tourism companies when wolves were reintroduced? Include these estimates in your presentation.

For some local businesses, having wolves back in Yellowstone has changed their livelihoods for the better. In your presentation, briefly describe the situation for Gerlie Weinstein.

In your presentation, include Rick McIntyre's statement and mention for whom he works.

According to Jim Halfpenny, what brings in more money to the local economy, wolf watching or elk hunting?

- Read the ARTICLE "Economic Impacts of Wolves"

In your presentation, include information from this article.

B. In your presentation, include a copy of Figure 1 from your "Student Pages_QUESTIONS about Excel Data" and state whether the Wolf Watching Ecotourism stakeholder would like MORE wolves or FEWER wolves.

C. Read the "Bear Creek Council Letter", the "Bear Creek Council Position Statement on Wolves", and the "Bear Creek Council Wolf Initiatives"

Summarize the key points from these documents and include this information in your presentation.

Who is Bear Creek Council and what do they do?

Bear Creek Council is asking Montana Fish Wildlife and Parks to lower the number of wolves that can be hunted in areas near the northern boundary of Yellowstone (units 313 and 316) to ONE WOLF per hunting unit. What are the 3 reasons they cite to support this request?

Bear Creek Council wants to protect wolves that live 95% of the time in Yellowstone. List the reasons why.

D. In your presentation, include a copy of Figure 7 from your "Student Pages_QUESTIONS about GIS Data". Make sure your class understands the following points:

1. Wolf watchers come from around the world to view wolves in Yellowstone
2. The Wolf Watching Ecotourism business in the Northern Rocky Mountains focuses on wolves that live inside Yellowstone National Park.
3. Wolves in Yellowstone are managed differently than the way wolves are managed outside Yellowstone. Inside Yellowstone, wolves are not hunted. Outside Yellowstone, wolves are hunted.
4. Remind the class that based on the GPS data everyone worked on, only 12 packs lived inside Yellowstone National Park during 2014. Since there are so few wolves inside Yellowstone, compared to the number of wolves outside Yellowstone, the Wolf Watching Ecotourism stakeholder group would like to make sure that resident Yellowstone wolves are protected and are not hunted even when they travel outside Yellowstone.
5. Also remind the class that wolf hunting affects wolf tourism along borders of places like Yellowstone National Park. There's a published paper on this topic, go to the webpage listed below to find the article. Read the Abstract. (You can also read the entire paper if you'd like!):

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0153808>

After you have put together your presentation, think about the issues that affect your stakeholder. After all groups have given their presentations, you will be working to identify common ground and then you will be discussing ISSUES. Be prepared to state one or more issues that affect your stakeholder during the Stakeholder Meeting.

*For example, an important issue for Wolf Watching Ecotourism is protecting wolves that live in Yellowstone. Some of these wolves periodically travel outside Yellowstone Park and when they do, they might get hunted. The Wolf Watching Ecotourism industry has stated that when Yellowstone wolves are hunted, it negatively affects their business and when alpha wolves are killed, it can cause a pack to splinter and cease to exist.

One possible solution to this issue is to reduce the number of wolves that can be hunted in areas adjacent to the boundary of Yellowstone National Park. The non-profits called Wolves of the Rockies and Bear Creek Council have worked to reduce the hunting quota in

the two Montana hunting units that border Yellowstone National Park. By working with state officials, advocates like Wolves of the Rockies and Bear Creek Council have reduced the number of wolves that can be hunted by half, from 4 wolves to 2 wolves.

During the stakeholder meeting, be prepared to discuss the possible solution described above.

*Another example of an important ISSUE: Rancher Stakeholder will report that one of their biggest ISSUES is that wolves kill their livestock. The Rancher Stakeholder will say that it is important to keep wolf numbers in check (i.e., use lethal control on wolves) to reduce wolf-livestock conflict. The Rancher Stakeholder will show Figure 3 from your "Student Pages_QUESTIONS about Excel Data" as evidence that lethal control of wolves helps reduce wolf-livestock conflict. In a Washington State University study, researchers have shown that when you kill wolves that are depredating livestock, the number of livestock killed in the future can actually INCREASE instead of decrease. Why? Visit this website to learn the answer: <http://www.spokesman.com/stories/2014/dec/03/killing-wolves-protect-livestock-doesnt-work-study/>

During the stakeholder meeting, be ready to share the information about how livestock depredations can actually increase instead of decrease when wolves are lethally removed from an area where livestock exists.

Photo Section Begins on Next Page

PHOTO SECTION

Feel free to use these photos in your presentation
Unless otherwise noted, photo images provided courtesy of Shutterstock



Photo credit: Yellowstone's Photo Collection by Jim Peaco



Photo credit: Yellowstone's Photo Collection by Jim Peaco









Written by Dr. Melissa Reynolds-Hogland.
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June 4, 2015

Dear MTFWP Commissioners,

The time is approaching to vote on approval of the proposed 2015-16 Wolf Hunt. Bear Creek Council (BCC) would like you to vote to adjust an important aspect of this proposed harvest. BCC is a local, grassroots organization working to protect the integrity of our environment and community at the north entrance to Yellowstone National Park. We are based in Gardiner with a diverse membership making a livelihood mainly in the tourism industry.

BCC would like to see the quotas in units 313 and 316 lowered to ONE WOLF in each. We would further like to see these harvest units have NO TRAPPING allowed. We agree with MTFWPs choice to keep the harvest to one wolf per hunter in those units.

The situation around northern Yellowstone Park is unique in all of Montana. In recent years over 200 wolves per year have been harvested from across the state. We are asking to protect less than 2% of those, which would greatly improve our situation. Unlike every other place sportsman can harvest wolves in the state, our area has a segment of the regional wolf population that is very important in three different ways, which I describe here:

- 1.** Our economy relies on individual wolves to promote and maintain a significant aspect of its tourism industry. The loss of even one individual wolf can lead to widespread negative publicity among potential visitors to our area. By protecting these wolves we are seen as good stewards—maintaining positive public relations with the millions of visitors from around the world that drive the economic engine of our region. By hunting and trapping these wolves we are seen as not placing proper value on these attractions, the reason for many people's visit. In the past, we've suffered loss of eco-tourism revenues and even boycotts by tourists angered by wolf hunts. While I'm referring to the Yellowstone area, all of Montana has experienced increased wildlife tourism.
- 2.** Yellowstone's wolves are the subject of intensive long-term ecological research the results of which stretch the frontiers of our knowledge on the species and its ecology. These studies are seriously undermined by the harvest of collared individuals. The data and analyses from these studies are desperately needed to inform our approach to wolf conservation not only locally, but where wolves are found worldwide.
- 3.** The lack of conflict in our area further supports the need to treat these wolves as uniquely valuable and deserving of special management consideration. There is little to no ranching in these subunits and correspondingly only a few isolated cases of livestock depredation have occurred in the 20 years since reintroduction of wolves. At over 5,000 elk, the Northern Range herd remains robust and numerous, and certainly unaffected by harvesting 4 fewer wolves.

