

# HR 3446

## YELLOWSTONE BUFFALO PRESERVATION ACT

### IMPLEMENTATION PLAN



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## EXECUTIVE SUMMARY

### *History*

The American bison (*Bison bison*), more commonly known as buffalo, is an important wildlife icon for the United States. Historically, bison roamed across the Great Plains and western North America. With the advance of the railroad and settlement of the American west, buffalo populations greatly declined due to hunting and loss of habitat. The buffalo populations residing in Yellowstone National Park reached historic lows in the early 1900s. A concerted effort began to rejuvenate and manage this last free-roaming buffalo herd that has continuously occupied its native habitat. That herd is now referred to as the Yellowstone buffalo herd. Over the last century, the Yellowstone buffalo herd has grown from 23 individuals to over 4000.

### *Migration*

The political boundaries of Yellowstone National Park do not wholly encompass the current migration patterns of the Yellowstone buffalo herd. A portion of the current herd annually migrates into lowland parts of Montana in search of more abundant food. Recently, an increased migration of the bison outside of the park has been observed during winter months. There is much disagreement about the actual cause of the increased migration. Three primary explanations have emerged that include population increases, winter severity, and the use of existing park roads as travel corridors outside the Park.

### *Brucellosis*

Brucellosis, a disease that infects both bison and cattle, is caused by the bacteria *Brucella abortus*. It is an infection of the reproductive tract and is transmitted primarily through contact with the reproductive tissue from an infected animal. The migration of the Yellowstone buffalo into surrounding states poses a problem because the buffalo are carriers of this disease. As a result of winter migration, infected bison may come into contact with cattle herds in neighboring states. This interaction increases the potential to cause significant economic impacts on the cattle industry, which is a specific concern for the state of Montana. In the winter, Yellowstone buffalo tend to migrate onto lowland areas in Montana. This annual migration increases the state's risk of losing their federal "brucellosis-free" designation, which could have serious economic impacts on the cattle industry. Nearly \$30 million are spent annually in the US to retain the brucellosis-free status of states. The negative repercussions associated with losing this designation include restricted transportation and trade of cattle across state lines resulting in a loss of revenue.

### *Legislation*

In recognition of the buffalo herd's unique plight in Yellowstone National Park, the Yellowstone Buffalo Preservation Act aims to provide safe winter grazing areas that extend outside of the Park's boundaries. The Act directs the Secretary of the Interior to secure access to lands outside the Park through land acquisitions, easements, and exchanges. It also recommends the temporal and spatial separation of cattle and buffalo herds as a means to reduce the possibility of brucellosis transmission. Finally, the Act designates the National Park Service as the sole management agency of the herd within the park, calls for disassembly of one capture facility, and suggests the use of vaccinations in cattle to reduce the risk of contracting brucellosis. The Act allots three years for implementing the goals as described above. It outlines certain prohibited

actions, penalties for committing these actions, and rewards for individuals who provide information contributing to conviction of violators.

#### *Yellowstone Buffalo Interagency Preservation Plan*

The Yellowstone Buffalo Interagency Preservation Plan was created as a framework for implementation of the Yellowstone Buffalo Preservation Act. The plan includes continuous evaluation requirements and allows for future adaptation of strategies, reflecting an adaptive management approach, to ensure the goals of the Act are met. During the first year of implementation, the Interagency Plan calls for the establishment of the Buffalo Interagency Strategic Oversight Network (BISON) under the Department of the Interior to serve as the liaison among agencies involved in managing the Yellowstone buffalo herd. These agencies include the National Park Service, US Forest Service, and the Montana Department of Livestock. Within Yellowstone National Park, the National Park Service is the sole management authority of the buffalo. BISON will help ensure this is enforced as well as serve as the coordinating body for management actions on federal and private lands outside the Park boundaries. The Act specifies several Prohibited Acts which restrict capturing, killing, hazing (see Appendix 6. Definitions), or luring of buffalo on federal lands. Several Duties, as specified by the Act, are to be accomplished during the first year. These include the enforcement of the Prohibited Acts by federal and state law enforcement agencies, the disassembly of the Stephens Creek Capture facility, and the completion of the land exchange that secures additional grazing land for the Yellowstone buffalo herd. The US Forest Service, National Park Service, and the Montana Department of Livestock will work together to ensure that the buffalo and cattle herds remain spatially and temporally separated, thus guaranteeing the continued health and safety of both populations. In addition, an extensive population and migration monitoring program will be established during the first year. This enables BISON to accurately evaluate the success of program implementation and adapt strategies to meet the changing needs of the Yellowstone buffalo herd.

#### *Conclusions*

Once viewed as a hunted commodity the American buffalo are now seen as a national treasure. The Yellowstone Buffalo Preservation Act provides a resolution to the conflicting interests of the cattle industry and conservationists. It outlines several Duties to be completed by the National Park Service to ensure the safety of the free-roaming buffalo herd. The Act includes provisions for extending the buffalo winter migration area into federal and private lands surrounding the Park. It also directs the Secretary of the Interior to take steps to separate cattle and buffalo herds, a critical component for preventing the transmission of brucellosis and maintaining the support of the cattle industry. The Yellowstone Buffalo Interagency Preservation Plan meets the requirements of the Act while serving the overall purpose of providing for the protection of the wild, genetically unique Yellowstone buffalo herd.

## 1. BACKGROUND

### 1.1. Population History

The American bison (*Bison bison*), more commonly known as buffalo, have roamed North America as the largest land mammal since the end of the Ice Age (NBA 2004). They are gregarious as well as nomadic in nature, migrating in search of food resources throughout the year. These 800 to 2,000 pound grazing animals eat about 2 to 3 percent of their body weight per day, feeding primarily on low-lying grassy vegetation. Throughout history they ranged the grasslands, meadows, foothills, and plateaus of North America. Bison populations in North America were once very abundant, ranging from an estimated 30 million to 75 million. These large populations declined as the early European explorers pushed west. By the year 1819 most of the bison east of the Mississippi were annihilated. In the 1830s the American Fur Company and Hudson Bay Company started to view bison pelts as a valuable commodity. By 1840 the majority of bison west of the Rocky Mountains were gone. With the advance of the railroad and settlement of the American west during the 1850s, there was widespread slaughter of the plains buffalo (Arthun and Holechek 2004). By 1902 the herd residing in Yellowstone National Park had been reduced to 23 individuals.

Populations have rebounded over the last century, with a steady increase over the last 20 years (Dobson and Meagher 1996). The population rise began shortly after the turn of the century due to intensive protection programs (see Figure 1). In the early 1930s a program was instituted to control the population through culling, or removal of unwanted individuals. The program was ceased in the late 1960s and the Park adopted a strategy of natural regulation, allowing environmental pressures to control the population size of the Yellowstone buffalo herd. As is clearly displayed in Figure 1, the population grew steadily after the institution of the new policy. Currently there are an estimated 150,000 buffalo across the United States (US) with 4100 free ranging bison in Yellowstone National Park (BMPEIS 2003). The herd that currently resides in Yellowstone National Park is a descendent population from the historic population and is probably the only place that a herd has been grazing since prehistoric times (NPS 2003a). The buffalo population is divided into three smaller herds – the Mary Mountain herd in the Madison River valley, the Pelican herd in southeastern Yellowstone, and the Northern Range herd in the Yellowstone River and Lamar River valleys (Ferrari and Garrott 2002; Thorne et al. 1991). According to the US General Accounting Office (US GAO 1997) the Northern Range herd is comprised of approximately 900 bison, some of which migrate beyond the northern border of the Park during winter. Appendix 1 illustrates the main wintering valleys for the Yellowstone buffalo.

Bison population,  
1900-2002

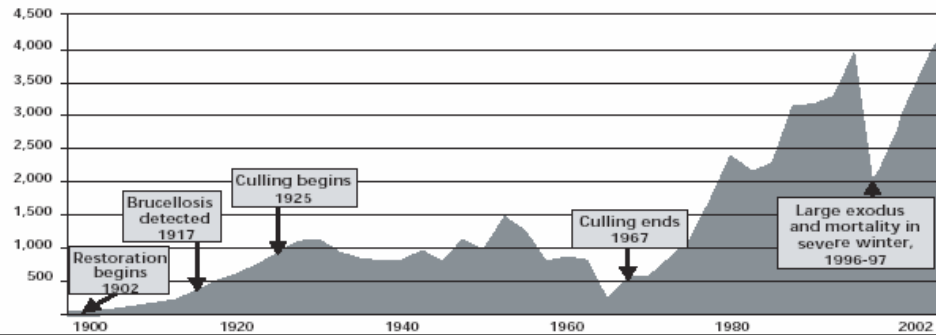


Figure 1: This graph illustrates the population trends of the Yellowstone buffalo during the 20<sup>th</sup> century (NPS 2003b).

## 1.2 Migration

For thousands of years, bison have migrated in and out of the area designated by the United States as Yellowstone National Park. Buffalo are characteristically nomadic (Rezendes 1997) because they require large quantities of forage. On average, adult bison require approximately 30 pounds of forage per day (Evans and Probasco 1977). Part of the current Yellowstone buffalo herd migrates outside of the Park boundary into Montana in search of lower elevation lands with more abundant food (Figure 2). They find critical resources primarily in the Gallatin National Forest and on private lands to the north and west of the Park. The number of animals leaving the Park and the extent to which they migrate varies yearly. Recently, an increased migration has been observed during winter months. Three of the predominant explanations for increased migration are: population increases, winter severity, and use of existing roads as pathways outside the Park boundaries. However, there is much disagreement about the actual cause.

### Population Increases

From 1935-1967 the National Park Service (NPS) controlled the bison population through culling, or the removal of unwanted or undesirable individuals (Rezendes 1997). In 1974 the Park adopted a natural regulation approach to management of the buffalo herd, allowing environmental factors to control the growth of the population. When the policy changed and they no longer removed animals, the population steadily increased. The herd has grown from a population that was once maintained at around 1000 animals (Dobson and Meagher 1996) to a population of over 4000 animals. According to the limits established by the NPS under the 2000 Bison Management Plan, 3000 bison is the “ecological carrying capacity,” or the number of bison that Yellowstone National Park can support without damage to natural resources (YNP Planning 2000). Many believe the increase in numbers and resulting competition for available resources has caused the extended migration out of the park in search of adequate grazing lands.

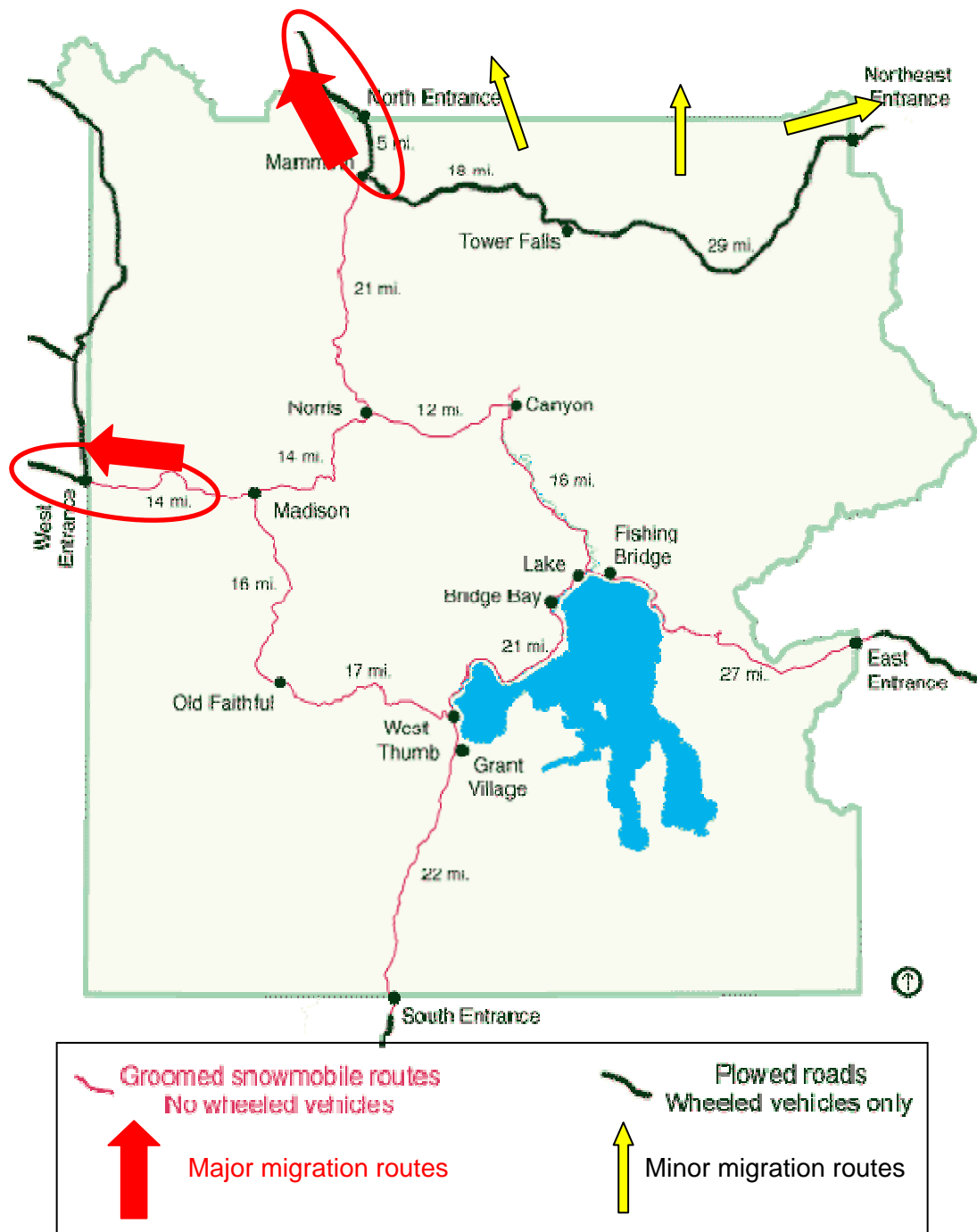


Figure 2: Displays the winter travel corridors along groomed roads and snowmobile paths, as indicated by the red circles at the North and West Entrances. Red block arrows indicate major migration routes. Small yellow arrows are minor migration routes. (Base Map Source: Yellowstone National Park.Com 2003)

### Winter Severity

Furthermore, there is an apparent correlation between winter severity and the extent of the herd migration. The northern part of Yellowstone National Park has elevations ranging from 1500m to 2400m, which is generally lower and warmer than southern portions of the Park (elevations between 2300 and 2600m). Consequently, the northern range tends to receive less snowfall (Singer 1991), in turn, providing better winter grazing for the buffalo. However, as forage is affected by yearly fluctuations in seasons, the migration range fluctuates as well (Meagher 1989a). During more severe winters when there is greater snow accumulation, the buffalo migrate to lower elevations outside the park. Further studies indicate that competition for resources is not the only factor governing dispersal. Meagher (1989a) compared the severe and mild winter migrations of the northern herd of buffalo. Results showed that the herd migrated even during more mild winters, suggesting that the buffalo might be migrating in an attempt to recolonize historical habitat.

### Use of Existing Pathways

Finally, there is research to suggest the extended migration is influenced by the use of snowmobile paths and plowed roads (Figure 2). Ferrari and Garrot (2002) noted that buffalo seek out areas with less snow cover to minimize energy expenditure during travel. The NPS plows roads and pathways in the winter, providing easily traversable corridors for the buffalo to leave the Park. Meagher (1989(a)(b); 1996) found that travel along these corridors was a primary factor affecting the herd's migration outside the Park boundaries. The increased access to resources outside the park, in turn, affects the natural regulation of the buffalo population by effectively increasing the carrying capacity (Meagher 1990).

## **1.3 Brucellosis**

The bacteria *B. abortus* causes brucellosis, a disease that infects both bison and cattle. It is an infection of the reproductive tract and transmitted primarily through contact with the reproductive tissue from an infected animal. The hallmark of the disease is the abortion of the first calf. Other effects include lowered reproductive ability, sterility, poor growth in calves, and decreased milk production. Brucellosis can also be transmitted to calves at the time of birth and by grazing on contaminated forage, as the bacteria can remain viable in the environment for two weeks and up to one hundred days in freezing conditions (Galloway 1974 as cited in McLeod and VanTassell 1996). However, it is not usually a sexually transmitted disease, and as such males are not considered to be vectors. The disease, though not fatal, is chronic; it can remain dormant in an organism, enabling it to spread through a population unnoticed.

Brucellosis was first detected in Yellowstone bison in 1917. The most accepted theory behind its introduction to the herd is that it was transmitted by domestic cattle raised in the park in the early 1900s to provide meat and milk for visitors (NPS 2003b). Since brucellosis is a zoonotic disease, it can be transmitted from infected animals to humans. Human infection can occur through consumption of unpasteurized dairy products from infected cows or through direct contact of open wounds or broken skin with infected animal material or meat. Human effects of



the disease include undulant fever, influenza like symptoms, weakness, aches and chills. Annually, there are 100-200 human cases in the United States.

As a result of winter migration, infected bison may come into contact with cattle herds in neighboring states. Although the US General Accounting Office and National Research Council concluded there was low risk of transmission between bison and cattle, it is not impossible (HR 3446 2003). Increasing population densities, as well as naturally or artificially induced collectives of host species facilitate the transmission of infectious organisms (Meagher and Meyer 1994). As a function of their gregarious nature, bison and cattle can share the same grazing grounds, thus increasing the possibility of transmission. However, there are no known cases of brucellosis transmission from bison to cattle in the wild.

The possibility of transmission threatens the brucellosis-free status of cattle herding states. Brucellosis-free status is a federally designated safety indicator affirming that no cases of brucellosis transmissions or infections in livestock have occurred; therefore human consumption of derived products will not pose the risk of brucellosis infection. The certified brucellosis-free herd status is valid for twelve months unless the herd becomes infected. The herd can regain its status by participating in a whole-herd vaccination plan (APHIS 1998). This status has implications for trade on a domestic and international level.

If brucellosis is detected in livestock, the entire herd is quarantined and tested. Individual animals or the entire herd may be slaughtered if evidence of transmission within the herd exists. Efforts are made to test neighboring herds for the disease as well. State or federal officials are responsible for notifying herd owners in the immediate community about the presence of cattle and/or bison herds that have been placed under quarantine for brucellosis. These officials must also establish quarantined feedlots and pastures (APHIS 1998). If the disease has spread beyond the local confines of a single herd, the state loses its brucellosis-free status.

To retain or reinstate a state's brucellosis-free status the following conditions must be met:

- 1) cattle and/or bison herds in the state must remain free from infections of *B. abortus* for at least 12 months
- 2) all quarantined cattle and/or bison herds in which the bacteria was known to exist must be legally released to an approved slaughter establishment before certification
- 3) all herds of other domestic livestock species in which the bacteria has been found or suspected must be tested negative, slaughtered, or quarantined, leaving no known uncontrolled site of infection
- 4) a minimum of 95 percent of the cases for the previous 12 months must be successfully closed (APHIS 1998).

