ENVIRONMENTAL ASSESSMENT

REMOVING EXCESS AND STRAY WILD HORSES FROM THE AREA NORTH OF INTERSTATE 80 AND WEST OF US HWY 287 IN THE RAWLINS FIELD OFFICE

EA# WY030-06-EA-165

PREPARED BY:

U.S DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

2006

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I. PURPOSE AND NEED

BACKGROUND

With passage of the Wild Free Roaming Horse and Burro Act (the Act) of 1971 (Public Law 92-195), Congress found that: "...wild free roaming horses and burros are living symbols of the historic and pioneer spirit of the West...." In addition, the Secretary was ordered to "...manage wild free-roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands..." Program goals have expanded beyond simply maintaining a "thriving natural ecological balance" (by setting and achieving appropriate management level (AML)) for individual herds, to achieving and maintaining viable, vigorous, and stable populations. Managing individual herds is an ongoing, daily activity, consisting of many parts. One part, population management (PMAs, gathers or roundups), occurs every three to five years and is the subject of much interest and attention.

This document has been prepared to assess the environmental impacts of that periodic activity (population management) in a portion of the Field Office (refer to Map 1) through a program of capture, selection, removal, and the returning of a specific number of animals to the public lands and associated data gathering. These adjustments are necessary as the current populations exceed the AMLs established for the two HMAs in this portion of the RFO. The AMLs for these HMAs were established based on monitoring data. Documents containing this information are available for public review at the Rawlins Field Office.

The analysis area begins at the city of Rawlins and encompasses all of the Rawlins Field Office north of Interstate Highway 80 and west of US Highway 287, an area approximately 55 miles by 45 miles or almost 2500 square miles. Within this area are two Wild Horse Herd Management Areas (HMAs), Stewart Creek and Lost Creek, and a large area that is over ½ privately controlled lands into which horses may stray from time to time which is referred to as I 80 North. This area is fenced into twenty grazing allotments with numerous interior fences. The vast majority of the analysis area lies within the Great Divide Basin, a closed basin along the Continental Divide that has no external drainage to either ocean. This area is quite arid but remarkably diverse and productive. A major portion of the area is known as the Seven Lakes area for the seven natural desert wetland complexes found there. Although most of the historic traditional livestock use of the area was by sheep grazing in the winter time, development of water sources and changing livestock markets have shifted use to about two-thirds spring and summer use with 90 percent cattle and 10 percent sheep. However, a large portion of this permitted use has not been made in recent years, resulting in only light to moderate levels of forage utilization. In 1993, detailed studies were completed that determined that the AML for wild horses in the two HMAs was a specifically defined population range that would result in an average population of 220 adults over time. That population range was determined assuming that a three year gather cycle would be implemented to maintain it and that all other authorized uses of the area would take place. It was based on what was then known about the population and the habitat. The range was from 185 to 260 adult wild horses. During this period of time, livestock use was variable but consistently less than the permitted use level that could have been authorized. During 1994 to 2003 several seasons of adverse drought like climatic conditions were documented. There has been no reasonable opportunity to evaluate the 1993 recommendations. This action will provide an opportunity to evaluate those recommendations through monitoring that will be carried out for the next few seasons and be utilized in determining the timing and extent of subsequent PMAs.

The population of the analysis area is estimated at 595 adult wild horses as of 4/1/06. A foal crop of approximately 178 colts is anticipated in the spring of 2006 and some mortality is anticipated in the interim. This will result in a total of approximately 773 wild horses in the analysis area to be encountered during the gather.

A. PURPOSE

The purpose of this environmental assessment (EA) is to analyze the impacts associated with the Bureau of Land Management's (BLM) proposal to remove excess and stray wild horses from the Wild Horse HMAs and nearby areas in the summer or fall of 2006. Approximately 125 adult horses would be removed from within the Lost Creek HMA and 155 from within the Stewart Creek HMA. Approximately 76 adults would be removed from the I 80 N area.

Approximately 225 adult horses would remain on the range within the two HMAs. This would adjust the population levels within the two HMAs to within the acceptable range associated with the respective AMLs.

B. NEED

The proposed Action is necessary because monitoring has determined that there are excess wild, free roaming horses in both the Lost Creek and Stewart Creek HMAs and stray horses nearby that must be removed in accordance with the provisions of the Act. More detail on those determinations is found in the attached Gather Plan for CY 2006 for the Rawlins Field Office (APPENDIX A)

The following table shows the areas included in this analysis.

TABLE 1

AREA	**PUBLIC ACRES**	**OTHER ACRES**	**AML**	**ESTIMATED POPULATION (4/1/2006)**
LOST CREEK HMA	235 k	15k	70**	225
STEWART CREEK HMA	165 k	13k	150	280
I-80 N*	339 k	357 k	0	90
TOTAL	739 k	385 k	220	595

** All lands north of Interstate 80 and west of Wyoming Hwy 287 except for the Lost Creek and Stewart Creek HMAs. It includes all or portions of 16 grazing allotments, the Bairoil pasture of the Stewart Creek allotment and two areas of entirely private surface. The horses are not uniformly distributed throughout this entire area.*
*** Raising this AML to 120 in order to insure the genetic integrity of the New World Iberian resource identified in this HMA is under consideration at this time.*

C. CONFORMANCE WITH LAND USE PLAN

Gathering and removal of excess wild horses from the Lost Creek and Stewart Creek HMAs is in conformance with the Great Divide Resource Management Plan (RMP) approved November 1990. The Great Divide RMP objectives for management of wild horses are to; protect, maintain, and control a viable, healthy herd of wild horses while retaining their free-roaming nature and to provide adequate habitat for free-roaming wild horses through management consistent with environmental protection and enhancement policies. It should be noted that the current Rawlins RMP revision underway does not propose to change the AMLs or HMA boundaries within the area covered by this EA. It does, however, affirm that the AML in the Lost Creek HMA may require adjustment in order to meet the genetic needs of the population there.

D. RELATIONSHIP TO OTHER STATUTES, REGULATIONS, OR OTHER PLANS

No other federal, state, or local plans will be affected by implementing the proposed action and no other permits or authorizing actions are required unless fertility control is employed in conjunction with the gather. In that case (use of fertility control), a research permit held by the Humane Society of the United States will be the permitting and regulatory mechanism (**APPENDIX 1 of the Gather Plan**.) The action will be implemented under the authority of Public Law 92-195, as amended. Public Law 92-195, as amended, requires the protection, management, and control of wild free-roaming horses and burros on public lands. The preparation and transportation of wild horses will be conducted in conformance with all applicable state statutes.

The Proposed Action is in conformance with all applicable regulations at 43 Code of Federal Regulations (CFR) 4700 and policies. The following are excerpts from 43 CFR relating to the protection, management, and control of wild horses under the administration of the BLM.

43 CFR 4700.0-2 One of the objectives regarding wild horse management is to manage wild horses "as an integral part of the natural system of the public lands under the principle of multiple use..."

43 CFR 4700.0-6(a-c) Requires that BLM manage wild horses"...as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat...considered comparably with other resource values..." while at the same time"...maintaining free-roaming behavior."

43 CFR 4710.4 "Management of wild horses and burros shall be undertaken with the objective of limiting the animals' distribution to herd areas."

43 CFR 4720.1 "Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately."

43 CFR 4720.2 Removal of strayed or excess animals from private lands.

43 CFR 4180 requires that all BLM management actions achieve or maintain healthy rangelands.

All federal actions must be reviewed to determine their probable effect on threatened and endangered plants and animals (the Endangered Species Act).

Federal actions must also be reviewed to determine their probable effect on cultural and historic properties. This process is termed section 106 consultation (Section 106 of the Historic Preservation Act).

This document presents BLM's compliance with the National Environmental Policy Act (NEPA).

The action analyzed here is essentially a continuation of established practices, modified slightly by a gradual shift from BLM conducted operations to End Product Contracting. This has resulted in a slight change in the surface use to complete the action but the objectives of the action are not new.

Executive Order 13212 directs the BLM to consider the President's National Energy policy and adverse impacts the alternatives may have on energy development.

Specific Herd Management Area Plans (HMAPs) guide the ongoing management of the horses in the Lost Creek HMA and Stewart Creek HMAs. These HMAPs contain objectives for both the horses and their habitat along with proposed management actions that will achieve those objectives. They are available for review in the Rawlins field office.

Annual monitoring and evaluation reports for each HMA are available for review in the Rawlins Field Office.

Attainment and maintenance of the AMLs established for these and all other HMAs in the state are key points in complying with the August 2003 Consent Decree between the State of Wyoming, United States Department of the Interior, and Bureau of Land Management.

When a Population Management Action (PMA) is necessary (usually gather and removal), a gather plan is prepared to guide that action to insure effective operation and humane treatment of the animals involved. The Gather Plan contains detailed information with regard to the selection and evaluation of the specific practices such as post gather population targets, selective removal criteria, age/sex distributions, and fertility control practices that may be employed in carrying out the proposed action which. (APPENDIX A).

II. ALTERNATIVES ANALYZED AND A DESCRIPTION OF EACH ALTERNATIVE

This Section describes the Proposed Action and alternatives including any that were considered but eliminated from detailed analysis. It should be noted that it is not necessary to include an alternative from which the final decision is taken verbatim. Rather, the purpose of the EA is to array a range of actions and impacts so as to enable an appropriate final decision. Alternatives analyzed in detail include the following:

ALTERNATIVE 1: ADJUST ADULT WILD HORSE POPULATIONS TO INTERIM MANAGEMENT LEVELS WHICH ARE:

STEWART CREEK	125
LOST CREEK	100
I 80 NORTH	0
BAIROIL	0

ALTERNATIVE 2: ADJUST ADULT WILD HORSE POPULATIONS TO INTERIM MANAGEMENT LEVELS SHOWN ABOVE IN ALTERNATIVE 1 AND ADMINISTER FERTILITY CONTROL TO SELECTED RELEASED MARES.

ALTERNATIVE 3: DO NOT ADJUST ADULT WILD HORSE POPULATIONS IN THE ANALYSIS AREA, RESULTING IN THE FOLLOWING POPULATIONS IN 2006:

STEWART CREEK	280
LOST CREEK	225
I 80 NORTH	74
BAIROIL	7

Proposed Action and Alternatives

Alternative 1 (Proposed Action)

Under this alternative, BLM would implement a population management strategy in which wild horses would be reduced from the current estimated population of 226 to approximately 100 adult horses in the Lost Creek HMA and from the current estimated population of 280 to approximately 125 adult horses in the Stewart Creek HMA. Further details associated with the Proposed Action are contained in APPENDIX A.

This alternative would involve capturing approximately 694 total wild horses from the HMAs and I80 north, returning about 225 adult horses to the HMAs, and removing the remainder of the horses. BLM would collect sex, age, and color data on the captured horses. Individual animals would be sorted as to age, size, sex, and/or physical condition. Animals selected for retention would be returned to the range, while the wild horses determined as excess would be sent to Bureau facilities for preparation for adoption or long term holding.

Alternative 1 was developed based on the need to remove excess wild horses in order to manage the range for a thriving natural ecological balance and multiple-use relationship and to prevent range deterioration. The removal of wild horses under this alternative would ensure that the wild horses remaining within the HMAs have adequate forage and water to survive and maintain satisfactory physical condition. Removal of excess wild horses would also help to sustain the long-term productivity of the rangeland resources on the public lands that wild horses depend.

The following actions are included in Alternative 1:

- Gather operations would be conducted in accordance with the Standard BLM Operating Procedures for Wild Horse Removal. The helicopter drive method would be used for this gather, and would include multiple gather sites. To the extent possible gather sites (traps) would be located in previously disturbed areas. Post-gather, every effort would be made to return released animals to the same general area from which they were gathered.

- An Animal and Plant Inspection Service (APHIS) veterinarian may be on-site, as needed, to examine animals and make recommendations to BLM for care and treatment of wild horses. On-site inspection by an APHIS veterinarian is required for any animals to be transported across State borders.

- Animals would be removed using a selective removal strategy. That strategy is subject to periodic adjustment and is currently guided by Washington Office IM 2005-206. Specific criteria to be employed for this gather are found in the Gather Plan.

  The National selective removal criteria would form the framework for the specific criteria. Exceptional animals that represent historic colors, size and/or confirmation may be chosen for release outside of the selective removal

priorities. Weak, unhealthy and unthrifty animals would not be selected for release back onto the HMAs. Criteria for the Lost Creek HMA will emphasize retention of individuals of the Spanish Colonial type.

Blood samples would be collected from those horses selected for return to the range and be submitted for genetic analysis.

