

Yellowstone

When Bison Leave the Park



Most animals in Yellowstone are subject to different rules when they leave the park, but bison require special attention because many have been exposed to the bacteria that causes brucellosis, a disease that also infects domestic cattle. Yellowstone has worked with the state of Montana and other federal agencies to develop a plan for managing this bison population in a way that protects both its wild and free-roaming characteristics and the health of Montana cattle.

Changing views of the American bison

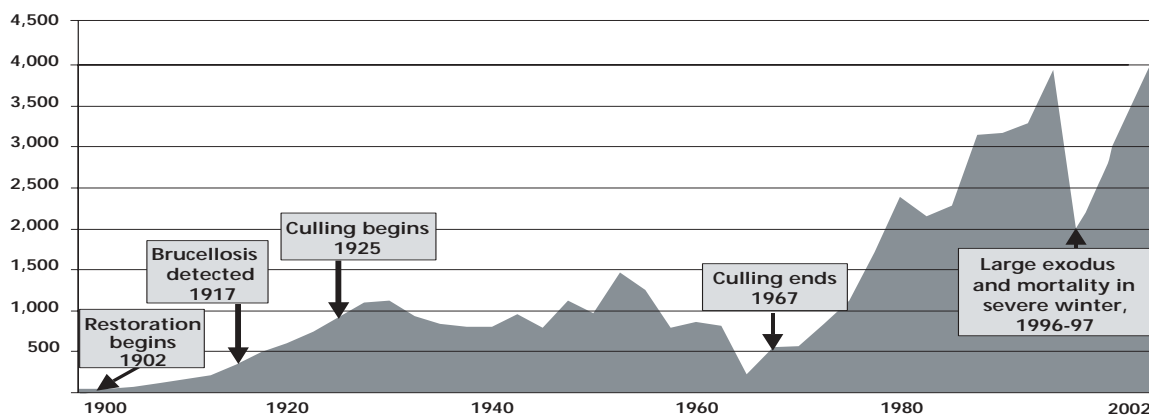
The current interagency bison management plan is another step in a long history of changing ideas about bison conservation. Although regarded as an icon of American wildlife, for most of the last 150 years the bison has been subjected to efforts to remove it from Western ranges or manage it as domestic livestock. Congressional efforts to halt the slaughter taking place across the West in the 19th century were opposed by those who hoped that elimination of both bison and nomadic Native Americans would hasten settlement by homesteaders with livestock.

By the 1890s, most Native Americans were on reservations and Yellowstone was the last refuge for wild bison, but it lacked the means to protect bison from poachers. In 1902, with the herd down to 23 bison, the park purchased 21 bison from privately owned

herds. To help ensure population growth, these animals were fed and bred in Lamar Valley at what became known as the Buffalo Ranch.

As the herd increased, the captive bison were released to join the park's increasing herd of free-roaming bison. But starting in 1925, concerns about brucellosis and how many bison Yellowstone could support led to periodic culling. During the next 40 years, park staff also reduced the elk herds in order to limit winter mortality and maintain a presumed "balance" between bison, elk, and their forage. However, by the 1960s, public opposition and evolving views of wildlife management brought herd reductions to an end. Instead of focusing on individual plants and animals, park managers now try to preserve the environmental processes that shape an ecosystem over time.

Bison population, 1900-2002



The goals for managing the bison population

The primary goals of the interagency bison management plan are to:

- ◆ Maintain Montana's brucellosis-free status by reducing the risk of bison transmitting brucellosis to cattle.
- ◆ Preserve a population of about 2,300 to 3,000 free-roaming bison (late winter count).

The plan was agreed to by the state of Montana, the National Park Service, the U.S. Forest Service, and the Department of Agriculture in December 2000. To achieve the plan's goals, some bison that

leave the park may be killed each year. However, in considering a range of alternatives, the agencies rejected those that would have an unacceptable impact on the overall population of bison, other wildlife, or ecological processes, or on the experience of park visitors, or that would not adequately safeguard livestock from brucellosis.

Montana has been designated brucellosis-free by the U.S. Department of Agriculture since 1985. This enables livestock owners to export their cattle without testing and restrictions. This plan is designed to assist the State in maintaining that status.



Why bison leave the park

Bison are often on the move across the landscape as they graze. Most bison remain in the park during the winter. They live off stored fat as snow and ice make forage difficult to reach. But by early spring

some bison usually leave the park for lower elevation range, following established routes near the Yellowstone and Madison river valleys into Montana. These areas are part of the bison's historic range, but they include public and private lands that are also used for cattle grazing in summer. Bison outside the park usually return by late spring. For times when they do not, the interagency plan is designed to ensure that they are not on summer cattle ranges when cattle arrive.



The scientific name for the North American bison is Bison bison. Although commonly known as buffalo, it belongs to a different branch of the bovid family from "true" buffalo, such as the water buffalo of India and the African buffalo. Bison bison is the descendant of a Eurasian bison that emigrated to North America thousands of years ago.

What happens to bison outside the park?