As of April 2004, 48 states were designated as brucellosis free, Wyoming and Texas having recently lost their certified status (APHIS 2004).

Retaining a brucellosis-free status has significant economic importance for cattle herding states such as Montana. The annual cost to retain brucellosis-free status to US dairy and beef producers is an estimated \$30 million (Bittner 2004). Loss of this status negatively impacts the cattle industry as it curtails avenues for trade and increases costs of production to farmers. In

1951, the estimated losses in production for US dairy producers totaled nearly \$500 million (reported in 1993 dollars) (Bittner 2004). Since the institutionalization of the Co-operative State-Federal Brucellosis Eradication program in 1934, \$3.5 billion was spent on eradication measures which included surveillance testing at farms, stock markets, slaughter facilities, quarantines, herd depopulation, herd management and vaccination efforts (Bittner 2004). According to the Montana Department of Livestock Executive Officer, the loss of brucellosis-free status “could be devastating” to a state with a large livestock industry (Discovering Montana 2002).

### ***1.4 Stakeholders***

When buffalo migrate outside the Park into the surrounding federal and private lands in the state of Montana, they encounter cattle herds. According to the US General Accounting Office (US GAO 1999), there are approximately 300 cattle on private lands and 80 on public lands north of the Park. To the west of the Park there are approximately 350 cattle present during the period of time when the bison are likely to migrate. This is a total of about 730 cattle that could encounter the buffalo during the seasonal migration. As carriers of brucellosis, the Yellowstone buffalo pose a threat to the Montana cattle industry. The Yellowstone buffalo are known carriers of the disease and, consequently, there is risk of transmission to cattle in the area during winter migration outside the Park boundaries. Therefore, the environmental problem creates a clash between two distinct interests. Conservation groups and Native American Tribes value the Yellowstone buffalo as genetically unique remnants of an important American icon (Eilperin 2004). Cattle ranchers and the Montana Department of Livestock (MDOL) believe the risk of losing their brucellosis-free status is too high, making them vulnerable to significant economic losses. Currently, buffalo that leave the safety of the Park boundaries are subject to harassment and risk being killed by landowners who are trying to prevent the transmission of brucellosis from the buffalo to cattle.

There are many key players involved in the issues pertaining to management of the Yellowstone buffalo herd. The National Park Service and the US Fish and Wildlife Service are responsible for managing the herd within the Park and on federal lands outside the Park, respectively. The US Forest Service has federal lands bordering Yellowstone National Park onto which the herd migrates. The US Department of Agriculture Animal and Plant Health Inspection Service is responsible for managing for brucellosis and administering vaccines to cattle. The State of Montana Department of Fish, Wildlife and Parks and the Montana Department of Livestock deal with management issues on state and private land in Montana. There are many other groups that have a vested interest in this issue. These include environmental action groups and community groups that support or oppose current management practices. Cattle ranchers in all three states are concerned about the threat of brucellosis. Montana has a unique interest in the management of the Yellowstone buffalo because the seasonal migration corridors utilized by the buffalo extend into Montana. Thus, the buffalo may come into contact with cattle, raising concerns about disease transmission, addressed below.

The NPS has been involved in the management of the Yellowstone buffalo herd since the early 1900s (Yellowstone National Park Planning 2000). The NPS works with the Animal and Plant Health Inspection Service (APHIS) and other key federal agencies to ensure the maintenance of a healthy herd that does not pose a threat to local livestock or humans. The livestock industry and the Department of Livestock are concerned about the possible spread of brucellosis. Thus, they

maintain that all bison herds should be separated from cattle herds. There is a strong belief that these bison should be tested and slaughtered, which is part of the current strategy.

Environmental action groups and some community groups have been pushing to end all slaughter of the bison from Yellowstone. Representatives from the National Parks Conservation Association have stated that they believe there should be an end to “the years of seasonal hazing, capture, and killing of buffalo in and around Yellowstone National Park by federal and state agencies until specific, common sense conditions are met” (NPCA 2004).

### ***1.5 Current Management Strategy***

The most recent management plan proposed for the Yellowstone buffalo herd is the Modified Preferred Alternative of the Draft Environmental Impact Statement for the Interagency Bison Management Plan for the State of Montana and Yellowstone National Park. This plan was created through the cooperation of various federal and state agencies. The main agencies involved in this plan are the Department of the Interior, the National Park Service, US Department of Agriculture, US Forest Service, the Animal and Plant Health Inspection Service, and the state of Montana (Buffalo Field Campaign 1999; Discovering Montana 2004; NPS 2003a).

In accordance with this plan, participating agencies will first attempt to haze (see Appendix 6. Definitions) Yellowstone buffalo that travel outside the boundaries of Yellowstone back into the Park. When hazing is not effective, bison found outside of the Park may be captured and tested for brucellosis. Agencies may capture and slaughter bison that test positive (seropositive) and pregnant females that do not respond to hazing (NPS 2003a).

Winter grazing corridors for bison have been designated outside the North and West Entrances of the Park (Figure 2). The Modified Preferred Alternative Plan designates dates by which bison must leave the management zones and return to the Park. This creates a temporal separation for any livestock that might be grazing in the management zones during the spring, summer, and fall. The plan outlines a 45-day separation period. The separation period signifies that all bison must be out of the grazing corridors and back within the Park boundaries 45 days before cattle are allowed to graze in any area of the bison migration corridors. If bison are still present, they may be hazed off prohibited lands. If hazing is ineffective, “Agency (NPS) personnel...[may] shoot bison that could not be hazed, evaded capture, or were deemed unsafe to handle (usually large adult males)”. Bison may also be hazed off private lands if requested by the landowner (NPS 2004).

## **2. THE LEGISLATION: THE YELLOWSTONE BUFFALO PRESERVATION ACT**

In November 2003, Congressmen Maurice Hinchey (D-NY) and Charles Bass (R-NH) introduced the Yellowstone Buffalo Preservation Act to the House of Representatives as an alternative to the current management strategy for the Yellowstone buffalo herd. Their interest in the Yellowstone buffalo as a national icon and their disagreement with the existing management strategies prompted them to support this alternative.

### ***2.1 Purpose***

The main goal of the Yellowstone Buffalo Preservation Act (HR 3446) is to provide for the protection of the buffalo herd that resides in Yellowstone National Park and migrates to areas outside of the Park. This single herd of buffalo is the focus of this legislation because it is the only wild and genetically pure herd in the United States that has continuously occupied its original, or native, habitat. The Act identifies the American buffalo as an important “wildlife icon of the United States” that is “profoundly significant to Native American cultures” and has “influenced our history” as a nation (HR 3446 2003). In recognition of the Yellowstone buffalo herd’s unique plight in Yellowstone National Park, the Act aims to provide safe winter grazing areas that extend outside of the Park’s boundaries.

Management of the Yellowstone buffalo herd has been a concern for the state of Wyoming, where Yellowstone National Park is located. It has also been a concern for the states of Idaho and Montana, which share borders with Yellowstone National Park. In addition, private landowners and several government agencies, including the NPS, the US Fish and Wildlife Service, and the Bureau of Land Management have been concerned with the management issues of the herd. For over ten years, representatives from the above named agencies have attempted to devise a solution to the complex issue of managing the Yellowstone buffalo herd. This Act provides a legislative base upon which a management plan may be developed. There are four main issues addressed in the Act. These include: providing safe access for grazing on federal and private lands outside the boundary of Yellowstone National Park, the management of the herd while inside Park boundaries, the use of capture facilities, and the risk of buffalo infecting cattle herds with brucellosis.

### ***2.2 Duties***

The Yellowstone Buffalo Preservation Act sets a deadline for the completion of specific Duties. These Duties should be carried out within three years of this legislation’s ratification and are to be ensured by the Secretary and other “appropriate Federal agencies”.

#### Definitions

The following definitions are provided in the Act and are necessary to understand the Duties and interim regulations:

- Hazing – “any individual effort to drive away, obstruct, chase, scare, or deter natural movements of wildlife, including hazing efforts carried out on foot or horseback or efforts aided by machinery, aircraft, or any type of noise-making device”
- Individual – “any person representing a State or Federal Government”

- Park – “Yellowstone National Park”
- Secretary – “Secretary of the Interior”
- Yellowstone buffalo herd – “the wild, free roaming, unfenced buffalo living primarily within Yellowstone National Park”

The Duties are as follows:

1. The Yellowstone buffalo herd should be allowed to safely roam in Zones 2 and 3 (described below) of the Gallatin National Forest.
2. The National Park Service shall remain the sole management authority of the Yellowstone buffalo herd within the Park boundaries.
3. The land exchange (described below) should be finalized.
4. Stephens Creek Capture Facility should be disassembled.
5. The Secretary of the Interior should make every effort to enable the Yellowstone buffalo herd to safely roam on federal lands outside the boundaries of the Park.

Providing Safe Access for Grazing on Federal and Private Lands Outside the Boundary of Yellowstone National Park

The Act mandates that Zones 2 and 3 (Figure 3) of the Gallatin National Forest be designated as lands where buffalo can freely roam without being hazed. These zones are recommended in the Modified Preferred Alternative section of the 2000 Bison Management Plan for the State of Montana and Yellowstone National Park Final Environmental Impact Statement. This plan was created in 1999 and modified in 2000 by the Department of the Interior, National Park Service, US Department of Agriculture, US Forest Service, and the Animal and Plant Health Inspection Service as the preferred alternative for managing the Yellowstone buffalo herd.

Furthermore, the Act recommends the finalization of the land exchange/easement agreement allowing access to other key habitats (Appendix 2). During the winter months, part of the Yellowstone buffalo herd migrates outside of the Park boundary to surrounding areas of lower elevation in search of food. They find critical resources in the Gallatin National Forest to the north and west of the Park. There are also parcels of private lands that inhibit accessibility to lands along the Yellowstone River. Federal agencies have been working to secure a private land easement for this section. Currently, the buffalo that leave the Park boundaries are subject to harassment and risk of being killed by stakeholders who are trying to prevent the transmission of brucellosis from the buffalo to cattle. Allocation of the above named lands and finalizing the land easement agreement would guarantee safe access to critical habitat needed by the buffalo in the winter months.

Management of the Herd While Inside Park Boundaries

Under the Act, it is recommended that the management of the buffalo herd within Park boundaries continue to be the sole responsibility of the NPS. Currently, the management of the buffalo herd while inside the boundaries of Yellowstone National Park is the sole responsibility of the NPS. The NPS used various

techniques in the past and continue to monitor the effects of their management approach. The NPS has been charged with conserving the land and wildlife within the Park boundaries. The Act explicitly preserves this responsibility.

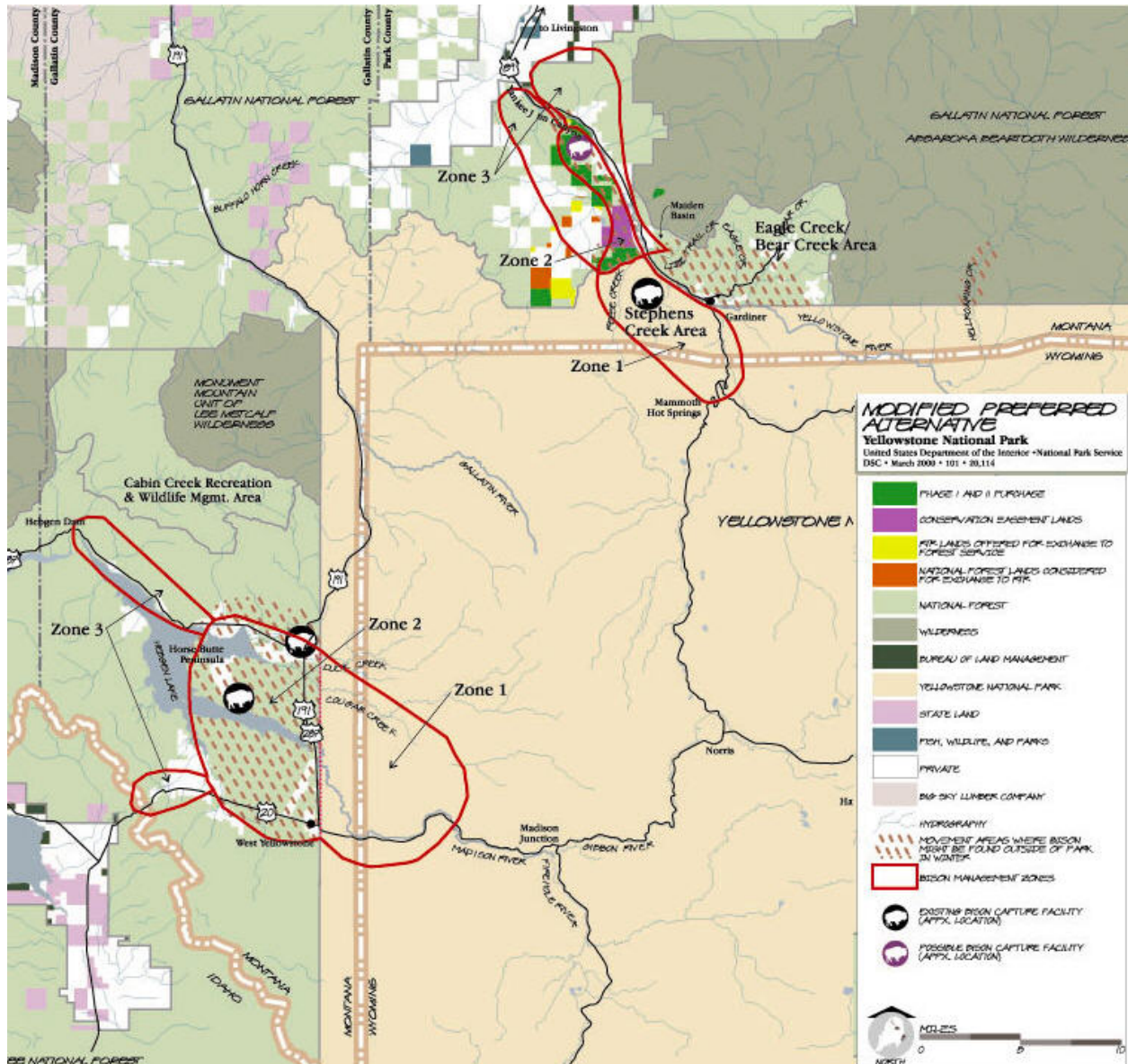


Figure 3: Map of Zones 2 and 3 from the Modified Preferred Alternative of the 2000 Bison Management Plan for the State of Montana and Yellowstone National Park Final Environmental Impact Statement. In these areas, bison shall be allowed to freely roam. (Map Source: Yellowstone National Park Planning 2000)

### Capture Facilities

The capture facilities are used to prevent buffalo from migrating into Montana and to confine the buffalo during testing for brucellosis. If brucellosis is detected from testing, the animal is slaughtered. The Act calls for the disassembling of the

Stephens Creek Buffalo Capture Facility located within the boundaries of Yellowstone National Park.

#### The Risk of Buffalo Infecting Cattle Herds with Brucellosis

The Act recommends that the spread of brucellosis be controlled through cattle vaccination, cooperation with landowners, and separation of livestock from the buffalo on a temporal and spatial scale.

### **2.3 Interim Period**

The Act specifies an interim period between the Act's enactment and the completion of Duties outlined within the Act. During this interim period there are certain Prohibited Acts, penalties, rewards, and a few exceptions to the regulations. The interim period should be completed upon successful implementation of the Duties, three years from the enactment.

#### Prohibited Acts

The Act prohibits hazing, capturing, or killing any buffalo on land held by the federal government or under a federal conservation easement. It also prohibits luring buffalo from federal to private land.

#### Penalties, Rewards, and Exceptions

There will be penalties for any individual who commits a Prohibited Act. An individual will be fined not more than \$5,000 or imprisoned not more than 1 year or both for an initial violation of the Prohibited Acts. For subsequent violations, an individual will be fined not more than \$10,000 or imprisoned not more than 2 years or both. There will also be rewards for individuals who provide information that leads to a conviction resulting from violation of the Prohibited Acts. Anyone who provides information that leads to a conviction will receive one half of the fine collected from the violator or \$2,500, whichever is less. These penalties do not apply to anyone who hazes a buffalo as a result of physical endangerment or damage to private property.

### **2.4 Obstacles to Implementation**

Given the number and diversity of stakeholders involved in the management of the Yellowstone buffalo herd, devising an appropriate program is critical. It must comply with the mandates of the Yellowstone Buffalo Preservation Act while being politically, scientifically, and economically feasible. Primary areas of concern include: fulfilling the required Duties of the Act, addressing stakeholder interests, reducing the threat of brucellosis transmission, and fostering interagency communication. In developing a viable implementation program, these aspects of the issue were carefully weighed.

### **3. SOLUTION: YELLOWSTONE BUFFALO INTERAGENCY PRESERVATION PLAN**

During the initial analysis phase of the Yellowstone Buffalo Preservation Act, scientific research was compiled regarding the carrying capacity of Yellowstone National Park, the prevalence of brucellosis in the bison population, quarantine protocols, testing options, and effective vaccines. These data served as guidelines for developing this management plan. To comply with the Duties specified under the legislation and to ensure the successful management of the Yellowstone buffalo herd, a coordinated management plan was developed. The Yellowstone Buffalo Interagency Preservation Plan, hereafter referred to as the Interagency Plan, delineates the actions that must be performed by the Department of the Interior, the National Park Service (NPS), the US Forest Service (USFS) and the Montana Department of Livestock (MDOL). As part of this plan's program, the Buffalo Interagency Strategic Oversight Network (BISON), an oversight organization responsible for program implementation and program management, will be created. BISON will be a multi-state, interagency council organized under a director to be hired by, and report to, the Secretary of the Interior. BISON will coordinate the management of the Yellowstone buffalo herd with representatives from various local, state, and federal agencies. The Interagency Plan addresses the population size, the migration monitoring methods, the management of the herd, the separation of cattle and bison herds, and the disassembly of the capture facility. A systematic performance measurement system has been created to measure the progression, efficacy, and achievement of the program's objectives.

#### **3.1 Action 1: Create BISON**

The Buffalo Interagency Strategic Oversight Network (BISON) will be created as a management body that concentrates on the relevant issues regarding the buffalo migration through federal and private lands, oversees the implementation of the Interagency Plan and acts as an intermediary between the four agencies. The creation of this organization will be the largest change in organizational structure associated with implementation of the Interagency Plan. BISON will be responsible for a number of tasks, including assessment of new management needs, monitoring of the Interagency Plan implementation and facilitating communication and coordination efforts among the different agencies involved. BISON will act as an intermediary agency to decide feasible actions about what may be best for the buffalo and the interests involved in the region, while remaining in compliance with the Yellowstone Buffalo Preservation Act. However, the BISON will not have any direct management authority of the buffalo within the Park, as this is the responsibility of the National Park Service (NPS). BISON will be created directly under the Department of the Interior (DOI) as to have management authority over both the NPS and the USFS in regards to management issues concerning the Yellowstone buffalo herd (see Figure 4).