Cessation of all wolf harvest in the units along the northern park boundary would be necessary to fully address the concerns we have. We understand the constraints placed on MTFWP by the legislature who have made it illegal to fully protect these wolves and our vibrant ecotourism industry. Thus, we request you do what you can to reduce these harvests to the full extent that you are able. We sincerely appreciate the hard work you do in serving diverse interests and opinions on wildlife management in Montana.

Respectfully submitted,

Nathan Varley, PhD
President, Bear Creek Council



BEAR CREEK COUNCIL'S POSITION STATEMENT ON WOLVES IN MONTANA 2013

- **Create a Yellowstone National Park (YNP) wolf protection zone by combining units 313/316 into one Wolf Management Unit (WMU).**
- **Permanently limit the quota to 1 wolf in combined WMU 313/316.**
- **Restore a statewide wolf hunt quota and WMU quotas.**

BCC wants a permanent solution to a clearly defined, ongoing problem: protecting YNP wolves that live within the park 95% of the year (Doug Smith, Wolf Project data). BCC favors a return to the hunt boundaries of 2011, which limited a high take on YNP wolves.

Every autumn during hunting season, wolves temporarily leave Yellowstone National Park (YNP) and move into former WMU 313/316 because of elk migration, hunters' gut piles, and because there are no resident packs establishing wolf territories. In 2009 and 2013, proportionally higher numbers of radio-collared YNP wolves, important to science and ecotourism, were killed in wolf hunts. In 2013, 7 YNP wolves were taken out of a total of 25 wolves killed by shooting and trapping in WMU 390. That means 28% of the wolves killed in WMU 390, which is quite vast, were Yellowstone Park wolves (sources YNP/FWP).

Why Protect Yellowstone National Park wolves from Montana hunts?

- 1. YNP wolves live in wilderness areas and don't deplete on livestock.**
- 2. Wolf tourism is essential to Montana's economy.** Gardiner and southwestern Montana depend economically on wildlife and especially wolf tourism. Grossing \$350 million in 2007, wildlife watching brings more dollars into Montana than hunting or outfitting (FWP brochure). A University of Montana 2003 economic study estimated that wolf watching brought in \$35 million to Montana. Wolf hunting has already had an impact on wolf tourism in Montana.
- 3. YNP research contributes to the best science-based Montana wolf management.** With over 18 years of data collection, YNP Wolf Project research is one of the longest-running scientific studies of wolf-ungulate relationships in North America. Protecting YNP-collared wolves protects the best science about wolf-ecology and will help Montana best manage wolves, elk, and deer.
- 4. Wolf-ungulate dynamics support our healthy ecosystem.** Gardiner residents have seen the erosion of soil and loss of vegetation overpopulation of elk caused before wolf reintroduction.
- 5. Public opinion.** In January 2013, MTFWP received 750 public comments *just from Montanans* about the Wolf Hunt Closure around YNP. 554 Montanans supported the closure and only 196 opposed it.
- 6. Killing YNP wolves violates the rules of fair chase.** Exposed to thousands of tourists each year, YNP wolves are tolerant of humans and thus do not run from hunters.

BCC does not oppose a state-wide wolf hunt; however, we want to see a healthy wolf population throughout Montana, as suits a species that has just been removed from the Endangered Species List. We value wolves as native Montana wildlife and believe Montana must recognize Montanans involved in Wildlife Tourism as stakeholders in debates about wolves in Montana.



About Bear Creek Council Wolf Initiatives 2014

Founded in 1983, Bear Creek Council has been working to conserve and protect the integrity of our environment at the north entrance to Yellowstone National Park. We have succeeded in getting the Kinross mine to clean up Bear Creek, helped pass the Park County Plan, have placed solar panels on Gardiner School, worked on greening Gardiner with recycling, supported the initiative of Bear Awareness Gardiner, and have lobbied on behalf of bison, bear, and wolves for more than 20 years.

Bear Creek Council has extensively lobbied the legislature, the governor, and MTFWP to protect wolves in Montana and around the borders of Yellowstone National Park.

Some of our most recent wolf initiatives:

- The BCC wolf committee is currently negotiating with MTFWP to create a special fund at MTFWP. The fund could create salaried positions from non-hunting-related dollars.
- We're in conversation with a PhD candidate at UMT, who is studying public tolerance towards wolves and studying numbers on wolf tourism in the GYE.
- We're amassing a data bank showing public comments to FWP from Montanans favor protections around YNP.
- We've succeeded in lobbying FWP on some of the changes to their wolf hunt proposals.

Contacts:

President Barbara Ulrich 406-848-9445

VP Nathan Varley 406-223-2152

Wolf committee member Ilona Popper 406-223-9632

or visit our FB page.

THE U.S. FISH AND WILDLIFE SERVICE (USFWS) began reintroducing the endangered gray wolf to the Greater Yellowstone Area (GYA) and central Idaho in 1995. The restoration of wolves to the GYA has become one of the most successful wildlife conservation programs in the history of endangered species conservation. Yellowstone is now considered one of the best places in the world to watch wild wolves. The visibility of wolves within the park and public interest in wolves and wolf-based education programs have far exceeded initial expectations. But questions have persisted about the economic impact of wolf restoration that we have sought to answer.

During preparation of the Environmental Impact Statement (EIS) that was completed by the National Park Service prior to wolf restoration (USFWS 1994), one of the main concerns of wolf-reintroduction opponents was the expenditure of public federal funds for the restoration effort and the potential for negative effects on the regional economy. These assumed negative effects included the costs of wolf depredation on livestock and reduced big game populations resulting in lower economic returns to agencies and businesses that derive revenue from big game hunting. Proponents, on the other hand, predicted increased regional visitation and positive regional economic impacts as a result of wolf restoration.