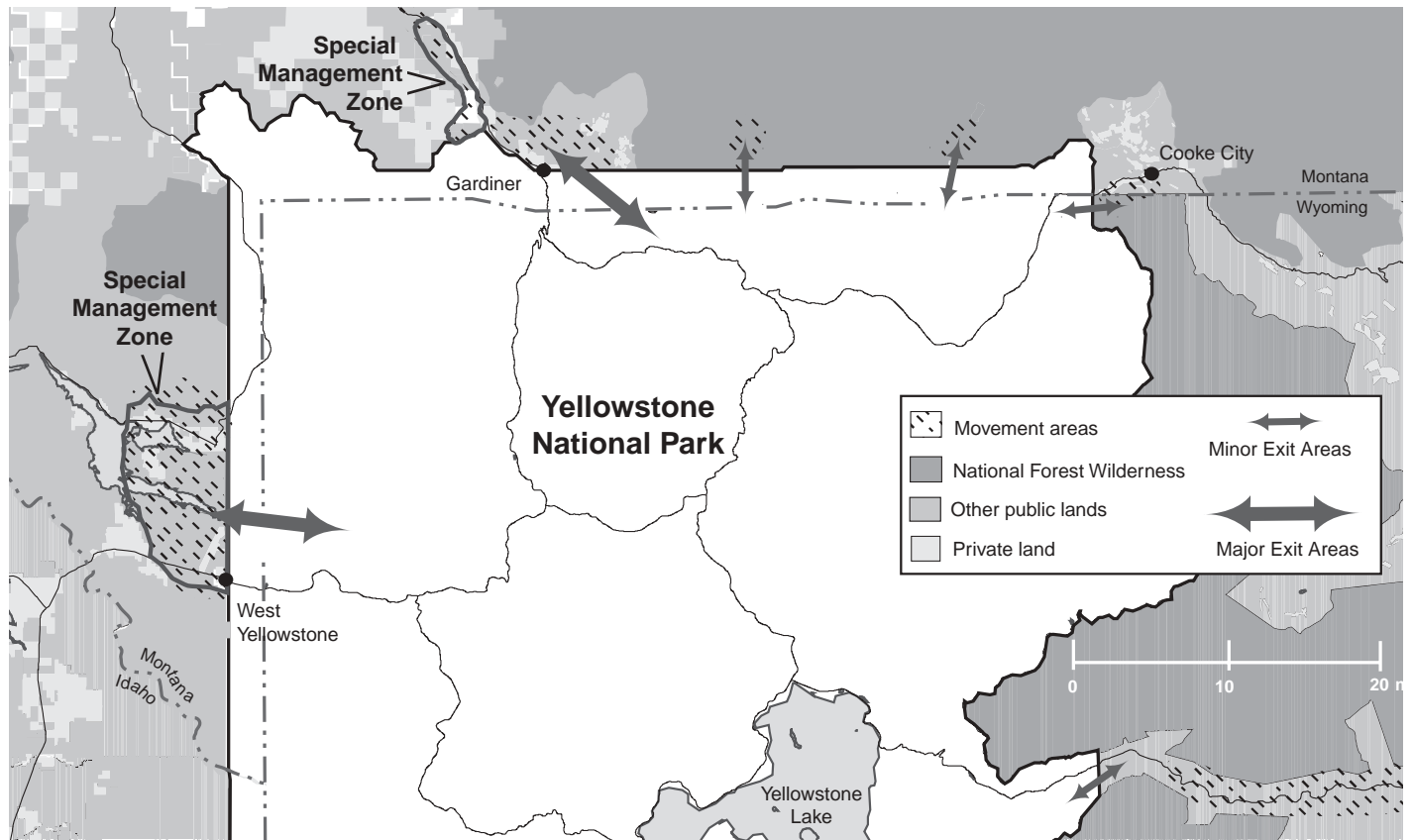
Under the interagency plan in effect since the winter of 2000-01, park rangers and Montana state employees monitor the two main bison exit areas from November until June.

- ◆ Bison that cannot be hazed back into the park may be captured, tested for exposure to brucellosis, and sent to slaughter if they test positive. Bison that cannot be hazed into the capture facility may be shot.
- ◆ Bison that test negative may be released, but the number allowed to remain outside the park is limited to 100 in each of the two special management zones. (See map.)
- ◆ If the population estimate exceeds 3,000 before the calving season, captured bison may be killed without being tested.

- ◆ If the population estimate drops below 2,300 during the winter, consideration will be given to increasing the use of non-lethal means of control at the boundary.
- ◆ After bison vaccination begins in the park (anticipated in 2004-05), some untested bison will be allowed to remain in the special management zones.
- ◆ Bison are allowed to remain in some areas of national forest in Montana where overlapping use of range with livestock is very unlikely.

Wyoming permits up to 15 bison bulls beyond the park's east boundary on the Shoshone National Forest where cattle are not present. If any bison cows or more than 15 bulls remain there from July through January, hunting permits are issued to remove them.

Where bison leave the park



This map shows where most bison have exited the park in recent decades. In some years, a small number have crossed the park's southern boundary into Wyoming and to the west into Idaho.

How is brucellosis transmitted?

