

July 23, 2010

Superintendent Suzanne Lewis
Yellowstone National Park
Bison Ecology and Management Office, Center for Resources
P. O. Box 168
Yellowstone National Park, WY 82190

RE: Brucellosis Remote Vaccination Program, DEIS Comments

Dear Superintendent Lewis,

Thank you for the opportunity to comment on the Park's remote vaccination program for bison.

Please consider all of our joint comments in detail including the development of alternatives that best protect America's last wild buffalo and Yellowstone National Park, complete disclosure of impacts, and provide the American people an opportunity to review additional and new information missing from your analysis.

Buffalo Field Campaign was founded in 1997 to stop the slaughter of Yellowstone's wild buffalo herd, protect the natural habitat of wild free-roaming buffalo and native wildlife, and to work with people of all Nations to honor the sacredness of the wild buffalo.

Buffalo Field Campaign is located in West Yellowstone, Gallatin County, Montana, and is supported by volunteers and citizens in Montana, Idaho and Wyoming, and by people from around the world who value America's native wildlife and the ecosystems upon which they depend, and enjoy the natural wonders of our irreplaceable public lands.

As an organization and on behalf of our members, Buffalo Field Campaign is concerned and actively involved with protecting the last remaining descendants of indigenous bison in North America to occupy their original range in the Greater Yellowstone ecosystem. Buffalo Field Campaign actively publicizes the plight of the bison, to end their slaughter by government agencies, and to secure long-term protection for viable populations of wild bison and year-round habitat in the Greater Yellowstone ecosystem. Buffalo Field Campaign actively engages the American public to honor our cultural heritage by allowing wild buffalo to exist as an indigenous wildlife species and fulfill their inherent ecological role within their native range, and serve as the genetic wellspring for future wild, free ranging bison populations.

Western Watersheds Project (WWP) is a regional, membership, not-for-profit conservation organization, dedicated to protecting and conserving the public lands and natural resources of watersheds in the American West. WWP has our headquarters at the Greenfire Preserve in Custer County, Idaho; and is supported by more than 1,400 members located throughout the United States, including in Montana. WWP's Montana office and two Montana staff, are located in Missoula, Montana. WWP also has offices and other staff in Boise, Hailey, and Salmon, Idaho, Wyoming, Utah, Arizona, and California. Through these staff, and with the assistance of numerous unpaid members and supporters, WWP is deeply involved in seeking to improve livestock grazing management on federal and state public lands, including on federal lands. WWP is also involved in seeking to protect native wildlife and their habitat across the west, including bison and sage grouse.

Western Watersheds Project, as an organization and on behalf of our members, is concerned with and active in seeking to protect native, wild bison, and to protect and improve bison habitat in the Greater Yellowstone Ecosystem (GYE). WWP is also active in reviewing and commenting upon agency decisions and actions and otherwise participating in efforts to eliminate conflicts between livestock and native wildlife such as bison; in publicizing accurate information about the minimal threat of brucellosis, promoting alternative management that would protect bison with minimal or no threat of brucellosis transmission; promoting and educating the public and government agencies about the ecological, economic, and other benefits of protecting wild, free-roaming bison and their habitat.

Western Watersheds Project, as an organization and on behalf of our members, is concerned with and active in seeking to protect sage grouse and their habitat across the west, including in the GYE. WWP is actively seeking Endangered Species Act (ESA) protection for the imperiled sage grouse, and has litigated to enforce federal agency protective obligations in land management decisions.

THE PARK IS REQUESTED TO EVALUATE NEW ALTERNATIVES AND DISCLOSE IMPACTS OF ALTERNATIVE D A WILD BUFFALO TRUST ALTERNATIVE FOR THE PUBLIC'S REVIEW AND CONSIDERATION.

Buffalo Field Campaign and Western Watersheds submits a request to Yellowstone National Park to develop an alternative in your Draft Environmental Impact Statement Brucellosis Remote Vaccination Program for Bison in Yellowstone National Park to buyout cattle in Yellowstone, Madison, and Gallatin River valleys.

Erecting wildlife proof fencing around cattle would also prevent commingling with wild elk and buffalo.

Such an alternative strategy would effectively address brucellosis risk management by removing potential host cattle in bison's native range and using fencing that actually deters elk and bison from commingling with cattle, if that is your stated concern.

The Park is aware of alternatives that are less harmful to bison and Yellowstone National Park:

Joe Escodo; Mike Soukup QUESTIONS FOR THE RECORD Secretary of the Interior Fiscal Year 2007 Budget Hearing Wednesday, March 1, 2006:

“Brucellosis transmission from bison to cattle is the reason that NPS and APHIS have given for this massive slaughter. However, soon-to-be-published research conducted by the Consortium for Conservation Medicine suggests that in the northern special management area risk is high only in an extremely small area (a single ranch) and only during the time of year when animals are pregnant or giving birth, or in extreme winters, or when bison populations have boomed locally. Further, the research concludes that there are many simple common-sense solutions to this perceived problem that would do far more to reduce interactions between wild animals and domestic cattle than an all out slaughter of over 1/5 of the wild bison herds.” (Attached and incorporated by reference, YNP_Reply to Congressional questions DOI House Appropriations March 8 2006)

Based on numerous illegalities, deficiencies, costs without benefits, waste, intrusive and harmful measures being undertaken by the Park targeting wild buffalo, and given the fact that vaccinating wildlife is ineffective, costly, harmful, intrusive, and culturally unacceptable, Yellowstone National Park is obligated to develop environmentally sound alternatives and disclose impacts to buy out cattle that graze in the buffalo's range.

Yellowstone National Park anticipates spending \$9 million taxpayer dollars vaccinating buffalo inside Yellowstone National Park. (DEIS, 173-176) This funding could be allocated to buy out cattle on private lands and conserve the habitat in perpetuity for native wildlife. Alternatively, this funding could be used to erect wildlife proof fencing where cows continue to graze.

Components of an effective cattle buyout would result in:

- High priority habitats being conserved by buying out cattle allotments in wildlife migration corridors in the Gardiner basin, Hebgen basin and Taylor Fork.

- Connectivity of habitats for wildlife migrating in the Yellowstone, Madison, and Gallatin River valleys.
- Erection of wildlife proof fencing around cattle cows and exclusion of elk and bison from commingling with domestic livestock.

Prepare a cost/benefit analysis of Alternative D with alternatives developed by the Park in your analysis.

Free range dispersal of buffalo where cattle no longer graze across the landscape would allow buffalo access to forage to meet their nutritional needs and maintain healthy populations for future generations.

The WILD BUFFALO TRUST ALTERNATIVE D meets the Park's mandate from the U.S. Congress to conserve and leave buffalo "unimpaired for the enjoyment of future generations."

The WILD BUFFALO TRUST ALTERNATIVE D also follows Park management policies and directives requiring "protection of ecological processes and native species in a relatively undisturbed environment."

Wild Buffalo Trust Alternative D is an ecosystem-based, ecologically sound alternative and should be fully considered in a supplemental environmental impact statement for the public to review and comment on.

Wild Buffalo Trust Alternative D is consistent with the Park "adapting" the course of your current management regime to reflect the environmentally preferred alternative of your original decision:

"As a summary, the public was overwhelmingly in favor of more natural management of the bison herd, with minimal use of actions they felt more appropriate for livestock such as capture, test, slaughter, vaccinating, shooting, corralling, hazing, etc. They also indicated extremely strong support for the management and/or restriction of cattle rather than bison given a choice between the two. The public also supported the acquisition of additional land for bison winter range and/or the use of all public lands in the analysis area for a wild and free-roaming herd of bison. A large number of commentors also expressed opposition to lethal controls, and in particular the slaughter of bison.

Alternative 2 would minimize human intervention, discontinue the use of capture, test and slaughter, focus on managing cattle rather than bison, and result in the largest area of acquired land for winter

range. It also would offer the largest benefits to most environmental resources analyzed in the EIS, with alternative 3 offering some benefits to many of these same resources as well. The management emphasis and environmental advantages of alternative 2 are most consistent with the overwhelming majority of public comment. In addition, the benefits to environmental resources as analyzed in the FEIS as well as those analysis [sic] of Section 101 criteria indicate alternative 2 as environmentally preferred. Based on this combination of public commentary, FEIS analysis, and adherence to the principles of Section 101 of the National Environmental Policy Act, alternative 2 is identified as the environmentally preferred alternative.” (*ADAPTIVE MANAGEMENT, 21*)

Buffalo Field Campaign and Western Watersheds respectfully requests an extension of public comment period (currently ending July 26, 2010) in order for the Park to study and develop and disclose to the public the results of Alternative D and give the American people time to review and comment on environmentally preferred alternatives that conserves, preserves and restores wild bison in the greater Yellowstone ecosystem.

THE PARK IS REQUESTED TO FULLY CONSIDER, EVALUATE, AND DISCLOSE NEW INFORMATION AND SCIENCE, INFORMATION WITHHELD, OR NOT CONSIDERED, AND REQUESTED TO BE EVALUATED AND DISCLOSED FOR FURTHER PUBLIC REVIEW AND COMMENT.

Vaccinating buffalo is a harmful, costly, wasteful and failed strategy as indicated by Yellowstone National Park's own evidence.

SRB51 vaccine causes abortions in females (Palmer et al. 1996). (DEIS, 37, 164)

The Park intends to spend over \$9 million taxpayer dollars over the next 30 years on a vaccine that is ineffective, experimental, not approved for use in wild buffalo. Under Yellowstone National Park's modeling scenario, "approximately 25% of the target group received protection from the vaccine." (DEIS, 189)

Yellowstone National Park admits in your impact statement: "experiments conducted by Texas A&M University concluded that vaccination with Strain RB51 provides no protection from aborted pregnancies." (DEIS, vi)

Yellowstone National Park also admits vaccination is "unlikely to reduce the seroprevalence of brucellosis in wildlife sufficiently (i.e., near zero) to alter the perceptions of livestock operators, producers, and regulators regarding the risk of brucellosis transmission to cattle from wildlife." (DEIS, 21)

The Park needs to evaluate and disclose then, how and why your stated purpose and need for action is undermined by these “perceptions” and consider why it should terminate your bison vaccination program altogether.

Yellowstone National Park’s remote vaccination program for wild bison is in conflict with and violates your mandate “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” (16 U.S.C. 1; DEIS, 10)

Clearly, proceeding with, by the Park’s own evidence, an ineffective vaccine SRB51 and an intrusive, long-term and perhaps permanent program to vaccinate wild bison within the Park, will leave a diminished, impaired wildlife species for generations now and into the future.

Loss of wildlife values, which the Park needs to fully consider, evaluate and disclose for public review, include impairment to the wild character and genetic integrity of America’s only wild population of American bison to continuously occupy and persist in their native habitat. (DEIS, 1)

For the Park to engage in the denouement of this significant, irreplaceable indigenous wildlife by managing the species like livestock is an irreparable harm to wild buffalo, the ecosystem upon which they depend, and to people everywhere who visit Yellowstone National Park to view wild buffalo in their native habitat.

National Park Service vaccination of wild bison inside Yellowstone National Park threatens bison’s wildness, natural selection, evolutionary adaptation, and distinction as a wildlife species, and is an inappropriate use of the Park.

Yellowstone National Park's vaccine could jeopardize America's last wild buffalo population.