Based on a 1991 park visitor survey, wolf recovery in Yellowstone was predicted to have a positive impact of \$19 million annually in the regional economy due to increased wolf-related visitation to the park. If true, that would more than offset the negative economic impacts on the livestock industry and big game hunting that were expected to result from wolf restoration.

To test the economic projections that were made as part of the EIS analysis, in 2005 we surveyed park visitors about their expenditures and reasons for visiting the park. This paper focuses on two primary results from the 2005 survey: preferences for wildlife viewing among Yellowstone visitors and the regional economic impacts attributable to wolf presence in the park.

Data Collection

The Yellowstone National Park 2005 Visitor Survey was designed to collect a broad spectrum of information and opinions from park visitors. For purposes of the regional economic analysis, information was collected on visitor attitudes toward wolf recovery and wildlife and on visitor expenditures. From spring through fall, visitors at all five park entrance stations were asked to participate in the survey. Winter visitors traveling by car were contacted at the North Entrance. A separate sample of visitors was contacted at parking areas in the Lamar Valley where people specifically interested in seeing wolves tend to congregate. Because the Lamar Valley sample is not representative of park visitors as a whole, their survey responses are not included in the data represented here unless otherwise stated.



A total of 2,992 surveys were distributed from December 2004 to February 2006; 1,943 were completed and returned for an overall response rate of 66.4%: 1,431 from the park entrance sample (64.4% response rate) and 521 from the Lamar sample (74.2%). The resulting responses were weighted appropriately to reflect the actual distribution of 2005 park visitation by entrance and season. The survey procedure followed a standard Dillman (2000) mail survey methodology using initial contact and repeat follow-ups.

Visitor Wildlife Viewing Preferences

Visitors were asked to list the three animals from a list of 16 that they would most like to see while in the park (Table 1 compares the 2005 study results from summer visitors to

Wolf Recovery in Yellowstone

Park Visitor Attitudes, Expenditures, and Economic Impacts

*John W. Duffield,
Chris J. Neher, and
David A. Patterson*



Wolf watchers at Slough Creek,
photograph by Jim Peaco/NPS.

similar surveys conducted in 1991 and 1999). The “charismatic megafauna,” including large carnivores and ungulates, rank highest on the lists. The large carnivores are consistently among the top five ranked species. In the 1991 study, wolves ranked ninth in popularity; 15% of park visitors listed them as one of the three species they would most like to see even though wolves were not present in the park. In the 1999 study, following wolf reintroduction, wolves were ranked second after grizzly bears and the percentage of visitors who chose wolves had increased to 36%. In the 2005 study, 44% of visitors listed wolves as a species they would most like to see, again ranking it second after grizzlies.

When asked to indicate which species they saw on their trip to the park, nearly all respondents reported seeing bison (93% to 98%), and a large share reported seeing elk (85% to

92%). As expected, very few visitors (1.8% or less) reported seeing the rarely viewed mountain lion and wolverine. Table 2 shows the percentage of entrance sample respondents who reported seeing wolves, coyotes, and both wolves and coyotes. For purposes of analyzing the impact of wolf presence in Yellowstone, we reduced the chance of counting visitors who misidentified coyotes as wolves by using the percentage of visitors who reported seeing both coyotes and wolves.

Table 2 shows that, depending on the season (spring, summer, or fall) from 9% to 19% of visitors reported seeing both wolves and coyotes. In winter, about 37% of North Entrance visitors reported seeing wolves and coyotes. Applying these percentages to the actual 2005 recreational visitation levels yields an estimate of 326,000 visitors who saw wolves in 2005. Although this is a conservative estimate because it excludes

winter visitors who came through the West, East, and South entrances on over-snow vehicles, it is substantially higher than previous estimates. For example, according to field counts of wolf-watching visitors by Yellowstone National Park personnel (Smith 2005), about 20,000 visitors per year were viewing wolves. Given the size of the park, the widespread distribution of wolves (Smith 2005), and the limited presence of park personnel in the field, this method may have under-estimated the number of wolf observers by more than an order of magnitude.

Yellowstone Visitor Trip Expenditures

A key measure of the economic significance of a resource such as Yellowstone to the local economy is the amount of money visitors from outside the three-state area of Montana, Idaho, and Wyoming spend during their trips. To obtain an estimate of this, the survey questionnaire asked visitors to indicate the total amount they spent on their trip, as well as the amount they spent in these three states. Table 3 compares the reported average trip spending by season for residents of the three states to the spending of nonresidents.

Net Recreation Impacts of Wolf Recovery on the Regional Economy

Survey respondents were also asked if the possibility of seeing or hearing wolves had been a reason for their visiting

the park and, if so, whether they would have come if wolves had not been present. Based on the responses to this question by both residents and nonresidents we estimated that the percentage of annual Yellowstone visitation attributable to wolves is 3.7%, ranging from 1.5% in the spring to nearly 5% in the fall. The percent for nonresidents only is similar, ranging from around 2% of spring visitors to almost 5% of summer visitors (Table 4). Table 4 shows the derivation of our estimate of the economic impact to the three-state region.

We estimate that approximately 94,000 visitors from outside the three-state region came to the park specifically to see or hear wolves in 2005, and that they spent an average of \$375 per person, or a total of \$35.5 million in the three states (Table 4). Prior to reintroduction, Duffield (1992) estimated that a recovered wolf population would lead to increased visitation from outside the three-state region resulting in an additional \$19.35 million in direct visitor spending in the three states. Adjusted for inflation this would be \$27.74 million per year in 2005—less than the \$35.5 million estimate based on the data from our 2005 study, but well within the 95% confidence interval (\$22.4 to \$48.6 million).

Wolf Impacts on Livestock and Big Game Hunting

The EIS economic analysis provided estimates of the impacts of a recovered wolf population on livestock predation and big game populations in the three-state area. The estimated

Rank	1991 Study		1999 Summer Study		2005 Summer Study	
	Species	%	Species	%	Species	%
1	Grizzly	0.550	Grizzly	0.58	Grizzly	0.55
2	Black Bear	0.332	Wolf	0.36	Wolf	0.44
3	Moose	0.332	Moose	0.35	Moose	0.41
4	Elk	0.239	Lion	0.31	Black Bear	0.26
5	Lion	0.229	Black Bear	0.29	Lion	0.25
6	Sheep	0.219	Sheep	0.23	Sheep	0.21
7	Eagle	0.187	Eagle	0.21	Eagle	0.21
8	Bison	0.160	Bison	0.19	Bison	0.21
9	Wolf	0.154	Elk	0.14	Elk	0.14
10	Wolverine	0.047	Wolverine	0.06	Wolverine	0.06

The 2005 study also included six other species that were selected as preferred by some respondents: trumpeter swan (3%), deer (2%), fox (1.8%), coyote (0.6%), antelope (0.3%), and goose (0.1%).

