Is There Room for Free-Roaming Bison in Greater Yellowstone?

Peter Morrisette*

Under Montana law, state officials may kill bison that migrate out of Yellowstone National Park and onto public lands in Montana. Despite scientific evidence to the contrary, Montana fears that these bison may spread the disease brucellosis to domestic cattle. Montana's policy brings into question whether ecosystem management is possible in greater Yellowstone. This paper reviews bison management policies in greater Yellowstone, and explores the extent to which the Park Service and Forest Service can protect bison on federal lands outside the Park notwithstanding Montana law. This paper proposes the establishment of special management zones on federal lands outside the Park where bison are allowed to roam.

CONTENTS

Introduction ............................................................................. 468
I. Bison, Ecology, and Preservation in Yellowstone .......... 471
   A. Bison and Yellowstone's Early Preservation Mandate ......................................................... 471
   B. The Leopold Report and the Preservation of Ecosystems ....................................................... 474
   C. Natural Regulation of Bison in Yellowstone and the Boundary Problem .......................... 476
   D. The Concept of Ecosystem Management in Greater Yellowstone ...................................... 479
II. The Brucellosis Problem in Yellowstone Bison ............... 482

Copyright © 2000 by The Regents of the University of California

* J.D. candidate, University of California at Berkeley School of Law (Boalt Hall), 2000; Ph.D., Geography, University of Colorado; M.A., B.S., University of Oregon. The author is grateful to Professor Joseph Sax and Robert Davis for their invaluable advice and critiques of earlier versions of this paper. The author is also grateful to ELQ editors Alexis Pelosi, Jeff Brax, Anita Starchman, and Scott Birkey for their skill and patience.
III. Laws and Policies that Govern Bison in Greater Yellowstone ........................................... 487
   A. The Basis for Federal and State Jurisdiction over Bison................................................... 487
   B. Emerging Conflicts over Bison on Federal Lands Outside Yellowstone National Park............ 488
   C. Current Bison Management Policies in Greater Yellowstone .............................................. 490
   D. The Proposed Long-Term Bison Management Plan ............................................................ 493

IV. An Ecosystem Management Vision for Bison in Greater Yellowstone .................................... 496
   A. The Current Management Model ......................................................................................... 496
   B. An Ecosystem Management Model .................................................................................. 497
   C. Manage Cattle, Not Bison, to Control the Spread of Brucellosis ........................................ 499
   D. Providing for Bison Habitat Through Easements and Land Purchases ............................... 501
   E. Managing Bison in a Special Management Zone ............................................................... 502

V. Can the Park Service or Forest Service Establish a Special Bison Management Zone Under Current Federal Law? ................................................................. 504
   A. The Authority of the Park Service to Manage Bison Outside Yellowstone National Park .......... 505
   B. The Forest Service's Authority to Manage Bison Outside Yellowstone National Park ............... 509
   C. Can the Park Service or Forest Service Be Compelled to Protect Bison Outside Yellowstone National Park? .................................................................................. 513

VI. The Need for a Popular Mandate to Preserve Free-Roaming Bison in Greater Yellowstone .......... 515

INTRODUCTION

At the time of European settlement, over sixty million bison roamed North America. Their numbers were reduced by the expansion of settlers across the continent and a wholesale extermination campaign that began in the 1870s. By 1902, free-roaming bison in the United States amounted to less than two dozen animals in Yellowstone National Park. Today, through conservation efforts, Yellowstone is home to a free-roaming bison herd numbering around 3,500. The saving of Yellowstone's wild bison from extinction remains one of the great conservation successes of the twentieth century.

During the winter of 1996-97, however, one-third of the Yellowstone bison herd was slaughtered by officials of the State
of Montana and the National Park Service after migrating across the boundary of Yellowstone National Park, where they are protected, to private and public lands in Montana. Bison in Yellowstone carry a contagious bacterial disease called brucellosis that Montana officials fear bison will transmit to cattle that graze outside the park. Because cattle can transmit brucellosis to humans, causing a debilitating fever, state officials destroy cattle that contract the disease. In an effort to protect Montana's livestock industry, Montana has adopted a zero-tolerance policy for bison outside the boundaries of Yellowstone National Park. When the bison left Yellowstone in the winter of 1996-97 to find forage, over a thousand were killed as they crossed the Park boundary. Montana's zero-tolerance policy raises the question of whether it is possible for a wild, free-roaming herd of bison to exist in America.

The plight of Yellowstone's bison is more than a public health and safety issue. At its core, it is a conflict over who controls the management of the federal lands in greater Yellowstone. Numerous federal and state agencies have jurisdiction over wildlife and the public lands in the greater Yellowstone region. These agencies have overlapping, and conflicting mandates on how to manage the public lands and wildlife. To understand whether it is possible to have a wild, free-roaming herd of bison in America thus requires understanding the larger battle taking place over how to manage the federal lands outside the boundaries of Yellowstone National Park. The bison, like the wolf and the grizzly bear, is a symbol of the geographical and legal extent of the present-day Greater Yellowstone Ecosystem, the largest intact temperate ecosystem in the world. Free-roaming bison were part of a Greater Yellowstone Ecosystem that existed at the time the Park was established in 1872. This is an ecosystem that many environmentalists and resource management professionals would like to see re-established in some form. To ranchers, however, allowing bison outside the boundary of Yellowstone National Park means more than an increased risk of brucellosis; it entails surrendering influence over part of the public lands and accepting a vision of land management that may threaten their way of life.

The idea of a Greater Yellowstone Ecosystem embodies a vision of preserving the ecological diversity of the region not only within the Park, but also on federal lands outside the Park. Since boundaries of natural ecosystems rarely match the administrative boundaries of federal land management agencies,
effective ecosystem management requires federal and state agencies to develop shared goals and management objectives that maintain ecological integrity and conserve biological diversity. Unfortunately, the Park Service, the Forest Service, and the State of Montana remain unwilling or unable to agree on a strategy to protect bison that wander across Park boundaries. This inability to act has brought into question whether ecosystem management in Greater Yellowstone is truly possible under current laws.

This paper examines the controversy over bison in and around Yellowstone National Park and evaluates whether it is possible under current laws to craft a policy, based on the principles of ecosystem management, that allows bison to roam freely across the boundaries of the Park. This paper traces the evolution of bison management in the Park, showing how the concept of preservation has shifted from one of valuing bison as part of the Park's scenic resources to one valuing bison as a critical link in a unique ecosystem. Next, this paper explores the brucellosis problem and discusses the current laws and policies that govern the management of bison. It then describes how an ecosystem management approach to maintaining bison on federal lands outside the Park might look and assesses alternative options for managing bison. The alternatives explored include the ability of the Park Service to extend its responsibility over bison to federal lands outside the Park's boundary, and the authority of the Forest Service to protect bison on national forest lands. The final Part examines potential legislative solutions to the bison problem that entail designating a Greater Yellowstone Bison Management Area outside the Park as part of a larger ecosystem approach to managing the federal lands around Yellowstone National Park.

1. This paper deals only with the controversy between the National Park Service and the State of Montana over how to manage bison that migrate out of the Park into Montana. A smaller bison herd exists in Grand Teton National Park, which is also part of the Greater Yellowstone Ecosystem. Those bison also migrate out of Grand Teton onto other federal lands in Wyoming. Wyoming, like Montana, is concerned about the spread of brucellosis, and some bison have been killed. See Robert B. Keiter & Peter H. Froelicher, *Bison, Brucellosis, and Law in the Greater Yellowstone Ecosystem*, 28 LAND & WATER L. REV. 1, 17-20 (1993).
A. Bison and Yellowstone's Early Preservation Mandate

Congress established Yellowstone National Park in 1872. Yellowstone marked the first time in history that Congress set aside such a large piece of land (two million acres) for preservation. The 1872 legislation states that Yellowstone will be "dedicated and set apart as a public park or pleasuring ground for the benefit and enjoyment of the people." The Act further stipulates the Secretary of the Interior "shall . . . provide for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition." The Secretary shall also "provide against the wanton destruction of the fish and game found within [the] park." Congress thus established Yellowstone National Park with a dual purpose of public use and enjoyment, and preservation of nature.

The Park was initially constrained by a limited budget and a lack of staff. As a result, during the 1870s market hunters killed thousands of elk and bison in Yellowstone. Eventually, Congress placed the U.S. Cavalry in charge of Yellowstone and directed them to protect the Park from poachers, unauthorized development, and resource exploitation. The Cavalry took care of the Park until Congress established the Park Service in 1916 under the National Park Service Organic Act.

The Park Service Organic Act contains the same dual purpose embedded in the 1872 Yellowstone Act. The Organic Act stipulates that national parks should be managed to "conserve the scenery and the natural and historic objects and the wild life 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."10 In its first fifty years, the Park Service emphasized the public use mandate over the nature preservation mandate, interpreting the idea of nature preservation mostly as a mandate to protect the scenery of parks, rather than their ecological integrity.11 This initial emphasis on tourism and scenery protection had profound impacts on the ecology of the parks. To accommodate tourists, the Park Service built roads, hotels, campgrounds, and other facilities. More significantly, the Park Service manipulated the natural processes of the Parks as part of its resource management efforts. In Preserving Nature in the National Parks, Richard Sellars writes that this purposeful manipulation of nature included "the nurturing of favored species, such as bison, bears, and game fish; or the reduction of populations of so-called problem species, such as certain predators or tree-killing insects."12 Indeed, in Yellowstone, the Park Service eradicated wolves and other predators that preyed on elk and bison.13 Both the Cavalry and the Park Service perceived elk and bison as part of the scenic resources of the Park, which needed protection from predators.14

By 1889, the number of bison in the United States had been reduced to less than 1,000, with the largest concentration (approximately 200 animals) located in Yellowstone National Park. By 1902, the Yellowstone herd had fallen to just 23 animals.15 In response, the Army embarked on a heroic effort to save Yellowstone bison by enforcing poaching laws, importing bison from Montana and Texas, and opening a "buffalo ranch" to

---

10. 16 U.S.C. § 1. Sellars convincingly demonstrates that the original framers of the Organic Act probably did not intend this duality of purpose. To those framers, the national parks were to be used by the public, and the mandate to leave them unimpaired meant to leave them undeveloped so that they could be enjoyed in a primitive state. See SELLARS, supra note 3, at 45. Sellars writes that "[t]he ongoing manipulation of the parks' backcountry resources, such as fish, forests, and wildlife seems not to have been viewed as impairing natural conditions." Id.
12. SELLARS, supra note 3, at 4.
13. Schullery notes that by 1935 the Army and the Park Service had "killed more than 100 wolves, 100 mountain lions, and 4,000 coyotes." SCHULLERY, supra note 7, at 126.
14. Sellars describes how certain wildlife such as elk, moose, and bison, which he refers to as "charismatic megafauna" or "glamour species," became popular for wildlife viewing. SELLARS, supra note 3, at 24.
breed bison. By 1930, the Yellowstone herd had reached over 1,000 animals. The largest concentration of bison was located in the Lamar River Valley in the northeast corner of the Park, where the herd was intensively managed by the Park Service. Indeed, the Park Service's early management of the bison looked more like a livestock operation than the maintenance of a wild, free-roaming herd of bison. Bison were kept in corrals, fed, branded, and excess animals culled. Some of the bison from the Lamar herd were eventually used to establish herds in the Hayden Valley and along the Firehole River. The rebuilding of Yellowstone's bison herd is widely considered one of the great victories of the early conservation movement in the United States.

Controlling the herd size by culling was a key component of the Park Service's early bison management policies. The number of bison removed each year varied from a few to several hundred. A reliable estimate is that the Park Service removed 9,016 bison (mostly by slaughter) between 1925 and 1967. The Park Service removed excess bison because of concerns over allowing the number of bison to increase beyond what it believed to be the natural carrying capacity of the Park's range. In addition, the Park Service removed bison that tested positive for brucellosis, a disease first discovered in Yellowstone bison in 1917. Thus, by 1967 the total number of bison in the Park decreased (mostly through intentional management efforts) to 397 animals. The Park Service had come under mounting criticism for its management of both bison and elk, however, and its culling program was particularly unpopular among the public.

16. SCHULLERY, supra note 7, at 121. At first, the native Yellowstone bison and the transplanted bison were kept separate; by 1915, the two groups of bison were allowed to intermingle. See DEIS, supra note 15, at 12.
17. See DEIS, supra note 15, at 12.
18. See id.
19. See SCHULLERY, supra note 7, at 121. Culling is a management practice where excess animals are slaughtered and removed from the herd. See DEIS, supra note 15, at 375.
21. See SCHULLERY, supra note 7, at 121.
23. See Meyer & Meagher, supra note 22, at 580.
24. See DEIS, supra note 15, at 15; see also MEAGER, supra note 22, at 70.
26. See Keiter & Froelicher, supra note 1, at 15.
B. The Leopold Report and the Preservation of Ecosystems

In 1962, Secretary of the Interior Stewart Udall appointed a small committee headed by A. Starker Leopold to assess wildlife management policies in the national parks. Udall formed the committee in response to increasing criticism over Park Service management of wildlife in the national parks—particularly in Yellowstone. A year later, Leopold’s committee released a fourteen page report (commonly referred to as the Leopold Report) that would profoundly change how America’s national parks would be managed. The Leopold Report began by noting that the key to preserving a species was preservation of wildlife habitat, and not just the protection of animals. In perhaps the Report’s most famous passage, the committee proposed a new vision for the management of the national parks: “As a primary goal, we would recommend that the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man.” The committee further concluded that “[above all other policies, the maintenance of naturalness should prevail,” and urged that the Park Service adopt a science-based approach to management of natural ecosystems within the parks.

