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*To the Honorable members of the World Heritage Committee,
World Heritage Centre United Nations Educational, Scientific and Cultural
Organization,
International Union for the Conservation of Nature and Natural Resources
The World Conservation Union,*

Greetings from Montana and the members of Buffalo Field Campaign, a nonprofit organization incorporated in the state of Montana in 1997 to protect, preserve, and expand the range of Yellowstone's wild buffalo. Our nationally recognized organization is comprised of people from all walks of life and ages, from all 50 United States, Israel, Australia, Germany, France, Lithuania, Poland, South Korea, Ecuador, Canada and other member states.

Buffalo Field Campaign is submitting a Draft Report to the World Heritage Committee and your respective members to provide you with resources to fairly conduct a scientific review on the conservation status of American bison and the distinct population of wild bison to inhabit its native range in the present environment of Yellowstone National Park and the contiguous public and private lands adjoined to this World Heritage site: _

<http://whc.unesco.org/en/list/28/documents/>.

We ask The World Heritage Committee, World Heritage Centre and The World Conservation Union to fully consider our presentation and critically apply our findings to the United States Department of Interior-National Park Service report on "the status of key conservation and management issues" for Yellowstone National Park and its examination by the Committee at its 32nd session in 2008.

We also want to draw your attention to comments submitted by the Animal Welfare Institute on the Yellowstone National Park's Draft Site Progress Report to the World Heritage Committee detailing the ecological, humane, and policy failures embodied in the State of Montana's and United States Interagency Bison Management Plan.

Buffalo Field Campaign coordinates daily field patrols as bison migrate from the interior of Yellowstone National Park to their native habitat and range in the Madison, Gallatin and Yellowstone river valleys within the State of Montana. Wild bison migrations and state and national action's targeting them for harassment, capture, quarantine, and slaughter is recorded on

video. An extensive video, photo and news archive is available online:
<http://www.buffalofieldcampaign.org/media/bisonvideogallery.html>.

Buffalo Field Campaign has also developed a searchable online wildlife database of recorded migrations of wild bison and native wildlife species into the Gardiner Basin and the upper Madison Valley from the Yellowstone Plateau: <http://www.buffalofieldcampaign.org/habitat.html>.

At the web address above, you will also find an Interactive Mapping Service presenting data on land use, bison habitat, Geographic Information System, public lands grazing, and ownership in the Yellowstone ecosystem.

We plead with your members to consider that this last remnant population of wild bison to continuously occupy its native range in the United States is a wildlife species of "outstanding universal value" at risk or in danger of genomic extinction, and under threat of genetic harm and loss of diversity. A draft report on the legal, ecological, and conservation status of Yellowstone bison is presented below for your review.

An archive of bison science, ecology, history, law and cultural papers is available online in English for your members to peruse:
<http://www.buffalofieldcampaign.org/worldheritage.html>.

Correspondence on our Draft Report to the World Heritage Committee on the status of American Bison, Yellowstone National Park (Buffalo Field Campaign 2008) can be directed to: Darrell Geist, Buffalo Field Campaign, PO Box 957, West Yellowstone, Montana, USA 59758-0957. Tel: +1 (406) 646-0070. Fax: +1 (406) 646-0071. Email: z@wildrockies.org. Web: <http://www.buffalofieldcampaign.org/>.

We thank the honorable members for your time and dedicated service to conserving our World Heritage.

Sincerely,

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Draft Report to the World Heritage Committee on the status of American Bison, Yellowstone National Park (Buffalo Field Campaign 2008)

The American Bison: At Risk of Extinction

The American bison (*Bison bison*), once roamed North America 30 to 60 million strong (Knapp et al. 1999). Today, less than 4,700 wild American bison remain in the United States, mainly within the confines of Yellowstone National Park (Yellowstone National Park 2007; Gates et al. 2005).

Since the mid-1980's agents from the State of Montana's cattle industry and the United States government have slaughtered over 5,000 wild bison migrating from Yellowstone National Park (<http://www.buffalofieldcampaign.org/index.html>) putting the genetic integrity and survival of the last wild American bison at risk.

On August 15, 2007 the United States Fish & Wildlife Service issued a finding (<http://a257.g.akamaitech.net/7/257/2422/01jan20071800/edocket.access.gpo.gov/2007/E7-16004.htm>) in response to a hand-written petition submitted by a United States citizen from Moorhead, Minnesota, Mr. James Horsley, on January 5, 1999, urging the United States government to protect the Yellowstone population, the last wild bison left in America, as an endangered species.