Table 1. Comparison of Yellowstone National Park visitor ratings of the animals they most would like to see on their trips to Yellowstone.

livestock losses of \$1,900 to \$30,500 per year (mostly for cattle and sheep) were based on assumptions of a recovered population of 100 wolves. During the period when wolf numbers were near 100 (1997–2000), annual losses averaged \$11,300 (based on actual payments at market prices for wolf kills verified by Defenders of Wildlife, www.defenders.org). When wolves numbered more than 300 in 2004 and 2005, losses averaged \$63,818 per year, twice the high-end estimate predicted in the EIS. Even if payments by Defenders of Wildlife understated livestock losses by a factor of two due to the difficulty of verifying all actual kills, recent direct losses would still be less than \$130,000 per year. Other livestock industry costs resulting from wolf reintroduction have not been quantified, but could include increased fencing and management costs associated with reducing wolf predation on a given ranch.

Based on biologists' projections of the impact of wolf predation on big game populations, the EIS projected a decline of 2,439 to 6,157 hunter days for elk, deer, and moose on the northern range and for Jackson and North Fork Shoshone elk. The associated foregone annual hunter expenditure was projected to be \$207,000 to \$538,000, based on approximately \$85 hunter expenditure per day for those species. In 2005 dollars, this would be a loss of \$342,000 to \$890,000. Three of the species examined in the EIS (deer, moose, and bison) either have seen no reduction in population levels (as was predicted in the EIS) or, in the case of moose, have inadequate data to evaluate current population levels (White et al 2005). There have been no reductions for permits, animals harvested, or hunter success for mule deer or moose on the northern range as a result of wolf restoration (White et al. 2005).

The other key game species, elk, has provoked substantial concern in recent years because some herd sizes have dropped dramatically as wolf numbers have risen. While a substantial body of recent literature on wolf-prey modeling in the Yellowstone ecosystem exists, most of it focuses on the northern range elk. A review of the wildlife biology literature on the northern

Survey (cont.)

35. Was the possibility of seeing or hearing wolves one of the reasons for your visiting Yellowstone National Park on this trip?
☐ NO ☐ YES
 If YES, would you still have chosen to take this trip even if wolves were not present in Yellowstone National Park? (Please check one)
☐ DEFINITELY YES ☐ DEFINITELY NO ☐ NOT SURE

36. If wolves were not present in the park, would you have spent fewer days in the park on this visit? (Please check one)
☐ NO ☐ YES
 If YES, reduction in days visiting the park _____

37. Have you traveled to Yellowstone National Park for purposes of observing wolves in a previous year? (Please check one)
☐ NO ☐ YES
 If YES, how many years (including 2005) have you been coming to Yellowstone National Park for the purpose of observing wolves? _____

38. Do you personally favor the reintroduction of wolves to Yellowstone National Park?
☐ NO ☐ YES ☐ NOT SURE
 What is your main reason for your views on wolf reintroduction?

39. Do you own a camera, video camera, or binoculars?
☐ NO ☐ YES
 If YES, how much did you pay for the camera/binoculars (total)? _____

Left, sample page from the 1991 survey; below, Female wolf pup #17 of the Rose Creek pack in Rose Creek pen, Barry O'Neill, 1995.



range elk population shows a divergence of views on the extent to which wolf predation has been responsible for its decline. However, two peer-reviewed papers (Varley and Boyce 2006, Vucetich et al. 2005) show that the impact of wolves on elk numbers has been consistent with or below the EIS prediction, which was for a long-range reduction of 5% to 30% in the hunter elk harvest. If one accepts the Varley and Boyce (2006) estimates, which also include impacts on the Jackson and North Fork Shoshone elk herds, actual declines in big game populations as a result of wolf predation and associated hunter impact are in the range predicted by the EIS (\$342,000 to \$890,000 in 2005 dollars). A caveat to these estimates is that they do not account for substitution behavior in response to changes in elk hunting opportunities in the GYA. This may result in an overstatement of hunter impacts. It was assumed in

Statistic	Spring N=495	Summer N=477	Fall N=322	Winter N=221
% Report seeing wolves	25.4%	15.2%	18.5%	42.4%
% Report seeing coyotes	45.3%	38.9%	40.4%	71.2%
% Report seeing both	19.2%	9.1%	12.8%	36.7%
Recreational visitation (2005)	382,598	1,819,798	547,777	43,933
Number of visitors seeing wolves and coyotes	73,382	166,330	70,335	16,123
Total estimated visitors sighting wolves and coyotes (spring-fall)	310,046 (95% C.I. 257,210 to 362,882)			
Total estimated visitors sighting wolves and coyotes (year-round)	326,170 (95% C.I. 273,277 to 379,097)			
Note: winter estimate includes only North Entrance visitation.				

Table 2. Estimated number of Yellowstone visitors seeing wolves and coyotes in the park in 2005.

Season/residency	Average amount spent in ID, MT, WY	Average total trip spending	Sample Size
Spring–nonresident	\$361.89	\$795.14	260
Spring–3-state resident	\$86.19	\$112.37	101
Summer–nonresident	\$369.12	\$757.31	291
Summer–3-state resident	\$142.06	\$142.06	45
Fall–nonresident	\$425.50	\$855.00	149
Fall–3-state resident	\$152.67	\$198.64	72

Note: winter results are only representative of wheeled access and are not presented.

Table 3. Comparison of park visitor spending in Idaho, Montana, and Wyoming by season and residency based on visitors responding to 2005 entrance station surveys.

the EIS that hunters who did not receive an elk hunting permit in the GYA would not hunt elsewhere in the three-state area for elk or increase hunting effort on other species.