In 1964 Secretary Udall, based on the recommendations of the Leopold Report, issued a new policy statement for the management of large national parks such as Yellowstone: “[M]anagement shall be directed toward maintaining, and where necessary re-establishing, indigenous plant and animal life, in keeping with the March 4, 1963, recommendations of the [Leopold Report].” The Leopold Report’s emphasis on science,

28. Id. at 32.
29. Id. at 35. The need for a science-based approach to management of the national parks was made more emphatically in a National Academy of Sciences report that was also released in 1963. The report included many of the same recommendations that were contained in the Leopold Report. See National Academy of Sciences, A Report by the Advisory Committee to the National Park Service on Research, in AMERICA’S NATIONAL PARK SYSTEM: THE CRITICAL DOCUMENTS 253 (Larry M. Dilsaver ed., 1994). Sellars notes that together the Leopold Report and the National Academy study were “threshold documents” that fundamentally changed how the national parks are managed. SELLARS, supra note 3, at 214.
ecology, and naturalness thus became the foundation for modern Park Service management policies. These new management policies took an even more concrete form in a 1968 management document that recognized that the national parks had become “islands of primitive America” whose natural or ecological integrity was threatened by activities outside the parks as well as by the millions of visitors to the parks.31 This policy document announced that “[t]he concept of preservation of a total environment” would guide the management of the national parks.32 The document even stipulated with respect to plants and wildlife within the parks that:

management will minimize, give direction to, or control those changes in the native environment and scenic landscapes resulting from human influences on natural processes of ecological succession. Missing native life forms may be reestablished, where practicable. Native environment complexes will be restored, protected, and maintained, where practicable.33

In implementing the Leopold Report, the Park Service embarked on a new era in which protection of park ecology became the central focus of the Park Service’s preservation mandate under the Organic Act.

As part of the new focus on naturalness and ecological preservation, in 1967 the Park Service stopped controlling the size of the elk and bison herds within Yellowstone National Park. While culling Yellowstone’s elk and bison herds has always been controversial and unpopular with the public, considerable debate continues among ecologists about the carrying capacity of the Yellowstone range and the need for controlling the elk and bison populations.34 Nevertheless, the Park Service departed radically

32. Id. at 354.
33. Id. More recent Park Service policy documents have even more firmly established the commitment to ecological preservation in the national parks. For example, the 1988 version of the 1968 planning document states that the Park Service should “maintain all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity, and ecological integrity of the plants and animals.” NAT’L PARK SERVICE, U.S. DEPT OF THE INTERIOR, MANAGEMENT POLICES 4:1 (1988). The 1988 document also notes that the “[n]atural processes will be relied on to control populations of native species to the greatest extent possible.” Id. at 4:6.
from its previous policy of actively managing the Yellowstone elk and bison herds, and instituted a policy under which natural regulation would control herd size.\textsuperscript{35} This shift in Yellowstone policy toward natural regulation of elk and bison mirrored the Park Service’s larger effort to implement the naturalness approach recommended by the Leopold Report.\textsuperscript{36}

C. Natural Regulation of Bison in Yellowstone and the Boundary Problem

When the Park Service began using natural regulation to control the bison herd within the Park, it also began a boundary control policy to keep bison from leaving the Park. This new policy included efforts at hazing\textsuperscript{37} bison and placing fences along migration routes to prevent animals from leaving the Park.\textsuperscript{38} These efforts proved unsuccessful over time, and the Park Service was left with no option but to shoot bison that left the Park—an unpopular policy with the public. Although the Park Service shot only a few bison, in 1978 the Park Service rescinded its policy of shooting bison as a boundary control tool.\textsuperscript{39} As a result, the size of the Yellowstone herd increased steadily after 1967, reaching a peak of almost 4,000 in 1995.\textsuperscript{40} This rapid growth of the bison herd severely limited the Park Service’s ability to prevent bison from leaving the Park.


\textsuperscript{36} The Leopold Report is commonly cited as the origin of the natural regulation policy; however, while the Leopold Report did recommend the use of natural controls to maintain the ecology of the parks where possible, it also foresaw the need to continue active management of the Yellowstone elk herd. See Leopold, supra note 27, at 38-41. The term “natural regulation” is often used in conjunction with the concept that humans should not interfere with ecological processes in the parks, but the Leopold Report did not support such a view. Human intervention, where necessary to re-create or maintain a natural landscape was a specific recommendation of the Report. See id. at 43. Indeed, the Park Service does intervene when it believes it is necessary to manage wildlife. See Wagner, supra note 35, at 29; see also Keiter, supra note 35, at 662-65. The Park Service’s shift to a natural regulation policy has been controversial. Alston Chase, for example, proclaims that the Park Service is “playing God” in Yellowstone by trying to restore natural regulation and eliminate human intervention in the management of the park’s wildlife. See generally Alston Chase, Playing God in Yellowstone: The Destruction of America’s First National Park (1987).

\textsuperscript{37} Hazing refers to actions to scare, harass, or otherwise physically force the bison to return to the Park. See Keiter & Froelicher, supra note 1, at 16 n.89.

\textsuperscript{38} See id.; see also DEIS, supra note 15, at 12.

\textsuperscript{39} See Schullery, supra note 7, at 233.

\textsuperscript{40} See DEIS, supra note 15, at 145-47.
Most of the bison leaving the Park move down the Yellowstone River Valley toward the town of Gardiner, Montana. A smaller number of bison also leave the Park via the Madison River Valley toward the town of West Yellowstone, Montana. Almost all of the land surrounding Yellowstone National Park is public land managed by the National Forest Service; there is also some private land around the towns of Gardiner and West Yellowstone. Most of the land on the northern and northwestern boundary of the Park lies in the Gallatin National Forest, which the Forest Service manages under a multiple-use mandate requiring it to provide for uses including livestock grazing, timber harvesting, wildlife habitat, watershed management, and recreation. The Forest Service maintains several cattle grazing allotments along the Yellowstone River near Gardiner and around Hebgen Lake near West Yellowstone. About 2,000 head of cattle use these grazing allotments during part of the year. The State of Montana fears that if wild bison from Yellowstone National Park intermingle with cattle grazing on public and private lands outside the Park, the bison might transmit brucellosis to the cattle.

In response to these fears, Montana game wardens shot 88 bison that crossed the Park boundary into Montana in 1984. In 1985, the Montana Legislature authorized a public hunting season for bison migrating outside the Park. Fewer than 100 bison were taken during the first three years of the hunt. However, during the winter of 1988-89, the first winter after the 1988 fire season in which over 40% of the Park had burned, many bison left the Park in search of forage, and as a result

---


42. A grazing allotment is “[a] designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range allotment management plan.” FOREST SERVICE, DEP’T OF AGRIC., GALLATIN NATIONAL FOREST PLAN VI-28 (1987).

43. This figure is reported in GREATER YELLOWSTONE COALITION, COMMENTS OF THE GREATER YELLOWSTONE COALITION ON THE DRAFT EIS FOR THE INTERAGENCY BISON MANAGEMENT PLAN FOR YELLOWSTONE NATIONAL PARK AND THE STATE OF MONTANA 22 (Nov. 2, 1998). According to Forest Service data reported in the DEIS, the 12 grazing allotments on the Gallatin National Forest north and west of the Park can accommodate 1,119 cow-calf pairs (a mother and its calf). See DEIS, supra note 15, at 158.

44. See DEIS, supra note 15, at 15; see also Keiter & Froelicher, supra note 1, at 16.


46. See DEIS, supra note 15, at 15.
hunters killed 569 bison. In response to the public outcry against the slaughter of bison and fearing an anti-hunting backlash, the State of Montana Legislature repealed its authorization of the bison hunt in 1991. Despite the repeal, Montana continued to shoot bison exiting the Park: the State killed 271 bison during the winter of 1991-92, 427 bison during the winter of 1994-95, and another 433 bison during the winter of 1995-96. Most alarming, however, was the 1,084 bison killed by Montana officials during the winter of 1996-97. Over 40% of the Yellowstone herd died in the five months between November 1996 and April 1997, and by the spring of 1997, the Yellowstone herd contained only 2,000 bison.

Why do the bison leave the Park? The simple answer is that they are looking for forage. Montana State officials and other critics of the Park Service’s bison policy claim that the herd has exceeded the natural carrying capacity of the range within the Park. Harsh conditions certainly forced some bison out of the Park in search of forage during the winters of 1988-89 and 1996-97. Scientific data, however, suggest that condition of the range within the Park is very good, and that range conditions are not yet a controlling factor on the size of the herd. Bison have a natural tendency to roam, and some biologists believe that bison are simply rediscovering their natural tendency to migrate. Both the Yellowstone and Madison Rivers are natural corridors for the bison to wander down, while the Park’s boundary is only an artificial construct. Further compounding the problem is the large network of roads and trails inside the Park, plowed in the winter for use by snowmobiles and other snow machines, which

47. See id.
48. See Keiter & Froelicher, supra note 1, at 17; see also DEIS, supra note 15, at 15.
49. See DEIS, supra note 15, at 147.
50. See id. at 145-47.
51. See id. at 15. In addition to the bison shot by the State of Montana, another 300 to 400 bison died during the winter of 1996-97 due to the harsh conditions inside the Park. See id.
53. See NATIONAL RESEARCH COUNCIL, BRUCELLOSIS IN THE GREATER YELLOWSTONE AREA 67 (1998) [hereinafter NRC REPORT].
54. See id. at 69; Mary Meagher, Range Expansion by Bison in Yellowstone National Park, 70 J. MAMMALOGY 670, 674 (1989). The Park Service has identified several factors that contribute to bison moving from the Park to “bison vacant” land outside the Park, including “acquired knowledge of vacant range, the bison’s natural gregariousness, increased herd size, weather conditions, and human activity.” YELLOWSTONE NATIONAL PARK, RESOURCE MANAGEMENT PLAN YELL-I:55-56 (1998).
provide convenient routes for the bison to leave the Park without trudging through miles of deep snow.  

D. The Concept of Ecosystem Management in Greater Yellowstone

Yellowstone National Park is an ecological island, a remnant of a much larger ecosystem. The Park perfectly illustrates an artificial set of boundaries that do not correspond to the natural ecology of the region. The Greater Yellowstone Ecosystem, as it is now commonly labeled, spans three states and covers over 18 million acres. In addition to Yellowstone National Park, it includes Grand Teton National Park, parts of six national forests (Gallatin, Custer, Beaverhead, Bridger-Teton, Shoshone, and Targhee), three national wildlife refuges (Grays Lake, Red Rocks, and the National Elk Refuge), lands administered by the Bureau of Land Management, as well as state and private lands. Developing a common approach to management of these lands has proven to be an enormous and complicated undertaking that has only met with marginal success so far.

The concept of ecosystem management emerged in the 1980s as a means of applying the thinking and concepts embodied in the Leopold Report to all of greater Yellowstone, not just the land within the boundaries of the Park. Ecosystem management is premised on the idea that the public lands within greater Yellowstone should be protected as an ecosystem by maintaining biodiversity and minimizing the disruption of natural processes. But as Professor Keiter noted in his article Beyond the Boundary Line: Construing a Law of Ecosystem Management, the concept of ecosystem management "is not focused exclusively on biodiversity conservation; it also contemplates ensuring sustainable resource systems and enhancing such amenities as aesthetics and recreation." Keiter recognizes that ecosystem management must conform to, not override, the different

55. See NRC REPORT, supra note 53, at 68-69.
57. See Keiter, supra note 56, at 937-41.
mandates of the federal agencies that manage the public lands of the Greater Yellowstone Ecosystem. Working within this complex jurisdictional context, Keiter explains that “ecosystem management requires that natural resource policies be framed at the appropriate spatial and temporal scale to meet human needs without impairing the integrity of underlying systems and processes.” Within greater Yellowstone this means coordinating the Park Service’s preservation mandate with the Forest Service’s multiple-use mandate.

A recent high-profile effort by the Park Service and the Forest Service to craft a “vision document” for the coordinated management of the Greater Yellowstone Ecosystem highlights the enormous obstacles that prevent achieving a shared vision of even the definition of ecosystem management. A draft version of the document listed several goals for coordinated management, including the conservation of a sense of naturalness and the maintenance of ecosystem integrity, and biological and economic sustainability. Although the document did not revoke the Forest Service’s multiple-use mandate, create any new interagency authority, or make any land allocation decisions, it was harshly criticized by local ranchers, miners, loggers, and politicians who saw it as an effort to extend the preservation mandate of Yellowstone National Park into the national forests that surround the Park. The Wyoming Legislature responded by passing a resolution proclaiming that the vision document threatened the future of multiple-use in the national forest and called for its retraction. As a result of such strong opposition, the agencies adopted a substantially shorter and more diluted final version of the vision document written by high level administrators in the Park Service and Forest Service. The fate

59. See id.
60. Keiter explains that “[i]n the case of the Forest Service, which operates under a multiple-use mandate, this means that ecosystem management is being seen as a means to promote long-term forest health and productivity; it contemplates adapting logging practices to more closely mimic natural processes, while still ensuring a steady flow of timber as well as other resources. In the case of the Park Service, which operates under a preservationist mandate, this means that ecosystem management is being viewed as a means to allow natural processes to operate on a large scale, while also accommodating park visitor needs and protecting neighboring landowners.” Id. at 303.
61. See CLARK & MINTA, supra note 56, at 97-98.
62. See SCHULLERY, supra note 7, at 208-09; see also CLARK & MINTA, supra note 54, at 98-99.
63. See CLARK & MINTA, supra note 56, at 98.
64. See id. at 99. The shorter version that was adopted contained more equivocal language than the earlier draft. For example, the goal of “conserving the sense of
of this moderate proposal reveals just how divisive the mention of ecosystem preservation is outside the boundaries of Yellowstone National Park.