The population levels (gather targets) were selected based on the following criteria:

- For Lost Creek, an interim level of 100 horses one year of age or older was selected based on the recommendation of Dr Phillip Sponenberg after a visit to Rawlins in the early summer of 2005. In his summary of that visit, he said with regard to the Lost Creek herd, "*The Lost Creek area had horses that all appeared to be of Spanish type, at least from the distance from which they were viewed. Front views and details of heads were difficult to evaluate, though, so a final decision will be made in the future by those that can more closely view these details.*

- *Given the consistency of the population and its isolation it is likely that the Lost Creek HMA is indeed a genetic resource herd. If that is borne out by further genetic testing, then this herd should be managed in isolation. It would also be ideal to bring the minimum population up towards 100 from the current level to avoid long-term consequences of inbreeding or genetic drift.*"

- The population, if adjusted according to the details of the proposed action would grow to approximately 124 adults by 2009 and 142 adults by 2010. Modifications to the selective removal policy could cause that growth to be more or less.

- For the Stewart Creek HMA, the lower limit of the AML was chosen;

Alternative 2 Removal of Excess Horses from the Lost Creek and Stewart Creek HMAs and administration of Fertility Control to selected released mares

This alternative would be exactly the same as the proposed Action, except that, after capture and prior to release, selected mares would receive fertility control treatment in accordance with the protocols detailed in Appendix 1 of the Rawlins CY 2006 Gather Plan. Horses will be captured and handled essentially the same whether fertility control is administered or not. The fertility control vaccine is, as yet, still experimental and its use is regulated by the provisions of the Investigational New Animal Drug exemption (INAD #8857) filed with the federal Food and Drug Administration (FDA). This exemption is held by the Humane Society of the United States (HSUS). As a condition of using the PZP vaccine, the HSUS expects the BLM to follow the Draft Criteria for Immunocontraceptive Use in Wild Horse Herds recommended by the Wild Horse and Burro National Advisory Board in August 1999. This alternative would require additional follow-up monitoring in the calendar years of 2008 and 2009 to determine the effectiveness of the vaccine. This monitoring would be non-invasive and consist of periodic observation of vaccinated mares to determine if they had foals or appeared to have been rendered infertile and, if so, for how long.

Alternative 3 (No Action)

Although Alternative 3 (No Action) does not comply with the 1971 Act, as amended, nor meet the purpose and need for this action, it is included as a basis for comparison with the action alternatives. Under the No Action Alternative, no gathering would take place. The wild horse populations would be allowed to increase until they reached levels where predation and environmental factors, coupled with density-dependant adjustments in reproductive rates stabilized the populations. Considering the limited forage and water availability due to the continuing drought conditions in the Lost Creek and Stewart Creek HMAs, it is anticipated that selection of this alternative could result in a rapid decline in the physical condition of the wild horses in the near future from increasing competition for available forage and water and would be expected to effect the ability of the HMAs and nearby areas to support the other authorized uses of the public lands.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Using Fertility Control Measures Only To Regulate Wild Horse Populations.
Demographic analysis has determined that fertility control alone would not achieve AML within 30 years in a population that was significantly greater than the population objective (AML) established for it and therefore was not analyzed further. This principle has been documented amongst a variety of animal species with the variability well correlated to the longevity of the species. More simply put, it takes longer for fertility control alone to regulate a population of animals that has an average lifespan of twenty+ years than it does for it to regulate a population with an average lifespan of <5 years. In addition, more frequent handling of the entire population would be required.

Closure Of HMAs To Livestock Grazing
This alternative was not analyzed in detail because the Act does not provide for arbitrary reduction in domestic livestock use unless areas are first established for the exclusive use of wild horses.

Elimination Of All Wild Horses From The HMAs
This alternative was not analyzed in detail because the land use planning process has affirmed that the public, in general, wishes to see the Act complied with and wishes to have healthy horses on healthy habitats within the area.

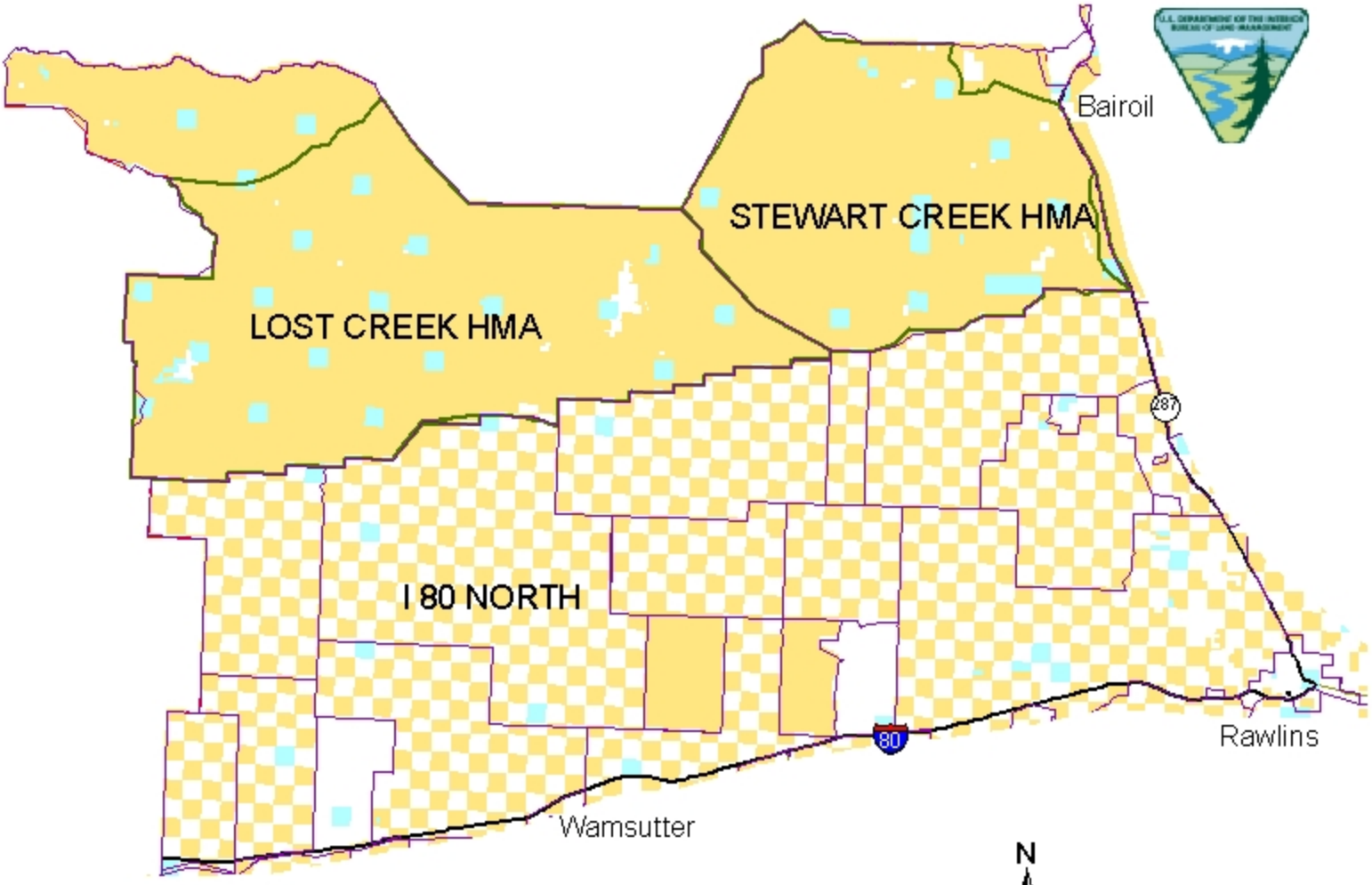
Increase Or Decrease AMLs Within The HMAs
This alternative was not analyzed in detail because the ongoing monitoring of the effects of all uses on the habitat within the HMAs incorporates regular, periodic review and indicated adjustment of the AML and other authorized uses. This was evidenced by the adjustments in AMLs and HMAs completed in 1994.

Adjust Adult Wild Horse Populations To Lower Limits Of Appropriate Management Levels Which Are:

STEWART CREEK	125
LOST CREEK	60
I 80 NORTH	0
BAIROIL	0

This alternative was not analyzed in detail because it was not significantly different from Alternative 1.

MAP 1
2006 RAWLINS WILD HORSE POPULATION MANAGEMENT



III. AFFECTED ENVIRONMENT

A. INTRODUCTION

The area covered by this analysis is within the jurisdiction of the Rawlins Field Office, Wyoming BLM. It is bordered on the south by Interstate Highway 80 and on the west by US Highway 287. As shown in Table 1, over acres of public and private lands are included in this analysis. Map 1 portrays the analysis area. The HMAs contain all or portions of 2 grazing allotments.

TABLE 2

ALLOTMENT NAME	PUBLIC ACRES	STATE ACRES	PRIVATE ACRES	TOTAL ACRES
Cyclone Rim	291954	13489	3165	308608
Stewart Creek	165,025	9152	3439	177,616

Each of these allotments is used by four different permittees with 27,290 active federal AUMs in Cyclone Rim (56 percent cattle) and 7,029 active federal AUMs in Stewart Creek (100 percent cattle).

AFFECTED RAWLINS GRAZING ALLOTMENTS (and other areas) OUTSIDE OF THE HMAS
(This area is also known as I80 north)

GL	Latham
North Tipton	North Creston West
Red Desert	Separation Flats
Monument Lake	Shamrock Hills
North Wamsutter	Sandstone
Chain Lakes	Bell Springs
Ruby Knolls	East City Limits
Jawbone	Bairoil pasture of Stewart Creek
Monument Draw	Larson Knoll
Shamrock Ranch	

Private land areas known as North Creston East, and; Red Desert Estates

These grazing allotments are used by twelve different permittees and contain approximately 37,000 federal and 36,000 private/state AUMs, used primarily with cattle during the spring, summer and fall months.

B. WILDLIFE

Wildlife General

A variety of wildlife species occur, or have the potential to occur, in the project area including mule deer, pronghorn, elk, moose, coyote, red fox, bobcat, desert cottontail, Wyoming ground-squirrel, horned lark, raven, magpie, common nighthawk, raptors, and other songbirds, small mammals and waterfowl. There are also brook and rainbow trout at A&M Reservoir and Lost Soldier Creek.

BIG GAME SPECIES

Pronghorn

Pronghorn antelope are the principle big game species found in the Red Desert area which includes both HMAs. This herd unit lies north of I-80 from Rawlins to Bairoil over to Rock Springs to Farson. The current objective is 15,000 antelope with current populations well under that number. Antelope utilize the entire project area year-round dependent on water availability and snow levels in the winter, with crucial winter range located from Bairoil south along Highway 287 and in the checkerboard along I-80 and the horseshoe bend area.

Mule Deer

Mule deer are found most generally in the more rugged habitat of the project area, in the checkerboard from Continental Divide east to the Rawlins uplift and northward along Bulls Rim and Lost Soldier Rim. The herd objective is for 500 animals, with current populations just under this level. Mule deer utilize the project area year-round with crucial winter range found in the checkerboard outside the HMAs.

Elk
Elk are most commonly seen in the more rugged habitat similar to where mule deer are found, but also move across the entire project area in small numbers. The herd objective is 75 elk, with current populations above that level. Elk utilize the project area year round with no crucial winter range occurring within the HMAs.

Moose
Moose are infrequently sighted in the project area, primarily near the limited riparian areas.

Threatened, Endangered, Proposed and Candidate Species

Four federally designated threatened, endangered, proposed, or candidate animal species and two plant species may be present or have the potential to be present within the project area.

The Colorado River and North Platte River Specie, Preble's Meadow Jumping Mouse and Wyoming Toads are not located, or habitats are not found, within the project area, nor are the blowout penstemon or Colorado butterfly plant. There will be no effect on these species as a result of implementing this project. The project will not result in any water depletions.

Species	Status	Habitat Types in Project Area
Bald eagle	Threatened	No suitable nesting, roosting habitat
Black-footed ferret	Endangered	White-tailed prarie dog towns >200 acres in size
Yellow-billed cuckoo	Candidate	Cottonwood/willow riparian habitat west of the Continental Divide
Ute ladies'-tresses	Threatened	Moist soils in mesic or wet meadows near springs, seeps, and riparian habitat between 4300' and 7000' ASL.
Canada Lynx	Threatened	Riparian areas used for travel corridors

Bald Eagle
Bald eagles are infrequently sighted near the project area during spring migration to nesting areas. No bald eagles have been recorded nesting or roosting in the project area as perennial water is limited.

Black-footed Ferret
Potential ferret habitat exists in the project area. Trap sites and staging areas associated with this project will not be placed in prairie dog towns.

Ute ladies'-tresses
Potential habitat may exist in the project area; however project activities will not take place in suitable riparian habitat for this species.