Caving in to livestock industry pressure and its attendant bureaucracies, Yellowstone National Park is willing to further jeopardize the nation's last wild population of American bison by basing your decision to vaccinate buffalo on "uncertainty", "incomplete and unavailable" science. (DEIS, Chapter 4.2 in general)

According to Yellowstone National Park's impact statement:

"using less effective vaccines or delivering the vaccine to a relatively small proportion of the eligible animals can lead to adaptive changes in the disease pathogen that select for variants

able to evade the immunological response induced by the vaccine. These vaccine-adapted variants can then spread in the population, reduce the efficiency of the vaccination program, and result in longer-term evolutionary changes in the host-pathogen association." (DEIS, 73)

Additionally, Yellowstone National Park admits:

"These aspects of SRB51 and the life history of *B. abortus* may provide a selective advantage for bacteria whereby SRB51 vaccination becomes ineffective leading to an increase in transmission potential, stronger persistence within the bison host, and greater pathogenicity (i.e., virulence or degree of intensity of the disease produced by a pathogen). This potential adaptation of *B. abortus* to SRB51 could be exacerbated if delivery via remote vaccination is hampered due to logistics or bison behavior and only a relatively small proportion of the eligible females are vaccinated." (DEIS, 73)

The Park needs to fully disclose how vaccinating buffalo with SRB51 could lead to increased levels of *Brucella abortus* transmission in the Yellowstone ecosystem, more virulent forms and stronger persistence of *Brucella abortus* in wild buffalo.

Yellowstone National Park does not disclose or admit what these unknown effects would entail for individual buffalo and the buffalo population as a whole. This lack of analysis needs to be rectified by the Park disclosing what could go wrong – and almost always does go wrong – with your bison vaccination program.

Evaluate and disclose scenarios where the Park's vaccination program results in: 1) more virulent, adaptive forms of brucellosis, 2) stronger, persistent variants of the disease organism in wild bison, and 3) increased levels of more virulent and persistent forms of brucellosis in wild bison.

Vigilant surveillance might detect this irretrievably bad result for buffalo, but there is no way to "mitigate" a more virulent, persistent, infectious disease arising from Yellowstone National Park's vaccination program. Evaluate and disclose the worst-case scenario and impacts on wild bison.

If implementation of so-called adaptive management under the IBMP is any guide, (Attached and incorporated by reference, GAO_YELLOWSTONE BISON Interagency Plan and Agencies' Management Need Improvement to Better Address Bison-Cattle Brucellosis Controversy) the public is not assured by the

Park's use of adaptive management to attempt mitigation of undesirable consequences of proceeding with SRB51 vaccination of wild bison:

“Similar uncertainties exist for all vaccination programs and the surveillance program (Appendix H) and adaptive management process will be used to mitigate potential adverse effects.” (DEIS, 74)

The U.S. Government Accountability Office's report was highly critical of the Park's adaptive management plan, multiple and on-going deficiencies, failures, and waste of taxpayer dollars and unnecessary impacts to our native wildlife and Parks. If adaptive management has any prospect of mitigating adverse effects to wild bison, than the Park needs to take a hard look at your track record to date, and evaluate and disclose these lessons. (Quotes are from GAO's report).

“The interagency bison management plan does not have clearly defined, measurable objectives, and the partner agencies share no common view of the objectives. Consequently, the agencies have no sound basis for making decisions or measuring the success of their efforts . . . Additionally, the agencies have not designed a monitoring program to systematically collect data from their management actions, nor have they set forth a coordinated research agenda to resolve remaining critical uncertainties related to bison and brucellosis-related issues.”

According to the GAO, the bison plan is nearly all paid for by American taxpayers with U.S. treasury expenditures of \$3,222,345 in fiscal year 2006.

Following release of the GAO report, House Natural Resources Committee Chairman Nick J. Rahall said: “It has been clear for some time now that the current Interagency Bison Management Plan is not working.” Rep. Maurice Hinchey added: “The entire process must be reorganized and opened up for oversight by Congress and the public.”

Among the key findings and conclusions in their report, the GAO found:

- “. . . the agencies lack accountability among themselves and to the public, and it is difficult for the public to obtain information without attending the meetings or contacting each individual agency.”
- “In the absence of a systematic monitoring program, the agencies have lost opportunities to collect data that could help resolve important uncertainties. The plan states that all captured bison are to be tested for exposure to brucellosis, but fewer than half of those captured since 2001 have been tested. For example, in early winter

2006, the agencies lost an opportunity to collect scientific data on about 900 bison. Park Service officials captured these bison as they attempted to leave through the park's northern boundary. The bison were consigned to slaughter without being tested at the capture facility because the Park Service determined that they would not be used for research and could not be held in the capture pens until the spring for release back into the park.”

- “The plan specifically states that it does not identify how the agencies will measure success or failure. In fact, several agency officials acknowledged that they had not identified metrics or parameters for measuring how well they are meeting the plan's stated goals.”
- “Park Service, APHIS, and Montana Department of Livestock officials also told us that they are not testing any hypotheses or the assumptions on which the plan is based. Furthermore, the agencies have no process to collectively review new scientific information related to brucellosis, much less to assess how the plan may need to be changed to reflect the latest information.”
- “. . . the federal government continues to spend millions of dollars on uncoordinated management and research efforts, with no means to ensure that these efforts are focused on a common outcome that could help resolve the controversies.”

The GAO also reported that the agencies have “not adequately implemented adaptive management,” the basis for the agencies’ decision to implement a tiered step disease risk management approach to separate bison and cattle in time and space.

The GAO report discovered that the agencies are failing to follow their promise to test bison destined for slaughter - and resolve an uncertainty in their testing which, to date, does not determine infection or the health of bison: “According to the U.S. Geological Survey, a published study by researchers at the Idaho National Engineering and Environmental Laboratory (now known as the Idaho National Laboratory) has shown that it is possible to detect *Brucella abortus* DNA in blood samples rather than antibodies to *Brucella abortus* and thereby determine actual infection . . . Current brucellosis tests involve determining whether a blood sample taken from an animal contains antibodies to the brucellosis bacterium. The presence of these antibodies indicates that the animal has been exposed to the bacterium in quantities sufficient to trigger antibody production but does not necessarily mean the animal is infected with, or ill from, the disease itself.”

To date, the agencies have not pursued testing that could determine infection from immune response to exposure, nor have they investigated how their plan is impacting bison genetic health and natural resistance to diseases, a major research gap identified by the agencies in your decade-old environmental analysis. (See ADAPTIVE MANAGEMENT, FEIS Volume I, Appendix D, pages 728-732; Declaration Robert Lindstrom)

“The agencies have no estimate regarding how long it will take to meet the conditions for starting step two, nor have they revised their estimated dates for reaching step three, which was expected by winter 2005-2006.”

Failure by the agencies to resolve that condition has resulted in over 2,600 wild bison being captured for slaughter inside Yellowstone National Park's Stephens Creek trap in the Gardiner Basin.

In testimony before the US Congress, Robin M. Nazarro, Natural Resources and Environment Director for the GAO, said the plan remains mired in step one “primarily because cattle continue to graze” on the Royal Teton Ranch, lands owned by the Church Universal and Triumphant. “Implementation of the IBMP remains in step one because cattle continue to graze on RTR lands north of Yellowstone National Park and west of the Yellowstone River . . . Until cattle no longer graze on these lands, no bison will be allowed to roam beyond the park's northern border, and the agencies will not be able to proceed further under the IBMP.”

Despite the Church Universal and Triumphant removing all cattle from the Royal Teton Ranch, and the Park contributing over one million dollars for a 30-year lease agreement to permit a few, trapped, vaccinated, radio-collared, bison to navigate an electrified fence to seasonally graze on habitat already purchased downriver from the Church, not one wild buffalo has benefited. (Attached and incorporated by reference, Briefing Paper_RTR land deal)

Finally, the GAO pointed out the most overlooked fact of the IBMP: the so-called adaptive management plan has not protected Montana cattle from potential brucellosis infection by elk, and Montana has lost its brucellosis free status since the plan went into effect in 2000.

“Multiple recent suspected transmissions of brucellosis from elk to cattle in the area have highlighted the importance of addressing this disease in its broader wildlife and ecological context, and doing so could have significant implications for the future management of Yellowstone bison.” (Attached and incorporated by reference, Briefing Paper_GAO Report on Yellowstone bison)

Yellowstone National Park staff responsible for bison management have also pointed out the poor execution of adaptive management by your agency partners:

“It seems to me that FWP [Montana Fish, Wildlife & Parks] and DOL [Montana Dept. of Livestock] are planning to implement adaptive bison management in the Gardiner Basin as they have conducted non-adaptive bison management in the West Yellowstone basin for years . . . with low levels of reliable knowledge, poor public relations, and overly-reactive responses across the board.”
(Attached and incorporated by reference, YNP Plumb to Lewis_Field operations team meeting, re 25 bison experiment January 26 2009)

It is an unacceptable harm and risk that Yellowstone National Park's vaccination program could jeopardize the viability and future of our last wild buffalo population.

Vaccinating wild buffalo is part of the framework of the Interagency Bison Management Plan that treats wild buffalo like livestock and not as the national icon they are - AMERICA'S only wild buffalo to continuously occupy their native range.

The Park needs to fully evaluate and disclose how your cumulative, on-going actions impact the wild, free natural state of America's last bison.

Evaluate and discuss how the Park's actions:

- Honor bison with respect for their cultural and spiritual significance to the Indigenous people of this continent.
- Further the potential to educate our communities regarding sustainable co-existence between humans and wildlife.
- Fulfills buffalo's inherent ecological role within their native range.
- Allows buffalo to exist within their innate social structure and functional herd dynamic.
- Lets buffalo live out their natural life cycle as a wild species.
- Exist as a genetic wellspring for future wild free ranging bison populations.

The Wildlife Society of Montana has cautioned the trustees of our wild bison that their management activities are leading towards domestication, e.g. loss of legal status and identity as a wildlife species:

“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.”
(Attached and incorporated by reference, The Wildlife Society_Position Statement of the Montana Chapter of The Wildlife Society on Wild Bison in Montana).

Please include in your analysis and disclose the extent and intensity of the Park’s participation in the continued and on-going harassment of bison off habitat, capture for slaughter, orphaning calves for a quarantine experiment that commodifies 3 of 4 offspring for America’s largest domestic bison rancher Ted Turner, that inhumanely confines and breaks social groups in capture pens, radio collaring, vaginal telemetry, marking wild buffalo with ear tags and paint, and now vaccination of half the population for decades with an unapproved, experimental, ineffective, intrusive, costly vaccine that causes pregnant females to abort their calves, among other known cumulative impacts on wild bison and their habitat.

Evaluate and disclose how the Park’s livestock management techniques, including vaccinating wild populations, impairs buffalo’s wildness, leads to unnatural selection, e.g. disease risk management actions that render wild bison to slaughter houses.

Compare the techniques the Park intends to use on an irreplaceable wildlife species inside Yellowstone National Park with techniques used on commercial, domesticated bison.

Disclose the implications of using these techniques on other species in the ecosystem that carry exotic diseases?

Why are buffalo singled out in your disease management paradigm when brucellosis is abetted, for example, by federal and state programs that artificially feed and unnaturally congregate native wildlife in National Refuges and Forests?
(Attached and incorporated by reference, Bridger-Teton National Forest_Press Release Elk Feedground Permit Upheld on Bridger-Teton)

What defines a wild buffalo population?

Describe the Park’s interpretation of wild, free ranging species in their native habitat.

Define what an unimpaired buffalo population means for Yellowstone National Park.

Evaluate and disclose how the Park's cumulative actions are contributing to the conservation of the wild specie and preventing impairment to the population, and subpopulation or distinct breeding groups, protecting natural processes and associated species in the ecosystem.