The failed effort to craft a vision document for the Greater Yellowstone Ecosystem has not precluded coordination among federal agencies or between federal and state agencies. Many interagency efforts are indeed underway in greater Yellowstone, such as an effort to manage grizzly bears. However, ecosystem management tends to work in greater Yellowstone only where a shared goal or mandate crosses jurisdictional lines. Grizzly bears, for example, are listed as a threatened species under the Endangered Species Act (ESA) and are managed under the Act's "no jeopardy" standard. Both the Park Service and Forest Service must manage grizzly bears under this identical standard. The ESA has provided a statutory mechanism that the agencies can use to implement an ecosystem approach to the management of grizzly bears in greater Yellowstone. Efforts like these are arguably premised, at least in part, on a larger ecosystem vision of greater Yellowstone.

The management of elk provides another example of ecosystem management in greater Yellowstone. Like bison, elk are not protected under the ESA and carry brucellosis, yet elk are allowed to migrate outside the Park, where they are hunted but not eradicated. Monitoring and management of Yellowstone's large northern elk herd is coordinated through an interagency effort referred to as the Northern Yellowstone Cooperative Wildlife Working Group. Hunting is used as a management tool to control the population of elk, but it is also important to the regional economy of greater Yellowstone. Elk thus have a constituency of state wildlife managers, hunters, and local outfitters who are interested in maintaining a regional elk ecosystem. Bison do not have a similar constituency. In fact,

naturalness and maintaining ecological integrity" in the draft version was replaced with a goal of "maintaining functional ecosystems." Id.

65. Section 7 of the ESA stipulates that no federal action may "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species." 16 U.S.C. § 1536(a)(2) (1994).


other than the National Park Service's mandate to protect and preserve bison within the borders of Yellowstone National Park, bison have no special legal status or local political constituency supportive of a bison ecosystem beyond the boundaries of Yellowstone National Park.

II

THE BRUCELLOSIS PROBLEM IN YELLOWSTONE BISON

Brucellosis is a contagious bacterial disease common to domestic livestock (cattle, goats, sheep, and swine) that also occurs in wildlife (elk, bison, and caribou).\(^69\) In both livestock and wildlife, brucellosis can cause abortion or birth of nonviable calves, infertility, and decreased milk production.\(^70\) Brucellosis is typically transmitted by contact with the reproductive materials from an infected animal.\(^71\) Brucellosis was first transmitted to North American wildlife from cattle imported from Europe\(^72\) and was first detected in Yellowstone bison in 1917.\(^73\) It is unclear, however, how the bison first came in contact with brucellosis; either they were exposed to brucellosis from cattle grazing in or near Yellowstone, or the bison that were transplanted into Yellowstone in 1902 brought the disease with them.\(^74\) Today, wildlife in the Greater Yellowstone Ecosystem come into contact with brucellosis either by ingesting contaminated forage or by directly ingesting contaminated fetal material.\(^75\)

Brucellosis is also transmittable from livestock and wildlife to humans, where it can cause undulant fever, a recurring and

\(^{69}\) See DEIS, supra note 15, at 16.

\(^{70}\) See NRC REPORT, supra note 53, at 2; Keiter & Froelicher, supra note 1, at 20.

\(^{71}\) Transmission can occur as a result of contact with aborted fetuses, birth membranes, uterine fluids, or vaginal discharges. See DEIS, supra note 15, at 17.

\(^{72}\) See NRC REPORT, supra note 53, at 16.

\(^{73}\) See id. at 13; DEIS, supra note 15, at 15.

\(^{74}\) See DEIS, supra note 15, at 15. Cattle grazed in the Park from 1886 to 1917, and in some places cattle and bison pastured together. Bison calves were also fed cow milk as part of the effort to manage and maintain the Park's bison herd. The disease can be transmitted through the consumption of milk from an infected animal. Some of the bison released into the Park may have come from a brucellosis-infected herd, and thus brucellosis-infected bison may have been imported into the Park. See id. Meagher and Meyer have concluded that the most likely source of disease was cattle raised in the Park by the Park Service. See Mary Meagher & Margaret E. Meyer, On the Origin of Brucellosis in Bison of Yellowstone National Park: A Review, 8 CONSERVATION BIOLOGY 645, 650 (1994). A counterargument is that brucellosis has been present in Yellowstone bison for a much longer period of time, and that it may even have endogenous rather than exotic origins. However, this is not the prevailing theory. See id. at 646.

\(^{75}\) See Keiter & Froelicher, supra note 1, at 27-28.
often debilitating ailment. While not typically fatal, brucellosis in humans can be difficult to cure. Because brucellosis can represent a significant health risk to humans, diseased livestock have been subject to extensive federal and state regulation for more than 60 years. Federal regulation of brucellosis is coordinated and administered through the Animal and Plant Health Inspection Service (APHIS), an agency of the U.S. Department of Agriculture. Federal law empowers the Secretary of Agriculture to seize, quarantine, and destroy brucellosis-infected livestock that move in interstate commerce. The National Research Council (NRC) estimates that since 1934, the national effort to eradicate brucellosis has cost $3.5 billion. As a result of such efforts, in 1998 only twelve cattle herds in the United States were infected with brucellosis.

APHIS currently classifies Montana as brucellosis free, a status indicating that the State has successfully eradicated brucellosis from its livestock. To protect its brucellosis-free status, Montana has authorized the State Department of Livestock to destroy livestock infected with brucellosis. APHIS cannot, however, remove Montana's brucellosis-free status because wild bison and elk present in the state continue to carry the disease.

According to APHIS, an animal has brucellosis if it tests seropositive, meaning there is a detectable antibody titer in its blood serum. Between 30 and 40% of the bison in Yellowstone test seropositive for brucellosis. However, culture tissue

76. See NRC REPORT, supra note 53, at 2. Brucellosis was typically transmitted to humans by means of the consumption of milk. Humans can also acquire brucellosis by contact with contaminated parts from an infected carcass, such as a hunter acquiring brucellosis when field-dressing an infected elk. See id.

77. See id.


79. See NRC REPORT, supra note 53, at 13.

80. See id. at 14.

81. APHIS classifies states as either brucellosis free, class A (infection rate of 0.25% or less), class B (infection rate of 0.26 to 1.5%), or class C (infection rate of more than 1.5%). A state with a class A rating must test cattle before export. A class B rating requires that a state test cattle both before and after interstate shipment. A state with a class C rating must test cattle twice before and once after interstate transport. See 9 C.F.R. § 78.1 (1999). Testing cattle before and/or after interstate transport can be costly for a state. In 1998, no states had a class B or C rating. See NRC REPORT, supra note 53, at 14.

82. See MONT. CODE ANN. § 81-2-102 (1997) (authorizing Montana State Department of Livestock to destroy livestock exposed to infectious, contagious, communicable, or dangerous disease as is necessary for protection of other livestock).

83. See NRC REPORT, supra note 53, at 27.

84. See id. at 13.
samples from bison killed during the winter of 1991-92 suggest that the actual infection rate may be much less. Moreover, because bison in Yellowstone suffer from a chronic form of the disease, and may only have a few brucellosis bacteria and no clinical signs of the disease, a bison testing seropositive may not be infectious. In elk, which can also carry brucellosis, the infection rates are somewhat different. About 37% of the elk that frequent the National Elk Refuge near Jackson Hole, Wyoming, or one of the several elk feeding grounds maintained by Wyoming Game and Fish, test seropositive for brucellosis. Elk that do not use either the National Elk Refuge or one of the winter feeding grounds, however, have a much lower seropositive test rate—around 1 to 2%, which includes most of Montana's elk.

Whether bison can transmit brucellosis to cattle in the wild remains a key scientific issue in the debate over the management of Yellowstone's bison herd. While there are no documented cases of bison-to-cattle or elk-to-cattle transmission, since 1961 six cattle herds in the Yellowstone area have tested seropositive for the disease after previously testing brucellosis free. All of these cattle herds infected with brucellosis were in Wyoming, five near Jackson Hole, and one east of the continental divide. At the time these herds became infected, brucellosis was not believed to be present in the area, nor had brucellosis-infected cattle been brought into the herds. Captive bison have transmitted the disease to cattle when held together, but there are no documented cases of transmission occurring in the wild. Nevertheless, ranchers and state officials assume that these herds became infected by contact with either infected elk or

85. Meyer and Meagher conclude "that bacteriologic results provide a close approximation of the amount of infection in... bison herds than do seroagglutination titers." Meyer & Meagher, supra note 22, at 592; see also DEIS, supra note 15, at 20; Keiter & Froelicher, supra note 1, at 27.
86. See NRC REPORT, supra note 53, at 33-34; see also DEIS, supra note 15, at 20.
87. See NRC REPORT, supra note 53, at 13.
88. See id.; see also DEIS, supra note 15, at 18. Any long-term strategy for controlling brucellosis in bison will also require controlling the disease in the more than 100,000 elk in greater Yellowstone to prevent re-infection of the bison. Controlling brucellosis in elk will likely require closing the elk winter feeding grounds where the disease is easily transmitted among elk. See Keiter & Froelicher, supra note 1, at 60-61. The low rate of brucellosis in elk that do not use feeding grounds underscores the value of maintaining natural conditions for wildlife. See id.
89. See NRC REPORT, supra note 53, at 44-45.
90. See id.
91. See id. at 44.
92. See id. at 42-43.
bison, even though they cannot prove such a theory. In its 1998 report on brucellosis, the NRC concluded that these possible cases of wildlife-to-cattle transmission are based on circumstantial evidence and limited scientific research, and that no documentation exists to verify that the brucellosis in these six herds came from wildlife. The NRC noted that it is possible for a cattle herd certified free of brucellosis to re-infect itself.

The widely held scientific opinion is that the transmission risk of brucellosis from Yellowstone's free-roaming bison to domestic livestock is very low. The NRC report concluded that "[n]early all parties to the controversy agree that the risk of transmission of brucellosis from bison to cattle in the [Greater Yellowstone Area] is small, but not zero." In an article analyzing the brucellosis problem in Yellowstone, Margaret Meyer and Mary Meagher wrote that "[b]ased on available data, we believe the risk of transmission of brucellosis from free-ranging bison to cattle herds is very low." They further explained that "[t]he bacteriologic results from seropositive bison is evidence for a wide exposure to the antigen and a low level of actual infection." This suggests that simply testing seropositive for brucellosis does not indicate whether a bison is capable of actually transmitting the disease. In fact, Meyer and Meagher argue that relying on serologic tests alone to detect the degree of brucellosis infection in Yellowstone bison is a "misuse of serology." The NRC reached a similar conclusion: "[i]t is unlikely that prediction of infectiousness can be based on serology alone. Clearly, bison and elk may have serological titers to [brucellosis] yet not be infectious." The Draft Environmental Impact Statement (DEIS) on the management of bison in the

---

93. In the situation involving the herd east of the continental divide, a federal district judge in Wyoming held that the infection most likely came from wildlife, but the negligence case against the federal government was dismissed because the plaintiff could not prove that elk or bison under federal control were responsible for the transmission of the disease. See Parker Land & Cattle Co. v. United States, 796 F. Supp. 477, 483 (D. Wyo. 1992).

94. See NRC REPORT, supra note 53, at 45.

95. See id.

96. Id. at 43.

97. Meyer & Meagher, supra note 22, at 579.

98. Id. at 593.

99. See id. Meyer and Meagher also hypothesize that immunological response in bison and cattle to brucellosis is quite different. See id. They further suggest that bison may actually pass the disease from the mother to the calf through infected milk, and not through exposure to abortion products. See id. at 590.

100. Id. at 592.

101. NRC REPORT, supra note 53, at 33-34; see id. at 17 (discussing modes and risks of transmission).
Greater Yellowstone Ecosystem, however, reached a more cautious conclusion:

There is considerable disagreement regarding the risk of [brucellosis] transmission from bison and elk to domestic livestock. . . . It is not possible to quantify the risk of [brucellosis] transmission from bison and elk in the Greater Yellowstone Area to domestic livestock because most of the variables that define the risk are unknown.\(^\text{102}\)

Despite the cautious reminders in the DEIS, several conclusions regarding the risk of brucellosis transmission from wild, free-ranging bison to cattle emerge from the literature: (1) the risk of actual transmission in the wild is very low; (2) bison that test seropositive may not be capable of transmitting the disease; and (3) relying on serologic tests alone is not an accurate indicator of the risk of infection.