### Implementation

#### Elements

- Create BISON Office in Bozeman Montana to facilitate communication with other federal agency offices in Bozeman.
- Establish toll-free BISON Hotline. The hotline will serve as a method of contacting BISON with concerns about the management of the buffalo. Specifically, private landowners may call to request a buffalo be relocated from their lands. Call reception will be staffed using a rotational basis during non-office hours.
- Hire BISON Director full-time to manage the agency and communicate with other agencies and local areas.
- Hire BISON Team Assistant full-time to assist Director in running meetings and communication efforts with agencies.
- Hire Clerical Secretary full-time to maintain agency records and provide day to day care for the office needs.
- Hire Network and Computer Systems Administrator full time to set-up and maintain interactive computer website, maintain networking system and create standard online forms to be used for information reporting purposes.
- Organize tri-annual BISON meetings.

#### Agencies

1. BISON
2. Department of the Interior

BISON will be directed by the Department of the Interior but will work in cooperation with numerous agencies including the National Park Service, USFS and Montana Department of Livestock.

The Buffalo Interagency Strategic Oversight Network (BISON), under the Department of the Interior, will co-ordinate a number of activities, including the assessment of new buffalo management needs both in federal and private lands, the administration of the Interagency Plan, the enforcement of penalties for violations of Prohibited Acts, managing the BISON Hotline and ensuring the continued communication and coordination among the National Park Service (NPS), the Department of the Interior (DOI), the Montana Department of Livestock (MDOL) and the USFS. See Figure 4.

The BISON headquarters will be located in an office in Bozeman, Montana, headed by a small year-round staff of four individuals: the Director, the BISON Team Assistant, the BISON Team Assistant – Clerical, and the Network and Computer Systems Administrator. BISON will be responsible for coordinating a convention following the three Greater Yellowstone Interagency Brucellosis Committee<sup>1</sup> annual meetings. These tri-annual meetings will be held in Jackson,

<sup>1</sup> The Greater Yellowstone Brucellosis Committee is an interagency, interstate organization whose goal is to protect the wildlife and cattle populations in the Greater Yellowstone Area by addressing the threat of brucellosis. The organization meets two to three times annually to coordinate management efforts toward the ultimate goal of eliminating brucellosis from the area.

WY, Bozeman, MT and Idaho Falls, ID. These will provide the main forum for interagency communication regarding Yellowstone buffalo herd management. This should be done as soon as the BISON office is functional.

In addition, BISON will be the coordinating agency assigned to ensure all of the legislation's Prohibited Acts are enforced. The BISON Director will oversee all disputes and enforcement issues. The BISON Team Assistant will assist the Director with any administrative duties pertaining to enforcement of the legislation's Prohibited Acts. In addition to the Director and Team Assistant, the ten forest rangers and four backcountry rangers will be responsible for actual patrol and subsequent citations.

Full implementation of BISON will be completed during the first six months. The staff will be hired by June 2005. Office space will be identified and equipped between December and April. After the office is established, the BISON hotline and first meeting will be initiated no later than June 2005. Total projected costs for Personnel and Other Than Personnel cost for creating BISON will be just over \$247,000. See Appendixes 4 and 5 for detailed job descriptions and budget information.

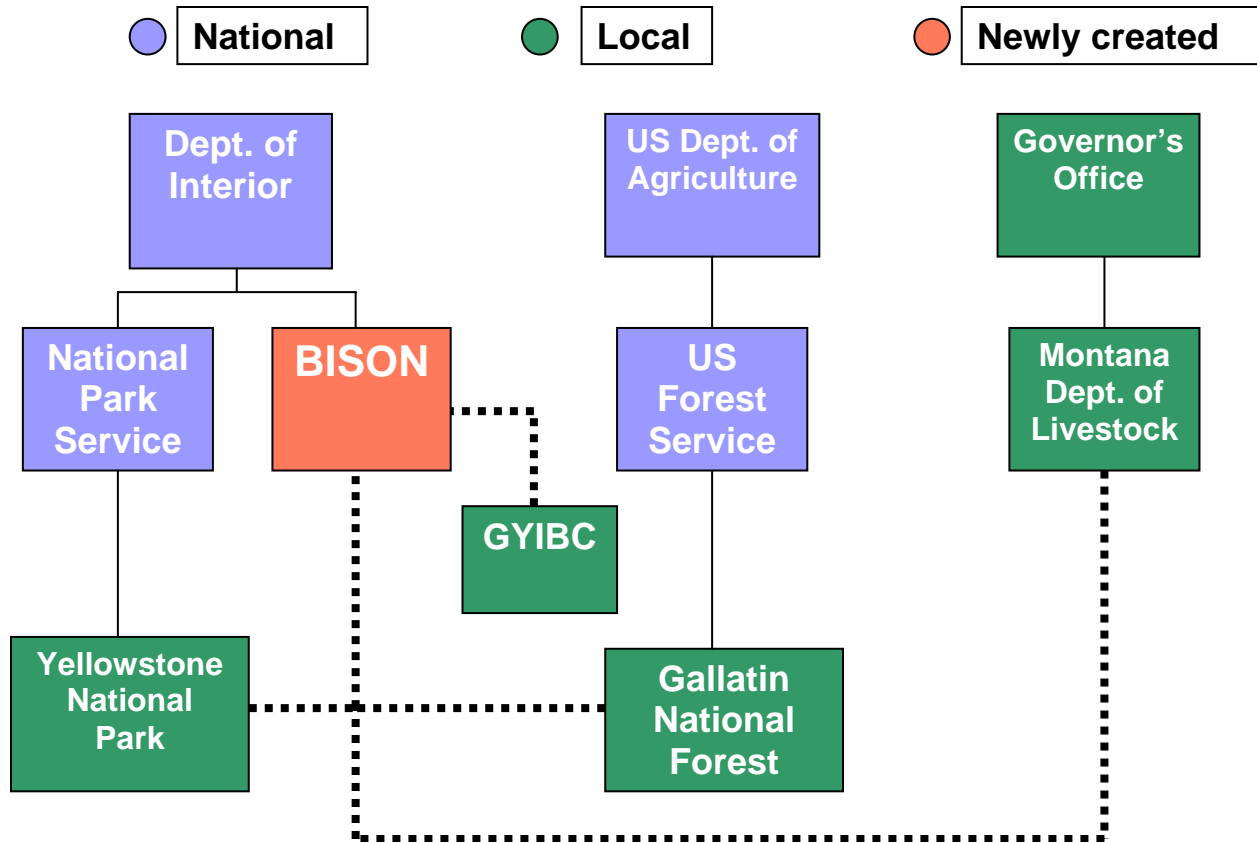


Figure 4: This chart illustrates the organizational structure of the various agencies involved in the Interagency Plan. BISON, the newly created oversight network, serves as the liaison between the Greater Yellowstone Interagency Brucellosis Committee (GYIBC), Yellowstone National Park, Gallatin National Forest, and the MDOL as indicated by the dashed lines.

### *Performance Measurement*

Since BISON will be created within the first year, the majority of indicators will be hiring dates. In addition to Department of the Interior ensuring that all staff are hired within the allotted time frame, it will be necessary to acknowledge that BISON coordinates the annual meetings with the Greater Yellowstone Interagency Brucellosis Committee. See Appendix 3 for a detailed view of the Performance Measures.

| Indicators   | Success   |
|--|---|
| <ul style="list-style-type: none"> <li>• Budget allocation for personnel and other expenses</li> <li>• Personnel hired</li> <li>• Benchmarking against existing agencies and networks</li> <li>• Connections established among agencies</li> </ul> | <ul style="list-style-type: none"> <li>• Establishment of BISON</li> <li>• Organization of the interagency meeting</li> </ul> |

## **3.2 Action 2: Monitor and Map Population and Migration**

### **Within Yellowstone National Park – National Park Service**

The National Park Service (NPS) will maintain its status as the sole authority within Yellowstone National Park. The Interagency Plan calls for NPS to monitor and map buffalo locations within the Park. This action will give the Park the necessary information for identifying the buffalo population size and location. NPS will also be in charge of managing the buffalo inside the Park's boundaries. They will do this by continuing the current natural regulation strategy (see Appendix 6. Definitions).

### *Implementation*

|  |
|--|
| <u>Elements</u> <ul style="list-style-type: none"> <li>• Park Rangers monitor Yellowstone National Park lands and identify the location of sighted buffalo.</li> <li>• Hire a Clerical Program Director, Clerical Program Assistant and a Natural Resources Program Manager to map buffalo sightings in a Geographic Information System (GIS) database.</li> <li>• Create a monthly migration map using GIS.</li> <li>• Natural Resources Program Manager responsible for managing the carrying capacity study.</li> <li>• Follow natural regulation strategy</li> </ul> |
|--|

|   |
|---|
| <u>Agencies</u> <ol style="list-style-type: none"> <li>1. BISON</li> <li>2. National Park Service</li> <li>3. United States Forest Service</li> </ol> |
|---|

NPS will use a natural regulation strategy for managing buffalo during the first year of the Interagency Plan's implementation. Natural regulation has been used for many different

populations in national parks including elk in Yellowstone. The term natural regulation indicates that the growth of the buffalo herd should “decline as the population becomes more dense and... increase if their numbers decline - a biofeedback response” (NPS 2001). Predation and starvation will be the main factors limiting the population. NPS will continue to follow this management strategy. NPS will monitor the buffalo population and migration through aerial flyovers and ranger ground-truthing. Ground-truthing is the process of verifying photographs, satellite images, and any other data collected with remote sensing devices by individuals observing the same features in the field. NPS will continue the three annual aerial flyovers, which are currently conducted to count buffalo herd size.

Rangers on the ground will also record the location and number of buffalo they encounter and report the information back to Yellowstone National Park headquarters. These rangers will be based in their respective northern and western districts and will report the buffalo monitoring information that they gather in the field directly to NPS through an online form created and maintained by BISON. In addition, at least one representative from Yellowstone National Park will meet at the tri-annual BISON meetings with representatives from all other stakeholders in the Yellowstone Buffalo Interagency Preservation Plan. The formal process for recording this information will be established by Yellowstone National Park by February 1, 2005. These rangers will be based in their respective northern and western districts and will report the buffalo monitoring information that they gather in the field directly to NPS through an online form created and maintained by BISON. In addition, at least one representative from Yellowstone National Park will meet at the tri-annual BISON meetings with representatives from all other stakeholders in the Interagency Plan. NPS in conjunction with BISON will create a monthly migration map using Geographic Information Systems (GIS), a spatial data analysis tool used to assess geographic information. These intermediate assessments will culminate in a year-end buffalo population status report for the Secretary of the Interior. This will be created with GIS software already available to NPS and with additional information from the US Forest Service (USFS) and Montana Department of Livestock (MDOL).

Yellowstone National Park will hire three additional employees including a Clerical Buffalo Monitoring Program Director, Clerical Buffalo Monitoring Program Assistant and a Natural Resources Program Manager to assist in compiling and analyzing the GIS data associated with the Interagency Plan. They will work out of the current Yellowstone Spatial Analysis Center. These three employees will be responsible for accumulating, storing and reporting all of the monitoring information received via the online BISON form. They will use this data to develop GIS maps to be used by both the Natural Resources Program Manager and BISON staff in assessing the Interagency Plan’s success and formulating adaptive strategies as necessary. The Natural Resources Program Manager will also be responsible for managing the Carrying Capacity Study (funded by Montana State University), ensuring it is integrated into the GIS database and thoroughly analyzed.

The three staff members at the Yellowstone Spatial Analysis Center will be hired between December and June 2005. This staff will immediately acquire and enter into the database the Montana State University Carrying Capacity study. After the initial BISON meeting, the four backcountry rangers will begin actual mapping and monitoring by June 2005. The total annual

budget for mapping and monitoring of buffalo within Yellowstone National Park will be slightly over \$216,000. See Appendixes 4 and 5 for detailed job descriptions and budget information.

### *Performance Measurement*

The information gleaned from NPS aerial flyovers and ranger ground-truthing (see Appendix 6. Definitions) will continue to be recorded in the existing GIS database. The data will be transformed into informational maps showing buffalo migration patterns. The maps will be published in *BISON Monthly*, an online newsletter, and culminate into the Annual GIS Report from the Spatial Analysis Center to be delivered by NPS to BISON.

NPS and USFS will record annual changes in buffalo population numbers in the GIS database. BISON will generate an annual mortality report indicating the number of human-induced deaths. These reports, to be published annually in the *BISON Monthly* online newsletter, will indicate adherence to the natural regulation management strategy. Success will be indicated by a lower incidence of human-induced buffalo mortality. See Appendix 3 for a detailed view of the Performance Measures.

| Input & Output Indicators   | Success Indicators  |
|---|---|
| <ul style="list-style-type: none"> <li>• Estimated population</li> <li>• Aerial fly-overs</li> <li>• Actual population</li> <li>• Bi-monthly reporting</li> <li>• Monthly migration mapping</li> <li>• Annual population report</li> <li>• Carrying capacity study</li> </ul> | <ul style="list-style-type: none"> <li>• Receipt of carrying capacity study</li> <li>• Timely submission of migration and population status reports</li> <li>• Lower human-induced mortality</li> </ul> |

**Outside Yellowstone National Park –  
United States Forest Service, Gallatin National Forest**

The US Forest Service (USFS) will retain its management responsibility for all USFS lands. Specifically regarding HR 3446, the USFS will be the responsible agency for Zones 2 and 3 and other Forest Service lands adjacent to the Park. As such, they will undertake several actions in the first year to ensure that the duties outlined in the Act that are pertinent on federal lands are completed and no Prohibited Acts are committed. The USFS will complete various monitoring and mapping actions within the first year of the management plan, while following a natural regulation strategy (see Appendix 6. Definitions) identical to that used by the National Park Service (NPS) in the Park for the first year of the Interagency Plan's implementation.

*Implementation*

Elements

- Monitor migration of buffalo in Zones 2 and 3
- Map the migration patterns of buffalo in Zones 2 and 3
- Perform ground-truthing with photographs, satellite images, remote sensing data
- Supervise grazing permits to ensure cattle and buffalo spatial and temporal separation
- Enforce put-on and take-off dates of cattle on grazing lands
- Submit observations and findings to NPS to be incorporated into monthly migration reports
- Attend Greater Yellowstone Interagency Brucellosis Committee Conference on August 19, 2005
- Integrate Montana State University's carrying capacity study into monitoring/mapping strategy

Agencies

1. United States Forest Service
2. National Parks Service
3. Greater Yellowstone Interagency Brucellosis Committee

USFS will oversee and manage the monitoring and mapping program within all USFS lands. USFS will submit observations, findings and conclusions to NPS on a bi-monthly schedule to be integrated into the monthly reports. USFS will attend the Greater Yellowstone Interagency Brucellosis Committee conference on August 19, 2005 and integrate any new procedures discussed at this conference into USFS monitoring and mapping strategies.

The USFS will monitor the buffalo population and migration within Zones 2 and 3 and communicate their findings to the NPS. This will entail ground-truthing by forest rangers already available in the field with minimal addition to their duties. USFS rangers will then send this information via email to NPS headquarters on a bi-monthly basis, and it will be incorporated into the monthly reports created by NPS.

The USFS will allow continued cattle grazing only on original grazing permits within the migration corridors. These grazing permits do not interfere with the separation of buffalo and cattle herds. The cattle are put-on in June and are taken-off as late as mid-October whereas the bison migration occurs during the winter months, thus allowing for ample separation of the herds. USFS rangers will enforce these dates by verifying the cattle's removal in the fall and re-entry to the corridors in the spring. The USFS will further assess the acceptability of these dates with a year-end report submitted to members of the BISON team.

BISON will host a meeting and cross-department session in coordination with the Greater Yellowstone Interagency Brucellosis Committee Conference held on August 19, 2005. At this meeting the USFS, as the buffalo management authority outside the Park, will be briefed by BISON staff on the new carrying capacity study conducted by Montana State University and new monitoring and mapping procedures as determined by BISON. The actual monitoring and mapping activities for year-one will occur from August 22, 2005 through December 30, 2005.

The three staff members at the Yellowstone Spatial Analysis Center will be hired between December and June 2005. This staff will immediately acquire and enter into the database the Montana State University Carrying Capacity study. After the initial BISON meeting, the ten district rangers will begin actual mapping and monitoring by June 2005. The total annual budget for mapping and monitoring of buffalo within Yellowstone National Park will be slightly over \$27,485.

#### *Performance Measurement*

The USFS will enforce put-on and take-off dates for cattle and distribute citations for Prohibited Acts and consequent penalties and rewards on Forest Service lands. USFS rangers will begin this duty as soon as the plan is implemented. Data collected by USFS rangers will be given to BISON to assimilate into a database. An Enforcement Database will be established and managed by the Team Assistant-Clerical member of BISON as a source for law enforcement data specifically referencing enforcement activities in response to infractions of the Prohibited Acts of hazing, capturing, luring, and killing of buffalo. The number of actual federal citations and convictions will then be recorded in the federal courts. The National Park Service (NPS) rangers will record the number of known infractions in the database. The infractions will be reported in the online newsletter, *BISON Monthly*. See Appendix 3 for a detailed view of the Performance Measures.

| Input & Output Indicators   | Success Indicators  |
|---|---|
| <ul style="list-style-type: none"> <li>• Put-on and take-off dates for cattle grazing</li> <li>• Bi-monthly reporting</li> <li>• Monthly migration mapping</li> <li>• Annual population report</li> <li>• Number of infractions, arrests, and convictions</li> <li>• Human-induced mortality</li> </ul> | <ul style="list-style-type: none"> <li>• Decrease in the number of infected cattle</li> <li>• No evidence of brucellosis transmission</li> <li>• Decrease in hazing incidents</li> <li>• Human-induced mortality decreases</li> </ul> |

### **3.3 Action 3: Relocate Buffalo from Private Lands**

The Montana Department of Livestock (MDOL) will be responsible for managing the buffalo that migrate onto private land to maintain the safety of private landowners surrounding the newly designated migration corridors. MDOL currently employs a buffalo removal crew, which will continue to operate under MDOL with BISON oversight. However, with the finalization of the land exchange, there should be little need for management on private lands, as the buffalo do not have a history of migrating further than the migration corridors described in the Act.

#### *Implementation*

##### Elements

- BISON manages toll-free Hotline where bison sightings are reported
- BISON contacts MDOL if buffalo are sighted outside of federal land boundaries
- MDOL removes buffalo and places them on federal lands
- MDOL responsible for informing and educating private landowners of Act's implications
- MDOL attends Greater Yellowstone Interagency Brucellosis Committee on August 19, 2005 and is briefed on the Act's implications

##### Agencies

1. BISON
2. Montana Department of Livestock

BISON is the oversight agency of buffalo removal and relocation. BISON will maintain the Hotline that private landowners may call if buffalo are encountered on private lands. BISON will contact MDOL if information is received regarding buffalo found outside of federal boundaries. MDOL will be responsible for removal and relocation of buffalo onto federal lands. MDOL is additionally responsible for informing and educating private landowners of the implications of HR 3446.