It is our position that all of the Park's techniques including vaccination irreparably harm the identity and evolutionary adaptations of American bison as a wildlife species ranging freely in their native habitat, and is an unacceptable impact inside Yellowstone National Park.

In-Park vaccination, and the Interagency Bison Management Plan from which it originates, diminishes buffalo's ability to live out their life history as a wildlife species and remain wild and free in their native range. This is an unacceptable impact and impairment of Yellowstone National Park, and to wild bison and associated species in the ecosystem.

Yellowstone National Park's remote vaccination program for wild bison is in conflict with and violates Park management policies and directives including The Master Plan of 1974, Statement for Management in 1991 for Yellowstone National Park, and NPS Management Policies 2006 that "require the protection of ecological processes and native species in a relatively undisturbed environment." (DEIS, 11)

Every Autumn and in May and June for eighteen weeks over a 30 year period wild buffalo will be closely approached by Park personnel inside Yellowstone National Park and shot with SRB51 vaccine approved for use in cattle, not approved or appropriate for wild buffalo. (DEIS, 173, 33)

Vaccinated buffalo will be shot with paint balls or implanted with tags under their hides. (DEIS, 27) Considering that the Park intends to vaccinate half the population annually for a period of 30 years, thousands of bison will bear such markings and tags.

At what point will the bison population inside Yellowstone National Park all bear tags from the Park's vaccination program?

How does the Park's management differ from tagging domesticated ranched bison?

Additionally, the Park intends to capture bison “as necessary” inside Yellowstone National Park at the Stephens Creek trap as part of your brucellosis surveillance program:

“Thus, as necessary, NPS staff may also capture bison in the Stephens Creek capture facility or dart them with immobilizing drugs to sample their serostatus for brucellosis.” (DEIS, 27)

Evaluate and disclose likely injuries and mortalities to bison subject to hazing (forced removal of bison from habitat they choose to be on) capture, testing and vaccination inside Yellowstone National Park at Stephens Creek.

"The bison had been held at the Stephens Creek facility near the park's northern boundary since March 22. During this 26-day period, no bison were sent to slaughter. Two cows aborted calves and two other cows died. One orphaned newborn calf and one sick, suffering yearling were euthanized. Four cows were tested and collared. No other bison were tested." (Attached and incorporated by reference, YNP Eric Morey_Incident Record April 2006)

Under the Park’s vaccination program, how many bison are likely to be injured or killed during such operations?

How many bison have been injured or killed during hazing and capture operations at Stephens Creek trap since 2000?

How many bison have aborted or miscarried while held at Stephens Creek since 2000?

Under the Park’s vaccination program, how many bison may abort or miscarry, due to handling, stress, and disruption of social bonds in confinement at Stephens Creek?

If the Park deems capture for surveillance necessary to carry out your vaccination program, then you need to fully consider, evaluate and disclose cumulative impacts of “hazing” bison from habitat especially during winter and calving seasons.

"These forced movements can place additional stress on chronically undernourished females and vulnerable newborn calves; especially during years of persistent deep snow pack on summer ranges.

Natural migration of bison back into the park typically begins in June and follows the progressive green-up of vegetation at higher elevations, similar to other ungulates in the region." (Attached and incorporated by reference,

YNP_Implications of Bison Birth Synchrony and Brucella Persistence on Adaptive Management)

“On April 24, 2003, 35 mixed bison, including a two-day-old calf, were hazed from Horse Butte back across the park boundary. Sixteen (16) people took part in the operation: two NPS [National Park Service], seven DOL [Montana Dept. of Livestock], three FWP [Montana Fish, Wildlife & Parks], two FS [U.S. Forest Service], and two Gallatin County Sheriff's Deputies.

On April 27, 2003, a total of 77 bison were hazed back into the park. Twenty-three bison (including 1 calf) were hazed from along the Madison River, 53 were hazed from Rainbow Point road along Highway 191, and 1 bull was hazed from the Duck Creek area. One DOL employee conducted the hazing with traffic control assistance provided by West Yellowstone PD [Police Department].

On April 30, 2003, a total of 213 bison were hazed back into the park. Ninety-two bison were hazed from the Madison River/Rainbow Point road, 98 were hazed from Horse Butte, and 23 bulls were hazed from the Duck Creek area. Thirteen people took part in the operation: two NPS, 1 USFS, 2 FWP, and 8 DOL. During the hazing operation, the hazing crew detected a bison calf mortality. The calf appeared to be already dry and clean and it was collected for necropsy at the FWP laboratory in Bozeman, MT. Necropsy revealed that the calf was stillborn and the lungs had never inflated.



Injured bison calf; hazing operation underway.

On May 1, 2003, a total of 71 bison were hazed from the Madison River, Madison Arm, Horse Butte, Yellowstone Village and Bakers Hole areas back into the park. Eleven people assisted with the operation: 2 NPS, 1 FWP, and 8 DOL." (Attached and incorporated by reference, YNP_YELLOWSTONE BISON POPULATION MANAGEMENT ACTIVITIES)

Clearly, buffalo are subject to repeated forced removal by the Park and it is harming the buffalo through depriving the wildlife species of forage at the peak of calf season, exhausting and injuring buffalo by forcing the species to flee their habitat repeatedly for many miles, and for days, and weeks on end.

Evaluate and disclose these cumulative impacts on wild bison, associated species, and the Park's resources.

How does the Park intend to mitigate increased calf mortality and other harms to wild bison, and avoid these harmful consequences in pursuit of your vaccination program?

Since 2000, thousands of wild bison have been captured inside Yellowstone National Park for shipment to slaughterhouses, and hundreds of operations targeting the forced removal of bison from habitat have been undertaken under the Interagency Bison Management Plan. (Attached and incorporated by reference, BFC_IBMP bison kill report; Briefing Paper_IBMP Update)

"Greatest hazing distance: I would suggest asking Brian Helms, Kevin Dooley, or Eric Morey as they were involved with nearly all hazings. I believe they hazed a group from Yankee Jim area - not sure exactly where back to Stephens Creek flats - about 5-8 miles I think. The greatest distance on the west boundary may be 9 miles on the 14th or 15th of May from the Horse Butte area to 7-mile meadow.

Date we shifted operations to population conservation: I'm not sure what shift you mean..hope this provides the answer. 3/25/08 is the day we began to test and hold bison. 4/8/08 is the day we began to hold positive adult cows if they were very pregnant, but continued to ship other bison. 4/14/08 was the last day bison were consigned and they were shipped to slaughter on 4/15/08.

- 1636 bison captured (probably closer to 1645 based on adding shipped bison, quarantine, morts [sic], holds, etc. but 1636 is what was reported as captured)

[Park report figures showing: 134 bison hazing operations, 1,794 bison captured, 1,218 bison slaughtered and not tested, 193 bison slaughtered and tested negative].

Stephens Creek Capture Facility Birthing Summary

- 1st bison was born on 4/6/2008 in the outer holding pen to a collared cow (Yell-050)
- Last bison was born on 5/16/2008 in the collar holding pen to a seropositive pregnant cow held back because she was very pregnant at last shipment to slaughter date
- The middle 80% of calves were born from 4/20/2008 to 5/3/2008
- 80 total calves were born within the Stephens Creek Capture Facility (that survived, 4 calves died after birth)
- 6 Abortions/Stillbirths occurred (4 in outer holding pen - 2 events sampled, both positive; 1 premature fetus in collar pen, no sample; 1 in negative holding pen - sampled negative)
- 1 breached birth occurred in the negative holding pen
- 4 calves died 2-6 days after birth" (Attached and incorporated by reference, YNP_Bison Hazing and Capture Operations Winter 2007_2008)

In one season alone on the western boundary in Hebgen basin, actions undertaken by the Park and your agency partners recorded 83 bison "hazing days" affecting 2,393 bison. (Attached and incorporated by reference, YNP and MDOL_West Boundary Area - FY05 Hazing)

From 2000-2007 the agencies recorded 1,013 bison hazing operations, 23 bison shootings, 2,568 total bison captured, 1,319 bison slaughtered and not tested, 6 bison slaughtered and tested negative. (Attached and incorporated by reference, YNP_Bison Hazing, Shootings, Captured, Tested, Not Tested, Slaughtered, Vaccinated, Quarantined, Pen Mortality 2000-2007)

"During 2001, 2004, and 2005, captured bison were tested for brucellosis and only exposed animals were sent to slaughter. Thus, few test-positive calves were culled. Conversely, bison were not tested before being culled during 2003 (244), 2006 (1,064), and 2008 (1,218). Thus, an unknown number of test-negative bison and more than 30% of calves were culled from the population during winters 2006 and 2008. Untested and brucellosis-exposed females approaching parturition were held for release during 2006.

More than 1,000 bison were culled from the population during winters of 2006 and 2008. A disproportionate level of calf-mother pairs were likely culled (Halbert, 2003; Geremia et al., 2009b), which could reduce rates of genetic recombination and lead to a higher probability of lost genetic diversity." (Attached and incorporated by reference, YNP White_Interagency Bison Management Plan - Expectations and Realizations)

Evaluate and disclose how cumulative impacts on bison's natural resistance to disease is compromised and conservation genetics diminished by the Park: 1)

removing bison based on antibody response using current diagnostic tests, 2) altering immune response to disease infection or exposure by SRB51 vaccination, 3) altering population dynamics, and 4) altering or harming vital population rates.

“In Appendix A of the ROD (i.e., Response to Comments on Final Environmental Impact Statement; Broad philosophical or approach issues; Topic: Bison Genetics), the National Park Service committed to "conducting additional research on genetics in bison. If the additional information suggests the management practices of the Joint Management Plan adversely affect genetic diversity, the NPS will review management actions and recommend adjustments" (page 51)." (Attached and incorporated by reference, YNP White_Adaptive Adjustments to the Interagency Bison Management Plan)

Before proceeding with vaccinating half the population, the Park needs to understand, evaluate and disclose how your actions are currently impacting bison genetic diversity.

Given that no genetic diversity baseline exists for bison inside Yellowstone National Park, science cautions you not to proceed in the face of uncertainty caused by the Park, and seek ways to “avoid or minimize adverse impacts on park resources and values to the greatest degree practicable (NPS 2006).” (DEIS, 79)

The Park should also begin research on how bison’s natural immunity prevents disease infection, and fully consider alternatives, such as acquiring habitat to meet the nutritional needs of the species ability to naturally resist disease infection, and eliminating bison hazing, capture operations and other actions that disrupt bison occupying their habitat, and induce stress, or lead to injuries and other harms to bison.

Fortunately, buffalo's unique genetic makeup and natural immunity to infectious diseases has served them fairly well since becoming infected with *Brucella abortus* from cattle 100 years ago. (DEIS, 43) The harm done to buffalo comes not from disease but taxpayer funded government-led slaughter of buffalo in the name of disease risk management in our National Parks and Forests.

The Park needs to take a hard look at how your cumulative actions are altering, interfering, artificially selecting for bison traits in the population, and for each distinct breeding group or subpopulation.