The risk of brucellosis transmission from wildlife to cattle can be further reduced by vaccinating cattle. The brucellosis vaccine for cattle does not provide complete protection against the disease, but it is highly effective.\(^\text{103}\) Montana law does not require vaccination of cattle, although it is strongly encouraged, and most cattle around Yellowstone are in fact vaccinated.\(^\text{104}\) Bison and elk can also be vaccinated against brucellosis, but the limited available data are not conclusive about the effectiveness of such an effort.\(^\text{105}\) In addition, administering a vaccine to wild bison and elk would be an enormous and difficult undertaking that would also likely require a rigorous test-and-slaughter program of currently infected bison and elk inside and outside the Park.\(^\text{106}\) The NRC concludes that "[g]iven the difficulties of vaccinating bison, the most workable method of reducing the risk of transmission of brucellosis from bison and elk to cattle in the [Greater Yellowstone Area] is vaccination of cattle."\(^\text{107}\)

\(^{102}\) DEIS, supra note 15, at 19.
\(^{103}\) See NRC REPORT, supra note 53, at 93; DEIS, supra note 15, at 59.
\(^{104}\) See NRC REPORT, supra note 53, at 115.
\(^{105}\) See id. at 7. In addition, there is no current vaccine that is considered safe for use on the wild bison herd within the Park because of the potential effect that the vaccine might have on other "nontarget species." DEIS, supra note 13, at 59.
\(^{106}\) See NRC REPORT, supra note 53, at 112-13. For a vaccination effort to be effective, it would require the eradication of brucellosis in both bison and elk in order to eliminate the opportunity for re-infection. Eliminating brucellosis in elk may require the termination of winter feeding. See id. at 8.
\(^{107}\) Id. at 115. Despite the difficulties of vaccinating wildlife against brucellosis, the Greater Yellowstone Interagency Brucellosis Committee (an interagency advisory committee organized by the states of Wyoming, Montana, and Idaho) has recommended the elimination of brucellosis from greater Yellowstone by 2010. Greater Yellowstone Interagency Brucellosis Committee, White Paper (visited Mar. 19,
The Park Service’s mandate to preserve the natural ecology of the national parks protects bison within the boundaries of Yellowstone National Park. On national forest and private lands outside the boundaries of the Park, the bison come under the jurisdiction of the State of Montana, where they are governed by Montana wildlife and livestock law. Under Montana law, bison that pose a threat to livestock or the public must be removed or destroyed. Indeed, the federal district court in Montana has held that the state “has an absolute right under its police powers” to protect the public health, safety, and welfare from federal bison that migrate into Montana carrying brucellosis. Despite this proclamation of state authority, the rules governing the management of bison in Greater Yellowstone are conflicting.

A. The Basis for Federal and State Jurisdiction over Bison

The Park Service has exclusive jurisdiction over the management and protection of bison in Yellowstone National Park. This authority derives from the 1872 Yellowstone Park Act, the 1894 Act of Congress closing Yellowstone to hunting, and the 1916 National Park Service Organic Act. On national forest land in Montana, the State of Montana and the Forest Service maintain jurisdiction over the bison habitat. State jurisdiction over wildlife within its borders is rooted in English common law and the concept of the public trust: Wildlife within a state is traditionally owned by the state in trust for its citizens.


109. See id. § 81-2-120(1).


111. The 1872 Yellowstone Act granted exclusive control over the Park’s resources to the Secretary of the Interior and further stipulated that the Secretary would protect the Park’s fish and game. 16 U.S.C. § 22 (1994). The Act of May 7, 1894, prohibited all hunting within Yellowstone National Park. 16 U.S.C. § 26 (1994). The National Park Service Organic Act established the National Park Service and vested it with the authority to “conserve . . . the wild life” within all the national parks. 16 U.S.C. § 1 (1994).

112. See 3 GEORGE C. COGGINS & ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW § 18.02[2][a]-[b] (1999); MICHAEL J. BEAN & MELANIE J. ROWLAND, THE EVOLUTION OF NATIONAL WILDLIFE LAW 10-22 (1997). The Supreme Court in Hughes v. Oklahoma rejected the state ownership doctrine, holding that a state could not claim ownership over wildlife traded in commerce. 441 U.S. 322, 335-36 (1979). Coggins and Glicksmann note that no one, including a state or the federal government, “has a true property interest in ambulatory wildlife before legal capture.” 3 COGGINS & GLICKSMAN, supra, § 18.02[2][b].
authority may preempt state wildlife jurisdiction on federal lands, but if exclusive federal control is not asserted (which is the case for most wildlife on national forest lands) state authority to regulate wildlife is typically maintained. With regard to Yellowstone bison, Robert Keiter and Peter Froelicher, in their article *Bison, Brucellosis and Law in the Greater Yellowstone Ecosystem*, note that the Forest Service "has deferred to state management authority over bison on forest lands outside the national park."

B. Emerging Conflicts over Bison on Federal Lands Outside Yellowstone National Park

Since 1968, Park Service policy for Yellowstone bison has been based on three principles: (1) maintain a free-roaming herd of bison inside the Park, (2) allow natural regulation to control the size of the herd, and (3) prevent bison from leaving the Park. For almost fifteen years this policy produced few conflicts. Between 1968 and 1984, however, the size of the Yellowstone bison herd increased from 397 to over 2,200. As the herd grew in size, it began to occupy more of its native habitat both inside and outside the northern boundary of the Park. As the bison became accustomed to moving across the northern boundary of the Park, Park Service efforts at preventing the bison from leaving the Park became less effective. As a result, lands outside Yellowstone National Park have once again become part of the Yellowstone bison herd's known natural habitat.

In the winter of 1984-85, the concern that bison might spread brucellosis to cattle and thus jeopardize Montana's newly achieved status as a brucellosis-free state led Montana wildlife officials to begin killing bison that left the Park. In 1985, the

---

113. In *Kleppe v. New Mexico*, for example, the Court, relying on the Property Clause of the Constitution, held that Congress can enact whatever legislation it wants regarding the management of wildlife on federal lands, and that such congressional action overrides state law. 426 U.S. 529, 541-43 (1976).


115. Keiter & Froelicher, supra note 1, at 34. Keiter and Froelicher note, however, that the Gallatin National Forest has forbidden Montana from killing bison in some areas designated in its forest plan as big game winter habitat if the bison pose no threat to cattle. See id. at 34 n.222.

116. See *YELLOWSTONE NATIONAL PARK*, supra note 54, at YELL-I, 55-56.

117. See id.

118. See id.
Montana Legislature added bison to the list of big game that could be legally hunted, and instituted a special hunting season for bison conducted under the supervision of game wardens. These actions by Montana led to the first of several lawsuits over the management of bison in greater Yellowstone. The Fund for Animals first sued the Park Service for allowing bison to leave Yellowstone National Park, knowing that the bison would be killed by hunters and game wardens in Montana. The Fund claimed that this Park Service policy represented a major federal action under the National Environmental Policy Act (NEPA), thus requiring preparation of an environmental impact statement (EIS). The federal district court in Montana ruled in favor of the Park Service on summary judgment, holding that allowing some bison out of the Park did not involve an irreversible or irretrievable commitment of resources that would significantly affect the environment or constitute a major federal action triggering the need for an EIS under NEPA.

The Fund for Animals brought a second suit in 1991. The Fund again alleged violations of NEPA, but this time it challenged an interim bison management plan prepared by the National Park Service and the State of Montana. The interim plan allowed Montana to continue to hunt or otherwise remove bison that left the Park. The plan also identified a minimum herd size of 200 for the Park's northern herd. The Park Service prepared an environmental assessment for the interim plan and issued a finding of no significant impact under NEPA. The Fund argued that an EIS was necessary. The federal district court in Montana denied the Fund's request for an injunction, finding that the Fund had not demonstrated that it could prevail on the merits, and had not shown how it was harmed by the interim plan. On appeal, the Ninth Circuit held that the Fund had standing under NEPA because of the psychological harm its
members suffered from viewing the killing of bison,130 but the Ninth Circuit nevertheless agreed with the district court that the Fund had not demonstrated it could prevail on the merits.131 The Ninth Circuit held that preventing the spread of brucellosis was in the public interest, but that the Fund had failed to demonstrate that the "bison management plan [would] result in irreparable harm to the human environment."132

In 1991 the Montana Legislature repealed its controversial controlled public hunt of bison.133 New legislation reclassified bison as a "species in need of management" and provided that the Montana Department of Fish, Wildlife and Parks would share jurisdiction over bison with the Montana Department of Livestock.134 The legislation granted the Department of Livestock authority to manage wild bison "that pose a threat to persons or livestock in Montana through the transmission of dangerous disease."135 This legislation granted control of wild bison to the state agency charged with ensuring Montana's status as a brucellosis-free state. Acting under its new authority, the Department of Livestock promulgated regulations requiring "migratory bison exposed to or affected with brucellosis" to be removed from the state by the most expeditious means.136 Alternatively, the regulations stated that "[i]f live bison cannot safely by reasonably and permanent means be removed from the state they shall be summarily destroyed where they stand by the use of firearms."137 The Montana Legislature has since codified these regulations.138

C. Current Bison Management Policies in Greater Yellowstone

Since 1990, the National Park Service and the State of Montana have developed four interim interagency bison management plans as part of a larger long-term planning process for the management of bison that migrate out of the

130. Fund for Animals v. Lujan, 962 F.2d 1391, 1396 (9th Cir. 1992).
131. See id. at 1400-01.
132. Id. at 1402. The Fund also tried to enjoin the State of Montana from implementing the plan. The Ninth Circuit held that even if the interim plan represented a major federal action, Montana could not be enjoined because it did not need prior federal approval to implement the plan on its own. See id. at 1397-98.
133. See Keiter & Froelicher, supra note 1, at 16-17.
134. MONT. CODE ANN. § 87-1-216(1)-(2) (1997).
135. Id. § 87-1-216(2).
137. Id. at 32.2.224A(1)(b).
Park. Participants in this planning process include the National Park Service, the Forest Service, APHIS, the Montana Department of Livestock, and the Montana Department of Fish, Wildlife and Parks. The most recent interim plan that governs current policy is the 1996 Interim Bison Management Plan, which the Park Service amended in 1997 after implementation of the 1996 plan contributed to the removal of more than 1,000 bison from the Yellowstone herd.

Under the current amended plan, bison are allowed onto some sections of the Gallatin National Forest, which are managed as big game winter habitat and where the bison pose no risk to cattle. Under the 1996 plan, no bison were tolerated outside the Park in the Yellowstone River Valley near Gardiner, Montana. Bison found outside the Park in this area were removed or shot by the State of Montana. Under the 1997 amended plan, the State of Montana agreed to allow some bison to remain on public lands in this area during the winter at the discretion of the state veterinarian. The Park Service maintains a capture facility inside the Park southwest of Gardiner, where it catches and holds bison that attempt to leave the Park. Under the 1996 plan, bison captured at this facility were sent to slaughter; under the 1997 amended plan, only those animals that test positive for brucellosis are sent to slaughter, all other bison are held until spring and released back into the Park. In the area around West Yellowstone, Montana, bison are not permitted outside the Park from May 1 to October 31, when cattle may be grazing on public and private lands outside the Park. From October 31 to May 1, bison outside the Park are captured, and those that test positive for brucellosis are slaughtered. Bison that evade capture are shot. Also, under the 1997 amended plan, Montana has agreed to haze bison back into the Park or onto public lands designated for bison whenever practical, rather than use lethal controls.

139. See DEIS, supra note 15, at 27.
142. See id.
143. See id.
144. See id.
145. See id.
146. See id.
lands outside the Park to accommodate the needs of migrating bison.

The 1996 Interim Bison Management Plan was challenged in court by a group of environmental organizations headed by the Greater Yellowstone Coalition (GYC). In addition to alleging that the Park Service had violated NEPA by not preparing an EIS for the Interim Plan, the GYC alleged under the Administrative Procedure Act (APA) that the Interim Plan violated both the Organic Act and the Yellowstone Act. Specifically, the GYC argued that the Interim Plan was arbitrary and capricious because it violated the National Park Service's mandate under the Organic Act to conserve bison and leave them unimpaired for future generations. The court held that because the Park Service's decision was based on an approved management plan, the decision was within its discretionary power under the APA. The GYC next argued that under the Organic Act, bison must be a detriment to the Park before they can be destroyed. The court held that the Park Service has statutory authorization to cooperate with the State of Montana, and that such cooperation was necessary to manage bison within a wider regional and ecosystem context. The court implied that a decision by the Park Service not to cooperate with Montana would constitute a detriment to the herd because the herd would be confined to the Park, where it would likely become overpopulated and starve. The court used its interpretation of ecosystem management, coupled with the language of the Organic Act, to uphold the Interim Bison Management Plan as a boundary protection program for bison. Finally, the GYC argued that the Yellowstone anti-poaching statute applied to the Park Service, and thus the Interim Bison Management Plan violated the law. The court noted that applying the anti-poaching statute to the Park Service would conflict with the Park Service's statutory authority to

---

148. The Park Service prepared an environmental assessment and issued a finding of no significant impact (FONSI), and the court held that the FONSI satisfied the Park Service's legal obligation under NEPA. See id. at 1445.
149. See id. at 1441-43.
150. See id. at 1441.
151. See id. at 1441-42.
sell or dispose of surplus bison when necessary. The court held that "[a] plain reading of the two statutes compels the court to construe section 26 as a criminal anti-poaching statute which regulates the conduct of the visiting public and section 36 as a statute giving broad discretion to the NPS to dispose of surplus bison."155

The district court denied the Coalition's motion for a preliminary injunction to stop implementation of the Interim Bison Management Plan,156 as well as a motion for a stay of the district court's order pending appeal.157 On appeal, the Ninth Circuit upheld the district court's decision in its entirety.158 Thus, in two major legal challenges to the Yellowstone interim bison management planning process (the 1991 suit pursued by The Fund for Animals and the 1997 Greater Yellowstone Coalition suit), the courts have consistently upheld the process.159 Not only have the courts dismissed the NEPA challenges, but in the latest lawsuit the court held that the Park Service has broad discretionary authority over how it decides to manage bison.160 Thus, the interim planning process has allowed the Park Service to make substantial policy decisions regarding the management of bison.161

D. The Proposed Long-Term Bison Management Plan

The interim bison management plans were always intended

156. See id. at 1446.
157. See id.
158. See Greater Yellowstone Coalition v. Babbitt, 108 F.3d 1385 (9th Cir. 1997).
159. Two other NEPA-based legal challenges against management polices have been successful. In Fund for Animals v. Ridenour, the court granted an injunction enjoining the Park Service from killing 25 bison within the boundaries of Yellowstone National Park to test the bison for brucellosis based on a violation of NEPA. See Keiter & Froelicher, supra note 1, at 17 n.95 (citing Fund for Animals v. Ridenour, No. 91 Civ. 0726 (D.D.C. 1991)). Similarly, in Fund for Animals v. Espy, the court prevented the Secretary of Agriculture from implementing a research study that would remove bison from public lands outside the Park without first complying with NEPA. 814 F. Supp. 142, 150-52 (D.D.C. 1993).
161. Keiter notes that the Park Service has been able to preserve this flexibility by not formalizing its preservation mandate under the informal rulemaking procedures of Section 553 of the APA. Keiter explains that "[a]lthough this limits the agency's ability to enforce [preservation] policies against the public, it means that the Park Service has retained considerable discretion in implementing— and even changing— its approach to preservation. Indeed, the policy can evidently be modified without public involvement or any meaningful threat of judicial review so long as a reasonable explanation is provided." Keiter, supra note 35, at 679.
as stopgap measures until the implementation of a long-term plan. Work on a long-term plan began in 1989. In 1995, the State of Montana sued the National Park Service over the allegedly slow progress on the development of a long-term management plan and environmental impact statement. As part of a settlement agreement, the National Park Service agreed to a timetable for release of the long-term plan. The draft environmental impact statement for the long-term plan was finally released for review in May 1998. The proposed long-term plan identified in the DEIS is premised on both maintaining a free-ranging bison herd within Yellowstone National Park and protecting Montana's domestic livestock from brucellosis outside the Park. Natural regulation is still the primary means for managing bison within the Park, and lethal control is still the principal management tool for managing bison outside the Park. The long-term plan identifies, for the first time, a target herd size for the Yellowstone bison of between 1,700 and 2,500 animals. As the herd approaches the low end of this range, the plan calls for curtailing the use of lethal controls on bison outside the Park. When the herd size is larger than 2,500, bison caught either trying to leave the Park or outside the Park will be removed and sent to slaughter. Thus under the proposed long-term plan, lethal controls will be used outside the Park to maintain a dynamic equilibrium for the bison herd within the Park.