Conclusions

Overall, it appears that the economic predictions made in the 1994 EIS analysis were relatively accurate. Our estimated increase in park visitation (3.7%) due to wolf presence is lower than was predicted in the EIS (4.93%). However, the EIS prediction was based on a survey of only summer visitors; our 2005 study estimated a 4.78% increase in summer visitation due to wolf presence. Regarding increases in visitor spending in the three-state area due to wolf presence, the estimate of \$35.5

million (confidence interval of \$22.4 to \$48.6 million) based on our 2005 study is consistent with the EIS estimate of \$27.7 million (2005 dollars).

Projected costs of wolf predation (based on the market value of cattle and sheep taken by wolves) have been in the range predicted by the EIS, and were on the order of about \$65,000 per year in 2004 and 2005. The impact of wolves on actual observed hunter harvest in the first 10 years after reintroduction was negligible, in that average hunter harvest and permits issued for big game species were either higher or unchanged compared to pre-wolf averages. However, reflecting in part the influence of a long-term drought, the presence of wolves, and aggressive management policies to reduce elk populations through hunting on the Northern Range, there

Statistic	Spring	Summer	Fall	Winter ¹
Total recreational visitation to Yellowstone	382,598	1,819,798	547,777	85,478
% of visitors from outside the three-state area	70.5%	83.68%	67.59%	82.2%
(A) Recreational visitors from out of the three states	269,770	1,522,807	370,242	70,289
(B) % of visitors who would not have visited without the presence of wolves	1.93%	4.78%	3.45%	3.66%
(C) Average spending per visitor within the three states by visitors from outside the area ²	\$361.89	\$369.12	\$425.50	\$510.84
(A) * (B) * (C) Total estimated annual three-state visitor spending attributable to wolves ³	\$1,885,178	\$26,889,668	\$5,431,916	\$1,314,167
Total estimated annual visitor spending in the three states attributable to wolves	\$35,520,929			
95% Confidence interval	\$22,404,274 to \$48,637,585			

¹ Based on 1999 winter visitor survey estimates (Duffield and Neher 2000).

² Average spending for those who specifically came to see wolves was nearly identical, but due to a much smaller sample size, had a much higher variance.

³ Sample size, by season for the 2005 sample was: 495 for spring, 477 for summer, and 322 for fall. The winter sample from 1998–1999 was 221.

Table 4. Estimated three-state (MT, ID, and WY) direct expenditure impact associated with wolf presence in Yellowstone National Park based on visitors responding to entrance station surveys.

has been recently a substantial reduction in elk permits. There is not a consensus among biologists on the actual impact of wolves on elk populations, but modeling supports the view that the long-term economic impact on big game hunting will be within the range projected by the EIS, of \$342,000 to \$890,000 per year (2005 dollars).

Weighing the economic impacts of increased tourism against reductions in livestock production and big game hunting participation, one can conclude that the net impact of wolf recovery is positive and on the order of \$34 million in direct expenditures. An input-output model of the three state economy (Minnesota Implan Group, 2007) can be used to estimate the effect on economic output, by accounting for indirect and induced expenditures throughout the three-state economy. Including this multiplier effect leads to an estimated total economic impact in the three-state area of about \$58 million in 2005 (range of \$34 to \$80 million).

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References

- Defenders of Wildlife Compensation Fund Data <http://www.defenders.org>
- Dillman, D. 2000. *Mail and Internet Surveys: The Tailored Design Method*, New York: John Wiley and Sons.
- Duffield, J. 1992. An Economic Analysis of Wolf Recovery in Yellowstone: Park Visitor Attitudes and Values. Report for Yellowstone National Park.
- Duffield, J. and C. Neher. 2000. Final Report. Winter 1998-1999 Visitor Survey: Yellowstone N.P., Grand Teton N.P. and the Greater Yellowstone Area. Denver: National Park Service.
- Minnesota Implan Group. 2007. State-level Data.
- U.S. Fish and Wildlife Service. 1994. The Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho: Final Environmental Impact Statement. Helena, MT.
- Smith, D. 2005. Yellowstone after Wolves, Environmental Impact Statement Predictions and Ten-Year Appraisals. *Yellowstone Science* 13(1):7-21.
- Varley, N., and M. Boyce. 2006. Adaptive Management for Reintroductions: Updating a Wolf Recovery Model for Yellowstone National Park. *Ecological Modeling* 193:315-339.
- Vucetich, J., D. Smith, and D. Stahler. 2005. Influence of Harvest, Climate and Wolf Predation on Yellowstone Elk, 1961-2004. *OKIOS* 111:259-270.
- White, P. and R. Garrott. 2005. Northern Yellowstone Elk after Wolf Restoration. *Wildlife Society Bulletin* 2005, 33(3):942-955.
- White, P., D. Smith, J. Duffield, M. Jimenez, T. McEneaney, and G. Plumb. 2005. Yellowstone After Wolves, Environmental Impact Statement Predictions and Ten-Year Appraisals. *Yellowstone Science* 13(1): 34-41.



**YELLOWSTONE
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Canon

WEIGHING IN ON WOLVES

Montana works to strike a fair and biologically sound balance between having enough of the large carnivores and having too many. BY TOM DICKSON

▶ **D**RIVING THROUGH THE FROZEN landscape of Yellowstone National Park's (YNP) Lamar Valley one recent morning, wolf watching guide Nathan Varley slows down and points to several ravens about a mile off. "There it is," he says, pulling over to set up his spotting scope and train it on a recent elk kill, which a few minutes earlier a colleague had told him was in the vicinity. For an hour we watch two wolves feeding on the carcass, a large gray male known to local watchers as "Crooked Ear" and a smaller black female called "Spitfire." The naming fosters anthropomorphizing, admits Varley, but it helps with identification, as do numbers given to about 20 percent of the park's wolves that wear radio collars for research purposes. Several other wolf watchers gather along the road in the bitter cold to view the large carnivores, clearly visible through high-powered optics. Crowded tour buses and minivans operated by wildlife-viewing companies pass by every 15 minutes or so, returning to Gardiner from another elk kill farther up the valley.

Varley, who lives in Gardiner, studied the park's carnivores for several years while earning a doctorate in ecology. But his primary concern with wolves these days is economic, not academic. "Every park wolf that steps over the border into Montana and Wyoming and gets shot is money out of our pocket," says the wildlife guide, who is also vice president of a local group called Bear Creek Council that tries

SAME ANIMAL, DIFFERENT LENSES Many hunters see the wolf as competition for elk and deer. Ranchers consider the large carnivore a threat to livestock. Yet others, like wolf watchers who crowd Yellowstone National Park in winter, when viewing conditions are best (right), consider the large carnivore a natural wonder to be cherished and protected.



to increase tolerance for wolves and bison leaving the park. Varley and his wife run Yellowstone Wolf Tracker wildlife tours, one of a dozen or so guiding operations sanctioned by park officials. These kinds of services are at the heart of a thriving wolf watching tourism that a University of Montana study found pumps millions of dollars into counties surrounding the park each year.