“Concerns about the impact of agency bison management removals on the genetic health of park bison are not new.²⁴ For example, at the May 21, 1998 meeting of the Executive Committee of the Greater Yellowstone Interagency

Brucellosis Committee, Dr. Joe Templeton of Texas A&M University summarized the results of a bison genetics study conducted to determine what is required for a species to survive after nearing extinction (as is the case with bison in North America). Dr. Templeton reported that “the genetic effects of a population bottleneck on a species are directly correlated to the length and severity of decline on the limited gene pool” and that “every animal which is removed from the breeding population can no longer contribute to the genetic variability of the herd.”²⁵ He cautioned the agencies that:

“The so called “random” shooting at the Montana’s borders is actually eliminating or depleting entire maternal lineages, therefore this action will cause an irreversible crippling of the gene pool. Continued removal of genetic lineages will change the genetic makeup of the herd, thus it will not represent the animals of 1910 or earlier.”²⁶

At the same meeting, Dr. James Derr, also of Texas A&M University, summarized the results of a bison genetics study designed to identify and characterize genetic variation from selected mitochondrial and nuclear gene regions in extant and historical bison populations. Dr. Derr reported that the Yellowstone bison herd maintains “reasonable genetic variation” and that the discovery (as also reported by Dr. Templeton) of naturally occurring resistance to brucellosis may be a viable long-term solution to the present bison management controversy. He cautioned, however, that “in order to fully explore this option (of a naturally occurring resistance to brucellosis) it is important to not reduce the bison population levels any further and risk the elimination of these disease resistant genes” and that “we should know the genetic makeup of bison before management decisions are made which may compromise the future of bison genetic health.”²⁷

²⁴ While concerns about the impact of removing matrilineal groups of bison through agency management actions is not new, much of the genetic information referenced in this petition is new and has yet to be considered by the NPS or its cooperating agencies.

²⁵ See Greater Yellowstone Interagency Brucellosis Committee Executive Committee Meeting Minutes, Cavanaugh’s on the Falls, Idaho Falls, Idaho, May 21, 1998.

²⁶ See also, Halbert (2003), “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.”

²⁷ More recently, in a March 23, 2008 article in the New York Times (“Anger Over Culling of Yellowstone’s Bison”), Dr. Derr expressed fear that some bison behaviors or traits, including the propensity to migrate, could be lost with the killed bison. Specifically, he was quoted as saying that “the great-grandmother,

grandmother, mother and daughter often travel together” and added that killing them “is like going to a family reunion and killing off all of the Smiths.” This would affect “the genetic architecture of the herd.” (Attached and incorporated by reference, AWI et al_Emergency Rulemaking Petition Yellowstone National Park)

The Park admits it does not know what level of harm it is subjecting bison to ten years into your adaptive management plan:

“If the population is structured by geographic area, then non-random removals may influence groups disproportionately and lead to a higher risk of losing unique alleles.” (DEIS, 154)

Evaluate and disclose Park research identified in your original decision, and the major research gaps remaining, for which the Park made commitments to in your adaptive management decision (ADAPTIVE MANAGEMENT, FEIS Volume I, Appendix D, pages 728-732)

However, some information does exist on bison population substructure and genetic diversity that was not disclosed in the Park’s analysis, and needs to be evaluated and disclosed:

“Previous genetic studies revealed that the GYA bison have a relatively high degree of genetic variation and no evidence of hybridization (Ward *et al.* 1999; Halbert and Derr 2007). The GYA bison may also represent an ecological microcosm of historic bison populations, thus requiring careful conservation efforts to ensure their persistence. Population genetic studies would provide crucial information for agencies charged with the management and conservation of these bison populations . . .

The highly differentiated population structure observed among the YNP breeding groups suggests female philopatry to natal ranges.

The Greater Yellowstone Area (GYA) bison represent two of only three remaining populations in the U.S. without hybridization with cattle (Freese *et al.* 2007; Halbert and Derr 2007). Knowledge regarding the distribution of genetic diversity among bison would help managers to conserve the diversity remaining in bison.

. . . the current YNP bison population may be carrying on historical movement patterns of their ancestors, which in turn has contributed to the pattern of genetic differentiation we observed with mtDNA haplotypes.” (Attached and incorporated by

reference, Gardipee_Thesis DEVELOPMENT OF FECAL DNA SAMPLING METHODS TO ASSESS GENETIC POPULATION STRUCTURE OF GREATER YELLOWSTONE BISON 2007)

“Yellowstone bison can be characterized as a single population with two distinct breeding groups or subpopulations. Analyses and models estimate that 1000-2000 bison likely are needed in each of the central and northern herds to retain 90-95% of genetic heterozygosity and rare alleles over 200 years.

A spatially-explicit model for the Yellowstone system indicated the central and northern bison herds have not reached a theoretical food-limited carrying capacity of approximately 2400 in the northern herd and 3800 in the central herd.” (Attached and incorporated by reference, YNP_State of Knowledge – Adapting the IBMP based on New Information)

And we also know how unique and rare it is to have wild bison that retain their identity as a wildlife species and inhabit Yellowstone National Park, briefly mentioned in your analysis. (DEIS, 1, 154). The Park needs to perform additional scientific evaluation and disclose how few wild bison remain in the public domain:

“Nuclear introgression was assessed in 14 chromosomal regions through examination of microsatellite electromorph and sequence differences between bison and domestic cattle. Only one population was identified with domestic cattle mitochondrial DNA introgression. In contrast, evidence of nuclear introgression was found in 7 (63.6%) of the examined populations.

The apparent success of the bison recovery efforts over the past 150 years is threatened by domestic cattle introgression. Hybrid species do not have taxonomic status and are not protected by the Endangered Species Act (O'Brien and Mayr 1991).

The combined results of this study and those of Ward et al. (1999) and Halbert et al. (2005) indicate that relatively few bison populations exist without evidence of domestic cattle introgression, and even fewer have been examined with appropriately large sample sizes to warrant statistical confidence in the detection limits (WC [Wind Cave] and YNP [Yellowstone National Park] only).” (Attached and incorporated by reference, Halbert and Derr_A Comprehensive Evaluation of Cattle Introgression into US Federal Bison Herds)

And we also know how important the bison is as a keystone species to plant and wildlife diversity, yet the wild species is currently extinct in more than 99% of

their original range, factors that need to be evaluated and disclosed in the Park's analysis:

“Three hundred years ago, bison ranged across the Great Plains in the tens of millions (Shaw 2000), reached from the Arctic Circle to Mexico and from Oregon to New Jersey (Hall & Kelson 1959), and were essential to the ecology of grassland systems and the economies and spiritual lives of the people that dwelled in those grasslands and other places (Haines 1995). Bison wallowed, rubbed, pounded, and grazed the prairies into heterogeneous ecological habitats; they converted vegetation into protein biomass for predators, including people; and they shaped the way fire, water, soil, and energy moved across the landscape (Knapp et al. 1999; Table 1.)

Best estimates are that bison currently occupy <1% of their circa 1500 historical range . . .

Ecological functionality connects species to their ecosystem context (Soule´ et al. 2003). In the case of species like the bison, we believe these connections are fundamental to restoration (Table 1). A tiger in a cage does not satisfy and neither does a bison in a corral. But bison grazing down the grass, spreading buffalo chips far and wide, interacting with other native species, living in large herds, and returning to earth when they die-these are animals that are integral to their landscapes. Conserving bison and conserving landscapes through bison are inseparable notions." (Attached and incorporated by reference, Sanderson et al_The Ecological Future of the North American Bison- Conceiving Long-Term, Large-Scale Conservation of Wildlife; Sanderson_Map of American bison herds historical range)

“Bison have a unique ecology that has profound effects on mixed-prairie ecosystems. Their grazing style provides spatial and temporal heterogeneity which benefits plant and animal species diversity. Bison also increase overall plant productivity by enhancing nutrient cycling and nitrogen availability. Their distinctive behavioral trait of wallowing further creates spatial patchiness of resource availability and boosts plant species composition. Finally, predators and scavengers benefit from consuming bison while the remains confer rich nutrients to prairie soils and plant communities.” (Attached and incorporated by reference, Fallon_The ecological importance of bison in mixed-grass prairie ecosystems)



Bison wallowing, Jim Peaco photo

We also have some idea of how intense and damaging Park actions and decisions have been for bison under the adaptive management plan, which needs to be considered in detail, evaluated and disclosed in your analysis:

"More than 1,000 bison (21%) and 1,700 bison (37%) were culled from the population during winters 2006 and 2008, respectively. Culls differentially affected breeding herds, altered gender structure, created reduced female cohorts, and dampened productivity. Over time, these effects could diminish the ecological role of the largest remaining free-ranging plains bison population in the world which, in turn, would diminish the ecological processes within the park and the suitability of the park to serve as an ecological baseline (i.e., benchmark) for assessing the effects of human activities outside the park.

Large-scale culls also contributed to a substantial reduction in juvenile cohorts when captured bison were not tested for brucellosis exposure before being removed from the population.

In addition, large-scale culls of females apparently reduced the productivity of the central herd, which decreased from between 0.71-0.75 + 0.01 juvenile (calves and yearlings) per female >2 years-old during 2004-2007 to 0.49 + 0.10 in 2008 and 0.63 + 0.01 in 2009.

Also, the large-scale culling of Yellowstone bison could have consequences that persist for multiple generations after culling has ceased. In long-lived, age-structured populations such as bison, a rapid increase in population density after release from culling can lead to a sequence of changes in age-specific fecundity and survival that affect fluctuations in population size for many years (Eberhardt, 2002) . . . Thus, sporadic, non-random, large-scale culls of bison have the potential to maintain population instability by altering age structure and increasing the variability of associated vital rates." (Attached and incorporated by reference, YNP White_Interagency Bison Management Plan – Expectations and Realizations)

And while the Park has slaughtered thousands of bison, it needs to evaluate and disclose how it may be “managing inadvertently or implicitly for extinction” by suppressing the population below which they may not be able to survive and adapt long-term:

“To ensure both long-term persistence and evolutionary potential, the required number of individuals in a population often greatly exceeds the targets proposed by conservation management.

The bottom line is that both the evolutionary and demographic constraints on populations require sizes to be at least 5000 adult individuals. These seem to be large requirements, but a number of studies across taxonomic groups have made similar findings: the median MVP derived from PVA of 102 vertebrate species was 5816 individuals (Reed et al., 2003), and 4169 individuals from a meta-analysis of 212 species (Traill et al., 2007). The census-based MVP of 5500 reported by Thomas (1990) is also remarkably congruent; all similar to the recommended census N of 5000 individuals (Frankham, 1995). We note though that similarities are not strictly equivalent, and are a result of evaluation of some non-overlapping factors, meaning minimum viable population size in many circumstances will be larger still." (Attached and incorporated by reference, Traill et al_Pragmatic population viability targets in a rapidly changing world)

“Today, this recovered population inhabits areas that permit the full expression of natural behaviors and ecosystem functioning in ways similar to those of the past, including migration, dispersal, and coexistence with an intact predator community.” (DEIS, 153)

Contrary to the Park’s “recovered population” fallacy, the U.S. Fish & Wildlife Service is currently reviewing a petition to list plains bison under the Endangered Species Act (Mountain-Prairie Region, Brian Kelly, Cheyenne, Wyoming (307) 772-2374 ext. 234 or Justin Shoemaker Region 6 Senior Listing Biologist (303) 236-4214):

“Summary: I petition to list wild plains bison (*Bison bison bison*) as threatened under the Endangered Species Act of 1973 (ESA), as amended, in order to conserve the subspecies and the ecosystems upon which plains bison depend. I find that each of the four major ecotypes of plains bison in the United States is likely to become endangered in the foreseeable future and that each ecotype is not sufficiently abundant or distributed, nor properly managed, to fulfill stated purposes of the ESA.