Management of bison outside the Park will be based on what

---

164. Participants in the long-term plan include the Montana Department of Livestock, Montana Department of Fish, Wildlife and Parks, National Park Service, Forest Service, and APHIS. See DEIS, supra note 15, at 1.
165. The Park Service has proposed several modifications to the preferred alternative. See National Park Service, Modified Preferred Alternative for Intergency Bison Management Plan (Nov. 1999) (on file with author). These proposed modifications are more tolerant of bison outside the Park than the proposal in the DEIS. This paper discusses the plan proposed in the DEIS. Proposed modifications to that plan are addressed in the footnotes.
166. See DEIS, supra note 15, at 102. Under the modified plan, the target herd size is 3,000. See National Park Service, supra note 165, at 1.
167. See id.
the Park Service refers to as "capture, test, and slaughter."\textsuperscript{168} Bison that attempt to leave the Park will be herded into capture facilities where they will be tested for brucellosis. Bison that test positive will be sent to slaughter, while bison that test negative may, depending on the overall size of the herd (that is, whether it is smaller than 1,700 or larger than 2,500), be tagged and released onto open public lands, sent to a quarantine facility (where they may eventually be used to repopulate bison herds on Indian lands), or shipped to slaughter.\textsuperscript{169} If possible, bison will be hazed back into the Park before lethal controls are used. Bison that avoid capture and cannot be hazed back into the Park or into special management areas (SMAs) that have been designated for use by bison will be shot.\textsuperscript{170}

The proposed long-term plan establishes SMAs on national forest lands outside the Park, where bison will be tolerated so long as they pose no risk to cattle.\textsuperscript{171} The principal SMAs run along the northern border of the Park from Gardiner to Cooke City, Montana, and along the northwestern boundary from West Yellowstone, Montana, to the northwestern tip of the Park. The SMAs represent a zone beyond which no bison will be tolerated. Bison that are present within that zone will be actively managed to prevent contact with cattle. Specifically, bison must be removed from an SMA 30 to 60 days before a rancher plans to release cattle onto that land.\textsuperscript{172} Moreover, the proposed plan includes no adjustment to existing grazing allotments on federal lands within the SMAs.

Other key components of the proposed long-term plan include vaccination of bison and a limited public hunting season.

\textsuperscript{168} \textit{Id.} at 101-03, 107-10.
\textsuperscript{169} \textit{See id.} at 108-09.
\textsuperscript{170} \textit{See id.} at 108. The Park Service's modified proposal includes a zone management approach for the areas around Gardiner and West Yellowstone that entails "increasingly stringent zones of risk management." National Park Service, supra note 165, attach. 1, at 1. Bison that cross the northern boundary of the Park will be captured and tested for brucellosis. Bison that test positive will be sent to slaughter. In the first zone, the zone closest to the Park, bison that test seronegative will be allowed to roam during the winter months and will be hazed back into the Park in the spring. \textit{See id.} Only a limited number of bison (around 100) will be allowed into the adjacent zone, and some lethal control may be used. \textit{See id.} Bison that leave zone 2 and enter zone 3 will be "intercepted and killed." \textit{Id.} at 2. In the West Yellowstone area, a similar zone management approach will be used, but bison will not be tested. \textit{See id.} attach. 2, at 1. The rationale behind the zone management approach is to ensure spatial and temporal separation of bison and cattle. The further bison move out from the Park, the greater the risk that bison and cattle might come together.
\textsuperscript{171} \textit{See id.} at 104-07.
\textsuperscript{172} \textit{See id.} at 107.
outside the Park to control the size of the bison herd. Public hunting of bison would require the approval of the Montana Legislature. The proposed plan suggests a season of October 1 to February 28, in which a limited number of hunters could hunt bison in designated areas. The proposed plan also calls for the eventual vaccination of the entire free-roaming herd of Yellowstone bison. Currently, no vaccine exists to effectively and safely vaccinate a wild, free-roaming herd of bison. Because of the potential environmental impact that an effort to vaccinate the Yellowstone bison herd entails, such an effort likely would require its own NEPA review. The long-term plan, however, fails to address the need to vaccinate elk as part of the effort to eradicate brucellosis in bison. Eradication of brucellosis in bison requires eradication of the disease in elk as well.

The proposed long-term plan is more tolerant of bison on federal lands outside the Park than is the current interim plan. The proposed plan, however, does not envision a functioning bison ecosystem extending beyond Yellowstone National Park. More significantly, the long-term plan seems to represent a shift in Park philosophy toward wildlife management: For the first time since the 1960s, the Park Service will manage the Yellowstone bison herd based on a target herd size.

IV

AN ECOSYSTEM MANAGEMENT VISION FOR BISON IN GREATER YELLOWSTONE

A. The Current Management Model

The Park Service's bison preservation policy within the

173. See id. at 110.

174. See id. at 58-59. Vaccinating the Yellowstone bison herd is consistent with the objectives of the Greater Yellowstone Interagency Brucellosis Committee to eradicate brucellosis from wildlife in Greater Yellowstone. See Greater Yellowstone Interagency Brucellosis Committee, supra note 105. The modified plan is premised on vaccinating bison caught in capture facilities and eventually vaccinating bison both inside and outside the Park by means of a remote vaccination process once such a process is developed. See National Park Service, supra note 165, at 1.

175. See NRC REPORT, supra note 53, at 89-106.

176. Montana has agreed to tolerate bison outside the Park if a bison vaccination program is implemented. See National Park Service, supra note 165, at 2-3. The proposed modified plan is premised on implementing a vaccination program. If adopted, the plan would be a step away from Montana's long-standing zero-tolerance policy. The modified alternative also includes a contingency plan for another mass migration of bison out of the Park. The contingency plan is based on monitoring bison movement early in the winter season and taking action to keep bison inside the Park. See id. at 7-8. In addition, hazing rather than lethal control will be the primary tool for controlling bison outside the Park. See id.
boundaries of Yellowstone Park, combined with Montana's zero-tolerance policy toward bison outside the Park, produces a crude process for controlling the size of Yellowstone's bison herd. In describing this process, the court in *Fund for Animals v. Lujan* noted that the combination of these policies "becomes almost ingenious in its operation and effectiveness." The court implied that permitting the state of Montana to kill bison that leave the Park allows the Park Service to continue its policy of natural regulation inside the Park without having to control the number of bison in the herd. The NRC report uses the ecological metaphor of sources and sinks to describe this process: The Park is a natural source of bison, an environment where bison thrive and the herd can grow, whereas bison that leave the Park enter marginal habitat, or a sink, where their numbers cannot be sustained because the habitat is less suitable. The shooting of bison that leave the Park acts as an artificial sink for the bison herd within the Park. The result is a human-induced dynamic equilibrium for the bison herd inside the Park. The proposed long-term management plan outlined in the DEIS adopts this approach for controlling the size of the Yellowstone bison herd. The legal boundary of the Yellowstone bison herd is the Park boundary, which therefore becomes the *de facto*, and yet artificial, boundary of the bison's ecosystem.

**B. An Ecosystem Management Model**

An alternative approach to managing bison in greater Yellowstone is to allow bison to use lands outside the Park boundaries that are part of their historic range. The boundary of Yellowstone National Park does not correspond to natural features such as watersheds or ecosystems, and a significant amount of important winter range lies outside the Park, particularly along the Yellowstone and Madison Rivers. Under an ecosystem management model, natural regulation would replace capture-test-and-slaughter as the principal means for controlling the size of the Yellowstone bison herd outside the Park. The Park Service believes that natural conditions "such as harsh winters and ongoing predation and competition . . . would maintain the population within the natural range of 1,700 and 3,500 animals."
Expanding the ecological and legal boundary of the Yellowstone bison herd may not necessarily resolve the problem of migrating bison because the herd simply may not achieve a dynamic equilibrium within this expanded territory. Even if the herd does achieve a natural equilibrium, animals may still move beyond their new boundary; thus, active management of the herd may still be necessary. Nevertheless, allowing bison on part of their natural range outside the Park will provide a better match between the natural bison ecology of greater Yellowstone and the laws that govern bison. This is the goal of an ecosystem management approach to managing bison.

One step toward accomplishing this goal would be the establishment of a special bison management zone where bison could roam freely on national forest land around the northern section of the Park. This special bison management zone would cover approximately 500,000 acres of the Gallatin National Forest stretching from the Idaho-Montana border on the northwest side of the Park to Cooke City, Montana, near the Park's northeast corner. The towns of Gardiner and West Yellowstone fall within the boundary of the special zone, as do several thousand acres of private land. Easements and land purchases could be used to reduce bison-cattle and bison-human conflicts on private lands. The risk of brucellosis transmission from bison to cattle in the special zone could be controlled by managing cattle to prevent their contact with bison. Capture-test-and-slaughter or shooting bison that evade capture would not be used within this special zone to manipulate the size of the herd or to protect cattle from contact with bison. Public hunting and transplanting of live animals, however, could be used to manage the size of the bison herd outside the Park if necessary to control or reduce the size of the herd.

Several options for a free-roaming bison management zone around the Park have been proposed in the past few years. For example, the DEIS uses the term "special management area" to identify areas outside the Park where special bison management policies could apply.\textsuperscript{181} The DEIS examined seven different alternatives for managing bison outside Yellowstone National Park; one of these alternatives, Alternative Two, allows bison to roam freely on designated public lands.\textsuperscript{182} Under this alternative, lethal controls would not be used as a primary management tool, and cattle grazing would be adjusted to accommodate bison

\begin{enumerate}
\item \footnote{181. \textit{id.} at 57-58.}
\item \footnote{182. \textit{See id.} at 67-73.}
\end{enumerate}
This alternative was not the preferred alternative identified in the DEIS, however. No other alternative in the DEIS permits bison to roam free and unharassed on lands outside the Park.

The Greater Yellowstone Coalition has released a *Citizens' Plan to Save Yellowstone Buffalo*, which recommends establishing a special management area on public lands outside the Park. Under the GYC plan, bison would be allowed to roam freely in the special management area, and cattle allotments would be adjusted to prevent contact between cattle and bison. The GYC plan endorses an aggressive effort to buy private lands that lie within critical bison habitat, recommends determining an appropriate bison carrying capacity for the range outside the Park, and endorses using either public hunting or live removals by Indian tribes to keep the bison population within the identified limit. Finally, the NRC report suggests a buffer zone outside the Park where more control would be exerted over bison as they moved further away from the Park.

C. Manage Cattle, Not Bison, to Control the Spread of Brucellosis

Allowing bison to roam freely in a special management zone on Gallatin National Forest lands adjacent to Yellowstone National Park will require the Forest Service to adjust its management of cattle on these lands to minimize or eliminate potential conflicts between bison and cattle. If bison and cattle are not in contact with each other, there is no risk that bison will spread brucellosis to cattle. As such, one solution is to remove the cattle from the areas that bison tend to use. It may also be possible to have both cattle and bison in the same area by altering how the cattle are currently managed. Cattle and bison do not tend to use the same areas at the same time: bison use the lands outside the Park for winter range, while cattle use these same lands for summer range. Timing the arrival of the cattle so that it occurs after bison have moved back into the Park is a management option. Other options include vaccinating all

---

183. *See id.* at 67.
185. *See id.* at 5-6.
186. *See id.* at 7.
187. *See id.* at 5-6.
188. *See NRC Report, supra* note 53, at 122.
189. To minimize the risk of spreading brucellosis, cattle cannot use the same range that bison have used until 30 to 60 days after the bison have left the range.
cattle, and allowing only those cattle that pose the least risk of contracting and transmitting the disease (such as steers and spayed heifers) to use grazing allotments near the Park where they may come into contact with bison.  