MDOL will be responsible for the relocation of buffalo to federal lands if contacted by the BISON. MDOL currently hazes buffalo from private land onto the closest federal land. While there are no prohibited actions on private lands, under the Act hazing buffalo on federal lands is prohibited. In an effort to ensure compliance under the Act and accurately monitor the population and migration, MDOL will be required to notify the National Park Service (NPS) of the location and number of buffalo relocated, and steps taken to relocate them. This should be done bi-monthly through email and will be incorporated into the monthly GIS maps created by NPS.

Buffalo sightings will be called in to the toll-free Hotline managed by BISON. BISON will contact the MDOL removal crew and inform MDOL of the buffalo location. MDOL removal crew will be comprised of MDOL employees working on rotational shifts paid \$12.00 an hour for their services. The MDOL crew will remove buffalo and place them on federal lands. The



Crew members will report the location of the removed buffalo to the GIS office in Yellowstone National Park.

Upon enactment of HR 3446, NPS, USFS, and MDOL staff will be briefed by their supervisors on the new Department of the Interior mandate on January 10<sup>th</sup>, 2005. Prior to the BISON meeting, MDOL staff will be responsible for informing and educating private landowners from January 10<sup>th</sup> through January 30<sup>th</sup>, 2005 on the implications that this bill has regarding their land. BISON will host a meeting and cross-department session in coordination with the Greater Yellowstone Interagency Brucellosis Committee Conference held on August 19, 2005. At this meeting MDOL will be briefed by BISON staff on the Act and its implications regarding buffalo relocation from private lands back to public (NPS/USFS) lands. Actual relocation activities will be ongoing and are set to occur during the first year from January 17<sup>th</sup> through December 30<sup>th</sup>, 2005. See Appendixes 4 and 5 for detailed job descriptions and budget information.

#### *Performance Measurement*

Representatives from MDOL, NPS and USFS will be involved in the evaluation of these management strategies during BISON meetings three times as year. See Appendix 3 for a detailed view of the Performance Measures.

| Input & Output Indicators  | Success Indicators   |
|--|--|
| <ul style="list-style-type: none"><li>• BISON Hotline incoming calls</li><li>• Customer satisfaction</li></ul> | <ul style="list-style-type: none"><li>• Buffalo removed without incident</li></ul> |

### **3.4 Action 4: Disassemble Stephens Creek Capture Facility**

National Park Service (NPS) will facilitate the disassembly of the Stephens Creek Capture Facility, as stipulated by the Act. Stephens Creek Capture Facility is the only capture facility located within the boundaries of Yellowstone National Park.

#### *Implementation*

|   |
|---|
| <u>Elements</u> <ul style="list-style-type: none"><li>• Disassemble the Stephens Creek Capture Facility and store the materials for future use.</li></ul> |
| <u>Agencies</u> <ol style="list-style-type: none"><li>1. National Park Service</li></ol>  |

The NPS Maintenance Crew will be responsible for completing the disassembly of the Stephens Creek Capture Facility. Planning and logistics for this project will occur during the spring, while actual disassembly should be completed by the end of July 2005. Existing Maintenance Crew staff will be paid overtime to complete this five-day task. The facility will be dismantled in such a way that it allows for possible reassembly outside of the Park. Materials should be stored on site at the Maintenance facilities for possible future use.

The staff that will be needed to disassemble Stephens Creek Capture Facility will be assembled between March and May 2005. They will begin to obtain supplies and coordinate travel in June

for the disassembly in July. Personnel services total \$3750, Other Than Personnel Services total \$550, with the total costs being \$4300. See Appendixes 4 and 5 for detailed job descriptions and budget information.

#### *Performance Measurement*

The Stephens Creek Capture Facility will be completely disassembled in July 2005. The National Park Service will report the disassembly to be included in *BISON Monthly*. See Appendix 3 for a detailed view of the Performance Measures.

| Input & Output Indicators                 | Success Indicators |
|---|--------------------|
| • Planning stages meet internal deadlines | • Disassembled     |

### **3.5 Action 5: Complete Land Exchange**

BISON, under the direction of the Department of the Interior, will task the US Forest Service (USFS) with overseeing the finalization of the land exchange in Zones 2 and 3 of the migration corridor to the north of the Park (Figure 3). The designated lands provide critical winter habitat for the bison herd, which migrates north of the Park boundary along the Yellowstone River in search of more desirable grazing grounds. The private landowner, Church Universal Triumphant, has been working with the Rocky Mountain Elk Foundation and the USFS to finalize this transaction. Section 1(f)(1) of the Act states that the Yellowstone buffalo will be allowed to roam freely in Zones 2 and 3 outside of the Park boundaries. To ensure fulfillment of this duty, the USFS will need to complete the paperwork necessary to finalize this exchange by the end of the first year of implementation.

#### *Implementation*

|   |
|---|
| <u>Elements</u> <ul style="list-style-type: none"> <li>• BISON hire a Land Exchange Liaison</li> <li>• Complete the necessary paperwork and legal contracts to finalize the land exchange.</li> <li>• Report results to BISON to be published in the <i>BISON Monthly</i>.</li> </ul> |
| <u>Agencies</u> <ol style="list-style-type: none"> <li>1. Department of the Interior</li> <li>2. United States Forest Service</li> </ol>  |

BISON will hire a Land Exchange Liaison who will be solely focused on finalizing the land exchange/easement agreement with the Church Universal Triumphant. The funds have been allocated from taxpayers, progress has been made in recent years, but the transfer of rights is not yet complete. The Land Exchange Liaison will be responsible for making the necessary contacts and working through the legalities of the issue.

A land exchange liaison will be hired between December and February 2005. The land exchange will be finalized by the liaison after March 1. Personnel Services total \$48,800, Other Than Personnel Services total \$13,003,000, with the total costs being \$13,051,000.

The land exchange liaison will be hired between December and February 2005. The liaison will be in charge of completing the land exchange no later than October 2005. Total personnel and other than personnel services is estimated to be \$52,000; which excludes the \$13 million dollars allocated by taxpayers to fund the land exchange. See Appendixes 4 and 5 for detailed job descriptions and budget information.

#### *Performance Measurement*

Any agreements made toward the successful completion of the land exchange will be reported by the USFS. The estimated versus actual costs of the land exchange data will be collected and reported in the annual budget report. Success of this first year objective will be defined by official, signed contracts completing the land exchange. All findings will be reported in *BISON Monthly*, the online newsletter. See Appendix 3 for a detailed view of the Performance Measures.

| Input & Output Indicators   | Success Indicators   |
|---|--|
| <ul style="list-style-type: none"> <li>• Progress made</li> <li>• Completed agreements</li> </ul> | <ul style="list-style-type: none"> <li>• Signed contracts</li> </ul> |

### **3.6 Action 6: Enforce Prohibited Acts of HR 3446**

Citations and Penalties for Prohibited Acts within Yellowstone National Park will be dispensed by officials from federal and state law enforcement agencies. Park rangers in Yellowstone National Park and Gallatin National Forest will be charged primarily with enforcing the law. They will be accompanied by local law enforcers, such as the state highway patrol and local police officers. The citations are federal offences and records of these citations can readily be accessed. An Enforcement Database will be established and managed by the clerical program staff member of BISON.

#### *Implementation*

##### Elements

- Federal, state, and local agencies enforce the Prohibited Acts laid out in HR 3446.
- BISON compile a list of citations given for violations of the Prohibited Acts.
- BISON report the list of citations in *BISON Monthly*.

##### Agencies

1. BISON
2. Department of the Interior
3. National Park Service
4. United States Forest Service
5. State and local law enforcement

The specific Prohibited Acts laid out in HR 3446 must be enforced. While the violating the Prohibited Acts is a federal offense, and therefore can be cited by any federal personnel, it must be guaranteed that this is being accomplished. BISON will be the coordinating agency assigned to ensure all of the legislation's Prohibited Acts are enforced. The Director of BISON is responsible for ensuring that all federal agencies in the area are enforcing the Prohibited Acts

and Penalties laid-out in the Act. The BISON Director will oversee all disputes and enforcement issues and the Team Assistant will perform administrative duties associated with the enforcement of the Prohibited Acts. The ten USFS rangers and four NPS backcountry rangers will be responsible for actual patrol and subsequent citations. BISON will respond to complaints against a federal agency for failing to enforce the Penalties, or if the agency is accused of violating them.

The briefing for staff and obtaining supplies necessary for enforcement of the Prohibited Acts will happen before January 15, 2005. Enforcement will begin after the Act is implemented. Personnel Services total \$41,500, other than personnel services total \$200, with the total costs being \$41,700. See Appendixes 4 and 5 for detailed job descriptions and budget information.

### *Performance Measurement*

The Enforcement Database will be established and managed by the BISON Team Assistant-Clerical as a reference of law enforcement data specifically regarding response activities to infractions of the Prohibited Acts. The number of actual federal citations and convictions will then be recorded in the federal courts. The NPS rangers will record the number of known infractions in the database. The infractions will be reported in *BISON Monthly*. See Appendix 3 for a detailed view of the Performance Measures.

| Input & Output Indicators  | Success Indicators  |
|--|---|
| <ul style="list-style-type: none"> <li>• Number of infractions, arrests, and convictions</li> <li>• Human-induced mortality</li> </ul> | <ul style="list-style-type: none"> <li>• Decrease in hazing incidents</li> <li>• Human-induced mortality decreases</li> </ul> |

### **3.7 Action 7: Perform Evaluations**

There will be incremental, mid-year and year-end evaluations, to measure the first year's success. In doing so, the members involved can see their progress in accomplishing the Interagency Plan's goals. The evaluations are important for solidifying interagency understanding and support for the Yellowstone Buffalo Interagency Preservation Plan. They will provide summaries of past performance, regulations, successes and failures. They will help to direct future policies and field actions of all of the involved agencies. The evaluations will identify tangible successes and failures, which should enable policy makers and field level managers to create long term policies beyond the initial three year interim period.

### *Implementation*

|   |
|---|
| <p><u>Elements</u></p> <p><i>Year 1:</i></p> <ul style="list-style-type: none"> <li>• Monthly reports beginning May 1, 2005</li> <li>• Year-end report issued by December 15, 2005</li> </ul> <p><i>Year 2 &amp; 3:</i></p> <ul style="list-style-type: none"> <li>• Monthly beginning January 1, 2005</li> <li>• Mid-year report issued by November 15, 2005</li> <li>• Year-end report issued by December 15, 2005</li> </ul> |
|---|

Agencies

1. BISON
2. Department of the Interior
3. Montana Department of Livestock
4. National Park Service
5. United States Forest Service

BISON will be the coordinating agency, responsible for all final evaluation and reporting of program findings. Although BISON is the final responsible agency to the Department of the Interior, the evaluation process will be an interagency operation. The primary data for the evaluations will be taken by field representatives from the Montana Department of Livestock, US Forest Service and the National Park Service. The National Park Service will receive the field reports, analyze data using a Geographic Information System (GIS), and issue reports to BISON. This interagency flow of information will enable BISON to develop effective and comprehensive program evaluation reports.

*BISON Monthly* will be published at the beginning of every month by BISON staff and will contain information on the carrying capacity, enforcement, and the migration patterns of the buffalo herds. In addition, there will be a year-end summary of each management action, which will include a collection of all the information within the BISON Monthlies. The first monthly report will be issued on May 1, 2005 and subsequently the first business day of each succeeding month. No later than December 15, 2005 BISON will issue the first comprehensive year end report detailing developing science, policy, program successes, program failures and program changes for the next year. Although BISON meetings will provide a forum for further evaluation, in the first year they will serve primarily as information dissemination forums.

After the first year, BISON will continue to create monthly reports and annual reports detailing the program's progression. In addition to the first year's duties, during the second and third years, BISON will assess and coordinate possible changes in the Yellowstone Buffalo Interagency Preservation Plan for future years. They will create a report by mid-November to be incorporated into the year-end summary.

*Performance Measurement*

Indicators for evaluations will be based on the timely issuing of online reports. This includes the monthly, mid-year and year-end reports. Timely and effective Ranger reporting will be used as indicators for the initial data gathering phase. See Appendix 3 for a detailed view of the Performance Measures.

Evaluations in the form of the online report, *BISON Monthly*, will occur after the first BISON meeting April. The online report will be posted the first of every month beginning in May 2005.

## **4. CONCLUSION**

The legislation's success in meeting its protection and management goals for the Yellowstone buffalo herd will require measuring key indicators of the proposed Yellowstone Buffalo Interagency Preservation Plan.

### ***4.1 Overview of Problem and Legislation***

The Yellowstone Buffalo Preservation Act considers two environmental problems: (1) the winter migration of buffalo from Yellowstone National Park into surrounding lowland regions and (2) the possible transmission of brucellosis from bison to cattle. The buffalo migrate to areas in Montana where they may come into contact with cattle. Cattle ranchers have been known to haze or kill the buffalo in attempts to protect their herds. The management of the Yellowstone buffalo herd is a contentious issue among stakeholders. While some agree with the natural management ethic of the Park, others believe measures should be taken to control the brucellosis risk through stricter haze-capture and targeted slaughtering of infected animals. This creates a conflict between the livestock industry, the National Park Services (NPS) mandate for protecting wildlife, and advocacy groups concerned about the safety of the buffalo.

There are several issues addressed in the Act: (1) the safe access for buffalo grazing on federal and private lands outside the boundary of Yellowstone National Park, (2) the management of the herd while inside Park boundaries, (3) the use of capture facilities, and (4) the risk of buffalo infecting cattle herds with brucellosis. The Yellowstone Buffalo Interagency Preservation Plan attempts to establish a compromise between the interests of the livestock industry and the conservationists' by decreasing the risk of brucellosis transmission while sustaining the buffalo population in a non-threatening manner.

### ***4.2 First-Year Implementation***

In the first year of enactment there are seven primary Actions which will be implemented under the Interagency Plan, as introduced in Section 3.

1. Create BISON
2. Monitor and map the buffalo population and migration
3. Relocate buffalo from private lands
4. Disassemble the Stephens Creek Capture Facility
5. Complete the land exchange
6. Enforce the Prohibited Acts and associated Penalties
7. Conduct performance evaluations

The disassembly of Stephens Creek Capture Facility, completion of the land exchange, and the enforcement of the Prohibited Acts are actions that are directly required by the legislation. The first two accomplish Duties outlined in the Act while the enforcement measures ensure that the buffalo herd is protected during the three-year implementation period. A third Duty, to ensure the National Park Service is the sole management authority within Yellowstone, is accomplished through a combination of actions. First, establishing BISON ensures proper communication and coordination regarding management jurisdiction. BISON will serve as an intermediary, thus fostering communication among agencies which aids in designing appropriate management strategies. Second, NPS is given the responsibility of monitoring and mapping the buffalo herd

within Yellowstone’s boundaries. A fourth Duty is to provide for the safety of the buffalo while in Zones 2 and 3. The US Forest Service efforts to enforce the put-on and take-off dates for cattle grazing will protect the health of the buffalo and minimize the risk they pose to cattle. An extension of Yellowstone National Park’s natural regulation management strategy into Zones 2 and 3 of the Gallatin National Forest increases the level of protection the herd is afforded, thus ensuring their safe migration in and out of the Park. Figure 5 provides an overview of each agency and their respective Actions.






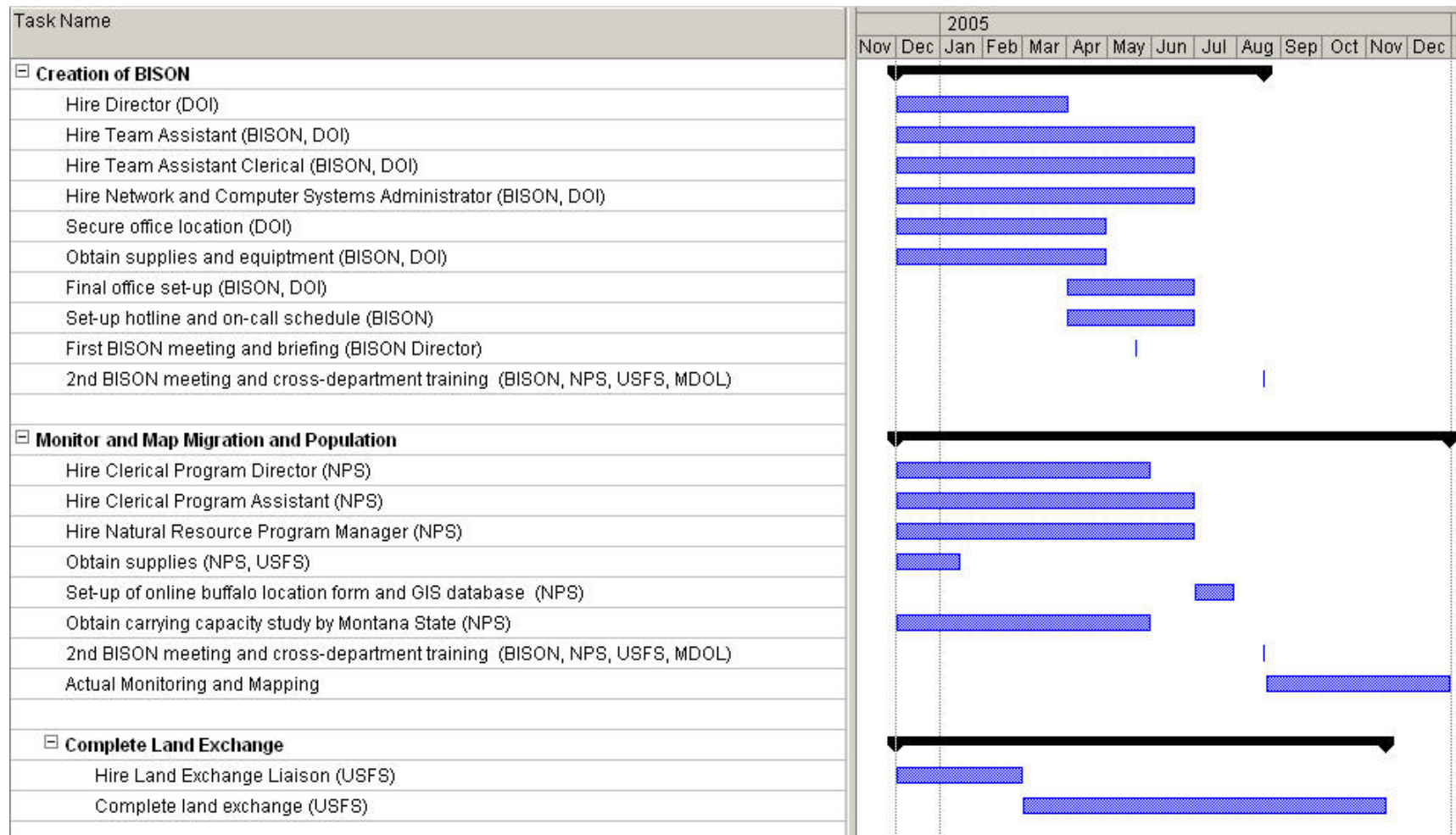
|   |  |  |  |  |  |
|---|---|---|--|---|---|
| <b>PROGRAM ACTIONS</b>                              | <b>DOI</b>  | <b>BISON</b>  | <b>USFS</b>  | <b>NPS</b>  | <b>MDOL</b>   |
| <b>Create BISON</b>                                 | ◆   | ◆   |  |   |   |
| <b>Monitor &amp; Map Migration &amp; Population</b> |   | ◆   | ◆  | ◆   |   |
| <b>Relocate Buffalo from Private Lands</b>          |   | ◆   |  |   | ◆   |
| <b>Disassemble Stephens Creek</b>                   |   |   |  | ◆   |   |
| <b>Complete Land Exchange</b>                       | ◆   |   | ◆  |   |   |
| <b>Enforce Prohibited Acts &amp; Penalties</b>      | ◆   | ◆   | ◆  | ◆   |   |
| <b>Perform Evaluations</b>                          | ◆   | ◆   |  |   |   |

Figure 5: This is an overview chart displaying the primary participating agencies in each program Action of the Interagency Plan, as outlined above in Section 3.