While the number of plains bison in wild and conservation herds has not declined in about 70 years, there are numerous threats to the future of wild plains bison that are not apparent in the total number of animals. Wild plains bison are threatened with loss of potential habitat, introgression with cattle genes, loss of genetic diversity, domestication and loss of wildness, disappearance of ecological effectiveness, and lack of effective, coordinated and persistent state and federal programs to restore the subspecies.” (Attached and incorporated by reference, Bailey_Petition to list plains bison as threatened under the ESA, Tables 1-4)

Buffalo Field Campaign has submitted science on the conservation status of American bison asking for review and consideration of the evidence qualifying the wild specie as endangered to the U.S. Fish & Wildlife Service, Yellowstone National Park, and each of the agencies involved in the IBMP (Attached and incorporated by reference, BFC to NPS Lewis_Tools for how to avoid managing wild American buffalo for extinction and conserve wild populations in their native range; BFC wild buffalo conservation, ecology and culture disc)

Recently, the Center for Biological Diversity filed a notice to sue U.S. Fish and Wildlife Service for failing to make required findings on seven petitions requesting protection under the Endangered Species Act, including for the plains bison:

PORTLAND, *Ore.*— The Center for Biological Diversity filed a formal [notice of intent to sue](#) the U.S. Fish and Wildlife Service today for failing to make required findings on seven petitions requesting protection under the Endangered Species Act for the plains bison, striped newt, Berry Cave salamander, Puerto Rican harlequin butterfly, Ozark chinquapin, western gull-billed tern and Mohave ground squirrel. For several of these rare species, the agency has missed legal deadlines by years.

“Like the Bush administration, the Obama administration is failing to provide prompt protection to wildlife desperately in need of protection, including the bison, Puerto Rican harlequin butterfly and hundreds of other species,” said Noah Greenwald, endangered species program director at the Center for Biological Diversity. “To date, the Obama administration has listed only two species in the mainland United States — an absurdly low number.” (Attached and incorporated by reference, CBD to Salazar_Sixty-day notice of violation of section 4(b)(3)(A, and B) of the Endangered Species Act, relating to late findings for 140 species June 16, 2010)

The public would benefit from an honest, unbiased evaluation and disclosure of the potentially endangered status of plains bison, including bison under the jurisdiction of Yellowstone National Park, and an analysis and disclosure of the five factors warranting an endangered species listing:

“(A) the present or threatened destruction, modification, or curtailment of its habitat or range;
(B) overutilization 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.” (Online: www.fws.gov/endangered/laws-policies/section-4.html)

Vaccinating wild buffalo is culturally unacceptable to American Indian Tribes and to all American's who honor wildlife.

For thousands of years, the greater Yellowstone ecosystem was traditional territory, ancestral homelands, and shared buffalo hunting grounds for Crow, Eastern Shoshone, Salish and Kootenai, Shoshone-Bannock, Blackfeet, Nez Perce, Northern Arapaho, Northern Cheyenne, Gros Ventre, Flathead, and Upper Pend d'Oreille Tribes. (DEIS, Chapter 3.7; National Park Service Management Policies 2006, 1.11)

Yellowstone National Park needs to evaluate and disclose how it intends to address traditional cultural concerns raised by Tribes in consultation (DEIS, 64) including:

- Respectful treatment of the bison, including allowing them to roam freely without fencing or disrespectful hazing.
- Vaccine contamination of meat for consumption and ceremonial purposes.
- Preservation of wickiups, stone alignments, and other cultural features associated with bison.

Indigenous knowledge, cultural relationships and perspectives on wild buffalo held in your trust need to be evaluated and disclosed.

In your analysis and decision, the Park needs to redress indigenous spiritual and cultural values held for wild bison, and adopt management approaches for wild bison remaining in your jurisdiction that reflect traditional ecological knowledge of indigenous peoples.

According to Arvol Looking Horse, the 19th Generation Keeper of the Sacred White Buffalo Calf Pipe:

“Many, many generations ago, our relatives, the Pte O-ya-te (Buffalo People) came up from Wind Cave in the Black Hills; the heart of Un-ci Ma-ka (Grandmother Earth) and prepared the way for our existence. From that time forward, they gave of themselves for our survival, as long as we respected their gift. They taught us how to live in an honorable and respectful way by example and through the teachings of the White Buffalo Calf Woman. She brought the Sacred Canupa (Pipe) to remind us of our responsibilities and also provided us with the knowledge of the sacred rites that are necessary to discipline ourselves.

From the Buffalo Nation, our ancestors learned to have an honorable relationship of being connected with Un-ci Ma-ka; this “way of life” that identifies us of who we are as an O-ya-te (a People), with all it’s sacred teachings. They understood the gifts from Un-ci and carefully lived in harmony with her wellbeing. For that reason, we hold them to be sacred. We co-existed in a good way until we were nearly destroyed. *Ob un-ka-so-ta-pi tka*. The sacred Buffalo Nation in these mountains are the survivors of that natural way of life. We are culturally and spiritually indebted to them and we still need their guidance, to remind us how to be at

peace and harmony with Un-ci Ma-ka.” (Attached and incorporated by reference Looking Horse_To Save the Buffalo Nation)

On April 15, 2008 Arvol Looking Horse led a releasing of the buffalo spirits ceremony at the Stephens Creek bison trap inside Yellowstone National Park. The prayer was held to honor the spirits of over one-third of the buffalo herd slaughtered by Yellowstone National Park and the State of Montana during the winter of 2007-2008.

Looking Horse declaration that day recognized that where buffalo roam it is sacred ground:

"Let it be known that Yellowstone territory; the habitat of the last wild Buffalo Nation - is sacred ground, it has been a SACRED SITE for the First Nation's people, and for all humanity who hold deep respect for all Creation. The Buffalo Nation has confirmed this fact; by where they have ended up, continuing to survive in their natural migration, struggling to live in a peaceful manner. Our ancestors also gave us this message by fasting in this area long ago, as they recognized this place of sacredness. This understanding is how we maintain the balance upon Un-ci Ma-ka (Grandmother Earth), to protect these places, especially for the survival of our future generations to come." (Attached and incorporated by reference Looking Horse_To Save the Buffalo Nation)

In 1998-1999 Rosalie Little Thunder organized a 500-mile Walk for the Buffalo from Rapid City, South Dakota to the gateway arches of Yellowstone National Park in Gardiner, Montana, with 30 American Indian tribes to represent their cultural identity and responsibility for the well being of the last few buffalo remaining in America. (Online: www.pbs.org/buffalower/war.html)

Part of the reason for their spiritual trek was in protest of Yellowstone National Park's and the State of Montana's slaughter of bison seeking refuge on land that is their birth right:

“The killings, says Ethelyne Ironcould, are “really devastating to not only Buffalo National but to the Indian nations as well. We believe that the way they treat the buffalo is the way that they treat the Indians.” That is why the Yellowstone slaughter cuts to the heart of the Lakota and other buffalo cultures of the Great Plains.”
(Attached and incorporated by reference, LaDuke_buffalo nation)

Rosalie Little Thunder went on to create Seventh Generation Fund's Tatanka Oyate project to speak out on the intertwined identity of buffalo as a sacred

species and indigenous cultures that co-existed and evolved with the wildlife species. (Online: <http://www.youtube.com/watch?v=tEYRZ-WCfGE>)

In a public interest lawsuit filed against the U.S. National Park Service for impairing buffalo, (Attached and incorporated by reference, WWP et al_Amended Complaint May 2010) Little Thunder submitted her declaration on the significance of wild buffalo to her relations and culture:

“3. In the winter of 1996-97, Sidney Keith, an elder who was my mentor, had heard that tribal people were being invited to Yellowstone National Park to get buffalo carcasses. He felt that something was terribly wrong with this picture and asked that I go there to see what was happening.

4. Like so many Lakota elders, Sidney knew the historical accounts of our relationship with the Tatanka Oyate and our continuing responsibilities to this relative. Throughout his life, Sidney maintained and taught the traditional beliefs and ceremonial practices that centered around tatanka.

5. Even prior to Sidney’s influence, from childhood, I heard our origin stories; how the Lakota evolved from a common origin with the buffalo. The buffalo surfaced from the underground at Wind Care, adapting and existing upon Unci Maka for centuries. We cautiously came forth out of Wind Cave, in human form, at the urging of our brother who offered an assurance of survival. The tatanka not only gave of themselves to provide food and shelter, but a way of being.

6. Tatanka, having the earlier experience of co-existing with all other beings and having learned to be a significant contributing factor to the ecosystem, was a good teacher to the frail human. The massive herds migrated across the plains, never lingering in one area long enough to deplete the generosity of Unci Maka or to cause damage to the habitat of other species. Their sharp hooves loosened and aerated the soil. They germinated plant seeds through their systems and also carried it far and wide in their shaggy coats and contributed to the diversity of the rooted beings. The vibration of their massive movements stimulated underground water levels and generated the energy to draw the thunderclouds to nourish the Earth. Tatanka are one of the species held sacred by Indigenous Peoples for their ability to support so many other species. to truly manage the Earth.

7. We weaker (*unsika*) Lakota learned to model our social order on that of the wiser and more disciplined tatanka. A sophisticated matriarchal system emerged to manage the collective energy.

8. Then catastrophic change came to the Buffalo Nation, to the natural world and natural law. In order to conquer the elusive Lakota people by cutting off their food source, the U.S. Army slaughtered millions of buffaloes. By systematically eliminating a keystone species, the entire ecosystem was put in great peril. The slaughter continues in Yellowstone now, where a remnant herd survived the earlier massacre. The killing is for different reasons that are likewise irresponsible.

14. By the standards of American culture, the tatanka is regarded as a mere commodity. In the Yellowstone area, it is regarded as an inconvenience to the cattle industry, but they are the last of the great ancestors, with their genetic integrity uncompromised and instinctive wisdom intact.

15. It is unfortunate that we must seek remedies from those that may not have a similar cultural foundation or the wisdom of their ancestors, who may not have the necessary disciplines to guide their thinking or behaviors, but on whom rests the fate of the Yellowstone buffalo herd.

16. We seek to hold accountable those that are entrusted stewards of the land and the true and rightful inhabitants. Lack of stringent oversight can sometimes distort the necessary standards of accountability. I believe that we must bring about this scrutiny to protect the rights of a sacred species. And so, as tribal people, our challenge is to develop further strategies to preserve the core of our culture, that viable populations of wild buffalo are maintained.” (Attached and incorporated by reference, Declaration Rosalie Little Thunder)

“The land we now know as North America was formed, according to the oral tradition of nations of the Iroquois or Haudenosaunee Confederacy, when the Sky-Woman fell through a hole in the sky. ⁿ³ At that time, the earth was covered with water. The creatures living in the water looked up and saw her falling and realized that they needed to make a place for her to land. The great turtle offered his back. The duck said that there must be earth on turtle's back, and dove to the bottom but could not dive deep enough. Loon and beaver both tried, but they could not reach the bottom either. Finally, muskrat was able to reach the bottom and bring back a small piece of earth, which, when he placed it on turtle's back, grew larger until it became the whole world. A pair of swans flew up to catch Sky-Woman and set her down gently on the earth on turtle's back. An indigenous culture which acknowledges that it owes its survival, from the very beginning, to the beneficence of non-human living things might also know something about how human communities can provide for their own needs while being mindful of the needs of other living things.” (ⁿ³ See Joseph Bruchac, Iroquois Stories: Heroes and Heroines, Monsters and Magic 15-17 (1985).

(Attached and incorporated by reference, Suagee_The Cultural Heritage of American Indian Tribes and the Preservation of Biological Diversity)

Evaluate and disclose how the Park can learn from people disciplined in traditional ecological knowledge of wild buffalo to identify and implement natural ecosystem and culturally based practices to conserve, preserve and restore wild populations of the species.

What opportunities exist for the Park to co-manage or cooperatively manage wild bison according to traditional ecological knowledge, natural processes, wildlife and ecosystem-based practices?