Over the long-term, however, the Forest Service may decide to eliminate livestock grazing on most or all of the grazing allotments it maintains within the special bison management zone. The Forest Service can do this by either canceling existing grazing permits or not renewing them. While the Forest Service is not required to compensate a permittee when it modifies or cancels a grazing lease, it might attempt to alleviate any potential hardship to the permittee by accommodating current permittees on nearby available allotments. Given the history of grazing in the West, any effort to eliminate grazing will cause great political consternation. The practical and economic considerations of removing 2,000 head of cattle from the public lands adjacent to Yellowstone National Park will be much less difficult to deal with than the political effect. One politically acceptable solution might involve the purchase of grazing rights by private conservation organizations from ranchers willing to sell. Working with the Forest Service, conservation organizations could retire these newly purchased allotments from grazing.

Under current policy, bison are forced off the public range (by hazing or shooting) 30 to 60 days prior to the scheduled arrival of cattle. An alternative approach is to permit cattle in these areas only 30 to 60 days after the bison have departed. The Forest Service is currently considering such a change in policy. Telephone Interview with Jeanne-Marie Souvigney, Associate Program Director of the Greater Yellowstone Coalition (Feb. 22, 1999).

190. The NRC report notes that spayed heifers and steers are the least likely to transmit brucellosis: “Although the animals might become infected, they will not transmit the disease when living and do not develop tissue titers of bacteria that can sustain the disease in nature.” NRC REPORT, supra note 53, at 115. See also Keiter & Froelicher, supra note 1, at 60, for a discussion of managing cattle to reduce the risk of contracting brucellosis from bison.

191. Forest Service grazing permits are a license to use designated national forest land for grazing. These permits are not a vested property right and are revocable at will. See 3 COGGINS & GLICKSMAN, supra note 112, § 19.04[3][b]. The Forest Service may modify or cancel grazing permits to meet other public purposes or management needs. See 43 U.S.C. § 402(g) (1994); see also 36 C.F.R. § 222.4 (1999).

192. The Forest Service must only compensate for any improvements that a rancher has made to the land. 43 U.S.C. § 402(g) (1994).


194. The Grand Canyon Trust recently announced a deal with the Bureau of Land Management and five ranchers in which it will pay the ranchers to retire grazing allotments on 120,000 acres of land within Utah’s Grand Staircase-Escalante National Monument. Under the plan, cattle will be removed from the entire length of the Escalante River and moved to grazing allotments outside the monument or to allotments at higher elevations within the monument. See Lisa Church, Fun Hogs to
The Forest Service could then make available to these ranchers other nearby grazing allotments where bison are not present. This approach would provide the Forest Service needed political cover and would provide ranchers with some compensation for moving their cattle.

D. Providing for Bison Habitat Through Easements and Land Purchases

Reducing or eliminating the potential for contact between bison and cattle on public land outside the Park is only part of the solution. Private lands would also fall within this special management zone, creating a potential for bison-cattle conflicts, as well as property damage and bison-human conflicts (for example, bison can destroy fences and may charge and gore a human if approached too closely). Many of these potential conflicts could be reduced or eliminated if the federal government either purchased easements on private lands that bison tend to use as winter range, or bought the land and added it to Yellowstone National Park or the Gallatin National Forest. Recently, for example, the federal government purchased over 7,800 acres of land along the west side of the Yellowstone River just north of Yellowstone National Park from the Church Universal and Triumphant for $13 million. This land represents critical habitat for bison as well as bighorn sheep.

195. The preferred long-term plan outlined in the DEIS acknowledges the possibility of purchasing either easements or private land from willing sellers outside the Park, but it does not change its recommended policy of intensive bison management based on these purchases. See DEIS, supra note 15, at 102. However, Alternative Two, which permits free-roaming bison outside the Park, does incorporate easements and land purchases into an overall solution to the bison management problem. See id. at 67.

196. See Greater Yellowstone Coalition, Government Buys Vital Wildlife Habitat (visited Mar. 12, 1999) <http://www.greateryellowstone.org/happened.html> (printout on file with author); Greater Yellowstone Coalition, Land Acquisition on Yellowstone’s Northern Doorstep a Triumph for Wildlife and the Public (visited Feb. 10, 2000) <http://www.greateryellowstone.org/happened.html>. The funds for this purchase came from the federal Land and Water Conservation Fund, which is supported through royalties from oil leases on federal lands. The Gallatin National Forest will manage the newly acquired lands. The deal almost died over a dispute between the Park Service and Montana about bison management issues on these new public lands. The Park Service wanted a bison easement on the lands, while Montana wanted the release of funds conditioned on completion of the bison EIS. Both sides opted to agree to the purchase and decide the bison issues later. See Scott McMillion, Church Lands Will Help Bail Out Bison, HIGH COUNTRY NEWS, Mar. 15, 1999, at 11. The Church Universal and Triumphant is a religious cult that owns nearly 33,000 acres of land near Yellowstone National Park. See id. at 8.
wolves, elk, and grizzly bears. The federal government purchased roughly 5,800 acres, exchanged about 1,000 acres of nearby national forest land for the privately owned land, and secured a conservation easement on another 1,000 acres. 197

The purchase-transfer-easement agreement demonstrates that creative solutions to the management of bison on private lands are possible. Because the federal government cannot purchase all private land around the Park, it will need to devise other approaches to deal with bison that wander onto private lands, particularly in populated areas such as Gardiner or West Yellowstone. In some cases, hazing may keep bison off private property. In extreme cases, it may be necessary to shoot a bison that endangers property or human life. The GYC has recommended establishing a private fund to compensate private property owners for damage done to fences and other structures by migrating bison. Only those landowners who allow bison to migrate across their lands to access public lands or who have not otherwise created a conflict with bison will be eligible for compensation under the plan. 198

E. Managing Bison in a Special Management Zone

Establishing a special bison management zone outside the Park will provide a designated area where bison will be allowed to roam freely and where cattle, not bison, will be managed to protect against the spread of brucellosis. This zone will allow the Park Service, Forest Service, and the State of Montana to manage bison in a manner that better accommodates the migratory behavior of bison and is consistent with the broader goal of preserving a remnant of the bison's historic range in greater Yellowstone. Establishing such an area, however, will not eliminate the need to manage bison. Specific measures likely will be needed to keep bison off private lands. In addition, the establishment of a special bison zone will not eliminate boundary problems, so the State of Montana and federal officials will still need to devise some means of dealing with migrating bison.

Federal and state officials should implement measures within the special management zone to discourage bison from migrating outside the zone, but the boundary of the special management zone should not be an inflexible line over which no bison are allowed to cross. The Forest Service and the State of

197. See McMillion, supra note 196, at 11.
198. See GREATER YELLOWSTONE COALITION, supra note 43, at 55.
Montana should retain discretion over how to manage bison within the special zone, but their decisions should be guided by principles of ecosystem management.\textsuperscript{199} The GYC, for example, has recommended that wildlife managers determine "a scientifically-based minimum [bison] herd size" for the Yellowstone bison herd.\textsuperscript{200} The determination of this herd size should take into account available winter habitat both inside and outside the Park, and under no circumstances should the number be less than 1,700.\textsuperscript{201} The GYC also recommends implementing a set of procedures to control the size of the bison herd if it reaches the maximum carrying capacity of the special management zone outside the Park.\textsuperscript{202} These procedures include public harvesting and live removal of excess bison for transplant to Indian reservations.\textsuperscript{203} Capture-test-and-slaughter should not be used as a population control strategy inside the Park or the special management zone; it is not consistent with maintaining a wild, free-roaming herd of bison.\textsuperscript{204} Finally, the Park Service should consider modifications to its winter trail grooming policies inside the Park to avoid creating paths that will provide bison a convenient and quick migration route out of the Park.

Whether the bison population will expand beyond the natural limits of the combined bison range inside and outside the Park is an unanswerable question at this time. In the DEIS,
the Park Service implied that natural controls will maintain the Yellowstone bison herd size within its current range of 1,700 to 3,500.205 The NRC Report, however, suggests that increasing the amount of range available to bison is more likely to lead to a larger bison herd and more range expansion.206 Establishing a special bison management zone may or may not lead to an increase in the Yellowstone bison herd, but it will provide flexibility in how wildlife managers manage the current herd. It will also provide a designated range for bison that better accommodates their migratory behavior and provides essential winter habitat, and it is also more consistent with the principles of ecosystem management than the current policy of slaughtering bison that leave the Park.

V

CAN THE PARK SERVICE OR FOREST SERVICE ESTABLISH A SPECIAL BISON MANAGEMENT ZONE UNDER CURRENT FEDERAL LAW?

Neither the Park Service nor the Forest Service has yet shown any interest in designating a special free-roaming bison management zone outside the boundary of Yellowstone National Park. Their failure to act on this idea is most likely due to a reluctance to fight the large political battle that would almost certainly unfold if either agency proposed such a plan. Local ranchers and Montana officials would likely perceive the designation of a special free-roaming bison management zone as an attempt to extend the wildlife preservation policies of Yellowstone National Park onto the Gallatin National Forest. Local ranchers would object to the loss of grazing allotments and the erosion of their influence over public land policies. Montana State officials would likely object to the federal usurpation of all control over wildlife policy on national forest lands. Despite an unwillingness to act, the question remains whether the Park Service or the Forest Service, under their existing statutory mandates, could establish a special free-roaming bison management zone along the northern boundary of Yellowstone National Park.

205. The DEIS itself is somewhat muddled on this point. In the discussion of natural regulation of the bison herd under Alternative Two, the DEIS suggests that natural conditions will stabilize the herd size between 1,700 and 3,500 animals. See DEIS, supra note 15, at 73. Later, the DEIS implies that natural regulation combined with active management will be needed to maintain the herd size at 1,700 to 3,500 animals. See id. at 196.

206. See NRC REPORT, supra note 53, at 122. The NRC Report nevertheless endorses the establishment of buffer zones outside the Park as bison move further from the Park. See id.
National Park or implement other regulations designed to protect bison that migrated out of Yellowstone National Park.

A. The Authority of the Park Service to Manage Bison Outside Yellowstone National Park

An extensive literature explores the degree to which the Park Service can regulate threats to the national Parks from activities occurring on both non-federal and federal lands; however, the conclusions are often inconsistent.\textsuperscript{207} Professor Lockhart, for example, in his article \textit{External Threats to Our National Parks}, argues that "the 1916 National Park Service Organic Act . . . and the 1978 'Redwoods' amendments to that Act . . . empower the Park Service to regulate activities outside of the parks that threaten to impair park resources or the experience of visitors within the parks."\textsuperscript{208} Lockhart concludes that the Park Service simply has been unwilling to test the bounds of what he believes is a very expansive power under the Park Service's statutory mandate.\textsuperscript{209} Professor Coggins, however, in his article \textit{Protecting the Wildlife Resources of National Parks from External Threats}, is more cautious in asserting the Park Service's powers under the Organic Act to regulate external threats.\textsuperscript{210} Coggins believes the Park Service's power is most likely limited to regulating "closely-adjacent, nuisance-like activities."\textsuperscript{211} Coggins and Lockhart do agree that to whatever extent the Park Service has power to regulate external threats, it has been unwilling to use that power.\textsuperscript{212}


\textsuperscript{208} Lockhart, \textit{supra} note 207, at 9. Congress amended the Park Service Organic Act in 1978 in response to the continuing problem of external threats to Redwood National Park. While most of the adjustments that Congress made to the Act specifically concerned Redwood National Park, some of the language added to the Act applied to all national parks. Specifically, in Section 1a-1 of the Act, language was added prohibiting the "derogation" of the values and purposes for which the parks were established. 16 U.S.C. § 1a-1 (1994). Lockhart contends that "a plain language reading [of the Redwoods amendments] demonstrates that the prohibition against harming the values and purposes of the parks is absolute." Lockhart, \textit{supra} note 207, at 66.

\textsuperscript{209} See Lockhart, \textit{supra} note 207, at 45-51.

\textsuperscript{210} Coggins, \textit{supra} note 207, at 17-18.

\textsuperscript{211} \textit{Id.}

\textsuperscript{212} See \textit{id.}
The authority of the Park Service to regulate threats from non-federal lands rests in the Property Clause of the Constitution. In *Kleppe v. New Mexico*, the Supreme Court unanimously reaffirmed its long-standing holding that "the power over the public lands thus entrusted to Congress is without limitation." This power is held by the United States as both proprietor of the public lands and as sovereign. Under the Property Clause the federal government can thus make whatever rules it deems necessary to care for the public lands, and these rules override conflicting state law under the Supremacy Clause. The Court in *Kleppe* did not directly address the question of the extent to which the federal government may employ the Property Clause to regulate activities on non-federal lands that affect federal lands. The Court did cite to its earlier decision in *Camfield v. United States*, however, holding that the "power granted by the Property Clause is broad enough to reach beyond territorial limits."