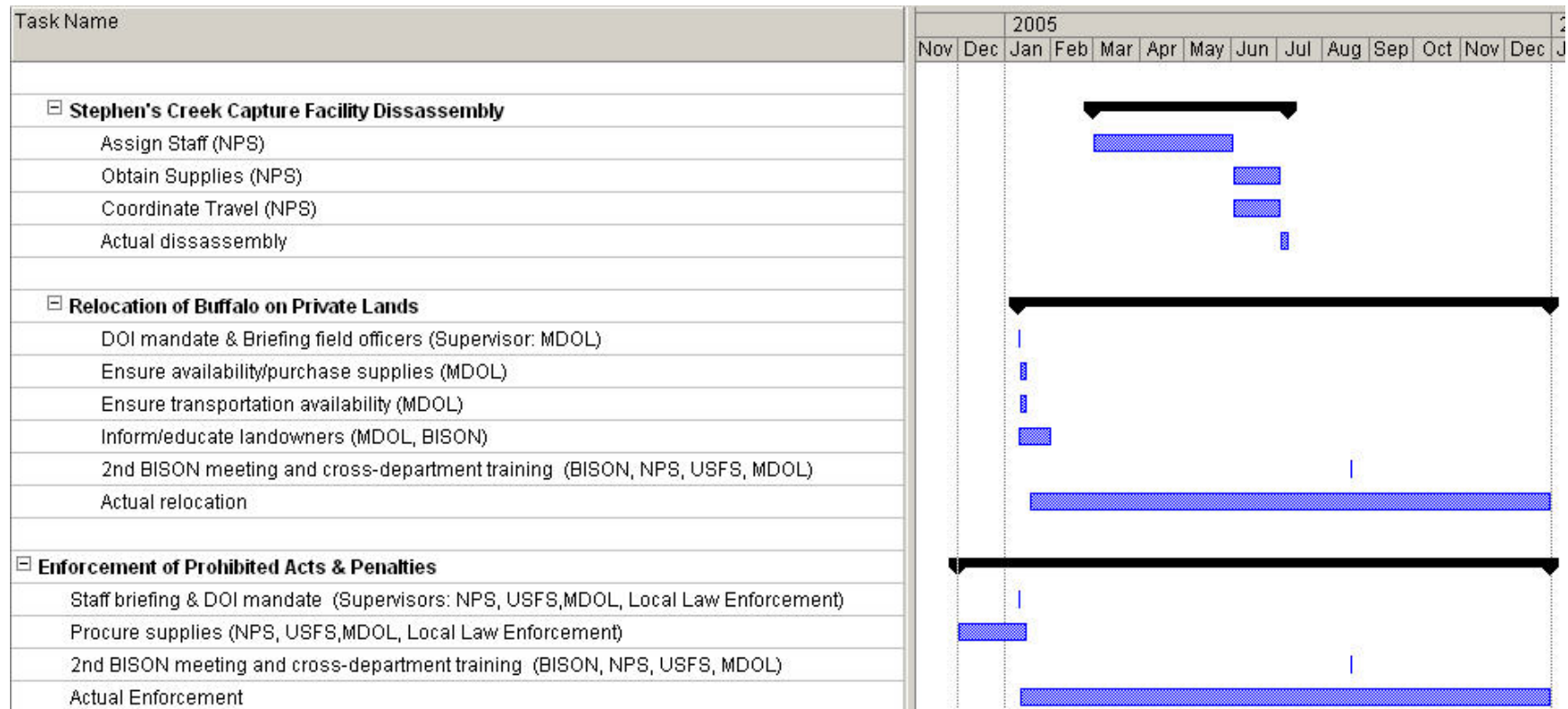
### 4.3 Master Calendar

In the first-year of implementation, many tasks must be accomplished to successfully implement the Yellowstone Buffalo Interagency Preservation Plan. The Master Calendar provides an overview of the critical start dates and completion deadlines for each Action detailed above in Section 3. The following charts display the tasks, start dates, and end dates for the Interagency Plan. Notice the majority of the hiring, planning, and organizational activities occur during the first half of the year while full implementation is achieved in the second half of the year.

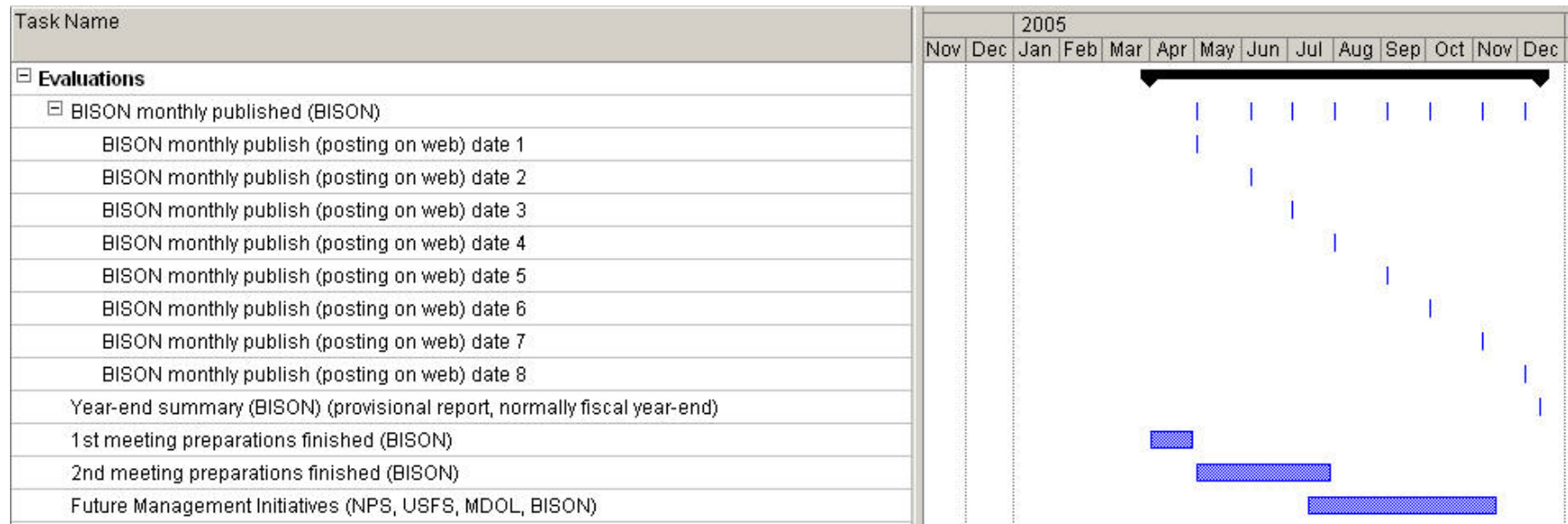
*Yellowstone Buffalo Interagency Preservation Plan*







*Yellowstone Buffalo Interagency Preservation Plan*



#### 4.4 Staffing

Implementing the Yellowstone Buffalo Interagency Preservation Plan will require the use of existing staff as well as the hiring of additional staff to complete the program elements under each Action, as outlined in Section 3. The creation of the Buffalo Interagency Strategic Oversight Network (BISON) will require the hiring of a complete set of administrative and support staff. Additionally existing staff will be trained to perform tasks associated with the Plan. The table below details the required staff for each Action and the associated agencies.

| <b>Program Actions – Oversight Agency</b>   | <b>Required Staff</b>  |
|---|--|
| <p>Action 1:<br/><i>Create Buffalo Interagency Strategic Oversight Network (BISON)</i></p>  | <ul style="list-style-type: none"> <li>• (1) Director</li> <li>• (1) Team Assistant</li> <li>• (1) Team Assistant-Clerical</li> <li>• (1) Network and Computer System Administrator</li> </ul>   |
| <p>Action 2(a):<br/><i>Monitor and Map Population and Migration – National Park Service (Yellowstone National Park and Yellowstone Spatial Analysis Center)</i></p> | <ul style="list-style-type: none"> <li>• (4) Backcountry Rangers (4)</li> <li>• (1) Natural Resource Manager</li> <li>• (1) GIS Clerical Buffalo Monitoring Program Director</li> <li>• (1) GIS Clerical Buffalo Monitoring Program Assistant (Part-time)</li> </ul> |
| <p>Action 2(b):<br/><i>Monitor and Map Population and Migration – United States Forest Service (Gallatin National Forest)</i></p>                                   | <ul style="list-style-type: none"> <li>• (10) Forest Rangers</li> </ul>  |
| <p>Action 3:<br/><i>Relocate Buffalo from Private Lands – Montana Department of Livestock</i></p>   | <ul style="list-style-type: none"> <li>• (6) Buffalo Relocation Crew<br/>- (3 Full Time, 3 Reserve)</li> </ul>   |
| <p>Action 4:<br/><i>Disassemble Stephens Creek Capture Facility – National Park Service (Yellowstone National Park)</i></p>   | <ul style="list-style-type: none"> <li>• (5) Labor Maintenance Crew</li> </ul>   |
| <p>Action 5:<br/><i>Complete Land Exchange – United States Forest Service (Gallatin National Park)</i></p>  | <ul style="list-style-type: none"> <li>• (1) Land Exchange Liaison</li> </ul>  |

|   |  |
|---|--|
| <p><b>Action 6:</b><br/><i>Enforce Prohibited Acts of HR 3446 – National Park Service (Yellowstone National Park) and BISON</i></p> | <ul style="list-style-type: none"><li>• (4) Backcountry Rangers</li><li>• (1) BISON Director</li><li>• (1) BISON Team Assistant</li><li>• (1) BISON Team Assistant-Clerical</li><li>• (1) BISON Network and Computer Systems Administrator</li></ul> |
| <p><b>Action 7:</b><br/><i>Perform Evaluations</i></p>  | <ul style="list-style-type: none"><li>• Multi-Agency Existing Staff</li></ul>  |

#### 4.5 Program Budget

The total program budget for implementation of the Actions described above is \$13,796,500. It is important to note that over \$13 million of the total cost of implementation is for the completion of the land exchange, which has separate funding sources. This results in the necessary funds totaling \$683,500, or 5% of the total program costs. Of this portion, 86% of the projected budget will be devoted to personnel costs. Due to the interagency, multi-state nature of the issue, it is critical that proper communication be maintained. This is why creating BISON is a budget priority in implementing the Interagency Plan. See Figure 6.

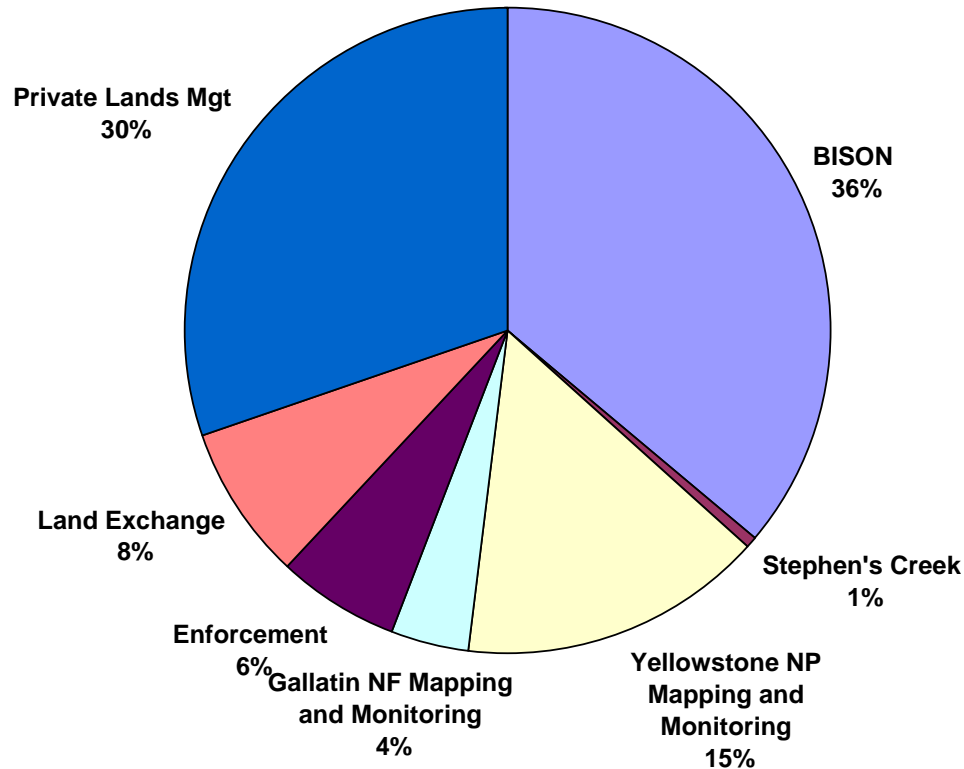


Figure 6: This pie chart illustrates the distribution of the program budget for the Yellowstone Buffalo Interagency Preservation Plan.

#### 4.6 Post-First Year

In the years following the first year of implementation, much of the interagency reporting and coordination will continue. As feedback from management strategies accumulates, BISON will work with the agencies to adapt the management strategies to meet the needs of the buffalo herd.

## **5. REFERENCES**

- Animal and Plant Health Inspection Service (APHIS). 1998. Brucellosis eradication: Uniform methods and rules, effective February 1, 1998. APHIS 91-45-011
- Animal and Plant Health Inspection Service (APHIS). 2004. Online. Available: [www.aphis.gov](http://www.aphis.gov). 9 August 2004
- Arthun, D. and J. Holechek. 2004. The North American Bison. Online. Available: [http://www.bisoncentre.com/resources/bce170/bce170\\_american\\_bison.html](http://www.bisoncentre.com/resources/bce170/bce170_american_bison.html). 10 Aug. 2004.
- Baskin, Y. 1998. Home on the range. *Bioscience* 48: 246- 251.
- Biggs, P.M. 1985. Infectious animal disease and control. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 310(1144): 259-274.
- Bison Management Plan Environmental Impact Statement Team (BMPEIS). 2003. Bison: answers to frequently asked questions. Online. Available: <http://www.nps.gov/yell/nature/animals/bison/bisonqa.html>. 10 Aug. 2004.
- Bittner, A. 2004. An overview and the economic impacts associated with mandatory brucellosis testing in Wyoming cattle. Wyoming Department of Administration and Information, Economic Analysis Division. Online. Available: [http://eadiv.state.wy.us/specialreports/Brucellosis\\_report.pdf](http://eadiv.state.wy.us/specialreports/Brucellosis_report.pdf). 15 August 2004.
- Buffalo Field Campaign. 1999. Summary of the Modified Preferred Alternative for Interagency Bison Management Plan. Online. Available: <http://www.wildrockies.org/Buffalo/politk99/summary.html>. 10 August 2004.
- Cheville, N.F., D.R. McCullough, and L.R. Paulson. 1998. Brucellosis in the Greater Yellowstone Area. National Research Council. National Academy Press, Washington, D.C., USA.
- Committee on Ungulate Research in Yellowstone National Park (CURYNP). 2002. Ecological dynamics on Yellowstone's Northern Range. National Research Council. National Academy Press, Washington, D.C., USA.
- Discovering Montana. 2004. Interagency bison management plan: Summary. Online. Available: <http://www.discoveringmontana.com/liv/animalhealth/bison/Summary.asp>. 10 August 2004.
- Discovering Montana. 2002. Governor Martz expresses concern over Idaho's confirmation of brucellosis infection in cattle herd. Online. Available: <http://www.discoveringmontana.com/gov2/css/pr.asp?ID=62>. 10 Aug. 2004

- Dobson and Meagher. 1996. The population dynamics of brucellosis in the Yellowstone National Park. *Ecology* 77(4):1026-1036.
- Edmondson, A. 1996. RB51: a new brucellosis vaccine. Online. Available: [http://www.vetmed.ucdavis.edu/vetext/INF-BE\\_cca9609.html](http://www.vetmed.ucdavis.edu/vetext/INF-BE_cca9609.html). 4 August 2004
- Eilperin, J. 2004. Buffalo kill to control disease questioned: environmental groups dispute risk to cattle. *Washington Post*: 26 March 2004.
- Evans, K.E. and G. E. Probasco. 1977. Wildlife of the prairies and plains. Gen. Tech. Rep. NC-29. St. Paul, MN: US Department of Agriculture, Forest Service, North Central Forest Experiment Station. 18 p. [14118] (cited on [www.allrefer.com](http://www.allrefer.com) *Bison bison*: Biological data and habitat requirements)
- Ferrari, M.J. and R.A. Garrott. 2002. Bison and elk: brucellosis seroprevalence on a shared winter range. *Journal of Wildlife Management*. 66(4):1246-1254.
- HR 3446: The Yellowstone Buffalo Preservation Act. 2003. The Library of Congress Online. Available: <http://thomas.loc.gov>. 9 August 2004
- Kowalaski, J.C., C. Lindeman, and S.M. Boyle. 2004. Bison, Brucella and DNA research in Greater Yellowstone. Online. Available: <http://www.cvgs.k12.va.us/bison/research/immunology/Brucell.html>. 4 August 2004
- Lawrence J. and D. Otto. 2002. Economic importance of Montana's cattle industry. Online. Available: [www.beef.org/dsp/dsp\\_content.cfm](http://www.beef.org/dsp/dsp_content.cfm). 13 August 2004.
- McLeod, D.M. and L.W. VanTassell. 1996. Economic and Policy Implications of Brucellosis in the Greater Yellowstone Area. *Rangelands*. 18(4):145-148.
- Meagher, M. 1989a. Range expansion by bison of Yellowstone National Park. *Journal of Mammalogy* 70(3):670-675.
- \_\_\_\_\_. 1989b. Evaluation of boundary control for bison of Yellowstone National Park. *Wildlife Society Bulletin* 17:15-19.
- \_\_\_\_\_. 1990. Changes in bison ecological carrying capacity because of human activities. Paper presented at meeting of the George Wright Society, El Paso, Tex., Nov. 14, 1990.
- \_\_\_\_\_. 1996. Range expansion by bison of Yellowstone National Park. Pages 307-312 in F.J. Singer, ed. *Effects of grazing by wild ungulates in Yellowstone National Park*. Technical Report NPS/NRYELL/NRTR/96-01, NPS, Natural Resource Information Division, Denver.
- Meagher, M. and M.E. Meyer. 1994. On the origins of brucellosis in bison of Yellowstone National Park: A review. *Conservation Biology* 8(3):645-653.