That economic argument is just one used by wolf advocates critical of growing hunter and trapper wolf harvests in Montana, Idaho, and Wyoming. Some are like Varley, who has no gripe with wolf hunting elsewhere but wants a kill-free buffer around Yellowstone. Others, often from outside the Rocky Mountain West, want to halt all lethal action on an animal that was classified as federally endangered just a few years ago.

On the flip side are those who demand that Montana kill more wolves, which they say harm ranchers' bottom line and deplete elk and deer herds. "We'd like the state to take much more aggressive measures in certain areas to bring these predator numbers down to a more tolerable ratio with prey populations," says Rob Arnaud, president of the Montana Outfitters and Guides Association. "We've got hunting outfitters around Yellowstone going out of business because of wolves."

Montana Fish, Wildlife & Parks is listening to all sides. The department's job is to ensure there are enough wolves to maintain a healthy

Tom Dickson is editor of Montana Outdoors.

"Every park wolf that steps over the border into Montana and Wyoming and gets shot is money out of our pocket."

"We've got hunting outfitters around Yellowstone going out of business because of wolves."

population in Montana, as mandated by its mission and federal law. At the same time, it works to limit livestock depredation, maintain abundant deer and elk, and foster public tolerance for wolves.

It's a balancing act, and, with impassioned interests tugging every which way, not an easy one.

► **Frustration fuels anger**

The wolf has long represented conflicting views of untamed nature. Roman, Norse, and Celtic mythology celebrated wolves, yet the carnivores were feared and persecuted throughout Europe for centuries. Native American tribes revered wolves as guides to the spirit world. The United States nearly eradicated the carnivore with bounties and, later, wide-scale federal government extermination. In Montana alone, "wolfers" killed 100,000 wolves between the 1860s and 1920s, primarily with poison.

Public attitudes toward wolves began to change in the 1970s as part of the growing environmental movement. *Canis lupus*, nearly extinct in the Lower 48, became a symbol of the nation's vanishing wildness. In 1995-96, 66 wolves were live-trapped in Canada and set free in Yellowstone National Park and the wilderness of central Idaho. The goal: Restore wolves to a region where they had almost been eliminated. Western states objected but took some comfort knowing that management authority, which includes regulated hunting and trapping, would revert back to them once the wolf population reached federal recovery goals.

In the first decade after the Yellowstone introduction, the highly prolific carnivores grew rapidly in number and range. By 2001 the regionwide population count surpassed the federal goal of 300 in Idaho, Montana, and Wyoming combined (at least 100 in each of the three states). By 2007 it reached at least 1,500—five times the initial target. Yet as wolf advocates cheered the growth, stockgrowers were reporting more and more livestock losses. Hunters in some areas began seeing fewer deer and elk and attributed the disappearance to growing wolf numbers. With the large carnivores still under federal protection, wolf critics felt powerless to stem the rapid population growth. They grew increasingly vocal, holding rallies, proposing legislation to defy federal rule, and even threatening illegal actions. "Shoot, Shovel, and Shut Up," read one popular bumper sticker.

Anti-wolf furor lessened after 2011, when the U.S. Fish & Wildlife Service (USFWS) removed ("delisted") the Northern Rockies population from the federally threatened and endangered species list. Wolves could now be hunted under carefully regulated conditions. Still, many wolf opponents complained that too many wolves remained in areas where hunters were unable to reduce numbers. Demands grew for the state to kill pups in dens or, as Alaska and Idaho do, employ aerial gunning from helicopters.

FED UP Frustrated that wolf numbers continued to grow far beyond initial federal recovery goals, anti-wolf protesters turned up the volume during the early 2000s. Wolves were finally delisted in 2011.



THE FACTS regarding concerns over Montana's wolf management

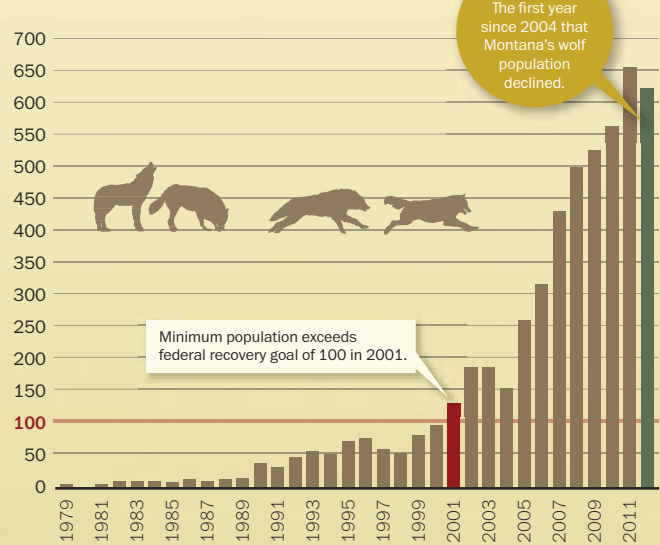


► **PRO-WOLF BELIEF:**

"Regulated hunting and trapping is decimating Montana's wolf population."

6X **FACT:** Montana's wolf population is still six times greater than the initial federal recovery goal of 100—a threshold reached in 2001.

Montana Wolf Population
(Minimum counts)

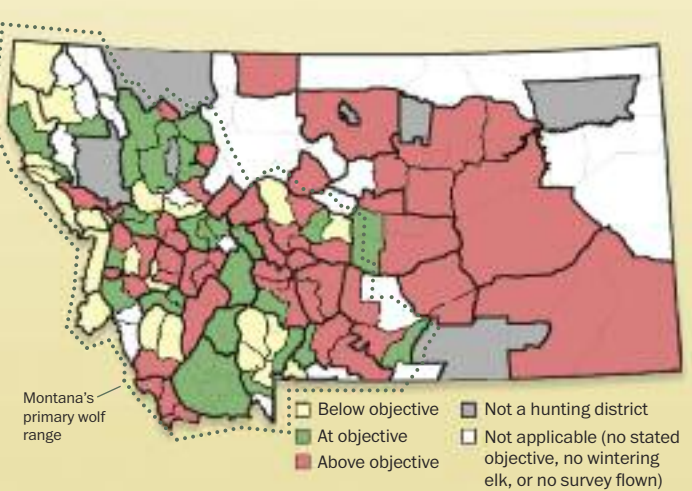


► **ANTI-WOLF BELIEF:**

"Wolves are decimating Montana's elk population."