A year after the *Kleppe* decision, the Eighth Circuit Court of Appeals addressed this very question in *United States v. Brown*. The issue in the case was whether Park Service regulations prohibiting hunting within Voyageurs National Park extended to waters within the Park that may still have been under state jurisdiction. The court held that "congressional power over the federal lands [includes] the authority to regulate activities on non-federal public waters in order to protect wildlife and visitors on the lands." Similarly, in *United States v. Moore* a West Virginia Federal District Court extended the power of the National Park Service to regulate non-federal activities when it upheld the authority of the Park Service to prevent the State of West Virginia from spraying pesticides over 50,000 acres of private lands located within the New River Gorge National River. Both *Brown* and *Moore* rested on the Park Service's

---

213. The Property Clause reads: "The Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States." U.S. CONST. art. IV, § 3, cl. 2.
214. 426 U.S. 529, 539 (1976) (citing United States v. City of San Francisco, 310 U.S. 16, 29 (1940)). The issue in *Kleppe* was whether the federal authority under the Wild Free-Roaming Horses and Burros Act to regulate wild burros and horses on federal lands overrides the authority of New Mexico to regulate these animals. Id.
215. See id. at 543.
216. Id. at 538. In *Camfield*, the Court held that the federal government could prevent a private landowner from fencing his land in such a way that it completely enclosed public land. 167 U.S. 518 (1897).
217. 552 F.2d 817 (8th Cir. 1977).
218. Id. at 822.
power under the Property Clause and involved threats to units of the national park system that originated from activities on non-federal property within the boundaries of those units. The activities on these non-federal inholdings threatened the Park resource itself, making clear to the courts in these cases that the Park Service’s statutory authority allowed it to regulate outside activities to protect Park resources.\footnote{An inholding is private or state land surrounded by federal land. In Brown, the court looked to the enabling legislation for the Park, holding that “[t]he congressional intention to exercise regulatory jurisdiction over the waters in the park is clearly demonstrated in the Voyageurs National Park Act.” 552 F.2d at 820. In Moore, the court also looked to both the Park Service Organic Act and the enabling legislation for the New River Gorge National River, finding that both granted the Park Service the authority to regulate activities “detrimental” to the Park. 640 F. Supp. at 166-67. In neither case, however, did the court elaborate on the extent of this authority. See also Stupak-Thrall v. United States, 70 F.3d 881 (6th Cir. 1995) (upholding the authority of the Forest Service to prohibit use of motor boats on a lake located mostly within a wilderness area, despite the existence of private riparian rights to use the surface of the lake); United States v. Lindsey, 595 F.2d 5 (9th Cir. 1979) (upholding the authority of the Forest Service to regulate campfires on state land within a national recreation area).}

Attempts to find authority for the Park Service to regulate activities on non-federal lands that clearly lie outside the boundaries of a national park (that is, non-inholding type situations) have been more elusive. The most significant effort to extend the authority of the Park Service beyond the boundaries of a park is a set of three cases dealing with logging on non-federal lands outside Redwood National Park. In the first two decisions, a federal district court held that the Park Service had an affirmative duty under both the 1916 Organic Act and the enabling legislation for Redwood National Park to protect the Park from erosion occurring inside the Park due to logging taking place outside the Park.\footnote{See Sierra Club v. Department of the Interior, 398 F. Supp. 284 (N.D. Cal. 1975); Sierra Club v. Department of the Interior, 376 F. Supp. 90 (N.D. Cal. 1974).} The Park Service attempted to comply, but its ability to do so depended on cooperation from private landowners and other federal agencies as well as funding from Congress, none of which was forthcoming. In the third decision, the court dismissed the case, concluding that the Park Service had done what it could to fulfill its duty.\footnote{See Sierra Club v. Department of the Interior, 424 F. Supp. 172 (N.D. Cal. 1976).} While the court found that the Park Service had a duty to protect Redwood National Park from external threats, it also realized that the Park Service had no independent authority to impose this duty on lands outside the Park.

Professors Coggins and Glicksman, in their treatise *Public
Natural Resources Law, contend that application of the Property Clause to extraterritorial threats to the parks is no longer in question: the Brown and Moore cases demonstrate its applicability. Instead, they argue that future disputes "will not turn on the existence of the power but on its proper scope and application." The primary questions, according to Coggins and Glicksman, include "whether the regulation is one 'respecting' federal property, whether it is 'needful' to protect that property, and whether the agency asserting the validity of the regulation was authorized to promulgate or impose it." The question of whether the Park Service can manage bison outside Yellowstone National Park or prevent Montana from killing bison that leave the Park thus depends on whether bison are a Park resource under the Property Clause and whether the Park Service has authority under existing statutes (for example, the Organic Act or the Yellowstone Act) to regulate Park bison outside the Park. Even if a court agreed that the Organic and Yellowstone Acts conferred statutory authority on the Park Service to protect bison leaving the Park, the Redwood cases demonstrate that the Park Service's ability to act beyond the boundaries of a national park is greatly constrained.

The Park Service could argue that under the 1872 Yellowstone Act and the 1894 Act to Protect the Birds and Animals in Yellowstone National Park, bison are a unique Park resource, since preserving bison was one of the reasons for establishing the Park. Protecting bison is therefore, arguably, the responsibility of the Park Service, whether the bison are inside or outside the Park. A recognition of such a responsibility, however, would not enable the Park Service to regulate state activities outside Yellowstone National Park over which it otherwise has no authority. For example, it would not enable the Park Service to tell the State of Montana how to regulate cattle to protect them from the spread of brucellosis, or to tell Montana that it must permit bison to wander uncontrolled. The Park

---

223. 1 COGGINS & GLICKSMAN, supra note 112, § 3.03[4][a].
224. Id.
225. Id.
226. The Yellowstone Act authorizes the Secretary of the Interior to protect against the "wanton destruction of the fish and game found within the park." 16 U.S.C. § 22 (1994). Congress enacted the 1894 legislation specifically to protect Yellowstone's wildlife. Under the 1894 Act, "the Secretary of the Interior shall make and publish such rules and regulations as he may deem necessary and proper for the management and care of the park and for the protection of the property therein, especially . . . for the protection of the animals and birds in the park, from capture or destruction." Id. § 26.
Service could rely on the 1872 and 1894 Acts to enjoin the State of Montana from killing bison if Montana's slaughter of bison threatened the integrity or survivability of the Park's bison herd. The Park Service, however, would still likely bear the burden of finding some means of keeping the bison within the Park.

Finally, can the Park Service require the Forest Service to take action to protect bison that wander out of the Park? For example, can the Park Service legally compel the Forest Service to not permit cattle to graze near the Park? The Property Clause does not govern the relationship between the Park Service and the Forest Service, since the federal government is the common landowner. As Professors Sax and Keiter note in their article *Glacier National Park and Its Neighbors*, federal agencies do not sue each other.227 The Park Service must therefore rely on the consultation processes included in existing statutes such as NEPA, NFMA, and FLPMA to influence actions taken by the Forest Service.228 Although the Park Service cannot compel the Forest Service to take particular action, the two agencies can work together to pursue a common goal. Both FLPMA and NFMA encourage such cooperation,229 and the Park Service and the Forest Service are currently collaborating on an EIS for a long-term management plan for bison with the State of Montana.230

**B. The Forest Service's Authority to Manage Bison Outside Yellowstone National Park**

Can the Forest Service establish a special management zone on the Gallatin National Forest where it prohibits or restricts killing of bison and manages cattle to avoid conflicts with bison? Under the Multiple-Use Sustained Yield Act and the NFMA, the

---


228. These statutes contain provisions stipulating that agencies should consult with each other on common management concerns when and where appropriate. For example, both FLPMA and NFMA have provisions for interagency coordination and consultation on land use planning. FLPMA, 43 U.S.C. § 1712(c)(8) (1994); NFMA, 16 U.S.C. § 1604(a) (1994). The preparation of an EIS under NEPA also requires interagency consultation. 42 U.S.C. § 4332(C) (1994). In a study of Glacier National Park, Sax and Keiter found that the Park Service avoids using laws of general application such as NEPA to shape Forest Service decisions that might affect Glacier National Park. See Sax & Keiter, supra note 227, at 217-19.


230. The EIS process, however, is primarily a Park Service enterprise. The DEIS listed only one Forest Service representative as a "preparer" of the document. In addition to the Forest Service employee, the team consisted of two members from the State of Montana, twelve Park Service employees, and four consultants employed by the Park Service. See DEIS, supra note 15, at 321-23.
Forest Service has statutory authority to manage and protect wildlife. The Multiple-Use Sustained Yield Act stipulates that "[i]t is the policy of Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."231 While the Multiple-Use Sustained Yield Act does not provide any guidance on balancing wildlife needs with the Act's other enumerated purposes, the Act clearly states that the management of wildlife is an appropriate purpose of the national forests.232 NFMA reiterates the multiple-use mandate of the Multiple-Use Sustained Yield Act and further stipulates that the Forest Service must develop land and resource management plans consistent with this mandate.233

In fulfilling this statutory obligation, the Forest Service routinely identifies special wildlife management provisions for specific areas within national forests as part of its planning process.234 If the Forest Service complies with the provisions of NFMA regarding the adoption and amendment of a land and resource management plan, as well as with other applicable statutes such as NEPA, establishment of a special management program for protecting bison is not beyond its statutory authority.235 The Forest Service can establish a special bison management area in the Gallatin National Forest in much the

---

232. See Charles F. Wilkinson & H. Michael Anderson, Land and Resource Planning in the National Forests, 64 OR. L. REV. 1, 286 (1985); see also BEAN & ROWLAND, supra note 112, at 345. Bean and Rowland noted that a 1978 Supreme Court opinion may cast some confusion over the enumerated purposes for the establishment and management of national forests. In United States v. New Mexico, the Court ruled that under the 1897 Forest Service Organic Act, protection of timber and waterflow were the original statutory purposes of national forests. 438 U.S. 696, 713-18 (1978). The Court held that there were no reserved water rights for fish and wildlife in national forests since these values were not among the original purposes of the national forest under the Organic Act. The Court acknowledged that the Multiple-Use Sustained Yield Act of 1960 expanded the purposes for administering national forests, but held that the Act did not expand the reserved water rights of the federal government to accommodate these "secondary" purposes. See id.
234. The 1987 Forest Plan for the Gallatin National Forest identifies a number of management areas within the forest where specific provisions for managing wildlife habitat apply. In some cases, for example, big game forage needs will be met before making forage allotments for livestock. In some cases, timber harvesting will be manipulated to enhance big game habitat. See FOREST SERVICE, supra note 42, at III-33 to III-34. The forest plan also recognizes special needs for grizzly bears. See id. at G-1 to G-38.
235. See 16 U.S.C. §§ 1604-1687 (1994). Section 1604(g)(1) requires that a land resource management plan be prepared in accordance with NEPA. Id. § 1604(g)(1).
same way that it establishes management goals and regulations for other wildlife in the national forests. In addition, the Forest Service may adjust or eliminate grazing allotments on national forest land to protect both bison and cattle from the spread of brucellosis.236

To what extent can the Forest Service regulate the activities of bison within a special management zone if those regulations directly conflict with Montana law? The Supreme Court answered this question in Kleppe: "the Property Clause . . . gives Congress the power to protect wildlife on the public lands, state law notwithstanding."237 If the Forest Service is properly exercising its statutory authority under the Multiple-Use Sustained Yield Act, NFMA, or FLPMA, the federal authority to protect bison would supersede conflicting state law. Montana might argue that in enacting these statutes Congress did not intend to change the traditional relationship between the federal government and states with respect to the regulation of wildlife. Indeed, there is language in the Multiple-Use Sustained Yield Act that makes just this point: "Nothing herein shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish in the national forests."238 But FLPMA grants the Secretary of Agriculture the authority to "designate areas of . . . the National Forest System where, and establish periods when, no hunting or fishing will be permitted for reasons of public safety, administration, or compliance with provisions of applicable law."239 Resolving once and for all the question of state authority to regulate wildlife may not be necessary here. The purpose of a special bison management zone is not to prohibit state regulation of hunting. It is rather to provide bison habitat that separates bison and cattle so bison can roam freely without the threat of spreading brucellosis.

236. See 43 U.S.C. § 402(g) (1994); 36 C.F.R. § 222.4 (1999); see also discussion supra note 191.
238. 16 U.S.C. § 528 (1994); see also Wilkinson & Anderson, supra note 232, at 307-08 (noting that it is not clear what relationship the statute intended to preserve).
239. 43 U.S.C. § 1732(b) (1994). The statute further stipulates that the federal government cannot require a federal permit to hunt on federal lands, and federal agencies must consult with state officials before making changes to hunting and fishing regulations on federal lands. See id. The exact meaning of this part of the statute remains ambiguous. In Defenders of Wildlife v. Andrus, the court implied that under Section 1732(b) of FLPMA states retain their preeminence in wildlife management, but the opinion in the case rested on a NEPA interpretation, not FLPMA. 627 F.2d 1238, 1247 (D.C. Cir. 1980). Coggins argues that "the statute on its face purports to preserve preexisting jurisdictional arrangements." Coggins. supra note 207, at 5-6 n.24.
Managing bison habitat on national forest land is a federal responsibility. Public hunting of bison in this special bison management zone may be an important management tool for the Forest Service to utilize. If so, public hunting of bison would remain the responsibility of the State of Montana, subject to the provisions of FLPMA Section 1732(b).

Montana law stipulates that wild bison infected with a dangerous disease that enter the state may be removed or destroyed if necessary to protect livestock or human health. The state might contend that its authority to regulate bison on federal lands is a health and safety matter, not a question of wildlife regulation, and thus is not preempted by existing federal statutes. The general rule for preemption on federal lands is that "[o]n nonenclave federal lands, state laws apply unless otherwise overridden by a federal law" under the Supremacy Clause. The leading preemption case on federal lands is California Coastal Commission v. Granite Rock. In Granite Rock, the Supreme Court upheld the California Coastal Commission's authority to require a mining company to obtain a state permit before beginning mining on national forest land. The Court held that requiring such a permit was an environmental regulation and thus not preempted under FLPMA and NFMA, rather than a land use regulation that would have been preempted. However, Granite Rock is a narrow opinion dealing with a facial challenge to a state's ability to regulate activities on federal lands that did not involve an actual conflict. The opinion does not grant the state the ability to regulate in a way that is inconsistent with federal law.