- Montana Cadastral Mapping Program. 2004. Discovering Montana. Online. Available: <http://gis.doa.state.mt.us/> 9 August 2004.
- National Bison Association (NBA). 2004. Bison history and status. Online. Available: <http://www.bisoncentral.com/history/history.asp>. 10 August 2004.
- National Parks Conservation Association (NPCA). 2004. Take action: end Yellowstone buffalo slaughter. Online. Available: [http://www.npca.org/take\\_action/action\\_alerts/ActionAlert.asp?strAction=link&lngAlertID=356](http://www.npca.org/take_action/action_alerts/ActionAlert.asp?strAction=link&lngAlertID=356) 10 August 2004.
- National Park Service (NPS). 2001. How does natural regulation work? Yellowstone National Park Official Website. Online Available: <http://www.nps.gov/yell/nature/northernrange/natreg/natural.html>. 20 November 2004.
- National Park Service (NPS). 2003a. Bison. Online. Available: <http://www.nps.gov/yell/nature/animals/bison/bison.html>. 10 August 2004.
- National Park Service (NPS). 2003b. Yellowstone. When bison leave the park. US Department of the Interior. Washington, D.C., USA.
- National Park Service (NPS). 2004. Table 1: Summary comparison of alternative actions. Online. Available: <http://www.nps.gov/yell/technical/planning/bison%20eis/table01.htm>. 10 August 2004.
- Rezendes, V.C. 1997. Wildlife management: issues concerning the management of the bison and elk herds in Yellowstone National Park. US General Accounting Office. Report No. GAO/T-RCED-97-200. Washington, DC, USA.
- State of Wyoming. 2004. Class A Status: Brucellosis Fact Sheet. Online. Available: <http://wyagric.state.wy.us/relatedinfo/BRucellosis/FactSheet1.pdf>. 15 August 2004.
- Schurig, G. 2004. Brucella abortus vaccines: smooth and rough strains. Online. Available: <http://www.moag.gov.il/brunet/>. 12 August 2004.
- Singer, F.J. 1991. The ungulate prey base for wolves in Yellowstone National Park. Pages 323-348 in *The Greater Yellowstone Ecosystem: redefining America's wilderness heritage*. Yale University Press, New Haven, Connecticut, USA.
- Thorne, E.T., M. Meagher, and R. Hillman. 1991. Brucellosis in free-ranging bison: three perspectives. *Greater Yellowstone Ecosystem: Redefining America's Wilderness Heritage*. Kieter and Boyce, eds. Yale University Press, New Haven, Connecticut, USA.



US General Accounting Office (GAO). 1999. Wildlife management: negotiations on a long-term plan for managing Yellowstone still ongoing. Resources, Community, and Economic Development Division. Report No. GAO/RCED-00-7. Washington, DC, USA.

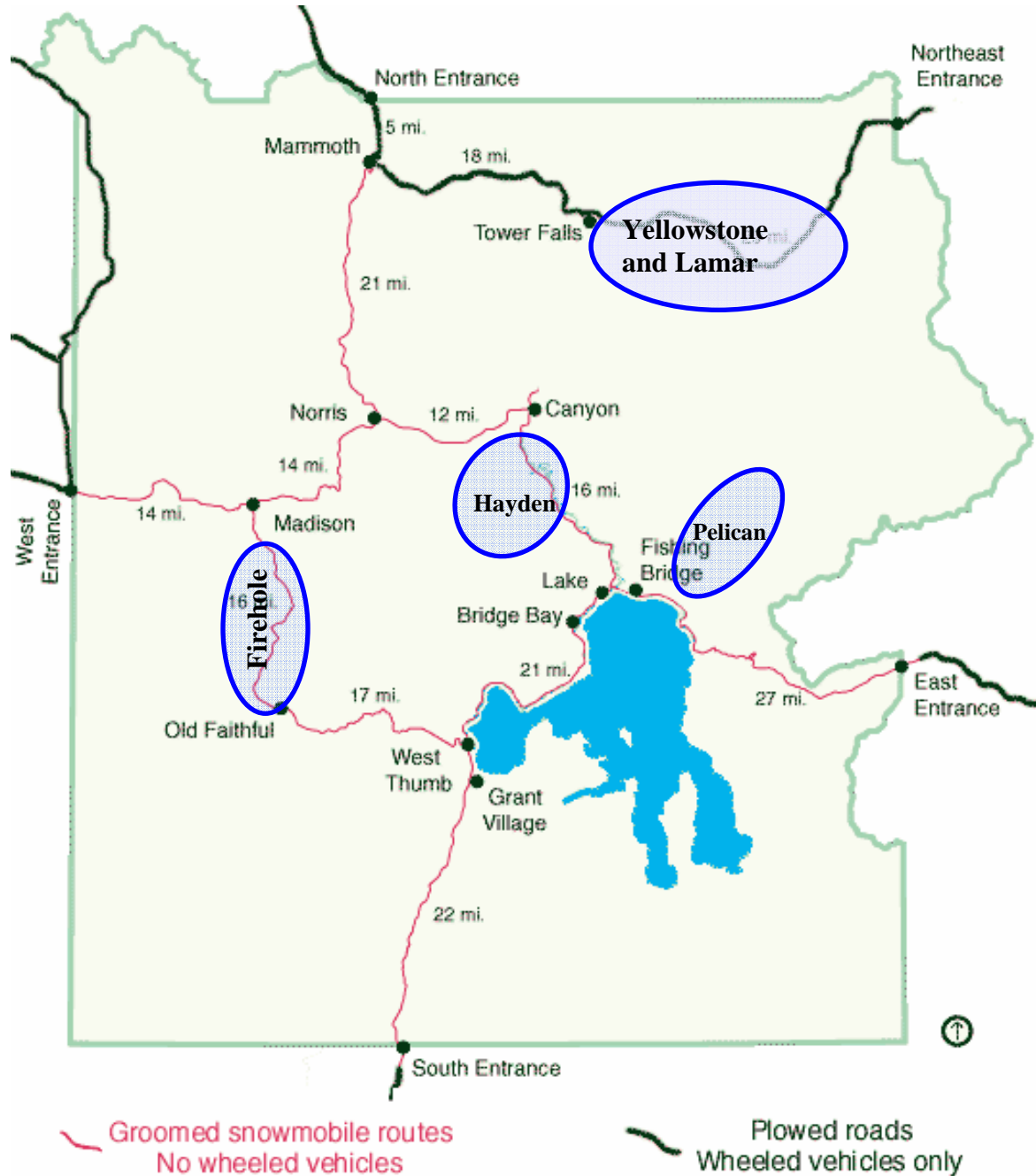
Yellowstone National Park.Com. 2003. Snowmobiling – Yellowstone National Park. Yellowstone Media Group, Inc. Online. Available:  
<http://www.yellowstonenationalpark.com/snowmobileparkmap.htm>. 13 August 2004

Yellowstone National Park Planning (YNP Planning). 2000. Summary Final Environmental Impact Statement for the Interagency Bison Management Plan for the State of Montana and Yellowstone National Park.  
<http://www.nps.gov/yell/technical/planning/bison%20eis/intro.htm>. 9 August 2004.

## 6. APPENDIXES

### Appendix 1

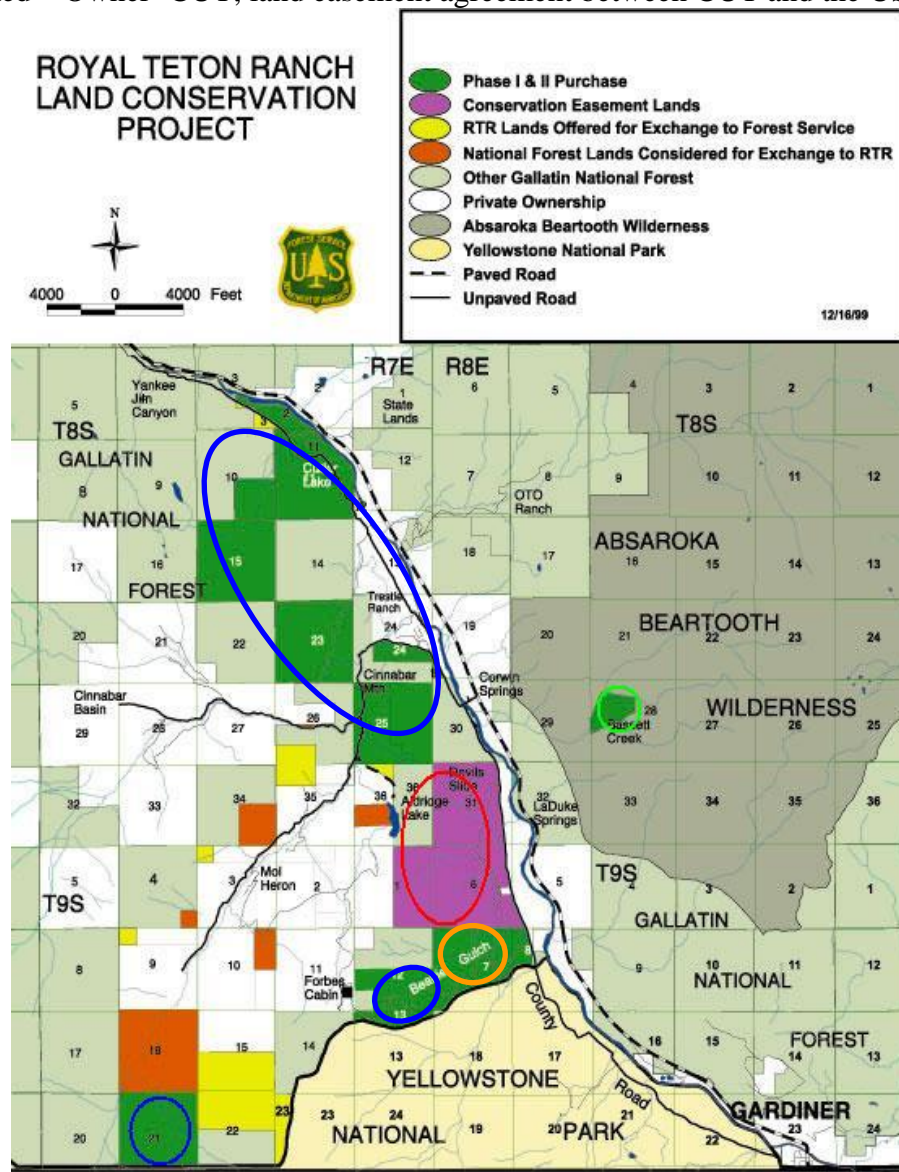
Illustrates the core wintering areas within Yellowstone National Park – Lamar, Pelican, Hayden, and Firehole Valleys. (Base Map Source: Yellowstone National Park.Com 2003)



## Appendix 2

According to the Montana State Cadastral Mapping Program, portions of the land deal are still in progress. As of June 2004 the majority of the land purchases were still undergoing deed transition (highlighted in blue and orange). The ownership and taxpayers for these parcels are listed below. It appears that the complete transfer of rights has not been completed. The area highlighted in red is the land easement project, also in progress. (Base Map Source: Montana Cadastral Mapping Program 2004)

- Green – complete transfer of property rights.  
Owner=US Department of Agriculture (USDA)
- Blue – Owner and taxpayer is said to be USDA, but Owner Name 1=CUT; indicates that the parcel is being sold via contract for deed
- Orange – Owner=Church Universal and Triumphant (CUT); taxpayer=USDA
- Red – Owner=CUT; land easement agreement between CUT and the USDA



## Appendix 3

PERFORMANCE MEASUREMENT MATRIX

| Action   | Interested Party | First Year Objective                                    | Input Indicator       | Output Indicator | Efficiency Indicator | Service Quality Indicator          | Cost Indicator          | Success Indicator                     |
|----------|------------------|---|-----------------------|------------------|----------------------|------------------------------------|-------------------------|---------------------------------------|
| Pop. No. |                  | Obtain Montana State carrying capacity.                 |                       |                  |                      |                                    |                         |                                       |
|          | BISON            | Carrying Capacity                                       | Est. Pop. No          | Actual Pop. No.  | N/A                  | N/A                                | Est. vs. Actual         | Receipt of Study from Montana State U |
|          |                  | <u>Measurement</u><br>(data collected)<br>(provided by) | no. buffalo           | no. buffalo      | N/A                  | N/A                                | \$113,000 vs. Actual    | Final CC Study                        |
|          |                  |   | NPS Rangers           | Montana State    | N/A                  | N/A                                | BISON                   | Montana State                         |
|          |                  | <u>Collection</u><br>(process)<br>(frequency)           | Pop. Database         | Pop. Database    | N/A                  | N/A                                | Budget Database         | Study Briefing                        |
|          |                  |   | Once: 01/05           | Once: 03/05      | N/A                  | N/A                                | Once: 03/05             | Once:03/05                            |
|          |                  | <u>Report</u><br><u>Feedback</u>                        | BISON monthly         | BISON monthly    | N/A                  | N/A                                | Budget Report           | BISON monthly                         |
|          |                  |   | 1st yr. assess.       | 1st yr. assess.  | N/A                  | N/A                                | 1st yr. assess.         | 1st yr. assess.                       |
|          | DOI              | Enforcement   | No. Known Infractions | No. Arrests      | No. Convictions      | % Rangers Satisfied w/ Enforcement | Est. vs. Actual         | Decrease in Hazing Incidence          |
|          |                  | <u>Measurement</u><br>(data collected)<br>(provided by) | no. infractions       | no. of citations | no .of convictions   | survey results                     | \$40,981.415 vs. Actual | % decrease                            |
|          |                  |   | NPS Rangers           | Fed. Cts.        | Fed. Cts.            | BISON                              | BISON                   | BISON                                 |
|          |                  | <u>Collection</u><br>(process)<br>(frequency)           | Enforce. Database     | Fed. Reg.        | Fed. Reg.            | survey                             | Budget Database         | database                              |
|          |                  |   | monthly               | monthly          | monthly              | annually                           | annually                | annually                              |
|          |                  | <u>Report</u><br><u>Feedback</u>                        | BISON monthly         | BISON monthly    | BISON monthly        | Enforce. Database                  | Budget Report           | BISON monthly                         |
|          |                  |   | 1st yr. assess.       | 1st yr. assess.  | 1st yr. assess.      | 1st yr. assess.                    | 1st yr. assess.         | 1st yr. assess.                       |

| Action          | Interested Party | First Year Objective                                    | Input Indicator               | Output Indicator              | Efficiency Indicator | Service Quality Indicator | Cost Indicator          | Success Indicator                      |
|-----------------|------------------|---|-------------------------------|-------------------------------|----------------------|---------------------------|-------------------------|--|
| Manage. in Park | DOI              | Disassemble Stevens Creek Capture Facility              | Disassembly plans             | Disassembly Completion Status | Duration             | N/A                       | Est. vs. Actual         | Complete Disassembly of Facility       |
|                 |                  | <u>Measurement</u> (data collected)<br>(provided by)    | NPS implemen-<br>tation dates | % complete                    | no. days             | N/A                       | \$4,000.00vs.<br>Actual | NPS completion<br>dates                |
|                 |                  |   | NPS                           | NPS                           | NPS                  | N/A                       | BISON                   | NPS                                    |
|                 |                  | <u>Collection</u><br>(process)<br>(frequency)           | NPS Report                    | NPS Report                    | NPS report           | N/A                       | Budget<br>Database      | NPS Report                             |
|                 |                  |   | Once: 01/05                   | Once: 07/05                   | Once: 07/05          | N/A                       | annually                | Once:07/05                             |
|                 |                  | <u>Report</u><br><u>Feedback</u>                        | BISON monthly                 | BISON<br>monthly              | BISON monthly        | N/A                       | Budget Report           | BISON monthly                          |
|                 |                  |   | 1st yr. assess.               | 1st yr. assess.               | 1st yr. assess.      | N/A                       | 1st yr. assess.         | 1st yr. assess.                        |
|                 | PUBLIC           | "Natural Reg."<br>Manage. Strategy                      | Pop. Begin. Yr.               | Pop. End Yr.                  | Buffalo Mortality    | N/A                       | Est. vs.<br>Actual      | Human-Induced<br>Buffalo Mort.<br>Rep. |
|                 |                  | <u>Measurement</u><br>(data collected)<br>(provided by) | no. buffalo                   | no. buffalo                   | no. perished         | N/A                       | N/A                     | Mortality Data<br>(Human/Natural)      |
|                 |                  |   | NPS/USFS                      | NPS/USFS                      | NPS/USFS             | N/A                       | N/A                     | NPS/USFS                               |
|                 |                  | <u>Collection</u><br>(process)<br>(frequency)           | pop. database                 | pop. database                 | pop. database        | N/A                       | N/A                     | pop. database                          |
|                 |                  |   | Once: 01/05                   | Once:01/06                    | annually             | N/A                       | N/A                     | annually                               |
|                 |                  | <u>Report</u><br><u>Feedback</u>                        | BISON monthly                 | BISON<br>monthly              | BISON monthly        | N/A                       | N/A                     | Mortality Rep.                         |
|                 |                  |   | 1st yr. assess.               | 1st yr. assess.               | 1st yr. assess.      | N/A                       | N/A                     | 1st yr. assess.                        |