81% **FACT:** Elk numbers are still at or over population objectives in 81% of hunting districts statewide. Numbers remain strong across most of the state's primary wolf range.

2013 Elk Population Objective Status by Hunting District



Such radical proposals alarmed wolf advocates. With the species no longer under federal protection but instead subject to state control, they responded by ramping up their rhetoric and protests, just as wolf critics had a few years before. Public comments to FWP skyrocketed, from 500 on the first proposed wolf hunting season to more than 25,000 on the most recent. Most were coordinated e-mail “blasts” coming from outside Montana that denounced all wolf hunting.

► **Outrage over killings**

Much of the outcry from wolf advocates concerns the Yellowstone park wolves. Extensive coverage by the BBC, *National Geographic*, *The New York Times*, and other global media have detailed the carnivores’ complex social interactions since reintroduction. Fans throughout the world track the Junction Butte, Blacktail, and other packs on blog posts and Facebook pages maintained by watchers who cruise the park’s roads year round. Devotees can see where Tall Gray was spotted last week or learn how 686F is faring in Mollie’s Pack, as though the wolves were characters in a reality TV show. Little wonder the Internet lit up this past August after a collared YNP wolf (820F) that had become habituated to humans was killed in Gardiner. “People become attached to these wolves that then leave the park and are shot. They get outraged,” says Varley.

Yellowstone’s wolf population has declined in recent years, not due to outside-the-park hunting, as some suggest, but mainly from a shrinking elk population. (All hunting is banned within the borders of national parks.) In the late 1980s and early ’90s, the northern Yellowstone elk herd was one of the nation’s largest. Reintroduced to this prey-rich environment, wolves grew from 41 in 1997 to a peak of 174 in 2003. As park biologists predicted, once elk numbers dropped (due to predation, weather, and



5% Today just over five percent of the 1,600 or more wolves in the Northern Rockies reside in Yellowstone.

6 Montana’s wolf hunting season now lasts six months. Hunters and trappers may (though rarely do) take up to five wolves each.

liberal elk hunting seasons outside the park) so did the wolf population, which now numbers 86. Hunters have legally killed wolves that wander out of Yellowstone, but far more of the animals have died from wolf-on-wolf attacks, starvation, and disease. Mange alone has killed dozens.

Though the park’s wolf decline understandably concerns watchers and guides, “the Yellowstone introduction was not designed to create wolf viewing opportunities or businesses,” says Ken McDonald, head of the FWP Wildlife Division. “It was meant as the

base for expansion far beyond the park’s perimeter. Park visitors focus on individual animals, but here in Montana our responsibility is to manage wolves at a population level.”

Wolf numbers in Montana and elsewhere in the Northern Rockies are robust, making the park’s packs less significant to the regional population than their popularity would indicate, says McDonald. Today just over 5 percent of the 1,600-plus wolves in the Northern Rockies reside in Yellowstone. The species is thriving across the West and Midwest, despite recent claims by the Sierra Club that hunting “has driven the gray wolf nearly to extinction.” According to the U.S. Fish & Wildlife Service, the Lower 48’s wolf population has grown by 50 percent over the past decade to 5,360.

Outlandish claims show up on both sides of the issue. Some wolf critics still insist the carnivores are “wiping out” most of western Montana’s elk populations. True, numbers are considerably down in some areas that have especially high wolf densities, notably the upper Gallatin, Blackfoot Valley, and Gardiner areas. But elk numbers remain at or above “population objectives” (what the habitat base and landowners will tolerate) in 81 percent of the state’s hunting districts.

► **Addressing reasonable concerns**

Exaggerations aside, most apprehension over wolves is well within reason: A Dillon rancher needs to protect his sheep; a Missoula hunter wants to see elk next November; a Bozeman naturalist desires to live in a state with a healthy wolf population; a Florida tourist hopes her favorite Yellowstone wolf stays free from harm. “We take all reasonable concerns about wolves seriously,” says Jeff Hagener, FWP director.

The department notes that livestock losses declined last year thanks to higher hunting and trapping harvest. Also credited are ranchers working with the department’s six wolf specialists to protect sheep and cattle using fence flagging (fladry), carcass

removal, and other measures.

Following reports of wolf predation on the southern Bitterroot Valley’s elk herd, the department launched a large-scale investigation in 2011. Researchers recently found that mountain lions are more responsible for elk population declines there than wolves are. What’s more, the southern Bitterroot elk herd is rebounding, likely thanks to favorable weather and habitat conditions.

As for criticism that Montana hasn’t done enough to control wolf numbers, “FWP fought for years to restore state management authority that includes public hunting and trapping,” says Hagener. Because wolves are wary and difficult to hunt or trap, FWP has supported liberalized regulations that now include a six-month season, electronic calls, and a wolf limit of five (a number that very few hunters or trappers actually take).

Montana is working to pare down the population of 600-plus wolves living here. But the state will not drive numbers low enough to trigger federal re-listing under the Endangered Species Act (ESA). “We can keep the ESA at bay only if we continue to show we have adequate regulatory mechanisms in place and are not advocating wholesale wolf slaughter,” says McDonald.

In support of wolves, Montana’s wolf conservation plan—the document that

“As hard as it might be for some people to believe, allowing Montanans to hunt wolves actually builds tolerance for wolves”

guides its wolf management—recognizes that many people value wolves, the large carnivores play an important ecological role, and the population must remain genetically connected to those in other states and Canada if it is to survive over time. FWP opposes poison, aerial gunning, and proposed legislation classifying wolves as predators that can be shot on sight. The department has created special hunting zones around YNP and Glacier National Park that reduce the chances that a park research wolf will be killed, and it urges hunters not to shoot radio-collared wolves.

FWP has also committed to keeping the population well above what the USFWS originally deemed sufficient for recovery.

Despite protests from wolf advocates, Montana will continue to allow hunters and trappers to kill wolves. That was part of the recovery agreement. Paradoxically, it’s also

in the wolf’s best long-term interests.