Examine strategies to protect Treaty rights and cultural resources of respective Tribes as identified and analyzed by Nie:

“(1) cooperative management arrangements, and (2) protected land-use designations.” (Attached and incorporated by reference, Nie_THE USE OF CO-MANAGEMENT AND PROTECTED LAND-USE DESIGNATIONS TO PROTECT TRIBAL CULTURAL RESOURCES AND RESERVED TREATY RIGHTS ON FEDERAL LANDS)

The Park’s interpretation of trust resources is unclear and needs to be revisited to clarify if trust resources are affected:

“In the 2000 FEIS, the National Park Service concluded that, though the bison in Yellowstone National Park are significant to many tribes, they are not a trust resource that would trigger a federal trust responsibility. Thus, the National Park Service does not consider the bison in Yellowstone National Park a trust resource to manage for one or more specific tribes, and as such, trust resources will be affected by the alternatives.” (DEIS, 22)

The public trust resource of America's last wild buffalo is to be conserved and protected for future generations and not impaired by the Park’s ill-conceived vaccination program.

Evaluate and disclose impacts of the Park’s vaccination program on bison taken in Tribal or state sanctioned hunts on adjacent National Forest lands. Has any Tribe raised the concern that the Park’s bison vaccination program will disrupt or stop Treaty exercised rights? Disclose how the Park intends to prevent an infringement or derogation of Tribal treaty rights.

Do the costs of your action outweigh any benefits realized for wild bison, and the Park’s resources? Does the risk of brucellosis transmission from bison and or

elk warrant proceeding with vaccination of one species, in Yellowstone National Park alone?

“The period of highest exposure to brucellosis in late winter likely coincides with the period of lowest immune competence in bison (ability of the immune system to respond appropriately to an antigen by producing antibodies which will combat the foreign substance). Thus, late winter exposure to *Brucella* can be difficult for any animal to produce an effective immune response, regardless of whether they are vaccinated or not (see USAHA Scientific Committee response to questions about uncertainty below).” (DEIS, 74)

“For bison, it is unlikely that the remote delivery vaccination actions will reduce the seroprevalence of brucellosis from current levels of 40-60% to below 16% (see Chapter 4, Impacts to Yellowstone Bison). Even if that were to be achieved, the State of Montana and the livestock industry are currently concerned about single-digit seropositive values in elk populations managed by the state—which are not under consideration in this EIS for vaccination—due to apparent brucellosis transmission from elk to cattle during 2007 and 2008. Thus, brucellosis will remain a concern for the livestock industry regardless of the outcome of a remote delivery vaccination program for Yellowstone bison and, thus, such a program would likely have negligible impacts on social and economic factors affecting the livestock industry.

Further, it is unlikely these massive animals would be well tolerated in most areas outside Yellowstone National Park even if they were disease-free due to social and political barriers . . .” (DEIS, 21)

Does the actual incidence of brucellosis-induced abortion in the wild present sufficient cause to vaccinate the bison population with SRB51 inside Yellowstone National Park? The evidence suggests any risk is local, temporal and is eliminated by mid-June.

"Sixty-three samples (i.e., 14 fetuses, 21 tissues, and 28 swabs) from 47 different parturition events and one motor vehicle accident yielded only three positive cultures for *B. abortus*. Birthing females meticulously cleaned birth sites and typically left the site within two hours. The birth synchrony and cleaning behavior of bison females, combined with *Brucella* environmental persistence data from previous studies, indicates that the risk of brucellosis transmission from bison to cattle is minuscule after May.

The infrequency of observed abortions ($n = 24$), and the even rarer identification of *Brucella* from these abortions, supports claims that *Brucella*-induced abortions are rare events for Yellowstone bison (Meyer and Meagher, 1995; Dobson and Meagher, 1996). There have been seven documented,

seropositive abortions in Yellowstone, including two from captive bison in 1917 (Mohler 1917), one in 1992 (Rhyan et al., 1994), and four during 1995-1999 (Rhyan et al., 2001). Only 2 of 25 samples collected from 15 termination events were culture positive for *B. abortus*. Ten stillborn calves have been submitted for culture testing and only one has been positive for *B. abortus*. Terminated pregnancies can occur for a multitude of reasons in bison (Williams et al., 1997), and *B. abortus* appears to play less of a role in inducing abortions than previously thought. Parturition events indicating a loss of pregnancy were typically observed prior to the onset of the bison calving season.

Based on field observations presented in this report, the potential for brucellosis transmission from bison to cattle is minimal by June 1 and essentially non-existent by June 15. Thus, the current haze back date of May 15 (i.e., the date after which bison are not tolerated outside the park) may be unnecessary from a disease transmission risk perspective." (Attached and incorporated by reference YCR_Parturition in Yellowstone Bison)

"Brucellosis transmission risk from bison to cattle is extremely low after June 1 and negligible by June 15 because (1) parturition is essentially completed for the year, (2) parturition events rarely occur in areas that will later be occupied by cattle, (3) cattle are generally not released on summer ranges until after mid-June, (4) females meticulously consume birthing tissues, (5) ultraviolet light and heat degrade *Brucella* on tissues, vegetation, and soil, (6) scavengers remove fetuses and remaining birth tissues, and (7) management maintains separation between bison and cattle (Aune et al. 2007, Jones et al. 2009).

Allowing bison to remain on essential winter ranges outside Yellowstone National Park until late-May or early June, when they typically begin migrating back into the park to high-elevation summer ranges, is unlikely to significantly increase the risk of brucellosis transmission from bison to cattle." (Attached and incorporated by reference, YNP_Implications of Bison Birth Synchrony and *Brucella* Persistence on Adaptive Management)

What about the possibility of re-infection of bison by elk? Did your modeling consider interspecies transmission in the ecosystem? If not, why?

"Due to the high prevalence of brucellosis in Yellowstone bison, as well as the possible re-infection reservoir from elk, the long-term use of test and removal programs (at boundary pens or in the park interior) in concert with vaccination may have unacceptable ecological (e.g., abundance, genetics, migration), economic, cultural, and spiritual costs." (Attached and incorporated by reference YNP_State of Knowledge – Adapting the IBMP based on New Information)

Evaluate and disclose “unacceptable ecological (e.g., abundance, genetics, migration), economic, cultural, and spiritual costs” stemming from the Park’s decisions and actions targeting wild bison.

Given that “Ebinger and Cross (2008) suggested that capture and sampling of more than 200 bison during a given year would be necessary to detect significant changes in seroprevalence following vaccination, and that detection would likely take 5-20 years . . .” capturing wild bison for the Park’s brucellosis surveillance program will become a permanent fixture inside Yellowstone National Park. (DEIS, 27)

For purposes of your analysis, we can calculate that the Park intends to capture 6,000 bison over 30 years. These cumulative impacts on wild bison and the Park’s ecology need to be fully evaluated and disclosed. How will visitors react to wild bison being treated like livestock?

Hazing wild bison from habitat and capturing wild species for confinement to inject a livestock vaccine, mark and tag bison, is clearly not a natural process. How will this affect the Park’s culture (perception and realization of your mission) if this kind of treatment of wild buffalo becomes a routine part of management?

(Photo: Wild bison trapped at Stephens Creek)

In addition to capturing 6,000 bison and drugging 1,200 bison inside Yellowstone National Park, “The NPS may also request that the State of Montana and Forest Service capture and sample bison at the Duck Creek capture facility outside the western boundary of Yellowstone National Park north of West Yellowstone . . .” (DEIS, 27)

Having Yellowstone National Park request the Montana Dept. of Livestock to capture bison at their Duck creek trap is likely to result in mortality for bison, as to our knowledge the livestock agency sends bison to slaughter who show an antibody response using current



diagnostic tests. Furthermore, these operations are likely to disturb grizzly bears, wolves, bald eagles, migratory birds, other native species including listed and sensitive species and their habitat.

Evaluate and disclose likely injuries, and mortalities to bison subject to the Park's requests to the Montana Dept of Livestock to capture wild bison at the Duck Creek trap on the Koelzer family property adjacent to Yellowstone National Park.

Disclose any agreement, contract, or the terms, conditions to site and operate the Duck Creek trap on the Koelzer family property. National Park Service rangers are known to gather and stage operations targeting wild bison for removal at the Koelzer family residence, and the public has a right to know what agreements and financial arrangements have been made.

Is it a handshake deal? Is it a one-year, five-year, ten-year agreement? How much does the Koelzer family charge to site and operate the Duck Creek trap to capture wild bison? Is the Duck Creek trap connected with leasing Stinnetts field to cattle during the summer months?

How frequently does the Park intend to make such requests to capture bison at Duck Creek to the Montana Dept. of Livestock, and for what duration? 10 years? 20 years? 30 years?

Has the Koelzer family committed to trapping wild bison on their property at Duck Creek to help you carry out your program?

Evaluate and disclose cumulative impacts to grizzly bears, wolves, bald eagles, migratory birds, other native species including listed and sensitive species and their habitat, due to increased use of the Duck Creek trap to capture wild bison as part of the Park's vaccination program.



Duck Creek bison trap, Koelzer private land

What assurance does the public have that Yellowstone National Park will not waive public closure restrictions in grizzly bear habitat? How many times has the Park waived such restrictions for the Montana Dept. of Livestock? When and for what duration did these waivers occur? Have wolf dens in the Hebgen basin been disturbed by hazing operations? Have bald eagle nests been disturbed?

How many times have these species habitat been disturbed or disrupted by hazing operations?

Additionally, it is unclear from your statement if your request to the U.S. Forest Service to capture bison would take place at the Montana Dept. of Livestock's Horse Butte trap on the Gallatin National Forest. (DEIS, 27)

For purposes of your analysis, hazing, capturing and testing bison on Horse Butte is likely to occur over the next 10 years given that Gallatin National Forest Supervisor Mary C. Erickson recently renewed the Montana Dept. of Livestock's special use permit. However, requesting the Montana Dept. of Livestock to trap bison on Horse Butte is likely to prejudice future Forest decisions to renew the trap permit for the 30-year life of your vaccination program.

Bison migrating along the Madison River from Yellowstone National Park winter on the Gallatin National Forest and have fidelity to calving grounds on Horse Butte peninsula, where cattle no longer graze. (Attached and incorporated by reference, BFC_Bison observations Hebgen Basin 2002-2009) Bison return year after year for spring green-up on the south facing buttes and rolling sagebrush grasslands and forests in Hebgen Lake basin (Attached and incorporated by reference, Gates_Map of Yellowstone bison winter range and corridors).

There is wide spread support for wild bison to occupy public and private lands outside Yellowstone National Park, and people have repeatedly asked for your leadership to simply let buffalo be where cattle are not present in the buffalo's range, and to reconsider the changed environmental conditions that favor such management. (Attached and incorporated by reference, BFC et al_Letter to Lewis Supplemental Environmental Impact Statement for the IBMP)

And in contrast to the Park's involvement in multimillion dollar deals to buy and lease habitat for native wildlife and bison in the Gardiner basin from Church Universal & Triumphant, where not one wild bison has benefited to date (ten years later), there are local people who have not asked for one penny of taxpayer money to simply let buffalo roam their land. (Attached and incorporated by reference, Royal Teton Ranch Fact Sheet; Royal Teton Ranch_30 year lease agreement; Royal Teton Ranch_Map of habitat 30 year lease agreement; Devil's Slide Fact Sheet)

Describe Yellowstone National Park's and your fellow agencies response to local people who support having wild buffalo on their land and in their villages?

Their land is subject to trespass and violated by helicopters deployed to force wild buffalo to flee.