Significantly, the United States Fish & Wildlife Service found that the wild population of American bison currently occupying its native range in and around Yellowstone National Park meets several criteria as a Distinct Vertebrate Population Segment.

Importantly, the Fish & Wildlife Service acknowledged that Yellowstone National Park is the only place in the United States where wild bison have continuously existed since prehistoric times (USFWS 2007). Unwisely, the Fish & Wildlife Service failed to adequately consider wild bison's historic range that spanned hundreds of millions of acres throughout North America (Hornaday 1889) and the millions of acres historically occupied by bison in the Madison, Gallatin, and Yellowstone river valleys to the Yellowstone Plateau, south to the Wind River Range, Upper Green River valley and west to the Snake River Plain.

Under a national policy announced in March 2007 that undermines the intent of the United States Congress, the Fish & Wildlife Service redefined how it determines whether a species is "in danger of extinction throughout all or a significant portion of its range." This new policy was applied in the Fish & Wildlife Service's interpretation and finding of significant range as only where bison currently range: Yellowstone National Park and the Gardiner Basin, north of Yellowstone (USFWS 2007) and failed to address wild bison's historic range or factors that could impact its native range like climate change.

When the United States Congress passed the Endangered Species Act in 1973 it addressed what criteria are used to determine whether a species is in danger of extinction throughout all or a significant portion of its range: http://www4.law.cornell.edu/uscode/html/uscode16/usc_sec_16_00001531-___000-.html

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) over utilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence.

A thorough review of bison's conservation status by the Fish & Wildlife Service would have unearthed a persuasive and growing body of evidence showing that several endangered species criteria are met for the wild American bison.

A Unique Bison Population ~ The Last of their Kind

Yellowstone bison represent a distinct population both geographically and reproductively isolated from other public trust bison populations (USFWS 2007). Bison's nomadic nature and migratory behavior is still intact but historic migration corridors have been truncated or lost (Berger 2004) preventing genetic flow among bison herds.

Throughout the United States, bison populations are intensively managed on small ranges, fenced off, rounded up, artificially bred, or have been found to have European or African cattle genes (Boyd 2003). Only three bison populations can be proven to be genetically *Bison bison*: Yellowstone, Wind Cave and Grand Teton (Halbert 2003). Only the Yellowstone bison exist in a unique ecological setting as the last wild herd of bison in the United States to continuously occupy its native range since prehistoric times (Gates et al. 2005; USFWS 2007).

Importance to Indigenous People

A rich, literary and oral tradition exists on the cultural and spiritual significance of the Yellowstone bison to Native American Indians (Greater Yellowstone Science Learning Center 2006).

However, the Fish & Wildlife Service did not evaluate cultural and historical significance of this last remnant bison herd in its finding denying bison Endangered Species Act protection (USFWS 2007). Though scientific criteria are used to determine whether a species is in danger of extinction, the irreplaceable historical and cultural value of wild bison as an indigenous wildlife species in its native range is embraced by the Nation, the American people, and the indigenous people of North America, and recognized by the U.S. Congress in its findings creating the Endangered Species Act.

Biological Significance

The Yellowstone bison population has tremendous biological significance for the conservation of American bison as a wildlife species (USFWS 2007) including ecological, behavioral and genetically unique traits.

Recent scientific studies provide conclusive evidence that Yellowstone bison, unlike most other bison populations held in the public trust, are genetically *Bison bison* (Polziehn et al. 1995; Ward et al. 1999; Halbert 2003). Evidence demonstrating the distinctiveness of Yellowstone bison is even recognized by the Fish & Wildlife Service (USFWS 2007) but the wildlife agency fails to acknowledge the urgency for protecting wild bison in its native habitat.

Threats to Bison Habitat

Wild bison currently occupy a fragment of their original range in North America (Hornaday 1889; Boyd 2003). With the exception of the State of Wyoming, wild bison are ecologically extinct throughout the United States (Freese et al. 2007). While vast tracts of the American bison's historic range exist, current government schemes including the Interagency Bison Management Plan forcibly prevent bison from occupying its native range.

As North America's human population skyrockets and demand for natural resources and land use grows, the ability to preserve large tracts of bison habitat is undermined (Boyd and Gates 2006).

Human activities outside Yellowstone National Park is reducing the availability of bison habitat and forage while land use and winter recreation inside Yellowstone National Park has resulted in direct and indirect impacts to wild bison and foraging activity that sustains this wildlife species in one of North America's harshest environments (Bjornlie and Garrott 2001; Gates et al. 2005).