Canada Lynx
Canada Lynx have the potential to travel through the area from one Lynx Analysis Unit (LAU) to another. Generally, they will use riparian habitat in open spaces, however, project activities will not take place in riparian habitats.

Yellow-billed cuckoo
This specie inhabits cottonwood/willow habitat west of the Continental Divide. Potential habitat may exist in the project area; however project activities will not take place in riparian area which are suitable habitat for this specie.

Sensitive Species Wildlife
A number of animal species potentially present in the project area have been accorded "sensitive species" status (IM-2001-040). Sensitive mammal species that have the potential to occur, or that may have habitat located within the project area include the Wyoming pocket gopher, pygmy rabbit, swift fox, dwarf shrew, spotted bat, long-eared myotis, fringed myotis, Townsend's big-eared bat, and white-tailed prairie dog.

Sensitive bird species that have the potential to occur in the area, or may have habitat located within the area include the: ferruginous hawk, mountain plover, peregrine falcon, greater sage-grouse, long –billed curlew, burrowing owl, sage thrasher, loggerhead shrike, Brewer's sparrow, sage sparrow, and Baird's sparrow.

Other sensitive species that have the potential to occur in the area, or may have habitat located within the area include the: midget faded rattlesnake and Great Basin spadefoot. Fish species include the roundtail chub, leatherside chub, blue head sucker, and flannel mouth sucker.

BLM records indicate that there are approximately thirteen greater sage-grouse leks and/or associated nesting habitat within or adjacent to the Lost Creek HMA, and approximately fourteen greater sage-grouse leks and/or associated nesting habitat within or adjacent to the Stewart Creek HMA. In addition to pronghorn antelope, this species is relatively abundant and one of the higher priority wildlife being managed for in this area.

Mountain plover have been recorded in the project area, and potential mountain plover breeding/nesting habitat exists throughout the HMAs.

C. CULTURAL, HISTORIC RESOURCES

Site types typically encountered in the HMAs include prehistoric open camps, prehistoric lithic scatters, historic period debris associated with the ranching industry, historic period trails and roads, historic mines, and historic railroad sites. Additionally, stone circle sites, rock alignments, rock art and other sites potentially sensitive to Native American Tribes may occur in the area. Cultural resource studies to support wild horse capture will follow the Wyoming State Protocol for the BLM's National Programmatic Agreement.

For the purposes of consultation under Section 106 of the National Historic Preservation Act of 1966 an undertaking is any activity which is funded in whole or in part by the Federal Government or is under a Federal approval. Under the Wyoming State Protocol Agreement implementing Section 106 consultation for the Bureau of Land Management in Wyoming, animal traps and corrals which are used for three days or less have been consulted upon programmatically. Coordination between the Wild Horse program and the cultural program is key to assuring that known areas of cultural importance are not impacted.

For locations where use for more than three days is anticipated or the proposed activity is something other than a trap or corral, the field office cultural resource specialist will determine the appropriate cultural resource studies to be undertaken. In most cases this would consist of a visit to the proposed location to determine if cultural resources would be impacted and if so, a recommendation to relocate the proposed activity in order to avoid potential impacts to cultural resources.

Many of the above kinds of resources within the analysis area are of cultural importance to Native American Tribes. Wild horse gathering related traps, corrals, and features will not be placed within or immediately adjacent to any of these sites without first completing consultations with the affected Tribes as per BLM Handbook H-8120-1.

D. WILD HORSES

General

Wild horses in the analysis area are part of the national, regional, and local populations and those relationships are portrayed in the following table:

TABLE 3

	1971 POPULATION	AML	2005 EOY POP EST
BLM-WIDE	~17,000	~27,000	~37,800
WYOMING	<5,000	3,106	4,120
RAWLINS	1,235	920	1,200
ANALYSIS AREA	185	220	575

Metapopulation

The wild horses in the analysis area are also part of the Red Desert metapopulation. This large group of horses includes those in the analysis area and the horses of the surrounding, contiguous areas of the Rock Springs and Lander Field Offices. It is only in the last ~50 years that this metapopulation has been effectively separated from the Stateline metapopulation by the construction of Interstate Highway 80. The Red Desert metapopulation is an interesting part of Wyoming and western history. The present day horses in the metapopulation share a rich and diverse history. Their ancestry ranges from ancient to modern and some individuals exhibit most of the mix while others exhibit little or no mixing of that range of ancestries. The equine escapees that have contributed to the present day mix range from 18th century native American mounts with Spanish Colonial pedigrees to 20th century draft horses or pleasure mounts lost by sheep herders or uranium miners and everything in between. Some smaller areas within the larger have remained fairly isolated and the horses will be less mixed and more reflective of some particular lineage than the collective average exhibited by the larger population. The Lost Creek HMA within the analysis area is one of those and will be discussed in more detail, later.

A metapopulation is all the animals of a species that have regular and sufficient interaction with one another to comprise the gene pool for that part of the species. From the standpoint of genetic viability, the required level of exchange of animals and the related introduction of new genetic material is not high. In small populations of less than 150 animals, the introduction of one or two competent, unrelated breeding animals per generation (approximately every 10 years) will ensure the maintenance of the genetic resource. Thus, to be members of the same metapopulation, individual animals need not experience frequent, large-scale contact with one another. See EA# 030-EA0-037 page 17-19 for a detailed description of metapopulations within the area. A report by Dr Gus Cothran showed that, in genetic terms, wild herds that had been sampled fell within the observed ranges of heterozygosity for domestic breeds.

Detailed information regarding the color and other characteristics of the horses is found in the respective gather plans and HMAPs for the HMAs.

The current adult wild horse population, prior to the 2006 foaling period, is estimated to be 225 in the Lost Creek HMA and 280 horses in the Stewart Creek HMA. The total horse population following the 2006 foaling period is projected to be approximately 290 in the Lost Creek HMA and 365 horses in the Stewart Creek HMA.

Population Gather History

Prior to passage of the Act, the area saw quite a variety of activity. Exploration and settlement each involved horses and both left new members of the wild population and depended upon them. The wild horse population of the area rose and fell in response to the same pressures it felt throughout the west. Within the analysis area are the remains of old traps and local lore has its share of mustang tales. The net effect of all this was that this was one of the areas of public land in the west where some wild, free roaming horses remained on public land and came under federal protection in 1971. Since then, the BLM has pursued a course of action often characterized by confusion and controversy. All this has led us to the present configuration of HMAs and objectives for the horses that occupy them.

Table 4a – Recent Population Estimates

Year	Lost Creek	Stewart Creek	I 80 North
2000	380	452	111
2001	100	400	100
2002	121	193	15
2003	143	227	20
2004	190	200	40
2005	225	280	67

Table 4b – Recent Removals

Year	Lost Creek	Stewart Creek	I 80 North
2001	302	105	34
2002	21	283	23
2003		94	
2004			18

Genetic Resource

The genetic resource in the analysis area, for the purpose of this discussion, is of two types. One is shared by all the horses of the area and the other is unique to those of the Lost Creek HMA. Common to all is that type commonly referred to as genetic diversity. Simply put, this tells us if a population of animals (in this case, the horses) has sufficient strength and diversity in its genetic material that when it reproduces in whatever its customary manner may be that it will be as fit as it can be and not unusually susceptible to disease or environmental stresses because of genetic related weaknesses such as inbreeding or birth defects. In this area, the horses of the analysis area get high marks. Genetic studies conducted from blood samples collected during gathers over the last several years have produced a wealth of information about these horses and this important part of their makeup. Detailed studies are available on each herd in the area and within the metapopulation. These studies are in the respective field offices. While each group of animals is unique, some things can be said of all:

- None possessed any genetic variants that had not been previously identified in other wild horse populations
- All possessed a wide variety of variants
- Individual variability *(Ho)* is high
- Allelic diversity *(Ae* and *TNV)* is also high
- Genetic similarity to most domestic breeds is low and mixed which indicates mixed ancestry
- Spanish types are included in all in the analysis area, though not in all wild populations in the west.
- The combination of herd sizes and interactions assures that no special measures are needed within the analysis area to insure continued genetic diversity and viability.

The second area of genetics has to do with what we might think of as special ancestry or national origin. When we look closely, we can see a definite connection with the first area here in the analysis area. Notice above that genetic data from all herds within the metapopulation indicates that Spanish types are included in most individual animals' ancestries. The degree of influence on individual animals varies from almost nothing to significant levels of similarity. When we get toward the significant end of the spectrum, we can start to see more of the historic influence in the animals. In other words, the horses start to look Spanish. They have characteristic Spanish head shapes, top lines, legs, feet, etc. We have documented a large number of significant level Spanish-influenced horses together in one area in the Lost Creek HMA. Based on genetic testing conducted in 2001, the Lost Creek herd has demonstrated a high degree of similarity to the New World Iberian (Spanish Colonial) breeds. Drs Gus Cothran and Phillip Sponenberg have been asked to evaluate this population with respect to its qualification as a rare and unique genetic resource and to make management recommendations, in that regard.

After a visit to the area in the early summer of 2005, Dr Sponenberg said, "The Lost Creek area had horses that all appeared to be of Spanish type, at least from the distance from which they were viewed. Front views and details of heads were difficult to evaluate, though, so a final decision will be made in the future by those that can more closely view these details."

"Given the consistency of the population and its isolation it is likely that the Lost Creek HMA is indeed a genetic resource herd. If that is borne out by further genetic testing, then this herd should be managed in isolation. It would also be ideal to bring the minimum population up towards 100 from the current level to avoid long-term consequences of inbreeding or genetic drift."

Factors Influencing Population Growth

Wild horse populations are as dynamic as any other wild animal population and perhaps even more so than some. The following factors effect the wild horse population in the analysis area and its fluctuations:

Age/Sex distribution-The ratio of males to females and their average age are the two most obvious subsets of this characteristic of a herd that can affect its rate of growth. EG, if a population is just 50% female, it can't increase by more than 50% a year. Then if those females are all over 15 or under 2 (too old or too young to have many babies), the herd's ability to increase would be further restricted.

Natality-Or birth rate. This may be expressed as either a percentage of the total population or a percentage of the female segment of the population. In the analysis area, it is expressed as a percentage of the total population. In the analysis area, most of the young (>85%) are born between May 10 and June 10. The birth rate appears to average about 30%.

Mortality-The number of animals or percentage of the population that dies of natural causes each year. These causes include starvation, dehydration, predation, disease and injury. This is often defined for individual age classes but may be expressed as a percentage of the entire population. In a typical Rawlins wild horse population, the adage is true that says, if this colt lives to be two, it will probably live to be twenty or even older. The highest mortality rates in these wild horse populations are for the young in their first winter. Then, of course, every horse, if left on the range will eventually succumb to the passage of time and die of old age. The mortality rate also varies by sex. For example, in that first winter, young males are more likely to succumb that females, then life gets a lot easier for the males than the females.

Recruitment -The percentage of young that survive to maturity and enter the adult segment of the population. In Rawlins, this generally equals the growth rate for the herd though technically, this isn't quite true.

Removal-Rounding up and removing part of the population has an obvious effect.

Growth Rate-The number that exists, plus the number born or introduced minus the number that die. For the Lost Creek and Stewart Creek populations, the growth rate has averaged 18 percent over a thirty year period but this average has included years of near zero growth and years of growth near thirty percent. That growth rate can be noticeably affected by slight alterations in the age/sex distribution resulting from application of selective removal criteria at gather time.

At its simplest level, the growth of a population is equal to the number added minus the number subtracted. Most of the addition to the population in the analysis area comes from colts being born and most of the subtraction comes from animals dieing.

A mere handful of horses are added to the population every year by escape or abandonment but every spring lots of bouncing new babies are born. These babies are born into a very stable social unit, the harem band, and most (>85%) are born between May 10 and June 10 when conditions are usually pretty favorable. If they survive their first year of life which is the most hazardous of their years, they are likely to live for 15 or more additional years with some individuals known to live 30 years or more. At any time, death can strike through disease, illness, accident, or a variety of calamities but horses, generally, are long lived and hardy creatures. The forage and climatic conditions of the analysis area are well suited to the horses' needs and parasites and predators are rare so relative longevity is a rule rather than an exception.

The foaling rate in the analysis area has been documented to be as high as 37% and is usually about 31%. About 1/3 of 2 year old mares have colts and then from three to nine years of age, mares have a colt about 80% of the time. Their fecundity then begins to decline as they advance in age until only about one in ten of the mares that live to over 20 manage to raise a colt. While there are no studies to prove it, it seems that the colts born to the very young and the very old die at a higher rate than those born to the

middle age group. A 2 year old or 22 year old might just abandon a newborn in order to survive themselves, something a four to fourteen year old would almost never do.