“As hard as it might be for some people to believe, allowing Montanans to hunt wolves actually builds tolerance for wolves,” says Hagener. He points out that overall anti-wolf anger in Montana, though still strong in some circles, has eased considerably since hunting and trapping seasons began in 2011. “As long as we can manage wolf numbers at what most Montanans consider an acceptable level, people here will accept having a certain amount of wolves on the landscape along with some loss of livestock and prey animals.”

But without regulated harvest, Hagener says, “there’d be much more pressure to treat wolves like varmints that could be shot anytime, year round.” Such relentless mortality would drive down Montana’s overall wolf population. And it would prevent Yellowstone wolves from moving freely across the region to breed with counterparts in Idaho and northern Montana, threatening that population’s genetic health and future survival.

Most people, including Montanans, want wolves to exist in the Northern Rockies. But how many, and where? It should come as no surprise that what is considered “enough” differs widely between those trying to live their lives on a landscape where wolves live, too, and those watching the drama play out from hundreds of miles away. 🐺

EATING OR STEALING? There’s no argument that wolves kill prey animals and livestock to survive. Where tempers flare is over how much, if any, of that predation is reasonable.



CLOCKWISE FROM TOP LEFT: JAMIE & LISA JOHNSON; BLUEOUPHOTO.COM; WIKIPEDIA; ARIZONA HISTORICAL SOCIETY; PUBLIC DOMAIN; PUBLIC DOMAIN

HISTORICAL PERCEPTIONS OF WOLVES



In Roman mythology, the twins Romulus and Remus, raised by a she-wolf, found the city of Rome.



For centuries Europeans feared wolves. “Wolves Chasing Sleigh” was a popular subject for painters.



President T.R. Roosevelt declared the wolf a “beast of waste and destruction” as the U.S. embarked on systematic eradication.



In fables and cartoons, the Big, Bad Wolf uses cunning and deceit to trick Little Red Riding Hood, the Three Little Pigs, and other innocents.



Modern fans embrace the wolf as intelligent, sensitive beings restored to their rightful place.

Defenders of Wildlife

Wolf Ecotourism

Conserving Wildlife and Boosting Local Economies



Ecotourism: “*responsible travel to natural areas that conserves the environment and improves the well being of local people*” (The International Ecotourism Society, www.ecotourism.org)

Ecotourism is quickly coming to the forefront of family recreational activities. More and more tourists are seeking vacations where they can enjoy wilderness areas. According to the [2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation](#), 38% of all American adults participate in some form of wildlife-related recreation. Wildlife watchers alone spent \$45.7 billion in the United States in 2006. Wolf-oriented ecotourism is part of this larger social trend, and many Americans are willing to travel long distances to see wolves. Wolf-related activities have generated economic benefits throughout North America.

Red Wolves in North Carolina

Since the first red wolves were reintroduced to northeastern North Carolina in 1987, about 100 red wolves now roam in the wild. A [2005 study](#) found that the red wolf and wildlife may increase tourism throughout the “Inner” Banks region. Alligator River National Wildlife Refuge holds [weekly howling tours](#) in the summer as part of this tourism.

- Red wolf activities are forecast to attract over 25,000 households and bring in about \$37.5 million to eastern North Carolina, boosting tourism by up to 19% in the region.
- A Red Wolf Education Center could potentially bring more than \$1 million in gate receipts and food or gift purchases over a summer season.
- More than 1,000 local residents and visitors from across the U.S. participated in howling safaris in the summer of 2008.



Courtesy of USFWS

Gray Wolves in Yellowstone National Park

Since wolves returned to Yellowstone National Park in 1995, the charismatic predators have stimulated significant economic activity, and clearly having a positive impact on the economy of the greater Yellowstone area. Visitors to the park now rank the wolf as one of the primary animals they come to see, thereby creating new demand for lodging, guided wolf-watching tours and a variety of wolf-related merchandise.



Courtesy of William C. Campbell, USFWS

- In 2005, approximately 94,000 visitors from outside of the three states surrounding the Yellowstone—Montana, Wyoming and Idaho—came to the park specifically to see or hear wolves and spent an average of \$375 per person, or a total of \$35.5 million in the three states.
- The estimated total economic impact of wolf recovery on the three-state area outside of Yellowstone is estimated to be about \$58 million in 2005.

Wolf Ecotourism

The International Wolf Center in Ely, Minnesota

The [International Wolf Center](#) (IWC) is a science-based wolf educational facility and a tourist destination for visitors to Ely, Minnesota. Along with outdoor recreational activities in the nearby lakes and forests, the IWC's educational programs and exhibit wolf pack are a main reason that tourists visit Ely. Visitors to the center have a major economic impact in St. Louis and Lake Counties.



- A third of all tourists to Ely visit the IWC, and about half of IWC visitors state that the center influenced their decision to visit Ely and that they might return on a future vacation.
- A recent survey shows that the IWC brings as much as \$3 million per year to Ely and creates as many as 66 jobs in tourism-related businesses and other industries.
- The IWC's economic impact is not limited to increased tourism expenditures. The center itself plays a role in the regional economy by hiring employees, purchasing maintenance and heating supplies, and buying goods and services from local businesses.

Mexican Wolves in the Southwest

In 1998, the Mexican gray wolf was reintroduced in east-central Arizona and west-central New Mexico, including the Gila and Apache National Forests. Anecdotal evidence indicates that wolf reintroduction has triggered tourist visitation.

- Many private citizens lead hiking trips in the wolf reintroduction area for visitors to see wolves.
- The Grand Canyon Chapter of the Sierra Club organizes trips to the area to volunteer with wolf management projects. Participants stay at local lodges and generate benefits for the local economy.



Courtesy of Jim Clark, USFWS

Eastern Wolves in Algonquin Provincial Park

[Algonquin Provincial Park](#) in Ontario, Canada is the largest protected area for the wolf and has been successful in using wolves to attract visitors. Since 1963, the park's public wolf howls have been one of the most popular events in Algonquin. At these events, park naturalists imitate wolf howls in the hopes that a nearby pack will return the call, making for an unforgettable thrilling experience.



Courtesy of National Geographic/Joel Sartore

- By the end of 2008, more than 144,000 people had participated in the public wolf howl program.
- From 8,000 to 10,000 people participate in the howling expedition each summer.