Human impacts to bison ecology and habitat are not confined to Yellowstone National Park's boundaries (Bjornlie and Garrott 2001; Gates et al. 2005). Grazing private cattle on national public lands on the Gallatin National Forest adjacent to Yellowstone National Park precludes bison from occupying critical winter range and spring calving habitat (Geist 2007).

Existing bison management plans establish a near zero tolerance policy for wild bison outside Yellowstone National Park (Bison Management Plan for the State of Montana and Yellowstone National Park 2000; Interagency Bison Management Plan 2000).

Bison migration, and nomadic treks within their home range is a natural phenomenon but following their instincts for self-preservation has turned into a deadly trap for wild bison.

Bison migrating to winter range north of Yellowstone National Park are captured at Stephens Creek, held in a trap and shipped to slaughter. The

winter of 2005/2006 counted 849 bison captured and sent to slaughter from Yellowstone National Park's Stephens Creek bison capture facility. Eight bison died while being held in captivity or as a result of injuries received while held in captivity. Eighty-seven bison calves were removed from their family groups to the Brogan quarantine facility at Corwin Springs, Montana. An additional 59 wild bison were killed by the State of Montana Department of Livestock including two bison that fell through the ice on Hebgen Lake during a bison hazing operation. Yellowstone National Park shot one wild bison (Geist 2007).

Clearly, the ongoing government-led slaughter of migrating bison threatens the wild character of America's last wild bison herd and its native habitat.

Brucellosis

The encroachment of cattle ranching into the bison's native range creates the disease risk that the cattle industry decries.

Brucellosis was originally introduced to Yellowstone's wild bison and elk populations by domestic cattle (Cheville et al. 1998; Meagher and Meyer 1994). The risk of brucellosis transmission from wild bison to cattle is small (Cheville et al. 1998) and there has been no documented case of such an event. Despite these facts, state and federal agents have spent millions of dollars in national taxpayer appropriated funds and killed thousands of wild bison since 1985 that pose no risk to cattle or the cattle industry.

Interagency Bison Management Plan is Flawed and Unscientific

Existing state and national laws have diminished the legal status of American bison as a wildlife species, and the current framework for managing wild bison - the Interagency Bison Management Plan - is flawed, unscientific, and poses a threat to bison's evolutionary potential as a wildlife species in North America.

In Montana, Yellowstone bison fall under the authority of the Montana Department of Livestock (<http://data.opi.state.mt.us/BILLS/mca/81/2/81-2-120.htm>), an agency with an institutional bias against wild, free-roaming bison that exists to promote the cattle industry.

An effort by the United States Department of Agriculture and its state agency counterparts to develop a new, more deadly plan to eradicate brucellosis from the Greater Yellowstone ecosystem, (<http://www.gyibc.com>) raises valid concerns about the long-term viability of America's most unique, culturally irreplaceable and biologically distinct bison herd.

The State of Montana and United States government is responsible for the ongoing destruction of Yellowstone bison and the severe curtailment of this wildlife species native range. The State of Montana and United States of America must reconsider their actions and adapt to new scientific evidence and take actions that conserve wild bison and its habitat. The Parties should

work cooperatively and in step to restore wild American bison by conserving contiguous habitats and migration corridors in the species native range.

Yellowstone bison warrant immediate protection as an ecologically distinct population segment. Such protection should mandate a cessation to the ongoing slaughter of wild bison and compel the Parties to create ecologically responsible and scientifically based programs to protect Yellowstone bison and its native habitat.

Rebuttal to United States Fish & Wildlife Service Finding Not to list Yellowstone bison as a national Endangered Species.

Fish & Wildlife Service's finding does not consider how and by what migratory routes bison originally occupied the Yellowstone Plateau. This is a critical discussion - missing from their finding - regarding the native range of wild bison in the Greater Yellowstone ecosystem. Without this discussion, the American people and the international community have no way to independently judge whether bison are endangered within all or a significant portion of their native range.

Dr. Mary Meagher, Yellowstone National Park's bison biologist for more than 30 years, believes that 10,000 years ago at the end of the last Ice Age, glacial retreat opened up range for bison migrating from surrounding river valleys who followed plant green up to the Yellowstone Plateau (Gates et al. 2005). Yellowstone's unique geothermal features opened winter range for bison to occupy habitat year round (Meagher 1973). Shortly after creation of the world's first national park in 1872, Yellowstone National Park became the last stronghold for the American bison, under armed guard to prevent the species near extinction (Meagher 1973; Cope 1885).