Foal mortality has a significant effect on population growth in the area. Approximately 30% of the colts born every year die before their first birthday as do about 15% of those who live another year. Dehydration and failure to learn how to get a share of the seemingly adequate forage account for most of the foal mortality, with a few more of the untimely born succumbing to winter storms or cold. Weak and sick mothers abandon a few. A few colts and mothers die at foaling time. Once in awhile, a coyote, eagle, or other predator ambushes a brand new baby, usually in its first few hours of life while it is still finding its legs.

In the analysis area, 3-14 year old horses rarely become mortality statistics. Once a horse gets to be three, life gets a lot easier for it. Especially if it is a bachelor male with no kids to raise. The survival rate for horses aged 3-14 in the analysis area is above 90% or in other words, a three year old is more than 90% likely to live to be four, and so on. At 15 it starts to drop until a horse over 20 only has about an even chance of making it another year.

AML Expression

In Rawlins, AMLs are expressed as the number of adults (horses one year of age and older) in March (or pre-foaling/post most winter mortality) population estimate. The AML is the mid point of the range identified as the lower limit and the upper limit. That range identifies the objective population sizes at minimum, maximum, and average within a three year cycle.

The time of year has an effect on the total number of horses that will occupy the range. BLM statistical reports are compiled to represent what the population is on December 31 of that calendar year. Inventories are almost never conducted on that date. Thus, if the population is estimated in March, whatever the winter mortality would be has normally taken place and few or no colts have yet been born. So, if the population were estimated to be 1000 in March, it could well be 1300 next September, and 1200 the following March (and maybe 1250 on that December 31). So, if a population is estimated at 1000 in March and the AML for it is 600 with a lower limit of 525 and an upper limit of 700, then a gather scheduled for August would need to remove approximately 615 total animals to bring the population to approximately 675 total animals and include approximately 150 colts.

E. DOMESTIC LIVESTOCK

Domestic livestock are authorized to use the public lands under the authority of the Taylor Grazing Act, as amended. Livestock belonging to specific livestock operators are authorized to use specific areas of rangeland (grazing allotments) for specified periods of time in specified numbers. Twenty of the 588 grazing allotments in the Rawlins Field Office jurisdiction and two large areas of solid block private land occur within the analysis area. In all cases, the grazing allotment and the authorization of livestock use predate passage of the Wild, Free-roaming Horse and Burro Act.

The rangelands in the HMAs provide seasonal grazing for livestock (cattle and sheep). Wherever domestic livestock are authorized to use the public lands, range improvements are present. Most of these range improvements are operated and maintained by the livestock operators, and they all affect wild horses. Fencing is primarily used to keep livestock in specific allotments during specified seasons of use. Livestock water is provided by springs, wells, intermittent and ephemeral streams, pipelines, and reservoirs. Sheep use snow in the winter as a water source. Sheep grazing in the HMAs is mostly within the winter period. Cattle grazing is about evenly distributed amongst the seasons.

The overall decline in the range sheep industry has resulted in a low and variable rate of actual use by sheep operators. Cattle use levels have been fairly constant in recent years. One large sheep operator has expressed interest in converting a portion of his sheep grazing use into active cattle grazing. The following tables depict the current status of livestock grazing in the HMAs.

TABLE 5a LOST CREEK HMA LIVESTOCK PREFERENCE					
Grazing Allotment	**Allot. #**	**Number of Operators**	**Active Preference (AUMs)**	**Type use**	**Seasons**
Cyclone Rim *	10103	2	11,494	Cattle	Yearlong
		3	15,796	Sheep	Fall/Winter
TOTAL		4#	27,290		

* The Cyclone Rim allotment is a little larger than the Lost Creek HMA. Numbers given are for the entire allotment
# One operator has both sheep and cattle

TABLE 5b STEWART CREEK HMA LIVESTOCK PREFERENCE					
Grazing Allotment	**Allot. #**	**Number of Operators**	**Active Preference (AUMs)**	**Type use**	**Seasons**
Stewart Creek	10102	4	7,029	Cattle	Spring/Fall
TOTAL		4	7,029		

F. VEGETATION AND SOILS

Vegetation General

There are a variety of vegetation types in the Rawlins Field Office areas where wild horses can be found, both within and outside of wild horse HMAs. Vegetation types include: sagebrush, sagebrush/grass, saltbush, greasewood, desert shrub, juniper, grass, meadow, broadleaf trees, conifer, mountain shrub, half shrub and perennial forbs, and badlands. The predominant vegetation type is sagebrush/grass.

Plant communities are very diverse in this large area, reflecting the diversity in soils, topography, and geology found there. The high-elevation, cold-desert vegetation of the project area is composed predominately of Wyoming and mountain big sagebrush/grass and Gardner saltbush vegetation communities. Other plant communities present are: desert shrub, grassland, mountain shrub, juniper woodlands, and a very few aspen woodlands. Needle-and-thread, Indian ricegrass, bluebunch wheatgrass, western wheatgrass, junegrass, basin wild rye, bottlebrush squirreltail, mutton and little bluegrass, and threadleaf sedge are the predominant grasses and grass-like species. Wyoming and mountain big sagebrush, black sagebrush, bud sage, birdsfoot sage, Gardner's saltbush, spiny hopsage, four-wing salt bush, greasewood, bitterbrush, winterfat, horsebrush, Douglas and rubber rabbitbrush, and true mountain mahogany are important shrub species. Forbs are common and variable depending on the range site and precipitation zone.

Wild horses generally prefer perennial grass species as forage. Shrubs are more important during the fall and winter. The species of grasses preferred depends on the season of the year. Needle and thread and Indian ricegrass are most important during the winter and spring and wheatgrasses during the summer and fall.

Soils-General

The soils in the HMAs are highly variable in depth and texture as would be expected when one pictures the great variability in geology and topography that characterizes the area. Generally, the western third is a mix of sandy soils with high wind erosion potential and clayey soils with high water erosion potential, low bearing strength and varying amounts of salts. The eastern third has more loamy inclusions in the form of undulating uplands and alluvial complexes, with moderate erosion potential, while the middle third is a mixture of both. Virtually any soil condition that may be encountered in the region can be found somewhere within the HMAs. More specific soils information can be found in the draft soil surveys located in the BLM files in the Rawlins Field Office.

Special Status Plants

Special status plants are those species that are federally listed as threatened or endangered, proposed for listing, or candidates for listing under the Endangered Species Act (ESA). They also include species designated by each BLM State Director as sensitive and those listed or proposed for listing by a state in a category implying potential endangerment or extinction. BLM is mandated to protect and manage threatened, endangered, candidate, proposed, and sensitive species and their habitats. The federally listed Ute ladies'-tresses has habitat in the area but surveys throughout the area have not found any populations. It occurs in riparian areas below 7,000 feet. The Wyoming special status plant species that grow, or have potential habitat in the project area are listed in the following table. The Colorado butterfly plant and blowout penstemon plant are not located within, or habitat is not found, in the project area. There will be no effect to these species as a result of implementing this project.

Wyoming Special Status Plant Species

Common Name	Scientific Name	Habitat
Nelson's milkvetch	Astragalus nelsonianus	Alkaline clay flats, shale bluffs and gullies, pebbly slopes, and volcanic cinders in sparsely vegetated sagebrush, juniper, & cushion plant communities at 5200 - 7600'
Cedar Rim thistle	Cirsium aridum	Barren, chalky hills, gravelly slopes, & fine textured, sandy-shaley draws at 6,700 - 7,200'
Ownbey's thistle	Cirsium ownbeyi	Sparsely vegetated shaley slopes in sage & juniper communities at 6,440 - 8,400'
Gibbens' penstemon	Penstemon gibbensii	Sparsely vegetated shale or sandy-clay slopes at 5,500-7,700'

Weeds

Federal agencies are directed by Executive Order 13112, Invasive Species, to expand and coordinate efforts to prevent the introduction and spread of invasive plant species (noxious weeds) and to minimize the economic, ecological, and human health impacts that invasive species cause. Weed populations are generally found along main dirt roads and two-tracks, in areas of livestock concentration, and in areas of intense recreational use. Motorized vehicles transporting seeds can be a major source of new infestations of weed species. The majority of the area has not been surveyed for noxious weeds. Noxious weed and other invasive species known to occur in the area include: Russian knapweed, hoary cress, houndstongue, Canada thistle, saltcedar, henbane, halogeton, Russian thistle, gumweed, goosefoot, and assorted mustards.

G. RECREATION

Residents and non-residents alike enjoy viewing wild and free-roaming horses. A limited number of people come from outside the region to view the horses in their natural environment while residents often see them in the course of travel for other activities.

Recreation in the HMA is primarily dispersed, with hunting big game, small game, predators and birds as the major activity. Other recreational activities common in the HMA include camping, hiking, rock hounding, photography, wildlife and wild horse viewing, off-highway vehicle (OHV) use on primitive roads and sightseeing.

H. WILDERNESS

There are no wilderness areas or wilderness study area in or adjacent to the HMAs.

I. RIPARIAN AREAS (AND OTHER SURFACE WATER RESOURCES)

Riparian areas are very limited in nature and extent within the HMAs. This adds to their importance. Within the HMAs, as elsewhere on the public lands, riparian areas are extremely important components of the landscape, providing essential habitat requirements to a wide variety of consumptive and non-consumptive uses on the public lands. Some of the value of these areas for horses includes forage, cover, water sources, breeding and rearing areas.

Riparian areas are important enough to warrant special policy and management considerations. The BLM policy with regard Standards Guidelines for Range Management for riparian areas on public lands under its jurisdiction; is for all riparian areas that are not properly functioning to be managed for proper functioning condition.

Within the HMAs, natural water sources are sparse. Intermittent streams are rare and often have upstream and downstream segments that are dry. Commonly, the duration of stream flow is ephemeral in most drainages; streams flow only in response to precipitation events and spring snowmelt. There are also large spring and playa areas that may be dry most years, containing riparian vegetation only in response to years with higher precipitation.

It must also be noted that early settlement often concentrated in limited riparian and areas with water sources. In addition to their natural values, riparian areas often are rich in historical and cultural values and in many cases they are on private lands. A large percentage of the total riparian resource within the HMAs is privately-controlled.

Riparian Assessment

The BLM method for determining the condition of riparian areas is named Proper Functioning Condition (PFC). It is conducted by an interdisciplinary team composed of professional specialists. Thus, Proper Functioning Condition is a desirable condition and the name of a federal inventory procedure. Riparian areas are said to be properly functioning if adequate vegetation, landform or woody debris are present to dissipate water energy associated with high stream flow.

On BLM managed land there is roughly 7 miles of potential lotic riparian and 2,000 acres of open water and riparian based on aerial photos from 2001. Lost Soldier Creek in the Stewart Creek HMA was rated as properly functioning in 1997. Many of the other areas, especially in the Lost Creek allotment are more difficult to evaluate since there is limited data collected for these areas since these areas have experienced drought during evaluation periods, and some of these areas are man-made water sources and may be inaccessible to horses during all or part of the year.

Surface Water Resources Available as Water Sources

A significant portion of the Analysis area lacks reliable, season-long water sources. Water in this area consists of natural, ephemeral stream flows, widely scattered springs and seeps, and a few very old reservoirs. Most of these reservoirs are located at springs or seeps and could be classified as spring developments. These characteristics combine to limit the carrying capacity of the area for season-long use by any kind of grazing animal to much less than could be supported by the available forage resource.

J. PRIVATELY-OWNED AND CONTROLLED LANDS

TABLE 6

HMA	PRIVATELY CONTROLLED	PERCENT OF HMA
Lost Creek	17,000	5.3%
Stewart Creek	13,000	7.1%

Privately-owned or controlled lands comprise 5.3% in the Lost Creek HMA and 7.1% in the Stewart Creek HMA. In addition to their proportionate contribution to the forage and

space requirements for all the animals that utilize the HMAs, a disproportionately high share of the reliable water sources in the HMAs occur on these lands.

K. SOCIOECONOMICS

The other uses of the public land within the Analysis area yield a variety of direct and indirect economic benefits, and the public rangelands are an important aspect of the sense of place that is the essence of the West. For the purpose of this analysis, the regional and national impacts are not quantified. Locally, the analysis area serves many purposes to the local, regional, and national populations. The primary direct effects are local in nature. As with other values/effects, the socioeconomic values need not be mutually exclusive. Maintaining a mix is consistent with the direction of the Act to maintain the multiple use relationship that presently exists within the areas. The following list represents the multiple use relationship that currently exists within and adjacent to the HMA.