Montana Dept. of Livestock forcing bison to flee, Yellowstone Ranch Preserve

These Park actions, which are on-going for the foreseeable future without a fundamental change in management, are contributing to increased social tensions, emotional distress, trespass onto private lands, and other ill-effects not considered in your analysis.

Where are the interests of local people who want buffalo on the land represented in your plan?

The Galanis family has ceased grazing cattle on Horse Butte (formerly the Munns ranch) and declared their land a Yellowstone Ranch Preserve and a sanctuary for bison to graze in peace. (Attached and incorporated by reference Galanis_Email to Governor Schweitzer RE Yellowstone Bison Herd; Galanis_DOL correspondence on Yellowstone Ranch Preserve) Local neighborhood and villager support for wild bison creates an opportunity to manage habitat year round on Horse Butte peninsula. (Attached and incorporated by reference, Earthjustice_letter to IBMP agencies RE Bison Management on Horse Butte Peninsula) Congress has also directed the U.S. Forest Service to manage habitat supporting viable populations of wild bison on our National Forests.

“Adaptive adjustments to the IBMP (USDI et al. 2008) already allow for a greater tolerance of untested bison on the Horse Butte peninsula outside the western

boundary of Yellowstone National Park because cattle are no longer present there during winter and spring.” (DEIS, 21)

While the Park claims “greater tolerance of untested bison” on Horse Butte, encouraging the Gallatin National Forest and Montana Dept. of Livestock to capture bison for your vaccination program undermines the little, meager “tolerance” your adaptive management changes have wrought for wild migratory bison in Hebgen basin. The Park’s position on this matter is absurd and the outcomes and impacts of such requests to capture bison on Horse Butte and Duck Creek need to be evaluated and disclosed.

Your ostensible reason to vaccinate wild bison inside Yellowstone National Park “is supposed to result in increased tolerance for untested bison on winter range lands outside the park in the northern boundary area . . .” (DEIS, 21) will result in continued and increased use of the Stephens Creek bison trap negating your supposed results.

Has the Church Universal & Triumphant requested wild bison be vaccinated by the Park as a condition to traverse the more than \$3 million dollar deal reached to let a few bison navigate a fenced corridor? Is vaccination of wild bison part of the terms agreed to in the 30-year lease?

Forcing bison to flee habitat for capture inside Yellowstone National Park, using immobilizing drugs and shooting livestock vaccines into buffalo at close range is part of the Park’s endless, harmful intrusions into buffalo’s evolutionary adaptation as an indigenous wildlife species and needs to be evaluated and cumulative impacts disclosed.

The Park is proceeding with an action that is not permissible under your own policies for natural processes and ecosystems:

“In accordance with Chapter 4 of NPS Management Policies 2006 (NPS 2006), the NPS may intervene to manage populations of native species only when such interventions will not cause unacceptable impacts to the population or to other components and processes of the ecosystem. Vaccination of wildlife with effective and low risk vaccines would be considered intervention that does not cause unacceptable impacts to the population or ecosystem since the aim of the program is to cause a decline in abundance of an exotic or non-native species (*B. abortus*).” (DEIS, 163)

The Park’s aim (whether it reaches “25% of the target group” or not) does not diminish the unacceptable impacts to wild bison from the Park’s persistent, long-

term intrusive use of livestock management techniques and vaccines approved for livestock not buffalo:

“While *B. abortus* vaccine SRB51 is licensed for cattle, it has never gained label approval for bison.” (DEIS, 33, 189)

(Photo: Bison head-locked for testing)

Evaluate and disclose why SRB51 is not approved for wild bison in Yellowstone National Park. Discuss in detail why the Park is proceeding to use SRB51 on an experimental basis in a programmatic way.

What legal basis exists to use an experimental vaccine on Park wildlife?

What scientific basis exists to programatically use SRB51 on Park wildlife when this livestock vaccine has not been approved for wild bison?



“NPS managers must always seek ways to avoid or minimize adverse impacts on park resources and values to the greatest degree practicable (NPS 2006).” (DEIS, 79)

Evaluate and disclose how Park SRB51 vaccination interferes or alters natural selection, natural disease resistance and immunity, evolutionary adaptation and genetic diversity of wild bison. These impacts should be considered by the Park throughout the 30-year course of your program, and beyond, as “25% of the target group” would have any added protection and the Park would have to continue vaccinating the population to have any further effect.

According to biologist James A. Bailey, PhD vaccination of wild buffalo has multiple, adverse consequences that the Park needs to consider as well:

1. “Disease has been a natural process throughout the evolution of bison. Natural selection has been the process to develop resistance and accommodation between host bison and their diseases. (Accommodation includes evolution of the pathogen whereby the disease organism persists with little or no impact to the host.) There is already evidence of Yellowstone bison having resistance to *Brucella* infection (p. 155 and Seabury et al. 2005). Moreover, there is considerable variation among mammals,

- including bison, in their reactions to *Brucella* exposure (p. 155). This variation allows natural selection to operate in developing resistance and accommodation.
2. There are many unknowns in pathogen-host relationships that may influence results of a vaccination program in unexpected ways. Bison are expected to carry populations of many competing and synergistic strains of viruses and bacteria, interacting with several humoral and cell-mediated aspects of host resistance. This micro-system is extremely complex and interrelated, such that interventions in one part of the system may cause unexpected effects elsewhere in the system. Furthermore, there is the possibility of linked genetic effects. Bison responding “positively” to RB51 could be unique in other genetically-controlled ways, some of which could be harmful. Still further, the proposed vaccination program may lead to adaptive changes in *Brucella* toward variants able to avoid immunological responses to the vaccine. This could lead to greater persistence of *Brucella* within bison and increased pathogenicity (p. 73). Our wildlife in national parks are not appropriate populations for experimenting with vaccinations.
 3. Vaccination will interfere with natural selection for resistance and accommodation between bison and *Brucella*. Vaccinated animals may not experience symptoms of disease and therefore not experience reduced rates of survival and reproduction, that is, natural selection. Bison already exhibiting resistance to *Brucella* will be less favored by selection and overall resistance to *Brucella* in the bison herd could decline.
 4. Since *Brucella* will not be eliminated from YNP, the vaccination program will be a permanent commitment to use of vaccines, and related interventions, to replace natural selection and to control brucellosis in Yellowstone bison. Lurking in the background is Montana’s request that immuno-contraceptives be added to the bison biobullets.” (Attached and incorporated by reference, Bailey_comments on the Draft Environmental Impact Statement for a Brucellosis Remote Vaccination Program for Bison in Yellowstone National Park)

“Vaccination of vaccination-eligible bison throughout the park would begin when a safe and effective vaccine and remote delivery system become available.”
(ADAPTIVE MANAGEMENT AND THE RECORD OF DECISION FINAL ENVIRONMENTAL IMPACT STATEMENT AND BISON MANAGEMENT PLAN FOR THE STATE OF MONTANA AND YELLOWSTONE NATIONAL PARK December 20, 2000, herein ADAPTIVE MANAGEMENT, 20-21)

Evaluate and disclose why the Park changed your criteria for remote delivery vaccination for bison inside Yellowstone National Park to “low risk”.

Upon what basis did the Park make your decision to change criteria?

Describe in detail, disclosing differences and impacts of what is “safe” and “low risk” for bison and other associated resources in Yellowstone National Park.

How does the Park’s “low risk” definition differ from what is deemed a vaccine safe and effective according to criteria established by the Greater Yellowstone Interagency Brucellosis Committee? (DEIS, Appendix D, 165-166)

The Park intends to administer field immobilization drugs to 40 bison annually to monitor vaccination results but your analysis is unclear of the impacts these drugs have on bison, described as “mild” based on observation only. (DEIS, 90, 176)

Your budget includes \$32,000 at a cost of \$800 per bison to immobilize 40 bison annually, so we can calculate that the Park intends to chemically immobilize 1,200 bison over 30 years. (DEIS, 176)

Evaluate and disclose long-term impacts of the Park’s use of immobilization drugs on wild bison.

Evaluate and disclose specific immobilization drugs, and any antidotes administered to bison by the Park.

What effects, short and long term, do each of the drugs have on bison?

What effects will these drugs have on bison behavior?

On April 13, 2010 a report by Park County Sheriff Scott Hamilton on bison activities in the Gardiner basin was sent to Commissioner Marty Malone. The report concerns two incidents involving bison bulls “breathing heavily” and or “highly agitated” in several neighborhoods during a period of time when the U.S. Dept of Agriculture APHIS was drugging wild bulls for APHIS’ semen study. (Attached and incorporated by reference, Park County Undersheriff Hamilton report of bull bison marked in APHIS semen study, April 13, 2010)

Evaluate and disclose each incidence where bison reacted negatively, unpredictably, or altered behavior e.g. aggressive, agitated, alone or removed apart from their group cohorts, as a result of being immobilized with drugs.

Calculate and disclose the risk of such behaviors happening concurrently with the Park drugging bison for each season, and over the 30-year course of your program.

Will the drugs make bison more susceptible to predation?

How long does it take for each of the drugs to metabolize or clear the body of a calf, yearling, adult female, and adult male bison?

Evaluate and disclose how immobilizing/reviving bison with drugs, and SRB51 vaccination, will affect hunters. Will drugs persist in tissues? Will the vaccine persist in blood? Why didn't the Park survey bison hunters or hunters who have submitted for tags?

SRB 51 may persist for over 120 days (Protection of *Brucella abortus* RB51 revaccinated cows, introduced in a herd with active Brucellosis, with presence of atypical humoral response, Comparative Immunology, Microbiology and Infectious Diseases, January 2005, Volume 28, Issue 1, Pages 63-70).

How will SRB51 vaccine persistence affect hunters?

Vaccinating wild buffalo inside Yellowstone National Park does not protect the population, will not placate Montana's cattle industry and does not change Montana's position "tolerating" bison migrating into the state.

As noted in Yellowstone National Park's impact statement, vaccinating buffalo does not satisfy cattle ranchers:

"The proposed remote delivery vaccination actions will be implemented with federal funding and will not reduce the seroprevalence of brucellosis sufficiently (i.e., eradication) to alter perceptions of livestock operators, producers, and regulators regarding the risk of brucellosis transmission from bison and elk to cattle." (DEIS, viii)

If one outcome you seek is "increased tolerance" for bison in Montana, SRB51 vaccination is a futile gesture to regulators who have requested bison vaccination but who have not committed to any adaptive management changes allowing such tolerance.

Where is the commitment to wild bison year-round in Montana by USDA APHIS, Montana Dept. of Livestock, the Montana State Vet? Could we get that in writing on what their commitment to "increased tolerance" for wild bison is in Montana?

“Brucellosis suppression actions (e.g., vaccination, test and slaughter) over the next 30 years will not reduce the seroprevalence in Yellowstone bison to a level where APHIS or the state veterinarians consider bison disease free and allow migration of untested animals outside the park or the intra- and inter-state transport of seronegative bison without sterilization or quarantine.” (Attached and incorporated by reference, YNP_State of Knowledge – Adapting the IBMP based on New Information)

It is misleading for the Park to claim that vaccination will lead to “greater tolerance of untested bison” habitats outside the Park. (DEIS, 21) Montana has no tolerance for wild buffalo period.

"P.J. White indicated that the NPS did not endorse or support the trigger points proposed by the MDoL because they would unnecessarily limit bison access to public lands in Zone 2 where there was no risk of brucellosis transmission from bison to cattle. The trigger points proposed by MDoL could allow essentially all bison west of the park boundary to be culled or hazed back into the park after February 15. For example, at least one of the proposed trigger points was reached during late February in 2008.