*Yellowstone Buffalo Interagency Preservation Plan*

| Action            | Interested Party | First Year Objective                                    | Input Indicator                   | Output Indicator                | Efficiency Indicator                            | Service Quality Indicator                | Cost Indicator              | Success Indicator             |
|-------------------|------------------|---|-----------------------------------|---------------------------------|---|--|-----------------------------|-------------------------------|
| Manage. Fed. Land | DOI              | B.I.S.O.N.: Staffing and Support                        | Budget for Personnel              | Budget for Office Establishment | Benchmark Against Existing Networks in NPS/USFS | Park Service/Forest Service Satisfaction | Est. vs. Actual             | Establishment of BISON office |
|                   |                  | <u>Measurement</u><br>(data collected)<br>(provided by) | \$265,996.035 vs. Actual Salaries | \$53,000 vs. Actual             | N/A   | survey results                           | \$318,996.035 vs. Actual    | N/A                           |
|                   |                  |   | BISON                             | BISON                           | BISON   | BISON                                    | BISON                       | N/A                           |
|                   |                  | <u>Collection</u><br>(process)<br>(frequency)           | BISON Database                    | BISON Database                  | BISON Database                                  | BISON Database                           | Budget Database             | N/A                           |
|                   |                  |   | monthly                           | monthly                         | annually  | annually                                 | annually                    | N/A                           |
|                   |                  | <u>Report</u><br><u>Feedback</u>                        | Budget Report                     | Budget Report                   | BISON monthly                                   | BISON monthly                            | Budget Report               | BISON monthly                 |
|                   |                  |   | 1 <sup>st</sup> yr. assess.       | 1 <sup>st</sup> yr. assess.     | 1 <sup>st</sup> yr. assess.                     | 1 <sup>st</sup> yr. assess.              | 1 <sup>st</sup> yr. assess. | 1 <sup>st</sup> yr. assess.   |
|                   | BISON            | Enforce “Put-on” and “Take-off”: Zones 2&3              | Pre-established Dates             | Removal/arrival of cattle       | Number On vs. No. Off                           | N/A                                      | Est. vs. Actual             | Decreased No. Infected Cattle |
|                   |                  | <u>Measurement</u><br>(data collected)<br>(provided by) | dates                             | head of cattle                  | head of cattle                                  | N/A                                      | N/A                         | brucellosis cases in cattle   |
|                   |                  |   | USFS                              | USFS                            | USFS  | N/A                                      | N/A                         | USFS                          |
|                   |                  | <u>Collection</u><br>(process)<br>(frequency)           | Per Management Plan               | vacc. database                  | vacc. database                                  | N/A                                      | N/A                         | vacc. database                |
|                   |                  |   | annually                          | annually                        | annually  | N/A                                      | N/A                         | annually                      |
|                   |                  | <u>Report</u><br><u>Feedback</u>                        | BISON monthly                     | BISON monthly                   | BISON monthly                                   | N/A                                      | N/A                         | BISON monthly                 |
|                   |                  |   | 1 <sup>st</sup> yr. assess.       | 1 <sup>st</sup> yr. assess.     | 1 <sup>st</sup> yr. assess.                     | N/A                                      | N/A                         | 1 <sup>st</sup> yr. assess.   |

| Action                     | Interested Party | First Year Objective                   | Input Indicator                               | Output Indicator                | Efficiency Indicator            | Service Quality Indicator                      | Cost Indicator               | Success Indicator                              |
|----------------------------|------------------|--|---|---------------------------------|---------------------------------|--|------------------------------|--|
| Manage.<br>Private<br>Land | <b>PUBLIC</b>    | <b>BISON<br/>HOTLINE</b>               | <b>Incoming Calls</b>                         | <b>Completed<br/>Calls</b>      | <b>Avg.<br/>Completed Calls</b> | <b>% Callers<br/>Satisfied w/<br/>Response</b> | <b>Est. vs.<br/>Actual</b>   | <b>Bison Removed<br/>From Private<br/>Land</b> |
|                            |                  | <u>Measurement</u><br>(data collected) | incoming<br>hotline calls                     | hotline call<br>responses       | incoming calls<br>completed     | survey results                                 | Est. vs.<br>Actual Cost      | # animals MDOL<br>removed                      |
|                            |                  | (provided by)                          | BISON   | BISON                           | BISON                           | BISON  | BISON                        | MDOL   |
|                            |                  | <u>Collection</u><br>(process)         | Hotline<br>database                           | Hotline<br>database             | Hotline<br>database             | Hotline<br>database                            | Budget<br>Database           | Hotline<br>database                            |
|                            |                  | (frequency)                            | monthly                                       | monthly                         | monthly                         | annually                                       | annually                     | monthly  |
|                            |                  | <u>Report</u>                          | BISON monthly                                 | BISON<br>monthly                | BISON monthly                   | BISON monthly                                  | Budget Report                | BISON monthly                                  |
|                            |                  | <u>Feedback</u>                        | 1st yr. assess.                               | 1st yr. assess.                 | 1st yr. assess.                 | 1st yr. assess.                                | 1st yr. assess.              | 1st yr. assess.                                |
|                            | <b>DOI</b>       | <b>Land Exchange</b>                   | <b>Progress Made<br/>on<br/>Land Exchange</b> | <b>Completed<br/>Agreements</b> | <b>N/A</b>                      | <b>N/A</b>                                     | <b>Est. vs.<br/>Actual</b>   | <b>Signed Contracts</b>                        |
|                            |                  | <u>Measurement</u><br>(data collected) | Any agreements                                | Signed<br>Documents             | N/A                             | N/A  | \$12,057,295.9<br>vs. Actual | Official<br>Documents                          |
|                            |                  | (provided by)                          | Gallatin Nat.<br>For.                         | Gallatin Nat.<br>For.           | N/A                             | N/A  | BISON                        | Gallatin Nat. For.                             |
|                            |                  | <u>Collection</u><br>(process)         | N/A   | N/A                             | N/A                             | N/A  | Budget<br>Database           | N/A  |
|                            |                  | (frequency)                            | N/A   | N/A                             | N/A                             | N/A  | annually                     | N/A  |
|                            |                  | <u>Report</u>                          | BISON monthly                                 | BISON<br>monthly                | N/A                             | N/A  | Budget Report                | BISON monthly                                  |
|                            |                  | <u>Feedback</u>                        | 1st yr. assess.                               | 1st yr. assess.                 | N/A                             | N/A  | 1st yr. assess.              | 1st yr. assess.                                |

## ***Appendix 4***

### ***Job Descriptions***

#### ***Backcountry Rangers - Yellowstone National Park***

##### ***Number needed: 4***

There are general qualifications and duties that must be met by any backcountry ranger that is hired in Yellowstone National Park. These duties consist of enforcing all laws including fish and game regulations, making arrests and issuing citations, assisting visitors, responding to emergency medical calls and structural fire alarms and wildland fire suppression. Duties of backcountry ranger positions include law enforcement and resource protection patrols by horse, foot, or boat, conducting outfitter evaluations, trail and campsite maintenance, fishing and hunting patrols, monitoring visitor use and mitigating resource impacts.

Yellowstone National Park regulations state that applicants must:

- 1) Be 21 years of age, and not reached his/her 57<sup>th</sup> birthday at the time of appointment
- 2) Completed an NPS Seasonal Law Enforcement Training Program
- 3) Meet physical requirements approved according to RM 57 Occupation Medical Standards and Physical Fitness
- 4) Complete and pass an Office of Personnel Management security investigation
- 5) Have, at least, a First Responder certification

In addition to these duties the rangers that work with the Interagency Plan will have to meet other requirements. They must have a four-year degree with 24 semester hours of related course work or have been employed for 52 weeks in a GS-4 position, or equivalent. The ranger must be willing to extend their contract past the usual deadline by two months, through the month of January. Rangers must be comfortable with winter-time solitary travel and have some tracking experience.

Salary Range: \$16,050 to \$20,277

Category: GS-5 (step 1) to GS-6 (step 5)

#### ***BISON Director- Department of the Interior***

##### ***Number needed: 1***

Typical duties include: managing an interagency networking team, facilitating monthly interagency meetings, developing educational and public outreach programs and reviewing and developing assessment reports. The Director must be able to prepare recommendations for management of department-owned wildlife (specifically the Yellowstone buffalo herd) and respond to complaints concerning buffalo. Additional duties include the hiring and training of staff, assigning work and evaluating performance. The Director must be able to develop a program budget. The ability to conduct public meetings and make presentations to civic, sportsmen, professional and special-interest groups is required.

Additional Skills/Qualifications: Masters degree in public administration or similar educational level, five years of management experience including evaluating impact of wildlife and land management programs on wildlife species, conducting wildlife research and summarizing findings in written reports. A considerable knowledge of: wildlife management practices including ecology, habitat requirements and population dynamics of wildlife; and federal and



state laws and regulations governing the taking, possessing, and controlling of wildlife is required.

Salary Range: \$128,200

Category: SES-V

***BISON Team Assistant-Department of the Interior***

***Number needed: 1***

Typical responsibilities include: assisting the manager of an interagency networking team in facilitating monthly interagency meetings, developing educational and public outreach programs, reviewing and developing assessment reports and preparing recommendations for management of department-owned wildlife (specifically the Yellowstone buffalo herd) In addition the Team Assistant must be able to assist the Director in hiring and training staff, assigning work and evaluating performance, developing a program budget and responding to complaints concerning buffalo. The ability to conduct public meetings and make presentations to civic, sportsmen, professional and special-interest groups is required.

Additional Skills/Qualifications: Master's degree in public administration or similar educational level and at least two years of management experience. Additional experience in evaluating impact of wildlife and land management programs on wildlife species, conducting wildlife research and report writing experience is needed. A considerable knowledge of: wildlife management practices including ecology, habitat requirements and population dynamics of wildlife; and federal and state laws and regulations governing the taking, possessing, and controlling of wildlife is required.

Salary Range: \$29,821 to \$43,774

Category: GS 7 to 9 (step 7)

***BISON Team Assistant-Clerical- Department of the Interior***

***Number needed: 1***

Typical job responsibilities include: the ability to enhance the Director's effectiveness by providing information management support by transcribing, formatting, inputting, editing, retrieving, copying, and transmitting text, data, and graphics. In addition the clerical assistant conserves the Director's time by reading, researching, and routing correspondence; drafting letters and documents; collecting and analyzing information; initiating telecommunications and maintaining the Director's appointment schedule by planning and scheduling meetings, conferences, teleconferences, and travel. Additional responsibilities include maintaining office supplies inventory by checking stock to determine inventory level, anticipating needed supplies, evaluating new office products, placing and expediting orders for supplies and verifying receipt of supplies; maintains professional and technical knowledge by attending educational workshops. The Team Assistant-Clerical is expected to review professional publications, establish personal networks and participate in professional societies. Additional Skills/Qualifications: Bachelor of Science or equivalent educational level, administrative writing skills, reporting skills, supply management, scheduling, Microsoft Office skills, organization, time management and verbal communication.

Salary Range: \$24,075 to \$31,302

Category: GS 5

***BISON Network and Computer Systems Administrator - Department of the Interior***

***Number needed: 1***

Typical job responsibilities include website development and maintenance; including the creation of pages, interactive forms and updates. Additional tasks include computer networking for an office, management of internal phone systems and general maintenance of office service equipment. Administrator must work well in group situations and be able to travel occasionally. A Master's degree is required and at least three years previous experience with administrative issues and a considerable knowledge of wildlife management systems.

Salary: \$36,000

Category: GS 7

***Buffalo Relocation Crew- Montana Department of Livestock***

***Number needed: 3 Field officers, 3 Reserve officers***

The duties of the relocation crew are primarily to move buffalo that are reported on private land back to federal land. Members must already be employees of the MDOL. All current job duties at MDOL will be maintained by the relocation crew. Members must be willing to drive to different areas surrounding YNP, in Montana, at varying times of the day and night. Animal handling experience is a must and members must be comfortable driving animal trailers. Members must be at least 21 years of age and pass gun-permitting. In addition, members must be willing, in extreme cases, eliminate dangerous buffalo if they threaten persons or private property and cannot be contained. Members will be paid an hourly wage for the time that they spend relocating buffalo.

Salary Range: \$20.00 (hourly pay)

***Forest Rangers – United States Forest Service***

***Number needed: 10 (2 in each district)***

Rangers must have a four-year college degree in biology, ecology, wildlife studies or a related field in addition to two-years field work experience. Rangers must also be able to perform various tasks associated with forest or structural fire control, protection of property and the gathering and dissemination of natural, historical, or scientific information. In addition rangers must be able to perform routine law enforcement patrols in addition to making vehicle stops, issuing citations for violations and making arrests. Applicants must be at least 21 years of age and complete a federal law enforcement training program. Working knowledge of animal movement and migration and the ability to perform in back-country areas is required.

Salary Range: \$29,821 to \$43,774

Category: GS 7 to 9 (step 7)

***GIS Clerical Buffalo Monitoring Program Director –  
Yellowstone National Park Spatial Analysis Center***

***Number needed: 1***

The main duty of this position is to catalog the data received from various federal agencies and Yellowstone National Park rangers. A proficient knowledge of Geographic Information Systems (GIS) software is a requirement, and a demonstration of skills may be requested. A Master's degree, or higher, in a related field is required. In addition the director must have at least three years of work experience. The director must pass the clerical examination administered by the

federal Office of Personnel Management, which includes a written test of verbal abilities and clerical aptitude and certification of proficiency. The position also involves the joint-writing of a cumulative year-end report to be distributed to other federal and state agencies. The director must have the ability to work with people from a diversity of fields.

Salary Range: \$26,836 to \$34,891

Category: GS-6

***GIS Clerical Buffalo Monitoring Program Assistant (Part-time) –  
Yellowstone National Park Spatial Analysis Center***

***Number needed: 1***

The GIS Clerical Program Assistant must pass an examination administered by the federal Office of Personnel Management, which includes a written test of verbal abilities and clerical aptitude and certification of proficiency. The assistant must be able to perform numerous secretarial services and clerical tasks, including database management and information compilation. The equivalent of a college degree or five years of work experience is required.

Salary Range: \$12,040 to \$15,650

Category: GS 5 (part time)

***Labor Maintenance Crew - Yellowstone National Park***

***Number needed: 5***

Regular Maintenance Crew duties may include the maintenance of roads, trails, equipment, buildings, and grounds with skills at all levels. Qualifications are based on the kind(s) and level(s) of skill rather than on the number of years of experience. Employees are paid hourly wage rates, which are periodically adjusted to bring them in line with prevailing wages paid to employees performing similar work in private industry. Seasonal pay ranges from about \$6.00 per hour to about \$11.00 per hour based upon skill requisites for the jobs. Crew members are already employed at Yellowstone and are volunteering for extra work at a seasonal increased pay rate. Specific requirements include some knowledge of carpentry skills and ability to lift fifty pounds unassisted. In addition, employees must be available for five full days out of two weeks to complete the disassembly of the Stephens Creek Capture Facility. A basic level health exam is required and must be passed no earlier than two months prior to starting the job.

Salary Ranges (Hourly rate): \$15.00

Total Range: \$1,800 to \$3,000

***Land Exchange Liaison – United States Forest Service***

***Number needed: 1***

The Land Exchange Liaison must have a working knowledge of land management issues and surveying techniques in addition to proficient communication skills. Knowledge of livestock issues and the structure of the federal system is a requirement. Liaison must have a Master's degree in a related field and at least five years work experience. Liaison must be willing to complete the planned 40-hour classroom course, which is provided to all new supervisors and includes training in cultural awareness, communication and interpersonal skills, teambuilding, conflict management, problem solving, and human resource management. Another 40-hour classroom course will add training in strategic thinking, and partnering and collaboration along with continuing skill development in interpersonal skills, cultural awareness, and teambuilding.

Salary Range: \$36,478 to \$46,866

Category: GS 9 to 10 (step 6)

***Natural Resource Manager –***

***Yellowstone National Park Spatial Analysis Center***

***Number needed: 1***

The main duty of the Natural Resource Manager is to analyze data compiled by the GIS office in Yellowstone National Park regarding buffalo movement and migration. In addition to analyzing and assessing data, the position involves the joint-writing of a cumulative year-end report which requires strong writing skills. This report will be distributed to other federal and state agencies. The Natural Resource Manager must have a Master's degree in a related field and five years experience working with GIS data. Additionally, knowledge of wildlife movement and migration tracking is preferred.

Salary Range: \$52,900 to \$63,500

Category: GS-12 (step 7)

## Appendix 5

### Expanded Action Budgets

#### Action 1: Create BISON

The BISON budget is divided into “Personnel” costs and “Other Than Personnel” costs. “Personnel” costs are associated with the BISON administrative office salaries. The staff will be headed by a Director at Senior Executive Service Level V, who is assisted by a BISON Team Assistant at Government Service Level 9, a BISON Team Assistant – Clerical at Government Service Level 5 and a Network and Computer Systems Administrator at Government Service Level 7. Fringe benefits which include health insurance and mileage stipends have been estimated at a rate of twenty-five percent (25%). Salary estimations are based on academic qualifications, relevant years of experience and comparable average salaries for similar positions in Montana.

“Other Than Personnel” costs include: (1) Office expenses – rent for a small office with three rooms, a kitchenette and bathroom, utilities and telephone charges; (2) Supplies – office equipment and stationary, computer hardware and software and miscellaneous items; and (3) Travel – transport, hotel, food and conference room rent for BISON-Greater Yellowstone Interagency Brucellosis Committee meetings. Estimations of office expenses were made by using average annual costs for these items in Montana. Travel costs were calculated assuming that twenty persons would meet four times a year over a three day period for each meeting. See Table 1.

Table 1: Budget for the creation of BISON.

| <b>Buffalo Interagency Strategic Oversight Network (BISON) Staffing and Support</b> |                                 |                     |
|---|---------------------------------|---------------------|
| <i>Personnel Services</i>   | <i>Percentage of Time</i>       | <i>Cost</i>         |
| BISON Director (SES-V)  | 95%                             | \$91,342.50         |
| BISON Team Assistant (GS-7/8/9)   | 100%                            | \$25,534.83         |
| BISON Team Assistant - Clerical (GS-5)  | 95%                             | \$17,346.53         |
| Network and Computer Systems Administrator (GS-7)                                   | 100%                            | \$21,000.00         |
|   | Base Salaries                   | \$155,223.86        |
|   | Fringe Benefits (25%)           | \$38,805.96         |
|   | <b>Total Personnel Services</b> | <b>\$194,029.82</b> |
| <hr/>   |                                 |                     |
| <i>Other Than Personnel Services (OTPS)</i>   |                                 |                     |
| Supplies  |                                 | \$16,500.00         |
| Office Expenses   |                                 | \$27,500.00         |
| Travel  |                                 | \$9,000.00          |
|   | <b>Total OTPS</b>               | <b>\$53,000.00</b>  |
|   | <b>Total BISON</b>              | <b>\$247,029.82</b> |

*Action 2: Monitor and Map Population and Migration*

*(a) Within Yellowstone National Park*

The NPS budget for buffalo management in Yellowstone National Park is divided into “Personnel” costs and “Other Than Personnel” costs. “Personnel” costs are associated with the backcountry ranger salaries and are adjusted to the amount of time that rangers will need to allocate for buffalo monitoring (25%). The base salaries have been calculated according to the salary for the GS-6 level as that is the maximum level for backcountry rangers in Yellowstone National Park. The Clerical Buffalo Monitoring Program Director, Clerical Buffalo Monitoring Program Assistant and Natural Resource Manager will have salaries in accordance with GS-6, GS-5 and GS-12 respectively. Fringe benefits, which include health insurance and mileage stipends, have been estimated at a rate of twenty-five percent (25%) of the salary allocation (see Table 2).