PUBLIC LAND USE	ECONOMIC VALUES	CULTURAL VALUES
Wild horse habitat	recreation, adoption	lifestyle, character
Livestock raising	meat, fiber, jobs	lifestyle, character
Big game hunting	meat, recreation, jobs	lifestyle, self reliance
Dispersed recreation	indirect expenditures	lifestyle, freedom
Energy Production	royalties, employment, energy	lifestyle, independence

IV. ENVIRONMENTAL CONSEQUENCES

A. INTRODUCTION

Resources impacted by the Proposed Action include wild horses, domestic livestock and wildlife, vegetation and soils, lands, socioeconomics and recreation. The direct, indirect, and cumulative impacts are addressed for each resource.

This section will assess the environmental impacts (either positive or negative) on the components of the human environment either affected or potentially affected by the Proposed Action and Alternative. Direct impacts are those that result from the actual gather and removal of wild horses in the Lost Creek and Stewart Creek HMAs and I 80 North. Indirect impacts are those impacts that exist once the excess animals are removed. By contrast, cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Critical elements of the human environment (USDI-BLM 1988) and their potential to be affected by the Proposed Action and Alternatives must be considered. These critical elements are listed below in Table 3. The elements that are determined to be not affected will not be analyzed or discussed further in this document.

Table 7 - Critical Elements Checklist

Critical Elements	Status	Analyzed in Detail in this EA
Cultural/Historic	Potentially Affected	Yes
Native American Religious Concerns	Potentially Affected	Yes
Wilderness	Not Affected	No
Wetlands/Riparian Areas	Potentially Affected	Yes
Invasive Species	Potentially Affected	Yes
ACEC	Not Affected	No
Air Quality	Not Affected	No
Farmland, Prime/Unique	Not Present	No
Wastes, Hazardous, Solid	Not Present	No
T&E Species	Not Affected	
Water Quality	Not Affected	No
Floodplains	Not Present	No
Environmental Justice	Not Affected	No
Wild & Scenic Rivers	Not Present	No
Other Resource Elements		
Wildlife	Potentially Affected	Yes
Wild Horses	Potentially Affected	Yes
Livestock Grazing	Potentially Affected	Yes
Vegetation	Potentially Affected	Yes
Soils	Potentially Affected	Yes
Recreation	Potentially Affected	Yes
Riparian	Potentially Affected	Yes
Private Lands	Potentially Affected	Yes
Socio Economics	Potentially Affected	Yes
Fluid or Solid Minerals	Not Affected	No
Visual Resource Management	Not Affected	No

ENVIRONMENTAL IMPACTS ON SPECIFIC COMPONENTS OF THE ENVIRONMENT

B. WILDLIFE

Wildlife General

The following impacts may occur to wildlife species under the Proposed Action and Alternative 2. There would be no wild horse gatherings implemented in Alternative 3; therefore, there would be no impacts to wildlife resulting from wild horse gathering operations. However, negative impacts to wildlife from unmanaged wild horse populations would continue or increase. Gathering wild horses, whether it be for adoption, emergency control, and/or fertility control, involves setting up wild horse traps, using saddle horses and helicopters to gather the horses, and trucks to transport them to a holding facility in preparation for adoption.

Activities potentially disruptive to wintering big game are avoided within crucial winter range from November 15 to April 30. This project will not be implemented during that time frame.

Project activities outside the seasonal restrictions would cause animals to temporarily vacate the area where gather operations are occurring. Such displacement would be brief and localized and big game species would return to the area after activities cease.

Environmental Consequences Of Alternative 1 & 2
Under these alternatives, the horses left on the range would have adequate forage, water, and space. Wildlife species would be able to live in a natural ecological balance within the HMAs and adjacent to it. Improved quality and increased quantity of forage would help to obtain or maintain objective wildlife populations as defined by the Wyoming Game and Fish Department.

Wildlife populations in areas where excess wild horses are gathered could be disrupted for a short time during the gathering operations. Once gathering operations cease, these effects would stop. The short-term effects are a result of human presence and the noise of the helicopter which may cause wildlife to seek cover in areas away from gathering routes. However, large game species should return to the area within a few days. Capture activities would not cause abandonment of normal habitat areas. There would be no long-term adverse effect on wildlife.

BLM data and past experience show that removal of excess horses from areas of wild horse concentration would improve habitat conditions for wildlife. This effect would be most pronounced around water sources and would benefit both game and non-game wildlife. Maintaining wild horse populations at AML through the removal of excess wild horses enables wildlife populations to utilize the forage that would otherwise be used by the excess wild horses. No adverse cumulative impacts to wildlife are anticipated.

Environmental Consequences Of Alternative 3

Unmanaged populations of wild horses might eventually stabilize at very high numbers near what is known as their food-limited ecological carrying capacity. At these levels, range conditions would deteriorate significantly. Due to the lack of large predators to limit population growth in the HMA, wild horse numbers would eventually exceed the carrying capacity of the HMA and adjacent areas. Competition for water sources and forage resources would increase between wildlife species, specifically pronghorn and mule deer. Inter-specific competition over time would affect pronghorn and mule deer, especially in crucial winter ranges. Large game species would be displaced over time and population levels and overall health of the herds would diminish.

Sensitive Species Wildlife

Impacts would be the same under Alternatives 1 & 2 and are detailed as follows: Horse gather operations would occur outside of critical time frames or habitat locations for certain species such as the greater sage-grouse, mountain plover, white tailed prairie dogs and raptors; species which are documented to occur in the project area. Removal of vegetation from sensitive sagebrush and riparian habitats will be avoided. With timing and

avoidance limitations, no impacts to these species are anticipated. Under Alternative 3, there would be no surface disturbing activities and therefore no impacts deriving from them. Impacts under this alternative would be associated with the deterioration of habitat conditions and potential decline in sensitive wildlife populations that would result from high horse numbers.

The following list indicates sensitive species identified within the project area for which seasonal/avoidance stipulations are applied. The dates shown include the earliest start and the latest stop for both field office jurisdictions. The proposed project is not scheduled to begin until after all seasonal/avoidance stipulations have expired.

Raptor Species:
Golden eagle and ferruginous hawk nests: Disruptive activities restricted within 1 mile, Feb 1-July 31. All other identified raptor nests: Disruptive activities restricted within 3/4 mile, February 1 – July 31. Since no project activities are planned for these time periods, there would be no impact to the specie as a result of implementing the proposed project.

Greater sage-grouse:
Sage-grouse leks: 1) Avoid surface disturbance or occupancy within ¼ mile of the lek perimeter of occupied sage-grouse leks. 2) Avoid human activity between 6 p.m. and 9 a.m. from March 1 - May 20 within ¼ mile of the perimeter of occupied sage-grouse leks.

Sage-grouse nesting/early brood-rearing habitat: Avoid surface disturbing and disruptive activities in suitable sage-grouse nesting and early brood-rearing habitat within two miles of an occupied lek, or in identified sage-grouse nesting and early brood-rearing habitat outside the 2-mile buffer from March 1 - July 15.

Since no project activities are planned for these time periods, there would be no impact to this specie as a result of implementing the proposed project.

Mountain plover:
Disruptive activities restricted from April 10 – July 10. Since no project activities are planned for these time periods, there would be no impact to this specie as a result of implementing the proposed project.

White-tailed prairie dog:
Construction of facilities, traps and staging locations will not occur within 50 feet of any active prairie dog town.

C. CULTURAL, HISTORIC RESOURCES

Environmental Consequences Of Alternative 1 & 2
Cultural resources would not be impacted as all potentially surface-disturbing activities would be subject to cultural clearance and mitigation practices.

Environmental Consequences Of Alternative 3
There would be no gathering or other handling and, therefore, no adverse effects associated with the construction of traps or other facilities. Increased numbers of horses would trample an unknown number of sites.

D. WILD HORSES-Environmental Consequences

Environmental Consequences Of Alternative 1
The Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195 as amended) states that all management activities shall be at the minimum feasible level. The minimum feasible level of management would require that removals and other management actions that directly impact the population, such as census, occur as infrequently as possible (3 to 5 years). To the extent practical, these alternatives would allow maintenance of a self sustaining population, as well as maintaining a thriving natural ecological balance.

Reducing the wild horse population in the Lost Creek HMA to 100 mature horses and in the Stewart Creek HMA to 125 mature horses would meet the intent of the Wild Free Roaming Horse and Burro Act that all management actions shall be at the minimum feasible level. The following positive impacts for wild horses and their habitat would occur:

- A thriving natural ecological balance would be achieved and maintained by reducing the population to the lower limit of the management range.
- The wild horses remaining on the range would experience decreased competition and stress for available resources.
- Ensure that a viable population of wild horses would survive, and be successful during poor years when elements of the habitat are limiting due to severe winter conditions, drought or other uncontrollable and unforeseeable environmental influences to the herd.
- Annual gathers would not be required which would allow for a greater level of herd stability and band integrity.
- Gathers would occur when the population approaches or exceeds the upper limit of the management range, anticipated to be no sooner than every third year.
- The wild horse population would be subjected to the stresses associated with gathering and handling as infrequently as possible.

Environmental Consequences Of Selective Removal Criteria
Direct impacts associated with Alternative 1 would consist of selecting wild horses for release that possess the historic characteristics (color, pattern, conformation, etc.) and age structure that are typical of the herd demographics of the Lost Creek and Stewart Creek HMAs, modified slightly to minimize the effects of past catastrophic events (EG under or over represented age classes). The National Selective Removal Policy (described in Alternatives Analyzed Section) would be followed to the extent possible. Animals selected for release would be the most capable of surviving environmental extremes, thus ensuring a viable population is present in the HMAs. Utilizing the selective removal criteria would result in a positive impact for the long term health and stability of the population. In addition, where possible, horses selected for retention in the Lost Creek HMA would be those exhibiting a preponderance of physical characteristics associated with the Spanish Colonial phenotype/genotype.

The effect of removal of horses from the population is not expected to have significant impact on herd population dynamics, age structure or sex ratio, as long as the selection criteria for the removal maintains the social structure and breeding integrity of the herd. The selective removal strategy for the Lost Creek and Stewart Creek HMAs would approximately maintain the age structure, the sex ratio and the historic range of characteristics currently within the herds. This flexible procedure would allow for the correction of any existing discrepancies in herd dynamics, which could predispose a population to increased vulnerability to catastrophic impacts. Further detail on these criteria and there probable impacts to the resulting population are found in Appendix

Potential negative impacts to the long term health and stability of the population could occur from exercising poor selection criteria not based on herd demographics and age structure. These negative impacts would include modification of age or sex ratios to favor a particular class of animal. Effects resulting from successive removals causing shifts in sex ratios away from normal ranges are fairly self evident. If the selective removal criteria favors studs over mares for retention, it would be expected to result in decreased band size, increased competition for mares, and an increase in the size and number of bachelor bands. If the selective removal criteria favors mares over studs, it would be expected to result in fewer and smaller bachelor bands, decreased competition for mares, and a likelihood of larger band sizes. Concurrently, if smaller band size was accompanied by an increase in the percentage of the population that participates in reproductive activities, then an improvement in genetic health would very likely result. Appendix B also compares the probable effects of a range of selective removal criteria reflecting the potential influences of policies directed at reducing the number of older horses in long term holding facilities.

Environmental Consequences Of Gather Operations
These direct impacts include: handling stress associated with the gathering, processing, and transportation of animals from gather sites to temporary holding facilities, and from the temporary holding facilities to an adoption preparation facility. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality does occur during a gather however it is infrequent and typically is no more than one-half to one percent of the total animals

gathered. Traumatic injuries that may occur typically involve biting and/or kicking which results in bruises and minor swelling but normally does not break the skin. These impacts occur intermittently and the frequency of occurrence varies with the individual.

Population wide impacts may occur during or immediately following the implementation of Alternative 1. They include the displacement of bands during capture and the associated re-dispersal, temporary separation of members from individual bands of horses, re-establishment of bands following release, and the removal of animals from the population. With the exception of the changes to herd demographics, direct population wide impacts have proven to be temporary in nature with most if not all impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release except for a heightened shyness toward human contact. Observations of animals following release have shown horses relocate themselves back to their home ranges within 12 to 24 hours of release. A study by Hansen, Montana State University, found that removals as conducted by the BLM in herds under the jurisdiction of the Lander (Wy) and Idaho BLM, had no adverse effects on the reproduction rates of those herds. The removal methods employed were the same as those proposed.

All activities would be carried out in accordance with current BLM policy, with the intent of conducting as safe and humane a gather as possible.

Environmental Consequences Of Data Collection
Direct impacts associated with data collection involve increased stress levels to the animals as they are restrained in the portable squeeze chute. Those animals selected for blood sampling may become very agitated as the samples are drawn. Once the animal is released from the squeeze chute, stress levels decrease rapidly. The collection of data is a positive impact to the long term management of the population. This data would be used to develop population specific objectives that would help to ensure the long term viability of the population. This procedure is within the intent of the Act, as it relates to managing populations at the minimum feasible level.