Archeological investigations suggest large numbers of bison occupied the Greater Yellowstone region (Cannon 2001) and that habitat diversity and climatic regimes played an important role in bison distribution, seasonal migration and abundance (Cannon 1997; Williams 2005; Lyman and Wolverton 2002).

From Yellowstone National Park's gateway community in Gardiner to Livingston Montana, Yellowstone River Valley is one of several river valleys with documented bison jumps and other archaeological evidence of bison inhabiting range that the Fish & Wildlife Service did not consider as historic range in its finding:

"The Lamar Valley and the Yellowstone River Valley north of the park (Figure 4.1) to Livingston and beyond was an important area for bison and Native peoples throughout the Holocene. This system can be considered the original Northern Range for Yellowstone bison, functioning as an ecological continuum of grasslands that likely supported seasonal migrations by bison as far south as the high elevation ranges in the Upper Lamar Valley. Davis and Zeier

(1978:224) described the lower Yellowstone Valley as an exceptional area for Native people to gather, drive and kill bison. Eight bison jumps and three kill sites have been documented south of Livingston. The closest jump site to YNP is 25 km north of the park boundary. It was used during the late prehistoric period between 1,700 and 200 b.p. (Cannon 1992). There is evidence of a human use corridor from the Gallatin and Madison River drainages into the interior Yellowstone National Park. Several major bison kill sites are located in the Gallatin Valley outside of Bozeman Montana." (Gates et al. 2005)

Fish & Wildlife Service's finding fails to consider the biology and natural ecology of bison, their nomadic nature and migratory instinct, knowledge and memory of destination, and the evolutionary significant characteristics of a wild bison herd.

The American bison is a land-intensive species that once roamed over great distances (Boyd and Gates 2006). Long distance migration, what defines wild bison as a nomadic, herd animal that once thundered across the Great Plains, is in danger of being lost forever.

Berger (2004) examined the "ecological phenomena" of accentuated treks of native ungulates in the Yellowstone ecosystem and found that 100% of historic and current routes for bison have been lost.

Bison corridors and habitat on National Forest lands in the Madison, Gallatin and Yellowstone river valleys exist (Jourdonnais 2006; Lemke 1997; Lemke 2006) but the United States Forest Service does not manage habitat for wild bison despite its stated forest plan goal of providing "habitat for viable populations of all indigenous wildlife species..." (United States Department of Agriculture, Forest Service, Gallatin National Forest Land and Resource Management Plan, PAGE II-1, 1987).

For bison migrating onto Gallatin National Forest lands from Yellowstone National Park, the State of Montana's hunt, capture and slaughter regime awaits them (Bison Management Plan for the State of Montana and Yellowstone National Park 2000; Interagency Bison Management Plan 2000).

Migratory corridors and natural selection of habitat is critical to maintaining the Yellowstone bison herd's habitat and genetic fitness. These evolutionary significant attributes must be conserved for wild bison in its native range.

Fish & Wildlife Service also fails to consider that wild bison as a native wildlife species are at risk of genomic extinction.

Greater than 95% of the 500,000 bison in North America today reside in private ownership (Boyd 2003). Less than 1.5% of bison are genetically *Bison bison* (Freese et al. 2007).

Forced cattle-bison breeding experiments to commercially exploit survival attributes of wild bison resulted in widespread introgression of cattle genes in private and public trust bison herds (Polziehn et al. 1995; Ward et al. 1999; Schnabel et al. 2000; Halbert 2003; Halbert and Derr 2007).

Current genetic studies identified only 3 populations that can be genetically considered Bison bison: Yellowstone, Wind Cave and Grand Teton (Halbert 2003). In the United States, only one wild bison population has continuously occupied its native range since prehistoric time: the Yellowstone bison (Gates et al. 2005).

Loss of genetic diversity stemming from the near extinction of the species (Boyd and Gates 2006) coupled with extreme loss of historic bison range (Hornaday 1889; Boyd 2003), raises the risk of ecological extinction for wild bison (Freese et al. 2007).

The extensive prevalence of cattle genes in bison populations (Polziehn et al. 1995; Ward et al. 1999; Halbert 2003), habitat fragmentation, loss of natural habitats and isolated populations (Boyd 2003), limited range and population sizes, artificial selection, intensive management, unnatural confinement to fenced ranges, absence of predators, introduction of non-native disease (Freese et al. 2007) are some of the risk factors of ecological extinction that the Fish & Wildlife Service failed to consider in its finding.