“Other Than Personnel” costs include additional computer system for the Yellowstone Spatial Analysis Center (\$3,000) and supplies needed to record buffalo location in the field such as waterproof notepads and pens. In addition to these costs, the budget for Yellowstone National Park reflects the \$113,000 grant used by Montana State University to complete a carrying capacity study for the buffalo in Yellowstone National Park.

Table 2: Budget for monitoring and mapping within Yellowstone National Park.

| <b>Monitoring and Mapping - Yellowstone National Park</b>    |                                 |                     |
|--|---------------------------------|---------------------|
| <i>Personnel Services</i>                                    | <i>Percentage of Time</i>       | <i>Cost</i>         |
| Clerical Program Director (GS-6)                             | 100%                            | \$20,353.08         |
| Clerical Program Assistant (GS-5)                            | 50%                             | \$7,825.00          |
| Backcountry Rangers (GS-5/6)                                 | 25%                             | \$9,240.00          |
| Natural Resources Program Manager (GS-12)                    | 100%                            | \$42,978.50         |
|  | Base Salaries                   | \$80,396.58         |
|  | Fringe Benefits (25%)           | \$20,099.15         |
|  | <b>Total Personnel Services</b> | <b>\$100,495.73</b> |
| <hr/>  |                                 |                     |
| <i>Other Than Personnel Services (OTPS)</i>                  |                                 |                     |
| Supplies   |                                 | \$3,000.00          |
| Carrying Capacity Study (Funded by Montana State University) |                                 | \$113,000.00        |
|  | <b>Total OTPS</b>               | <b>\$116,000.00</b> |
|  | <b>Total Yellowstone</b>        | <b>\$216,495.73</b> |

*Action 2: Monitor and Map Population and Migration*

*(b) Outside Yellowstone National Park – United States Forest Service*

The USFS budget for buffalo management in Gallatin National Forest is divided into “Personnel” costs and “Other Than Personnel” costs. “Personnel” costs are associated with the forest ranger salaries and are adjusted to the amount of time that rangers will need to allocate for buffalo monitoring (15%). The base salaries have been calculated according to the salary for the GS-9 level as that is the maximum level for rangers in Gallatin National Forest. Fringe benefits, which include health insurance and mileage stipends, have been estimated at a rate of twenty-five percent (25%) of the salary allocation (see Table 3). “Other Than Personnel” costs include supplies needed to record buffalo location in the field such as waterproof notepads and pens.

Table 3: Budget for monitoring and mapping in Gallatin National Forest.

| <b>Monitoring and Mapping - Gallatin National Forest</b> |                                 |                    |
|--|---------------------------------|--------------------|
| <i>Personnel Services</i>                                | <i>Percentage of Time</i>       | <i>Cost</i>        |
| Forest Ranger (GS-9)                                     | 15%                             | \$21,668.13        |
|  | Base Salaries                   | \$21,668.13        |
|  | Fringe Benefits (25%)           | \$5,417.03         |
|  | <b>Total Personnel Services</b> | <b>\$27,085.16</b> |
| <hr/>  |                                 |                    |
| <i>Other Than Personnel Services (OTPS)</i>              |                                 |                    |
| Supplies   |                                 | \$400.00           |
|  | <b>Total OTPS</b>               | <b>\$400.00</b>    |
|  | <b>Total Gallatin</b>           | <b>\$27,485.16</b> |

*Action 3: Relocate Buffalo from Private Lands*

The MDOL budget for buffalo management on private lands is divided into “Personnel” costs and “Other Than Personnel” costs. “Personnel” costs are associated with the full time field officers and estimated 10%-time reserve officers salaries. The base salaries have been calculated according hourly wages of \$20/hour with a 40-hour work-week. Fringe benefits which include health insurance and mileage stipends have been estimated at a rate of twenty-five percent (25%) of the salary allocation (see Table 4).

“Other Than Personnel” costs include all supplies needed for relocation of buffalo. These costs include equipment such as corrals and livestock trucks that will be borrowed from both the NPS and USFS. This category also includes travel expenses to the areas where buffalo will need to be removed.

Table 4: Budget for relocating buffalo from private lands.

| <b>Private Lands Response - Montana Department of Livestock Management</b> |                                 |                     |
|--|---------------------------------|---------------------|
| <i>Personnel Services</i>  | <i>Percentage of Time</i>       | <i>Cost</i>         |
| Field officers   | 100%                            | \$124,800.00        |
| Reserve officers   | 10%                             | \$12,480.00         |
|  | Base Salaries                   | \$137,280.00        |
|  | Fringe Benefits (25%)           | \$34,320.00         |
|  | <b>Total Personnel Services</b> | <b>\$171,600.00</b> |
| <hr/>  |                                 |                     |
| <i>Other Than Personnel Services (OTPS)</i>                                |                                 |                     |
| Supplies   |                                 | \$20,000.00         |
| Travel   |                                 | \$15,600.00         |
|  | <b>Total OTPS</b>               | <b>\$35,600.00</b>  |
|  | <b>Total MDOL</b>               | <b>\$207,200.00</b> |

*Action 4: Disassemble Stephens Creek Capture Facility*

The budget for disassembling the Stephens Creek Capture Facility is divided into “Personnel” costs and “Other Than Personnel” costs. “Personnel” costs are associated with the seasonal maintenance crew necessary to complete the project. These crew members can be recruited from existing seasonal maintenance staff and will be available during the summer months. It is estimated to take five labor maintenance employees up to five days to disassemble the facility and store the materials at the maintenance facility within Yellowstone National Park. Each employee will earn \$15.00 per hour and spend one week, or 40 hours, completing the project.

“Other Than Personnel” costs include \$500 for supplies, tools and moving materials. There are also funds estimated for travel, fuel and repair of the trucks used for disassembly.

Table 5: Budget for the disassembly of Stephens Creek Capture Facility

| <b>Disassemble Stephens Creek Capture Facility - Yellowstone National Park</b> |                                 |                   |
|--|---------------------------------|-------------------|
| <i>Personnel Services</i>  | <i>Percentage of Time</i>       | <i>Cost</i>       |
| Labor Maintenance (Seasonal)   | 2%                              | \$3,000.00        |
|  | Base Salaries                   | \$3,000.00        |
|  | Fringe Benefits (25%)           | \$750.00          |
|  | <b>Total Personnel Services</b> | <b>\$3,750.00</b> |
| <i>Other Than Personnel Services (OTPS)</i>                                    |                                 |                   |
| Supplies   |                                 | \$500.00          |
| Travel   |                                 | \$50.00           |
|  | <b>Total OTPS</b>               | <b>\$550.00</b>   |
|  | <b>Total Disassembly</b>        | <b>\$4,300.00</b> |

*Action 5: Complete Land Exchange*

The USFS budget for the Land Exchange Liaison in Gallatin National Forest is divided into “Personnel” costs and “Other Than Personnel” costs. “Personnel” costs are associated with a GS-10 salary and its fringe benefits. The base salary has been calculated according to the salary for the GS-10 level as that is the maximum level designated for potential candidates. Fringe benefits, which include health insurance and mileage stipends, have been estimated at a rate of twenty-five percent (25%) of the salary allocation (see table following this section).

“Other Than Personnel” costs include office supplies, travel expenses and the cost of the land exchange. Taxpayer funds, independent of other funding needs, have been allocated in Montana to cover the entire cost of the land exchange (see Table 6).



Table 6: Budget for the completion of the land exchange, including the allocation from taxes.

| <b>Land Exchange Completion - Gallatin National Forest</b> |                                 |                        |
|--|---------------------------------|------------------------|
| <i>Personnel Services</i>                                  | <i>Percentage of Time</i>       | <i>Cost</i>            |
| Land exchange liaison                                      | 100%                            | \$39,055.00            |
|  | Base Salaries                   | \$39,055.00            |
|  | Fringe Benefits (25%)           | \$9,763.75             |
|  | <b>Total Personnel Services</b> | <b>\$48,818.75</b>     |
| <b>Other Than Personnel Services (OTPS)</b>                |                                 |                        |
| Supplies   |                                 | \$1,000.00             |
| Travel   |                                 | \$2,400.00             |
| Land Allocation Funds (Funded by State Taxes)              |                                 | \$13,000,000.00        |
|  | <b>Total OTPS</b>               | <b>\$13,003,400.00</b> |
|  | <b>Total Land Exchange</b>      | <b>\$13,052,218.75</b> |

*Action 6: Enforce Prohibited Act of HR 3446*

The Yellowstone National Park backcountry rangers will be paid at their current GS-6 level while the Forest Rangers will be paid at their current GS-9 level. Both ranger groups will only be billed 5% FTE for enforcement duties. The Director will make a Senior Executive Service V salary while the BISON Team Assistant-Clerical will be paid at a GS-5 level. Both of these employees will only be needed for 5% of their respective FTE.

“Other Than Personnel” costs should be fairly minimal. The rangers will each need two citation pads (\$.50 each) and \$60 additional dollars will be designated for basic office supplies such as pens, paper and toner to support enforcement activities. See Table 7.

Table 7: Budget for enforcing the Prohibited Acts under the Yellowstone Buffalo Preservation Act

| <b>Enforcement of Prohibited Acts</b>       |                                 |                    |
|---|---------------------------------|--------------------|
| <i>Personnel Services</i>                   | <i>Percentage of Time</i>       | <i>Cost</i>        |
| Backcountry Rangers (GS-5/6)                | 5%                              | \$5,600.00         |
| Forest Ranger (GS-9)                        | 5%                              | \$21,887.00        |
| Director (SES-V)                            | 5%                              | \$4,807.50         |
| BISON Team Assistant - Clerical (GS-5)      | 5%                              | \$912.98           |
|   | Base Salaries                   | \$33,207.48        |
|   | Fringe Benefits (25%)           | \$8,301.87         |
|   | <b>Total Personnel Services</b> | <b>\$41,509.34</b> |
| <b>Other Than Personnel Services (OTPS)</b> |                                 |                    |
| Supplies                                    |                                 | \$200.00           |
|   | <b>Total OTPS</b>               | <b>\$200.00</b>    |
|   | <b>Total Enforcement</b>        | <b>\$41,709.34</b> |

*Action 7: Perform Evaluations*

There is not a separate budget for evaluations as the evaluation process is undertaken by all the involved agencies. The budget is built into each agency's program responsibilities. For instance, MDOL and USFS will receive funding for both personnel and materials involved in reporting field data to Yellowstone National Park's Spatial Analysis Center. As a result, the NPS will receive funding to staff, equip and operate a three person office responsible for the above mentioned information organization and dissemination to BISON. Finally, built into BISON's budget are expert personnel, clerical staff and supplies necessary to analyze and create monthly, mid-year and end of year evaluation reports.

**HR 3446 - Yellowstone Buffalo Preservation Act**

**Yellowstone Buffalo Interagency Preservation Plan (YBIPP) Budget Breakdown  
First Year Projections**

**TOTAL BUDGET:**

**PERSONNEL SERVICES**

| Job Title   | Number of Staff | % time | Salary        | Salary allocated to YBIPP | Action 1:<br>Create BISON | Action 2(a):<br>Map & Monitor<br>YNP | Action 2(b):<br>Map & Monitor<br>USFS | Action 3:<br>Relocate from<br>Private Land | Action 4:<br>Stephens<br>Creek | Action 5:<br>Complete Land<br>Exchange | Action 6:<br>Enforcement | TOTAL         |
|---|-----------------|--------|---------------|---------------------------|---------------------------|--------------------------------------|---------------------------------------|--|--------------------------------|--|--------------------------|---------------|
| BISON Director (SES-4)                            | 1               | 100%   | \$ 126,200.00 | \$ 56,150.00              | \$ 91,342.50              |                                      |                                       |  |                                |  | \$ 4,807.50              | \$ 96,150.00  |
| Natural Resources Program Manager (GS-12)         | 1               | 100%   | \$ 85,957.00  | \$ 42,978.50              |                           | \$ 42,978.50                         |                                       |  |                                |  |                          | \$ 42,978.50  |
| Land Exchange Liaison (GS-10)                     | 1               | 100%   | \$ 46,866.00  | \$ 39,055.00              |                           |                                      |                                       |  |                                | \$ 39,055.00                           |                          | \$ 39,055.00  |
| BISON Team Assistant (GS-7,8/9)                   | 1               | 100%   | \$ 43,774.00  | \$ 25,534.83              | \$ 25,534.83              |                                      |                                       |  |                                |  |                          | \$ 25,534.83  |
| Forest Ranger (GS-8)                              | 10              | 20%    | \$ 43,774.00  | \$ 43,555.13              |                           |                                      | \$ 21,668.13                          |  |                                |  | \$ 21,887.00             | \$ 43,555.13  |
| Field Officers                                    | 3               | 100%   | \$ 41,600.00  | \$ 124,800.00             |                           |                                      |                                       | \$ 124,800.00                              |                                |  |                          | \$ 124,800.00 |
| Reserve Officers                                  | 3               | 10%    | \$ 41,600.00  | \$ 12,480.00              |                           |                                      |                                       | \$ 12,480.00                               |                                |  |                          | \$ 12,480.00  |
| Network and Computer Systems Administrator (GS-7) | 1               | 100%   | \$ 36,000.00  | \$ 21,000.00              | \$ 21,000.00              |                                      |                                       |  |                                |  |                          | \$ 21,000.00  |
| Clerical Program Director (GS-6)                  | 1               | 100%   | \$ 34,851.00  | \$ 20,353.08              |                           | \$ 20,353.08                         |                                       |  |                                |  |                          | \$ 20,353.08  |
| BISON Team Assistant - Clerical (GS-5)            | 1               | 100%   | \$ 31,302.00  | \$ 18,259.50              | \$ 17,346.53              |                                      |                                       |  |                                |  | \$ 912.98                | \$ 18,259.50  |
| Clerical Program Assistant (GS-5)                 | 1               | 50%    | \$ 31,300.00  | \$ 7,825.00               |                           | \$ 7,825.00                          |                                       |  |                                |  |                          | \$ 7,825.00   |
| Labor Maintenance                                 | 5               | 2%     | \$ 31,200.00  | \$ 3,000.00               |                           |                                      |                                       |  | \$ 3,000.00                    |  |                          | \$ 3,000.00   |
| Backcountry Rangers (GS-5,6)                      | 4               | 30%    | \$ 28,000.00  | \$ 14,840.00              |                           | \$ 9,240.00                          |                                       |  |                                |  | \$ 5,600.00              | \$ 14,840.00  |
| Total (without benefits)                          |                 |        |               | \$ 469,831.05             | \$ 155,223.86             | \$ 80,396.58                         | \$ 21,668.13                          | \$ 137,280.00                              | \$ 3,000.00                    | \$ 39,055.00                           | \$ 33,207.48             | \$ 469,831.05 |
| Fringe Benefits (25%)                             |                 |        |               | \$ 117,457.76             | \$ 38,805.96              | \$ 20,099.15                         | \$ 5,417.03                           | \$ 34,320.00                               | \$ 750.00                      | \$ 9,763.75                            | \$ 8,301.87              | \$ 117,457.76 |
| <b>Total Personnel Services</b>                   |                 |        |               | \$ 587,288.81             | \$ 194,029.82             | \$ 100,495.73                        | \$ 27,085.16                          | \$ 171,600.00                              | \$ 3,750.00                    | \$ 48,818.75                           | \$ 41,509.34             | \$ 587,288.81 |
| Percentage Working Time                           |                 |        |               |                           | 33.04%                    | 17.11%                               | 4.61%                                 | 29.22%                                     | 0.64%                          | 8.31%                                  | 7.07%                    | 100.00%       |
| Percentage  |                 |        |               |                           | 3.9                       | 3.5                                  | 1.5                                   | 3.3  | 0.1                            | 1                                      | 0.8                      | 14.1          |
| Percentage  |                 |        |               |                           | 28%                       | 25%                                  | 11%                                   | 23%  | 1%                             | 7%                                     | 6%                       | 100%          |

**OTHER THAN PERSONNEL SERVICES**

|                             |                  |  |  |               |               |              |               |             |              |              |               |
|-----------------------------|------------------|--|--|---------------|---------------|--------------|---------------|-------------|--------------|--------------|---------------|
| Supplies                    | \$ 41,600.00     |  |  | \$ 16,500.00  | \$ 3,000.00   | \$ 400.00    | \$ 20,000.00  | \$ 500.00   | \$ 1,000.00  | \$ 200.00    | \$ 41,600.00  |
| Office Expenses             | \$ 27,500.00     |  |  | \$ 27,500.00  |               |              | \$ 15,600.00  | \$ 50.00    | \$ 2,400.00  |              | \$ 45,550.00  |
| Travel                      | \$ 27,050.00     |  |  | \$ 9,000.00   |               |              |               |             |              |              | \$ 9,000.00   |
| Total OTPS                  | \$ 96,150.00     |  |  | \$ 53,000.00  | \$ 3,000.00   | \$ 400.00    | \$ 35,600.00  | \$ 550.00   | \$ 3,400.00  | \$ 200.00    | \$ 96,150.00  |
| Total Operation Cost        |                  |  |  | \$ 247,029.82 | \$ 103,495.73 | \$ 27,485.16 | \$ 207,200.00 | \$ 4,300.00 | \$ 52,218.75 | \$ 41,709.34 | \$ 683,438.81 |
| Grants                      | \$ 13,113,000.00 |  |  |               |               |              |               |             |              |              |               |
| Total Budget (Funding)      | \$ 13,796,438.81 |  |  |               |               |              |               |             |              |              |               |
| Personnel/Total Operation   | 85.93%           |  |  |               |               |              |               |             |              |              |               |
| Total Operation/Total Funds | 5%               |  |  |               |               |              |               |             |              |              |               |

## **Appendix 6**

### Definitions

MDOL – Montana Department of Livestock

NPS – National Park Service

US – United States

USFS – United States Forest Service

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*Bison bison* – the scientific genus and species name of the American buffalo

*Brucella abortus* – the bacteria that causes the disease brucellosis in cattle and bison

Brucellosis – a zoonotic disease caused by the bacteria *Brucella abortus*

Carrying capacity – the maximum number of animals an area can support

Culling – the removal of undesirable or unwanted individual in a population

Eradication – in the case of brucellosis, the elimination of the disease in host populations

Ground-truthing – the process of verifying photographs, satellite images, and other data collected with remote sensing devices by individuals observing the same features in the field

Hazing – any individual effort to drive away, obstruct, chase, scare, or deter natural movements of wildlife, including hazing efforts carried out on foot or horseback or efforts aided by machinery, aircraft, or any type of noise-making device

Land easement – pertaining to the scope of the Yellowstone Buffalo Preservation Act, an agreement made between the United States Department of Agriculture and a private landowner that grants access to the private land for use by the Yellowstone buffalo

Natural regulation – a management strategy in which environmental pressures control the population size of the herd

Transmission – the conveyance of disease from one organism to another

Vaccine – a derivative of a bacteria that induces an immune system response to a disease; in the case of brucellosis, Strain 19 and RB51 cause the formation of antibodies for brucellosis

Zoonotic – the ability of a disease to be transmitted from vertebrate animals to humans