A thriving natural ecological balance would exist within the HMA and adjacent to it. Reducing the population to 100 mature horses in the Lost Creek HMA and 125 in the Stewart Creek HMA would benefit the remaining horses by improving the quality and quantity of forage available to them. This would ensure a vigorous and viable breeding population, reduce stress on vegetative communities and wildlife, and be in compliance with the Wild Free Roaming Horse and Burro Act, and the Great Divide Resource Management Plan. Reducing the wild horse population to 100 and 125 mature horses would also maintain the wild horse population above the level that Drs. Cothran and Sponenberg indicated would preserve the genetic diversity of the wild horse herds.

Environmental Consequences Of Alternative 2: ADJUST ADULT WILD HORSE POPULATIONS TO INTERIM MANAGEMENT LEVELS SHOWN ABOVE AND ADMINISTER FERTILITY CONTROL TO SELECTED RELEASED MARES.
The environmental impacts from this alternative would be the same as those from Alternative 1 in 2006. In addition, the amount of additional handling required after capture and before release to select and isolate the mares that would receive fertility control would result in some additional stress to them and opportunity for injury in 2006. This would be proportionate to the number of animals selected for treatment. Since experience gained over the years has resulted in a reduction of the death and injury rate from handling to nearly zero, this effect would be negligible. Fertility control effects can be broken into three areas for discussion. Those three would be: the effects of fertility control on the individual animal treated; the effects of fertility control on the band/group in which the treated animal lives; and the effects of fertility control on the whole population or herd (demographic analysis). Another area of interest lies in the possible future effect of fertility control on population management requirements (when and how big will the next gather be? How about adoption demand? Are just some of the questions that come to mind). While clearly not environmental in nature, these are still important considerations in planning for the future of any population of wild, free roaming horses on public land. The use of fertility control represents an expense that may well be recouped in the form of lower future costs of management.

The Effects Of Fertility Control On The Individual Animal Treated
Treated mares would be subjected to the additional handling required in order to receive the vaccine. They would be slightly at risk for allergic reactions and/or injection site

infections/reactions. Administration protocols have been designed to minimize these risks. They would be spared the stress of pregnancy and lactation if the treatment were successful. Typically, mares treated in August of 06 would already be pregnant if they were healthy and receptive and have a colt in the spring of 2007. They would then have an 82% chance of not getting pregnant in 2007 and a 68% chance of not getting pregnant in 2008 (based on observed titer levels produced in trials by the vaccine currently available). Depending on their age and environmental conditions during that period, they could grow bigger and stronger than they otherwise would while carrying and raising two colts, particularly if they were 2-4 years old when treated. This could result in their living longer and extend their young bearing years. While this result is very possible, it would be quite variable, depending on the individual animals. The vaccine under consideration does not alter the reproductive tract itself in any way and has no lasting effect on an individual animal's ability to become pregnant. If a mare was treated that was not already bred (such as a late foaler or late maturing filly), she would have a 94% chance of not getting pregnant in 2006 and be less likely to have a colt born unusually early or late in the following years. Then she would have the same 82% chance of not getting pregnant in 2007 and 68% chance of not getting pregnant in 2008 as the other mares in the treated segment of the population. These percentages are projected estimates based on trials conducted to date. The actual results could be different in these herds. Successfully treated mares should return to normal fertility by 2009.

The Effects Of Fertility Control On The Band/Group In Which The Treated Animal Lives
Successfully treated mares would not become pregnant and have colts but their estrous cycle would continue regularly. For individual animals, this would cause varying effects as some mares' estrous cycles appear to be more dependant on day length than others. They would continue to demand attention from the harem stallion and the competitive atmosphere among harem stallions associated with breeding behavior would be longer lasting than it would otherwise be as open mares continued to cycle until the fall, when days become shorter. The nature and extent of this effect is unknown. This could have an adverse effect on some harem stallions, causing them to enter the winter in lower physical condition than they otherwise would and thus render them more likely to succumb to adverse environmental conditions the following winter. The supply of younger bachelors is adequate to insure ready replacement of any increased mortality among harem stallions and a more rapid turnover in this segment of the population could provide a few more individuals an opportunity to participate in breeding. The social structure of the harem band is dependant on the periodic birth of young animals. It is not, however, known just how many young is "enough" to insure a stable social structure in a population. Thus, it is reasonable to predict that as long as some colts are born each year, the band structure will continue relatively unaffected. None of these effects are documented but are possible elements to use to evaluate the effects of fertility control over the long term.

The Effects Of Fertility Control On The Whole Population Or Herd (Demographic Analysis)
This is the best understood (and most misunderstood) and most often discussed effect of fertility control on wild horse populations. The use of fertility control would change the wild horse population demographics, over time as reproduction is first suppressed then returns to normal as the immunity afforded by the vaccine diminishes. The degree of change observed in the years after 2006 would vary with the rate of application and the success of the vaccine used in 2006. Those changes would be seen in the population size and makeup in future years. In order to array those possible changes, the tools and methods described in Appendix 1 of the gather plan were used to project and compare the response of the population size to two possible fertility control scenarios and them to a control (no fertility control applied at gather time). They were the most likely population size that would be encountered in the summer of 2009 if the population were adjusted to the target size and makeup in the summer of 2006. The three scenarios to be compared are that 2009 population if no mares were selected for fertility control treatment in 2006, if ½ of the mares released in 2006 were administered fertility control, and if all the mares released in 2006 were administered fertility control. Then, the most likely (average) 2009 population was projected out to 2012 using the same methods. The results for the two herds are shown in the following table:

TABLE 8

ADULT** POPULATION SIZES IN THE HMAS; FERTILITY CONTROL OPTIONS COMPARED					
Treatment Scenario (FC Treatment administered in 2006 0nly)	Highest Possible Population in 2009	Lowest Possible Population in 2009	Most Likely Population In 2009	Most Likely Population in 2012 if no gather in 2009	2006 gather objective
LOST CREEK HMA					
No Fertility Control	151	79	124	185	100
½ of released mares treated	134	76	113	157	100
All of released mares treated	121	72	105	138	100
STEWART CREEK HMA					
No Fertility Control	209	103	167	244	125
1/2 of released Mares treated	186	98	153	211	125
All of released mares treated	168	94	141	187	125

****** All animals one year of age and older are included in the adult segment
The above table reveals an interesting fact peculiar to the analysis area and similar populations that can often expect low survival rates for the very young (0 and 1 year olds): The total population size is more dependant on the environmental factors affecting survivability than on the artificial manipulation of the birth rate provided by fertility control.

A number of possible effects of fertility control have been identified but not studied adequately enough to be able to predict their role in the highly variable population dynamics that typify wild horse populations. Compensatory reproduction and an individual animal's reproductive success following treatment are examples.

As long as fertility control was administered in conjunction with gathers planned for population management, there would be little or no cumulative effects unless and until a vaccine were developed that had a longer period of efficacy than the management gather cycle.

Environmental Consequences Of Alternative 3
Under this alternative, horses would not experience the stress associated with gathering, removal or adoption. The current population of wild horses would continue to increase, and exceed the carrying capacity of the range. Though it may require many years for the population to reach catastrophic levels, by exceeding the upper limit of the management range, this alternative poses the greatest risk to the long-term health and viability of the wild horse population, wildlife populations, and the vegetative resource.

The population of wild horses would compete for the available water and forage resources. The areas closest to water would experience severe utilization and degradation of the range resource. Over the course of time, the animals would deteriorate in condition as a result of declining forage availability and the increasing distance traveled between forage and water sources. The mares and foals would be affected most severely. The continued increase in population would eventually lead to catastrophic losses to the herd, which would be a function of the available forage and water and the degradation of the habitat. A point would be reached where the herd reaches the ecological carrying capacity and both the habitat and the wild horse population would be critically unhealthy.

Ecological carrying capacity for a population is a scientific term, which refers to the level at which density-dependant population regulatory mechanisms would take effect within the herd. At this level, the herd would show obvious signs of ill fitness, including poor individual animal condition, low birth rates, and high mortality rates in all age classes due to disease and/or increased vulnerability to predation (Coates-Markle, 2000).

In addition, irreparable damage would occur to the habitat through overgrazing, which is not only depended upon by wild horses but by wildlife (which include sensitive species), and permitted livestock. All multiple uses of the area would be impacted. Significant loss of wild horses in the HMAs due to starvation and disease would have obvious consequences to the long-term viability of the herd. Irreparable damage to the resources, which would include primarily vegetative, soil and watershed resources, would have obvious impacts to the future of the HMAs and all other uses of the resources, which depend upon them for survival.

This alternative would not be acceptable to the BLM nor to most members of the public. The BLM realizes that some members of the public advocate "letting nature take its course", however allowing horses to die of dehydration and starvation would be inhumane treatment and would clearly indicate that an overpopulation of wild horses existed in the HMAs. The Wild Free-Roaming Horse and Burro Act of 1971, as amended, mandates the Bureau to "*prevent the range from deterioration associated with overpopulation*", and "*remove excess horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area*". Additionally, Code of Federal Regulations at Title 43 CFR 4700.0-6 (a) state "*Wild horses shall be managed as self- sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat".*

E. DOMESTIC LIVESTOCK

Environmental Consequences Of Alternative 1 & 2

In 1994, it was determined that an average population of 225 horses could be maintained in the analysis area without risking resource degradation or without the need to reduce livestock grazing preference. At the present time, actual use in the HMAs is much less than the level authorized by the livestock grazing preference. Much of this is due to the fact that the holders of the grazing preference in the HMAs include largely inactive sheep operators, some of whom have expressed varying degrees of interest in converting their operations to cattle operations. The area has a limited suitability for increased cattle grazing and the increase in the average wild horse population from 225 head, yearlong to 270 head, yearlong could further constrain that suitability. Further study is required to determine the nature and extent of any such limitation. The worst possible case would be If the additional 30 head of horses were determined to be 100% competitive with cattle and result in the need to deny conversion of 360 AUMs from the present permitted use of winter sheep use to the assumed desired use of summer cattle.

An improvement in the quality and quantity of forage availability is expected where excess or strayed wild horses are removed. This would provide greater opportunity for improved range conditions within the related areas. A complete analysis of livestock grazing and grazing impacts in this area is found in the Divide Grazing EIS. Grazing in this area is also addressed in the Great Divide RMP and the Green River RMP.

Livestock owners would be notified that wild horse population control operations are planned. The possibility exists that domestic livestock would be spooked by wild horses and/or the helicopter. In this situation, livestock would be subject to short-term stress and possible injury.

Environmental Consequences Of Alternative 3
Under Alternative #3, wild horse population control methods would not be implemented. This alternative would allow wild horse populations to increase within the Lost Creek and Stewart Creek HMAs and nearby areas. Livestock would gradually be displaced by wild horses as demand for space, forage, and water increased. Displacement would be slow and indirect. As competition increased, it would become less economically favorable to utilize these areas with domestic livestock. Fence maintenance costs would increase. This would have a negative economic impact on livestock producers. Range conditions throughout the area would deteriorate. These impacts would be cumulative over time.

F. VEGETATION AND SOILS

Vegetation General
Environmental Consequences Of Alternative 1 & 2
The removal of excess wild horses from inside the two wild horse HMAs would avoid

potential over-utilization of forage and reduction in vegetative ground cover. The quantity of forage throughout the HMAs could be increased. Impacts from wild horses could diminish and be beneficial. Vegetation composition, cover, and vigor could improve or be maintained near water sources where wild horses tend to congregate. An improvement in forage condition could lead to improved livestock distribution, which would prevent over-utilization and reduction in vegetation cover. Vegetative diversity and health should improve in areas where excess wild horses are removed. Adverse, short term effects to vegetation and soils would occur at trap sites when gathers are being conducted. Vegetation would be disturbed by trap construction, and short term trails and soil compaction may develop near and in the trap. Any vegetation removed would be minimal and localized.

Environmental Consequences of Alternative 3
Under Alternative 3, wild horse population control methods would not be implemented. Perennial vegetation would continue to experience season-long grazing pressure, which is not conducive to optimum plant health and vigor. Soil erosion and plant health would continue to be compromised around water locations, but elsewhere impacts would be localized and minimal. This alternative would allow wild horse populations to increase within the HMAs and nearby areas. As native plant health deteriorated and plants were lost, soil erosion would increase and a long term loss of productivity would occur. There would also be increased impacts to areas outside the HMAs as horses move out in search of better forage. Impacts would be cumulative over time and would affect areas beyond the HMAs. There would be no impacts from trapping operations because none would occur.