The real question is whether Montana has a legitimate reason to regulate bison. As long as the Forest Service is careful to keep cattle and bison separated on national forest land, a threat to livestock or public health is unlikely, and thus there is no reason for Montana to regulate bison on these lands. Furthermore, it seems unlikely that Montana, relying on Granite Rock...
Rock, could prevent the Forest Service from protecting bison in national forests. It remains unclear whether regulating wildlife would be interpreted as an environmental regulation where the state may have some authority, or as a land use regulation where the state has no authority. Clearly, the Forest Service's decision to establish a bison special management zone is an exercise of its land use planning authority under NFMA. Furthermore, even if the state does have some authority to regulate, the Court in Granite Rock did not hold that a state could prohibit a proper federal purpose on the federal lands by means of environmental regulation. Such an effort by the state presumably would be preempted as an impermissible obstacle to a legitimate federal purpose under preemption doctrine.

C. Can the Park Service or Forest Service Be Compelled to Protect Bison Outside Yellowstone National Park?

Under the various statutes that govern Yellowstone National Park, the Park Service may have some limited authority to protect bison that migrate outside the Park. The exact extent of that authority is unclear. So far, the Park Service has been unwilling to use whatever authority it may have to protect bison outside the Park boundary. While the Park Service's authority to protect bison outside the Park is limited, the Forest Service almost certainly has authority to establish special management policies to protect bison on lands within the Gallatin National Forest. The Forest Service, however, has also been unwilling to utilize its authority to protect bison. Can either the Park Service or the Forest Service be forced to take action to protect bison that migrate out of Yellowstone National Park? For example, can an environmental organization bring a lawsuit under one or more of the statutes that govern the federal lands to compel the Park Service or Forest Service to protect Yellowstone’s bison?

The one recorded attempt to use the substantive provisions of the Park Service Organic Act and the Yellowstone Act to compel the Park Service to protect bison that migrate outside the

246. See Granite Rock, 480 U.S. at 587-89.
247. Coggins and Glicksman note that the logic of the Court's reasoning for finding that state land use planning authority is preempted under FLPMA § 1712(c)(9) would apply to an argument that a state's authority to regulate wildlife under FLPMA § 1732(b) is also preempted. See 1 COGGINS & GLICKSMAN, supra note 112, § 5.03[2]. Rather than suggesting federal power over wildlife, this observation merely illustrates the confusing nature of the law. For a general discussion of preemption doctrine, see id. § 5.03[1].
248. See discussion supra Part V.B.
Park proved unsuccessful.\textsuperscript{249} The court in that case held that the language in the statutes "obviously gives park managers broad discretion in determining how best to conserve wildlife and to leave them unimpaired for future generations."\textsuperscript{250} In articulating just how far that discretion went, the court wrote:

Plaintiffs [Greater Yellowstone Coalition] have not shown that they are legally entitled to demand "unmanaged wildlife" (as Plaintiffs characterize it); the NPS is the federal agency responsible for determining how best to conserve park resources and to manage Yellowstone bison. Even if the NPS were to determine, after thoughtful consideration and study, that the best means of conserving and managing the Yellowstone bison would be to return to Yellowstone's bygone days of corrals, cowsheds, and cowboys (however unlikely the prospect), Plaintiffs might still have great difficulty showing that such an intensive management program was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law."\textsuperscript{251}

The broad discretion of the Park Service to decide how best to manage wildlife also was upheld in a case involving the rebuilding and operation of the Fishing Bridge Campground in Yellowstone National Park.\textsuperscript{252} In that case, the National Wildlife Federation challenged the reconstruction and continued operation of the campground, which was located in critical grizzly bear habitat.\textsuperscript{253} The court held that the Park Service's decision to keep the campground open while it completed an EIS on the campground's impact on grizzly bears did not violate either the Park Service Organic Act or the Endangered Species Act.\textsuperscript{254} The court noted that "the Park Service is empowered with the authority to determine what uses of park resources are proper and what proportion of the park's resources are available for such use."\textsuperscript{255}

The discretion of the Forest Service with respect to managing and protecting wildlife is probably even greater than that of the Park Service. Unlike the preservation mandate under which the Park Service manages wildlife, the Forest Service operates under a multiple-use mandate where wildlife is only one of several

\begin{footnotes}
\item[250.] Id. at 1441.
\item[251.] Id. at 1445.
\item[252.] See BEAN \& ROWLAND, supra note 112, at 309.
\item[254.] See id.
\item[255.] Id. at 391.
\end{footnotes}
enumerated purposes for which the national forests are managed. Coggins and Glicksman note that while the discretion of the Forest Service over managing wildlife is broad, it is not "unbridled." The Forest Service, for example, must abide by the provisions of the Endangered Species Act, and is "bound to consider the effect of [its] actions on wildlife." The Forest Service, however, is not required to choose wildlife preservation over some other use of the national forests. Thus, under current regulations and statutes, the Forest Service cannot legally be compelled to modify or cancel existing grazing leases to provide for protected bison habitat in the Gallatin National Forest.

VI
THE NEED FOR A POPULAR MANDATE TO PRESERVE FREE-ROAMING BISON IN GREATER YELLOWSTONE

Both the Park Service and the Forest Service are unwilling to use their authority (limited for the Park Service, but extensive for the Forest Service) to protect bison that migrate outside Yellowstone National Park because of the political costs of taking such a step. The controversy over the ecosystem management vision document that both agencies attempted to put together in the late 1980s and early 1990s illustrates just how high the level of political contention is in Yellowstone regarding bison management. The agencies are hesitant to take action that might be perceived by local ranchers and state officials as attempts to de facto expand the boundaries of Yellowstone National Park. The State of Montana and local ranchers would perceive any effort by either or both agencies to implement a special management zone or otherwise protect bison outside the boundary as a threat to Montana's ability to set wildlife policy and protect its livestock, and as a threat to local influence and control of land management decisions on public lands. They would see it as an attempt to expand the preservation mandate of Yellowstone National Park onto the multiple-use national forest lands. Montana would likely turn to its elected representatives in Congress to stop any effort to protect bison that did not have the approval of state officials, and it is unlikely that either agency currently has the political capital to win a battle over bison waged in Congress. Indeed, the recent history in Congress of attempts to protect bison and other park resources has not been favorable for advancing the idea of a

256. Coggins & Glicksman, supra note 112, § 18.04[2][c].
257. Id.
larger Yellowstone ecosystem.\textsuperscript{258}

Rather than entertaining bills to protect bison, Congress has considered bills that would require the Park Service to eliminate brucellosis from its bison herd. Two bills were introduced in the 104th Congress concerning bison and brucellosis in Yellowstone: S. 745 in the Senate and H.R. 2136 in the House.\textsuperscript{259} The Senate bill imposed a mandate on the Park Service to eradicate brucellosis in Yellowstone Bison by means of capture-test-and-slaughter. Specifically, the bill required the Park Service to capture and test every bison in Yellowstone National Park,\textsuperscript{260} and to shoot bison that evaded capture.\textsuperscript{261} Bison that tested positive for brucellosis were to be slaughtered or neutered, and bison that tested negative were to be vaccinated and held in quarantine until certified by the State Veterinarians of Idaho, Montana, and Wyoming as brucellosis free (a process that could last for more than a year).\textsuperscript{262} The Senate bill also required the Park Service to utilize the services of an independent team of range scientists to determine the optimum population of bison for the range inside Yellowstone National Park and to manage the herd size so that it remains 500 animals below the optimum population.\textsuperscript{263}

The Senate bill, introduced by Senator Burns (R-Montana), Craig (R-Idaho), Simpson (R-Wyoming), and Thomas (R-Wyoming), fundamentally challenged the authority and discretion of the Park Service to manage bison in Yellowstone National Park consistent with its policy of natural regulation which has been in place since 1968. The bill essentially treated bison like cattle, requiring that "range scientists" rather than wildlife scientists determine the carrying capacity of the range within the park, and imposing a scheme for capturing and controlling bison reminiscent of Yellowstone's bison ranching era in the 1910s and 1920s.

The House bill introduced by Representative Williams of Montana, though much less hostile to the National Park Service, also called for the eradication of brucellosis from Yellowstone's bison,\textsuperscript{264} but left the means for achieving this goal to the discretion of the Park Service. The House bill required that the Park Service and APHIS work with the states of Idaho, Montana,

\textsuperscript{258} See infra notes 255-67 and accompanying text.
\textsuperscript{260} See S. 745, § 1(a)(1).
\textsuperscript{261} See id. § 1(a)(3)(A).
\textsuperscript{262} See id.
\textsuperscript{263} See id. § 1(a)(4), (a)(6).
\textsuperscript{264} H.R. 2136, § 3(1).
and Wyoming to implement a bison management plan.\textsuperscript{265} Neither the House nor the Senate bills made it to the floor for a vote. Both bills seemed aimed at prodding the federal government to settle Montana's suit against the Park Service and APHIS for what it believed was unacceptable delay by the Park Service in developing a long-term management plan for bison and an unlawful attempt by APHIS to downgrade its brucellosis-free status.\textsuperscript{266}

In addition, Congress has repeatedly failed in attempts to protect Yellowstone National Park from external threats. For example, bills in the 102nd, 103rd, and 104th Congresses to protect Yellowstone's geothermal features from activities occurring outside the Park all failed.\textsuperscript{267} The bill in the 102nd Congress, the Old Faithful Protection Act, easily passed the House, but died in the Senate because of a dispute over takings provisions in the proposed legislation.\textsuperscript{268} A similar bill in the 103rd Congress also passed the House but failed in the Senate. An ambitious effort in 1995 to enact legislation to protect Yellowstone from a gold mine on the northeast corner of the Park was also defeated.\textsuperscript{269} The mine project was eventually halted under a deal negotiated by President Clinton to have the federal government purchase the mining rights from the mining company.\textsuperscript{270} Furthermore, the inability to protect parks from

\textsuperscript{265} Id. § 6(a). This Section included the language "[t]hese plans shall allow for the seasonal migration of elk and bison." It is unclear from the remainder of the bill what this language meant, but it certainly could be interpreted to permit bison to migrate outside of the Park as long as they did not pose a threat to cattle.

\textsuperscript{266} See Montana v. United States, No. 95-6-H-CCL (D. Mont. Nov. 13, 1995). The House bill in particular appeared designed to address the concerns of the State of Montana. See H.R. 2136. APHIS had threatened to downgrade Montana's brucellosis-free status if it allowed infected bison from Yellowstone National Park into the state. The state argued that it was unfairly caught between conflicting federal policies. The House bill required the Park Service, APHIS, and Montana to work together to implement a long-term bison management plan, and it prevented APHIS from downgrading Montana's brucellosis-free status based solely on the presence of infected bison in the state. See id. The settlement agreement reached between the federal government and the state essentially included these same provisions. See Montana v. United States, No. 95-6-H-CCL (D. Mont. Nov. 13, 1995) (settlement agreement). The Park Service, APHIS, and Montana agreed to complete a long-term plan for bison, and APHIS agreed not to downgrade Montana's brucellosis-free status as long as it was in compliance with the interim plan or the adopted long-term plan. See id. at 1-3.


\textsuperscript{269} S. 1737. 104th Cong. (1996).

\textsuperscript{270} See Lockhart, supra note 207, at 7-8.
external threats is not limited to Yellowstone, since other efforts in the 1980s to enact bills to extend park protection to all national parks failed in Congress.\footnote{271}{See Coggins, \emph{supra} note 207, at 22-24, for a discussion of congressional efforts in the 1980s to protect the national parks from external threats. The House, for example, twice passed a parks protection bill. A Senate bill was designed specifically to protect national park wildlife that migrated outside Park boundaries. \textit{See id.}}

Despite the current difficulty of protecting Yellowstone National Park from outside threats, providing for an effective ecosystem management mandate that protects not only bison but all of the unique biological and geological treasures of the Yellowstone region requires a political decision that commits the federal agencies (and the states) to work together for the common purpose of preserving a Greater Yellowstone Ecosystem. Where ecosystem management is occurring, it is being pursued under some existing statutory mandate (such as the protection that the Endangered Species Act provides grizzly bears), or it is being propelled by politically powerful constituencies (such as the coalition of wildlife managers and hunters that supports protection of elk habitat). As yet, bison lack such protection. Congress could provide that protection by establishing a special bison management zone outside Yellowstone National Park.

A well-crafted bison protection bill should clearly establish the federal interest in protecting and preserving a wild, free-roaming herd of bison, and should mandate that bison within this zone be managed consistent with the principles of ecosystem management. The bill should also include provisions to coordinate management responsibilities between the Park Service, Forest Service, and the State of Montana. The bill should recognize Montana's legitimate interest in protecting its livestock that graze on public and private lands outside the special management zone, and should provide funding for the acquisition of private lands and easements. Enacting a Yellowstone Bison Protection Act that establishes a special bison management zone outside the boundary of Yellowstone National Park based on concepts similar to those outlined in this paper would provide much needed protection for bison in Greater Yellowstone. It would also be an important step toward establishing a larger legal concept of a Greater Yellowstone Ecosystem.

\* \* \*

This paper began with the question of whether a wild, free-roaming herd of bison can exist in America. Wild, free-roaming
bison are a national resource unique to the Greater Yellowstone Ecosystem. Greater Yellowstone is the one remaining place that is large enough and wild enough to provide bison a habitat where they can truly roam free. Under current federal policy, however, there is no room for free-roaming bison in greater Yellowstone. Protecting bison that migrate outside Yellowstone National Park requires that the public choose how it wants to manage the federal lands around Yellowstone National Park. The choice need not "lock up" these lands or displace all traditional uses, but it must emphasize ecosystem protection above other traditional uses on the federal lands. It is a choice to allow a few thousand bison, the remains of a herd that once numbered 60 million and covered the continent, a small piece of their natural range where they can roam free. Legislation that includes the provisions outlined above will be controversial and will upset the status quo on the public lands outside the Park. However, such legislation is necessary if the nation is going to maintain a wild, free-roaming herd of bison.