Curtis Freese along with several scientists write: "Small herd size, artificial selection, cattle-gene introgression, and other factors threaten the diversity and integrity of the bison genome. In addition, the bison is for all practical purposes ecologically extinct across its former range, with multiple consequences for grassland biodiversity. Urgent measures are needed to conserve the wild bison genome and to restore the ecological role of bison in grassland ecosystems." (Freese et al. 2007)

"Today, the plains bison is for all practical purposes ecologically extinct within its original range." (Freese et al. 2007)

Fish & Wildlife Service utterly failed to discuss the ecological importance of bison and the vital, keystone role they play in maintaining ecosystem health and function. The United States Congress had intended that the national Endangered Species Act protect not only endangered species but the ecosystem they reside in: "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved."

(http://www4.law.cornell.edu/uscode/html/uscode16/usc_sec_16_00001531----000-.html)

Extirpation of bison from their native range is an indicator that the prairie ecosystem they played a part in forming is also at risk of extinction (Knapp et al. 1999).

"Knowledge of the bison's role in tallgrass prairies is lacking because the extent of this grassland and the abundance of its dominant ungulate have declined dramatically and in tandem over the last 150 years." (Knapp et al. 1999)

"Bison were a keystone species of the prairie ecosystem; significantly affecting the way the prairie grassland ecosystem evolved and playing an important role in maintaining it. Wild bison remain ecologically extinct in Montana. The State of Montana Department of Livestock has prevented the natural dispersal of wild bison into Montana from Yellowstone National Park because of disease issues while no attempts are underway to restore the species outside of this controversial region. Current management of private, state and Federal bison herds is leading towards domestication of bison that threatens their wild character and limits important natural selection processes." (Wildlife Society 2000)

Crucially, grazing by bison can reverse the loss of native grassland species and the disruption of grassland ecosystem structure and function caused by their extirpation (Collins et al. 1998).

The Fish & Wildlife Service puts great faith in the "contingency measures" of the Interagency Bison Management Plan and its "successful management" to prevent the loss of the Yellowstone bison population.

The on-going slaughter of large numbers of wild bison by the state of Montana and United States National Park Service may threaten the genetic viability and integrity of the Yellowstone bison herd's subpopulation structure (Halbert 2003).

Scientists have identified distinct breeding grounds that help maintain genetic diversity within the Yellowstone bison herd (Gardipee 2007; Olexa and Gogan 2007). However, there is no evidence that the interagency plan has considered bison subpopulation structure in its management decisions and actions (Peter Gogan United States Geological Service pers. comm.).

"The current practice of culling bison without regard to possible subpopulation structure has potentially negative consequences of reduced genetic diversity and alteration of current genetic constitution both within individual subpopulations and the overall YNP [Yellowstone National Park] bison population." (Halbert 2003)

Loss of entire matrilineal bison groups, who have fidelity to natal sites and rutting territory, could alter and limit knowledge of destination and migratory routes retained for each bison subpopulation.

"Since bison are known to naturally assemble in matriarchal groups including several generations of related females and the most recent calf crop (Seton

1937; Haines 1995), it is possible that the culling of bison at the YNP boundaries is non-random with respect to family groups, a practice that over sufficient time may lead to systematic loss of genetic variation." (Halbert 2003)

Yellowstone National Park and the several federal and state agencies involved in executing the Interagency Bison Management Plan have not adapted to emerging science on Yellowstone bison herd dynamics, ecology and subpopulation structure (Peter Gogan United States Geological Service pers. comm.), raising the risk that irreversible genetic harm may have already occurred or is taking place within America's last herd of wild bison.

"The caveat, however, is that caution must be practiced in the management of populations with substructure to ensure the maintenance of both subpopulation and total population variation. The YNP bison population has not previously been managed with this consideration in mind. For example, 1,084 bison were removed from YNP in the winter of 1996-97, representing a 31.5% decrease in total population size. Even more troubling, however, is the inequality in the reductions across the Northern and Central herds. While the Northern herd suffered a loss of approximately 83.9% (726/825), the Central herd was reduced by only around 13.9% (358/2,571; Peter Gogan pers. comm.). If in fact the Yellowstone bison population is represented by 2 or 3 different subpopulations, disproportionate removals of bison from various subpopulations might have detrimental long-term genetic consequences." (Halbert 2003).

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