Soils-General
Environmental Consequences Of Alternatives 1 & 2
Sheet and rill erosion would not exceed natural levels for the sites because the maintenance of AMLs would help ensure that a natural ecological balance would be maintained in and adjacent to the HMAs. Perennial vegetation would continue to experience season-long grazing pressure, which is not conducive to optimum plant health and vigor. Soil erosion and plant health would continue to be compromised around water locations, but elsewhere impacts should be minimal. Watershed health should improve throughout much of the area.

Environmental Consequences Of Alternative 3
Soil erosion would increase in proportion to herd size and vegetation disturbance. The shallow desert topsoils can not tolerate much loss without losing productivity and thus the ability to be revegetated with native plants. Invasive non-native species could increase following increased soil disturbance and reduced native plant vigor and abundance. The greater impacts would be around water locations. Watershed health throughout the area would continue to decrease. These impacts would be cumulative over time.

Special Status Plants

Environmental Consequences Of Alternative 1 & 2
Ute ladies'-tresses occurs in riparian areas. The gather operations in alternative 1 would not be in any area that would contain the necessary habitat for this species and so there would be a No Effect for this species. All existing sites for horse gather operations have been surveyed for special status plant species and have been cleared. If any other sites are proposed they will be surveyed and cleared before operations begin. There should not be any impacts to sensitive species as a result of implementing the Proposed Action since site specific analysis will be completed if surface disturbing activities will occur.

Environmental Consequences Of Alternative 3
This alternative would allow wild horse populations to increase within the Lost Creek and Stewart Creek HMAs and nearby areas. Under this alternative, no gathering would take place inside or outside of the HMAs. Populations of wild horses might eventually stabilize at very high numbers near what is known as their food-limited or ecological carrying capacity. At these levels, range conditions would probably deteriorate significantly which would affect the native species and the habitat for special status species.

Weeds

Environmental Consequences Of Alternative 1 & 2
The over-utilization of range resources and subsequent reduction in vegetative ground cover promotes the establishment and spread of invasive species. The removal of excess wild horses could aid in the curtailment of the introduction and spread of noxious weeds and other invasive species.

Environmental Consequences Of Alternative 3
Invasive non-native plant species could continue to increase and invade new areas following increased soil disturbance and reduced native plant vigor and abundance. This would lead to both a shift in plant composition towards weedy species and a loss of productivity from loss of native species and the erosion of soils. There would also be increased impacts to areas outside the HMAs as horses move out in search of better forage. Impacts would be cumulative over time and would affect areas beyond the HMA.

G. RECREATION

GENERAL
Recreation values are quite subjective. Those who wish to see wild horses might appreciate the increased viewing opportunities associated with increased herd sizes, so long as the condition of the horses remained good. Those who prefer other recreational activities that are degraded by an increase in the horse population might prefer to see smaller horse herds. Some might prefer to see no horses at all, particularly if they perceived that horses were using habitat that would otherwise be able to support greater numbers of native wildlife. Any change in the relative balance among species in the habitat is going to affect the quality of the recreational opportunities found in the HMAs. The analysis below is based on the assumption that the public wants the balance of recreational opportunities available in the HMAs to remain essentially unchanged from what it has been in recent years.

Environmental Consequences Of Alternative 1 & 2
Recreational opportunities would probably be unchanged, so long as environmental factors or disease did not significantly affect the herds.
Environmental Consequences Of Alternative 3
Where horse numbers increased, certain kinds of opportunities associated with the horse population would increase, although the condition of the horses could decline over time, rendering them less desirable for viewing. The quality of recreational opportunities associated with the quality of the habitat, such as viewing or hunting wildlife, would probably decline as the wild horse population increased beyond the carrying capacity of the habitat.

The quality of all recreational opportunities would decline, in the long-term. Some opportunities associated with the presence of wild horses might increase in the short term, but they would probably decline in the long-term due to the increasing occurrence of obviously malnourished horses. Recreationists would likely encounter carcasses and their scavengers more frequently when the population of horses is in decline due to insufficient feed and/or water. Thus, although the increased population of wild horses might make them easier for the recreationist to find, the experience might not be as desirable due to the poor condition of the horses.

Other recreation opportunities would also be detrimentally affected in the long run due to the habitat degradation caused by wild horse overpopulation. Game species might be pressured out of the area in search of essential resources. Viewers might not need to go to the HMAs to view wild herds because the wild horses would be forced to expand their territories outside the current boundaries in order to find the feed and water they need to survive. Once they establish themselves beyond the HMA boundaries, they would upset the balance among other species in the new habitat as they used resources required for the other species. Opportunities for viewing and hunting other wildlife could be severely reduced in the long run, both within the HMAs and beyond them.

H. RIPARIAN AREAS

Potential Effect on Riparian areas from Wild Horse Management

Direct Consequences
Overabundant grazing and browsing animals can detrimentally affect the condition of riparian areas due to overuse of riparian plants and physical damage caused by loitering. Specific impacts on riparian areas from animal use may include declining water quality from increased sedimentation, declining plant vigor, and decreased stream channel stability.

Indirect Consequences
Animal use can indirectly affect riparian condition through the removal of upland forage. When upland rangeland is adversely affected through the degradation of plant communities, nearby riparian areas are subjected to additional stress associated with increased run-off and sedimentation. If sufficient upland forage is removed, domestic and other grazing animals may then be forced to concentrate more in riparian areas to meet their foraging requirements. Increased utilization in riparian areas may induce plant species changes that increase the riparian grass component. This could increase the tendency for horses to select riparian areas for food. While horses do not typically loiter in riparian areas, choosing instead to visit them to drink and then quickly returning to upland areas, increases in their population levels would likely change this habit as it has been observed that domestic horses soon learn to tolerate the increased insect levels and unstable footing when confined to riparian areas.

Potential Effect on Riparian and Water Source areas from Wild Horse Population Management Actions
In addition to the kinds of impacts identified above that would accrue from wild horse management in general, the action of gathering wild horses could potentially affect riparian areas. To avoid potential impacts and for a number of other reasons, traps are not located in riparian or other areas with water sources and thus gathers are unlikely to affect riparian ecosystems. Description of the methods used to select temporary trap sites and specific mitigation measures are included elsewhere in this document.

Environmental Consequences Of Alternative 1 & 2
Under these alternatives, the number of free roaming horses would decline. Riparian and water source areas would respond to the overall decrease in grazing pressure and the percentage of miles of lotic riparian habitat and acres of lentic riparian habitat in proper functioning condition would increase, over time.

Environmental Consequences Of Alternative 3

This alternative and would result in population increases and decreases in response to favorable and unfavorable environmental and predator-prey relationships. Often these population swings can be dramatic and result in large population gains followed by catastrophic die-off. Habitat effects of this type of management would be the decline of riparian habitat when populations were maximum, followed by habitat recovery when horse populations declined. In the end, the extent that habitat could recover when populations were low would contribute to the determination of the extent and timing of population recovery. Effects of this alternative are highly variable, and likely to have the most unpredictable outcomes

I. PRIVATELY-OWNED AND CONTROLLED LANDS

General

The effects of any particular alternative course of wild horse management upon privately-owned and controlled lands would fall into two categories. The first, environmental effects, would not be significantly different depending on the ownership or control of the land. A particular riparian area, for instance, would be affected in the same manner by a given level of wild horse use irrespective of its ownership or form of control. The second category would be a particular combination of legal and attendant socioeconomic aspects that would tend to be quite subjective and personal and might be called value. This category would comprise a range of factors associated with a property owner's rights to the enjoyment of whatever might comprise the value of that property. An important

principle of our legal system provides for, under carefully prescribed conditions, that private property (or values associated with a particular piece of property) may be "taken" for public use, provided that the private owner is properly compensated and due process is employed. The Act did not authorize the taking of any privately-owned or controlled lands for use by wild horses. Thus, if a particular course of action (alternative) would result in the value of privately-owned or controlled property being adversely affected, the alternative would be legally unavailable as a course of action, in other words, the taking would not be authorized under current authorities.

Environmental Consequences Of Alternative 1 & 2

There would be no takings inside or outside of the HMAs. Horse populations would be maintained at levels which would not deprive landowners of the productive value of their lands.

Environmental Consequences Of Alternative 3

All populations would expand without control. Horses would expand their range. Eventually all available forage would be consumed by horses, and takings would occur within the HMAs and in adjacent areas.

J. SOCIOECONOMICS

With the exception of energy development, the present uses of the public lands within the HMAs are quite interdependent since they all rely on the same mix of limited natural resources. These uses can all be optimized to varying degrees without adversely affecting other uses. For example, improved genetics in domestic livestock can improve the profitability of that endeavor without the increased consumption of any habitat component required for some other use. These uses can also compete with one another. For example, if livestock numbers were increased with positive effects to 10 livestock operators and their families, the supply of wild meat available from licensed sport hunting might decline with negative effects to 50 individual families.

Environmental Consequences Of Alternative 1 & 2

Under this alternative the BLM would employ the practices to gather wild horses to the lower Limit of the AMLs in the HMAs. AML would be attained in the year 2006 and maintained there after by the periodic removal of horses. The social, economic, and environmental consequences of this action would allow for the continuation of other resource uses at present levels. This would allow viable wild horse populations to reach established management levels, upon which removal would occur as wild horse numbers exceeded established management levels.

The regional impacts from this alternative would be minor.

The overall local social effects of this action would be minimal. Change to regional lifestyles and attitudes would be insignificant because most ranchers would continue operations much as they have before. It is expected that changes to the historical patterns of use in the area would be insignificant.

Environmental Consequences Of Alternative 3

Under this alternative, the BLM would rely on predation and environmental forces to establish and maintain self-regulating populations. This action would allow wild horses to exceed the recognized carrying capacity of the federal range and all domestic livestock grazing would have to be reduced to the point of possible elimination.

Adverse impacts would occur in those grazing allotments that are within or adjacent to the HMA. Removal or reduction of livestock grazing would impact grazing management flexibility and opportunities. When livestock grazing is eliminated to accommodate the additional forage demand from the expanding wild horse populations, the following impacts would probably result.

Elimination of livestock use from all public lands within the herd areas would not have a significant adverse impact on the national livestock industry. However, it would cause significant impacts to the local economy and substantial increases in operational costs for the affected permittee, for example, increased fence maintenance.

Livestock operators' dependency on other lands would increase if they elected or were able to stay in the livestock business. Herding would be required to move sheep and cattle to leased private or state lands, and this leased property would have to be fenced to prevent livestock from straying onto public land and to prevent horses from consuming available forage desired for livestock production or resource protection.

Some operators would be affected less than others, but many would be forced to seek additional sources of income. Some would not be able to continue their ranching operations without the public land forage.

The impacts to the regional and local economies from this alternative would be substantial. There would be a loss of employment associated with the potential changes to livestock operations in the HMAs. Another impact would be the loss of property and sales tax revenues to the affected county.

An important consideration under this alternative relates to wildlife and recreation values. The elimination or near elimination of livestock from public lands in these areas would not lead to more stabilized wildlife populations because the livestock use would be replaced by horse use which would be less intensively-managed and regulated than the domestic livestock grazing that it replaced. In the long-term, under this alternative, wildlife values would decline noticeably. The forage competition that would occur with wild horses on public lands would force wildlife to eventually migrate to private lands. Recreation expenditures would be expected to remain stable for a time, then decrease to correlate with effects on the wildlife populations.

In a region that is predominantly agrarian, this alternative would present significant social impacts, serious enough to change the traditional ranching lifestyle.

Managing for a naturally-limiting wild horse population would not allow for continued implementation of management plans and management agreements. The benefits to wildlife, and watershed values that would normally accrue from permittee construction and maintenance of additional water management facilities would not be realized. In the short-term, the conditions of uplands and riparian areas would decline.

In the long-term, the rangeland conditions would stabilize once wild horse populations stabilize. This alternative would allow the least opportunity for resource management objectives for wild horses, wildlife, recreation, and livestock grazing.

V. MITIGATIVE MEASURES

Each alternative incorporates mitigation measures that have been developed through experience. For instance, whenever an alternative includes the use of traps to capture horses for any purpose, certain mitigative measures are routinely included. These include: no new roads will be constructed to trap sites and no blading will be allowed for roads or two track trails; no blading will be allowed for wing construction or corral construction; trap site selection will avoid sites where potential conflicts have been noted with other species or their habitat. Standard operating procedures include mitigation of adverse impacts that have been encountered. When soil conditions are wet enough to result in irreversible or long-term damage, operations will be suspended until conditions permit proper use.

No additional mitigation has been proposed. To propose additional mitigation for the probable impacts identified with each alternative would blur the distinctions between alternative management strategies and render the analysis moot.