The MDoL analysis provided no insights regarding why bison move from Horse Butte to south of the Madison Arm or the form of this relationship (e.g., linear, threshold). Also, the analysis did not consider the effects of hazing bison on Horse Butte or other factors on bison moving south of the Madison Arm.

The trigger points proposed by MDoL essentially treat Zone 2 as a buffer for Zone 3 rather than a tolerance area for bison. MDoL is proposing to eliminate tolerance for bison from much of the existing Zone 2, without providing any alternative use areas." (Attached and incorporated by reference, YNP memo White to Lewis_Summary of Technical Committee Conference Call; December 21, 2009)

MCA 81-2-120 makes no distinction of vaccinated/unvaccinated bison. (Online: <http://data.opi.mt.gov/bills/mca/81/2/81-2-120.htm>)

Czar like authority is granted to Montana’s State Vet, ensuring continued bias towards cattle ranchers to the detriment of wild bison in Montana.

The Park needs to show leadership and approach the U.S. Congress with funding ideas on how to conserve migrations of wild bison in Montana, embrace ideas like Alternative D, and forego population vaccination without end.

The Park needs to stop further harming our native wild buffalo using tools designed for domestic livestock. The cattle industry must be held accountable

for introducing brucellosis to native wildlife and take responsibility for developing an effective brucellosis vaccine for mandatory use in livestock. The cattle industry is, after all, responsible for the presence of brucellosis - and many other diseases - in the Yellowstone ecosystem.

“Topic: Vaccination of Bison and/or Cattle

Response: The plan includes the possibility of state-mandated cattle vaccination, if livestock producers do not voluntarily vaccinate 100% of the test-eligible cattle in the analysis area. The plan also describes steps in which vaccine-eligible bison would be vaccinated. The agencies believe the evidence shows RB51 to be a safe vaccine for bison calves; the plan would immediately initiate vaccination of calves if they were captured when attempting to exit the park. The criteria and research results of vaccine trials on calves and other classes of bison are summarized in volume I of the FEIS (pages 93-97). While research is ongoing in the development and testing of a remote vaccine delivery system, the agencies have agreed to use such a system only when it is proven safe. Additional NEPA analysis would also occur prior to initiating a park-wide, remote vaccination program. If any vaccine or delivery system was not determined safe, it would not be used. If a vaccine or remote delivery system thought to be safe and effective was found not to be either after use in the field, or some unanticipated adverse impact were discovered, the agencies would reevaluate the program, and might modify, adjust or begin a new, safe program.” (ADAPTIVE MANAGEMENT, 53-54)

Evaluate and disclose the rate of vaccination in “test-eligible cattle” as detailed above. Include rates for calf and adult-boosting vaccination for cattle for each year since 2000. (Attached and incorporated by reference, APHIS_Briefing IBMP Zone 2 Inventory of Vaccination in Cattle December 2008; APHIS_Briefing IBMP Zone 2 Inventory of Vaccination in Cattle October 2008)

If 100% voluntary calf and adult vaccination of cattle has not occurred, evaluate and disclose the circumstances of why Montana has not required mandatory vaccination of cattle.

Evaluate and disclose the reasons why the Park should begin remotely vaccinating wild bison with a livestock vaccine, if 100% voluntary cattle vaccination is not being achieved.

“Additional risk mitigation measures under the modified preferred alternative included the following:

- Vaccination of cattle in the area would be required if 100% voluntary vaccination were not achieved.” (ADAPTIVE MANAGEMENT, 20-21)

Evaluate and disclose any other brucellosis risk mitigation measures, including costs and effectiveness of such measures, being undertaken by livestock

producers adjacent to Yellowstone National Park within the IBMP's Zone management system.

Please prepare visual maps and describe the public lands cattle grazing allotments in the bison's range that "drives the need to prevent commingling" of the species:

"Suitable winter range for bison extends onto public lands outside Yellowstone National Park, where cattle may encounter shed bacteria. Concern over the risk of brucellosis transmission to cattle drives the need to prevent commingling with bison. The intent of vaccination is to reduce brucellosis infection in Yellowstone bison and, as a result, further reduce the risk of transmission to cattle outside the park." (DEIS, 80)

The public would benefit from the Park mapping each public lands grazing allotment within the project area, with descriptive information about the program including numbers and kinds of livestock, turn-on and turn-off dates, the costs and extent of the infrastructure to support these allotments including fencing, ponds, etc. (Attached and incorporated by reference, APHIS_GYAm1_cattle_IBMP2008; APHIS_GYAm2_cattle_IBMP2008_West)

Additionally, the Park's graphics depicting your analysis area (DEIS, 9), distribution of bison within the Park (DEIS, 28), summer distribution (DEIS, 52), and winter distribution (DEIS, 53) are poor quality and not informative. The public would benefit from updated and improved quality Park graphics that clearly show what they are intended to show. The public would benefit from maps that are geographically descriptive or recognizable, that shows land use and ownership in detail across the landscape.

Also, the Park avoids depicting what bison management looks like. Use photos that are descriptive of each Park management technique: forcing bison off habitat; capturing bison at Stephens Creek, Duck Creek, and Horse Butte; head-lock blood sampling and bison vaccination; remote bison vaccination; immobilizing bison with drugs; tagging bison; painting bison; transporting bison to slaughter; shooting bison in the field; shooting/killing bison at the slaughterhouse.

Pursuant to the tenets of adaptive management, update your analysis with the best available science. Compare and contrast what was analyzed for in 2000 with what the Park and your agency partners actually did in the ecosystem. What circumstances and conditions on the ground have changed? (Attached and incorporated by reference, USFS M. Daley_IBMP Changes 2000-2008)

Darrell Geist, Habitat Coordinator
Buffalo Field Campaign
PO Box 957
West Yellowstone, MT 59758
Phone: (406) 646-0070
Fax: (406) 646-0071
www.buffalofieldcampaign.org

Tom Woodbury, Montana Director
Western Watersheds Project
P.O. Box 7681
Missoula, MT 59807
Phone: (406) 830-3099
Fax: (406) 830-3085
www.westernwatersheds.org



Attachments incorporated by reference, and provided here to assist Yellowstone National Park in disclosing additional new information and science as submitted in our comments for further Park review and evaluation.

1. APHIS_Briefing IBMP Zone 2 Inventory of Vaccination in Cattle December 2008.
2. APHIS_Briefing IBMP Zone 2 Inventory of Vaccination in Cattle October 2008.
3. APHIS_GYAmapping1_cattle_IBMP2008.
4. APHIS_GYAmapping2_cattle_IBMP2008_West.
5. AWI et al_Emergency Rulemaking Petition Yellowstone National Park.
6. Bailey_comments on the Draft Environmental Impact Statement for a Brucellosis Remote Vaccination Program for Bison in Yellowstone National Park.
7. Bailey_Petition to list plains bison as threatened under the ESA.
8. Bailey_Petition to list plains bison as threatened under the ESA Table 1.
9. Bailey_Petition to list plains bison as threatened under the ESA Table 2.
10. Bailey_Petition to list plains bison as threatened under the ESA Table 3.
11. Bailey_Petition to list plains bison as threatened under the ESA Table 4.
12. BFC et al_Letter to Lewis Supplemental Environmental Impact Statement for the IBMP.
13. BFC to NPS Lewis_Tools for how to avoid managing wild American buffalo for extinction and conserve wild populations in their native range.
14. BFC wild buffalo conservation, ecology and culture disc. (Attached as a separate CD for the Park's review and consideration that remaining populations of wild bison warrant conservation, preservation, and restoration in the ecosystems upon which they depend, pursuant to the Endangered Species Act).
15. BFC_Bison observations Hebgen Basin 2002-2009.

16. BFC_IBMP bison kill report.
17. Bridger-Teton National Forest_Press Release Elk Feedground Permit Upheld on Bridger-Teton.
18. Briefing Paper_GAO Report on Yellowstone bison.
19. Briefing Paper_IBMP Update.
20. Briefing Paper_RTR land deal.
21. CBD to Salazar_Sixty-day notice of violation of section 4(b)(3)(A, and B) of the Endangered Species Act, relating to late findings for 140 species June 16, 2010.
22. Declaration Robert Lindstrom.
23. Declaration Rosalie Little Thunder.
24. Devil's Slide Fact Sheet.
25. Earthjustice_letter to IBMP agencies RE Bison Management on Horse Butte Peninsula.
26. Fallon_The ecological importance of bison in mixed-grass prairie ecosystems.
27. Galanis_DOL correspondence on Yellowstone Ranch Preserve.
28. Galanis_Email to Governor Schweitzer RE Yellowstone Bison Herd.
29. GAO_YELLOWSTONE BISON Interagency Plan and Agencies' Management Need Improvement to Better Address Bison-Cattle Brucellosis Controversy.
30. Gardipee_Thesis DEVELOPMENT OF FECAL DNA SAMPLING METHODS TO ASSESS GENETIC POPULATION STRUCTURE OF GREATER YELLOWSTONE BISON 2007.
31. Gates_Map of Yellowstone bison winter range and corridors.
32. Halbert and Derr_A Comprehensive Evaluation of Cattle Introgression into US Federal Bison Herds.
33. Kilpatrick et al_Wildlife-livestock conflict- the risk of pathogen transmission from bison to cattle outside Yellowstone National Park.

34. LaDuke_buffalo nation.
35. Looking Horse_To Save the Buffalo Nation.
36. Nie_THE USE OF CO-MANAGEMENT AND PROTECTED LAND-USE DESIGNATIONS TO PROTECT TRIBAL CULTURAL RESOURCES AND RESERVED TREATY RIGHTS ON FEDERAL LANDS.
37. Park County Undersheriff Hamilton report of bull bison marked in APHIS semen study, April 13, 2010.
38. Royal Teton Ranch Fact Sheet.
39. Royal Teton Ranch_30 year lease agreement.
40. Royal Teton Ranch_Map of habitat 30 year lease agreement.
41. Sanderson et al_The Ecological Future of the North American Bison- Conceiving Long-Term, Large-Scale Conservation of Wildlife.
42. Sanderson_Map of American bison herds historical range.
43. Suagee_The Cultural Heritage of American Indian Tribes and the Preservation of Biological Diversity.
44. The Wildlife Society_Position Statement of the Montana Chapter of The Wildlife Society on Wild Bison in Montana.
45. Traill et al_Pragmatic population viability targets in a rapidly changing world.
46. USFS M. Daley_IBMP Changes 2000-2008
47. WWP et al_Amended Complaint May 2010.
48. YCR_Parturition in Yellowstone Bison.
49. YNP and MDOL_West Boundary Area - FY05 Hazing.
50. YNP Eric Morey_Incident Record April 2006.
51. YNP memo White to Lewis_Summary of Technical Committee Conference Call; December 21, 2009.

52. YNP Plumb to Lewis_Field operations team meeting, re 25 bison experiment January 26 2009.
53. YNP White_Adaptive Adjustments to the Interagency Bison Management Plan.
54. YNP White_Interagency Bison Management Plan – Expectations and Realizations.
55. YNP_Bison Hazing and Capture Operations Winter 2007_2008.
56. YNP_Bison Hazing, Shootings, Captured, Tested, Not Tested, Slaughtered, Vaccinated, Quarantined, Pen Mortality 2000-2007.
57. YNP_Implications of Bison Birth Synchrony and Brucella Persistence on Adaptive Management.
58. YNP_Reply to Congressional questions DOI House Appropriations March 8 2006.
59. YNP_State of Knowledge – Adapting the IBMP based on New Information.
60. YNP_YELLOWSTONE BISON POPULATION MANAGEMENT ACTIVITIES.