Brucellosis is caused by the bacteria *Brucella abortus*, which can infect both wild animals and domestic livestock. It is transmitted primarily through contact with the afterbirth residue from an infected cow. It is generally not sexually transmitted, so infected male animals are unlikely to pass it on. Human infection (from consuming unpasteurized dairy products from infected cows) was once a serious problem, but is now rare in the United States. Brucellosis was first detected in Yellowstone bison in 1917. It was probably transmitted by domestic cattle raised in the park in the early 1900s to provide meat and milk for visitors.

Based on testing conducted on part of the Yellowstone bison population, it is believed that about half of the animals have been exposed to the bacteria, and fewer than that develop an infectious reaction to it. Brucellosis may cause some pregnant bison to lose their calves, but over the long term it has not limited population size. There has been no known case in which wild bison have transmitted brucellosis to domestic cattle under natural conditions, but the possible consequences are too serious to permit bison that may be infected to come in contact with cattle.

What can be done about brucellosis in bison?

To try to eliminate brucellosis in bison in Yellowstone by applying the same method as that used for livestock would require capturing and testing all the bison on an ongoing basis, slaughtering all bison that test positive for exposure to the bacteria, and shooting any bison that refused to be herded into the testing facility. This approach has been used with much smaller bison herds, but it would be neither feasible nor appropriate in Yellowstone National Park. The best available brucellosis vaccine can reduce the number of bison and cattle susceptible to infection by brucellosis, but it is not 100% effective.

Research is underway to develop a better vaccine for wild bison and a safe way to get it into non-captive animals. The National Park Service is committed to efforts to eliminate brucellosis from the ecosystem over the long term, but that is not possible with the currently available methods. The interagency plan is therefore designed to reduce the risk of bison transmitting the disease to cattle. *Brucella abortus* is also present in a small percentage of Yellowstone elk, but the risk of transmission is considered much lower because of when and where elk cows calve.

How has the new plan affected the bison population?



The first two winters during which the interagency plan has been in effect were relatively mild and the bison population has continued to increase despite the killing of some animals. Because the estimated count in March 2002 was more than 3,000 bison, 133 untested bison that left the park were sent to slaughter in addition to 66 that had tested positive. (The bison meat and hides are processed for dis-

tribution by the state of Montana.) Some bison that tested negative were allowed to remain outside the park, including at least 14 pregnant cows that gave birth to healthy calves. The bison counts shown below are the result of efforts to count all of the animals; some bison may not be seen, especially during the winter when they are more dispersed.

	Nov-June 2000-01	Nov-June 2001-02	Nov-June 2002-03
Late winter count	2,870	3,300	3,900
Management actions			
<i>Capture and testing</i>			
Bison captured and tested at park boundary	14	129	16
Bison released after testing negative	9	63	8
<i>Lethal removals</i>			
Bison sent to slaughter after testing positive	5	66	8
Untested bison sent to slaughter	0	133	235
Bison shot because they could not be hazed	1	3	1
Total bison mortality resulting from plan	6	202	244
Summer count after calving season (August)	3,307	4,045	4,250

Why has Yellowstone agreed to a plan that permits killing bison?

The National Park Service was established in 1916 to manage the parks so as to “conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”

This does not mean that Yellowstone National Park can preserve the life of every *individual* wild animal, whether inside or outside the park. The priority is to preserve native animal *populations* of sufficient size in their natural habitat so that each species will be present in the park for the long term.

Ideally, wildlife in the park is intensively managed only when necessary to protect human life or property, or to help in the survival of threatened or endangered species. Realistically, we know that wildlife does not recognize the park’s boundaries, and the surrounding states bear the primary responsibil-

ity for regulating wildlife outside the park where unlimited bison population growth cannot be accepted. (The U.S. Fish and Wildlife Service has primary responsibility for conservation of species currently listed under the Endangered Species Act, such as grizzly bears and wolves, regardless of where the animals are.) Although the U.S. Forest Service is required by federal laws to provide habitat for bison and other native species, its mandate to provide for “multiple use” includes providing range for domestic livestock that graze under federal permits.

To try to prevent all bison departures by the use of hazing or fences would be detrimental to bison and other wild animals in the park. By helping to prevent the comingling of bison and cattle, the plan allows some bison to range freely outside the park, reduces the number of bison that must be killed, and helps preserve a viable bison population in the park.

Free-roaming bison in Yellowstone

The number of bison leaving the park each year is affected by herd size and winter conditions. During the severe winter of 1996-97, which began with a population of about 3,400 bison, hundreds died of natural causes and, because of an interim bison management plan then in effect, more than 1,000 were killed when they attempted to leave the park. During the mild winter of 2000-01, when the population was estimated to be 2,870, fewer than 50 bison left the park and only six were killed.

Since the time when hunting for profit threatened to eliminate all big game animals and their predators in the West, a view of wildlife has evolved that enables many species to thrive on both public and private lands. It may be necessary to limit the presence of wild bison outside of places like Yellowstone National Park, but with adequate safeguards in place, the preservation of the species and the environmental processes that shape these ecosystems can be ensured.