VI. RESIDUAL IMPACTS

Residual impacts are those left over at the conclusion of a particular course of action and that could not be avoided or further mitigated. Because no additional mitigation is proposed beyond that which would be inherent in a particular course of action, all of the impacts from a particular course of action identified would be residual. The degree of severity of a residual impact is often a function of time. To illustrate, moderate overutilization of a forage plant for a short period of time has little or no residual impact because a change in the level of use can be made before the forage plant's productive potential is reduced. Extended periods of moderate overutilization, on the

other hand, will eventually reduce the productive potential of that plant and thus a residual impact (reduced production) would accrue after a time. If an action could conceivably be completed within a five-month period and logistical or other factors protracted the completion of the action, residual impacts might increase.

VII. CUMULATIVE IMPACTS

The Lost Creek and the Stewart Creek HMAs are not designated wild horse ranges. Herd management areas may also be designated as wild horse or burro ranges to be managed principally, but not necessarily exclusively, for wild horse or burro herds. The area analyzed contains a variety of resources and supports a variety of uses. There are a number of other BLM-conducted and authorized activities ongoing in and adjacent to the HMA. Any alternative course of wild horse management has the opportunity to affect and be affected by those activities. Most of those activities depend in one way or another on the maintenance of a healthy landscape. Further, wild horses are not unique to the Lost Creek and Stewart Creek HMAs. Thus, the impacts of a course of action pursued within the HMA may have effects on the national population or the well-being of the species as a whole. The following tables represent the probable cumulative impacts of the alternatives analyzed.

TABLE 9a ALTERNATIVE 1 & 2

CUMULATIVE IMPACTS OF THE ALTERNATIVE ON:		
NATIONAL POPULATION	**THRIVING NATURAL ECOLOGICAL BALANCE**	**MULTIPLE USE RELATIONSHIP**
Stabilizing	Maintained	Preserved

TABLE 9b ALTERNATIVE 3

CUMULATIVE IMPACTS OF THE ALTERNATIVE ON:		
NATIONAL POPULATION	**THRIVING NATURAL ECOLOGICAL BALANCE**	**MULTIPLE USE RELATIONSHIP**
Destabilizing	Not Maintained	Not Preserved

VIII. CONSULTATION AND COORDINATION

A. INTRODUCTION

The Bureau of Land Management is responsible for obtaining public input on Proposed Actions within the wild horse program. Public input has been solicited for several discrete actions proposed over the last few years.

In addition, a formal statewide hearing regarding the use of helicopters for the gather of wild horses in Wyoming is held each year. The public is provided an opportunity to discuss concerns and questions with BLM staff.

Environmental Analyses have been prepared which analyze the effects of individual population management actions on specific populations of wild horses. In preparing those analyses in 1999, interested publics were contacted and asked to identify issues of concern for inclusion in the analyses. Some of those concerns identified were beyond the scope of the analysis of the particular actions at the time they were proposed. EA# WY-039-EA0-037 was structured to attempt to address those additional concerns.

Recently, the Rawlins and Lander Field Offices completed a maintenance of their respective land use plans. As part of that action, input was solicited for that analysis and updated mailing lists for wild horse related issues were developed.

Comments concerning the alternatives analyzed herein will be accepted from the public until June 3o, 2006. Comments received during that period will be considered in arriving

at a decision whether or not to implement any of the alternatives analyzed or a combination of features of more than one alternative.

B. DISTRIBUTION

This EA, along with its Appendices, is available for review and comment at http://www.wy.blm.gov/rfo/wh.htm. A letter (APPENDIX C) detailing the process for review and comment was mailed to a list of parties who have expressed interest in such actions. This mailing list is maintained at the Rawlins Field Office.

C. LIST OF PREPARERS

NAME:	OFFICE:	RESPONSIBILITY:
Charles Reed	RFO	General, wild horses
David Simons	RFO	NEPA
Patrick Walker	RFO	Cultural
Crystal Clair	RFO	Recreation
Mary Read	RFO	Wildlife, sensitive species
Susan Foley	RFO	Soils, vegetation
Andy Warren	RFO	Domestic Livestock
Bob Lange	RFO	Riparian, other water resources

APPENDIX A
SITE SPECIFIC GATHER PLAN FOR CY 2006 FOR THE RAWLINS FIELD OFFICE.

APPENDIX B
DEMOGRAPHICS

APPENDIX C
INTERESTED PARTY LETTER

APPENDIX A
GATHER PLAN FOR CY 2006 FOR THE RAWLINS FIELD OFFICE.

BACKGROUND
This plan was developed pursuant to the practices and procedures detailed in the Rawlins Field Office Wild Horse Management Handbook (Handbook) and the Wyoming Supplemental Program Guidance for Wild Horse Management. The Handbook and guidance are included in this plan by reference. They describe the operating practices and mitigating measures that constitute, among other things, Wyoming BLM's Standard Operating Procedures for removing stray and excess wild horses from the public lands and contiguous areas of private land. This plan covers the area north of interstate Highway 80 and west of US HWY 287 within the Rawlins Field Office (RFO). Outside of this area and still within the RFO, there is one HMA, the Adobe Town HMA and a large area known as I 80 South where stray horses sometimes are found. No regular, planned activities are scheduled in this part of the RFO during the 2006 CY. Any activities in those areas would be conducted under emergency or non-HMA procedures and not subject to the procedures outlined in this plan. This site-specific gather plan describes how a specific Population Management Action (PMA) will be conducted. Specifically, this plan will guide the capture, evaluation, removal from or return to the range, transportation, and associated handling of approximately 531 adult horses and 163 colts from the area. The total population in the area prior to the action is estimated to be 595 adult horses and 178 colts. Of these, it is estimated that approximately 90% of those in I 80 N, 95% of those in the Lost Creek HMA and 85% of those in the Stewart Creek HMA will be captured for a total of 531 adult horses and 163 colts. Of the captured horses, 356 adults and all the colts will be selected for removal and 175 horses one year of age and older will be returned to the range within the Lost Creek and Stewart Creek HMAs, resulting in populations of approximately 7 adults in I 80 North, 100 horses one year of age and older, and 5 colts in the Lost Creek HMA and 125 horses one year and older and twenty colts in the Stewart Creek HMA. These populations will be equivalent to the lower limit established for the Appropriate Management Level in the Stewart Creek HMA and the recommended interim level for the Lost Creek HMA and will insure the continued genetic integrity of those herds. The animals selected for return to the range will be of varied ages and sexes, selected specifically to result in a balanced population. NOTE: The 14 horses in I 80 North will not be captured and then released back onto the range but it is estimated that they would evade normal efforts to capture them and remain at large or be in very small groups that were widely separated from other horses.

2006 SUMMER GATHER POPULATION ESTIMATES									
AREA	**Adults Pre gather**	**Colts Pre gather**	**% Cap**	**Adults Capt**	**Colts Capt**	**Adult Rem**	**Colt Rem**	**Adult post**	**Colt post**
Lost Creek	225	65	95	215	60	125	60	100	5
Stewart Creek	280	85	85	240	75	155	65	125	20
I 80 N*	90	28	90	76	28	76	28	14	
	595	178		531	163	356	153	239	25

NOTE: Adult includes all animals one year and older, colt includes colts born since January 1 (most in these herds [>85%]are born between May 10 and June 10)
***** Includes Bairoil pasture of Stewart Creek allotment

PURPOSE
Removal of Animals, Background
Wild, free roaming horses are removed from the public and private lands for two distinctly different purposes. When horses inside of HMAs exceed the population levels established for them, excess horses (the number of horses present above that established level) may be removed. When horses stray from within the HMAs to nearby areas of public or private land, the strayed horses must be removed if it is not practical to return them to the HMA from which they have strayed. Rarely

can horses be successfully returned to the HMA they left. If any appreciable amount of time has passed since they have left the HMA, the likelihood that they will return to the place they have strayed to is quite high. Horses in I 80 North may have originally come from either the Lost Creek or Stewart Creek HMAs in the RFO or the Green Mountain HMA in the Lander Field Office or the Divide Basin HMA in the Rock Springs Field Office.

The purpose of this removal action is to continue to implement decisions to achieve the Appropriate Management Levels (AMLs) that have been established for HMAs (remove excess horses) within the jurisdiction of the RFO and to limit the distribution of horses to these areas (remove stray horses). These decisions were based upon the analysis completed in Wyoming BLM Environmental Assessments (EA) WY-037-EA1-039, "Wild Horse Gathering Outside Wild Horse Management Areas" and WY-037-EA4-122, "Management Changes in the Wild Horse HMAs." The EA titled, Management Changes in the Wild Horse HMAs, evaluated management recommended by the Wild Horse Herd Management Area Evaluation. These two documents were completed in 1994 after an intensive monitoring effort in the HMAs. Establishment of AMLs occurred with this public process. Adjustment of HMA boundaries occurred as well. Subsequent adjustments were made known by a notice of Land Use Plan Maintenance published on December 15, 1999. The effect of maintaining AMLs on the horses, their habitat, and the other users of the public land was analyzed in EA# WY030-EA0-037 (January, 2000) Additional analysis of wild horse removal from the Stewart Creek HMA was conducted in EA# EA0-214.

Current wild horse management areas and levels were addressed in the Rawlins RMP update, now ongoing. In the development of alternatives, the presence and possible implication of New World Iberian genetics in the Lost Creek horses was identified. Alternative #3 of the RMP was framed as if the horses in Lost Creek were determined to be rare and unique and would have to be managed in absolute isolation from all others. The AML of 165 was developed to insure that the population would never contain less than 100 mature adults between the ages of three and twelve. This criteria was adapted from the literature and is purported to be the level that insures genetic survival in an already healthy population. (One such as Lost Creek that isn't already 'sick' and in need of some kind of 'fixing', but rather just maintaining of the status quo). Further review and consultation has determined two things of significance:

FIRST:
The genetics of the Lost Creek horses, while rare, are not so rare as to warrant any special designation; and,

SECOND:
The AML of 165 is not necessary to maintain the population level within desired limits and insure genetic integrity. Further examination of specific history of this population yields the following. In the early spring of 2001, a gather which was targeted at reducing the population to 70 (the AML for the HMA) was forced to quit early due to adverse weather conditions and funding shortfalls, leaving the population at approximately 100. It has grown steadily and healthily from there to its present level and there is every assurance that, if reduced to that level again, it will rebound similarly again. And habitat conditions during the time have been favorable in spite of several years of near record drought. Thus, the objective of this PMA will be to reduce the adult population level to 100 animals. In addition, most colts captured will be removed and made available for adoption. These colts will range in age from 60-90 days old. They will require a little extra care and attention prior to adoption but it will not exceed the costs and risks that would accrue to the level of fertility control that would be required to achieve the same result. Their removal will have the same effect on the population as administering a contraceptive with a one year effectiveness in 2005 would. The population will increase almost nothing in 2007 (or at the end of 2006), then returning to a 'normal' rate of increase the following year. The result will be that when the next gather comes due in this herd, there will have been one less reproductive cycle than there otherwise would have been.

Removal of Excess Animals

The Stewart Creek and Cyclone Rim/Antelope Hills HMAs were designated in 1994 from the Seven Lakes HMA. The boundary of the Stewart Creek HMA was adjusted and the Antelope Hills HMA and the Lost Creek HMA were designated from the Cyclone Rim/Antelope Hills HMA by notice on December 15, 1999. Throughout this progression, the AMLs for the HMAs have been monitored and evaluated. The result of this progression is that the AML for the Stewart Creek HMA is 150 horses and the AML for the Lost Creek HMA is 70 horses. The current population of this area is estimated to be 511 horses, including unweaned foals. This is approximately 325 more than the combined population objectives (AMLs) for the area and thus, an excess exists. Gathering of excess wild horses is in conformance with Public Law 92-195 (Wild and Free-Roaming Horse and Burro Act of 1971) as amended. Public Law 92-195, as amended, requires the protection, management, and control of wild free-roaming horses and burros on public lands.

As provided in 43 CFR 4700.0-6, BLM's policy for management of wild horses is to:

a)...managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat;
b)...considered comparably with other resource values; and
c)...maintaining free-roaming behavior.

The planned action is also in compliance with the following section of the CFR:

43 CFR 4720.1 - Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately.

In order to determine the number of horses that are excess and thus subject to removal, more than just the AML must be considered. It is accepted practice, when establishing the AML for a particular population of horses to identify a range within which that population will be allowed to fluctuate. The limits of that range are known as the upper and lower limits for that AML. Removal actions are indicated when the population approaches the upper limit and designed to insure that the population will not go below the lower limit established for it. This enables removal actions to be scheduled less frequently than would be indicated to maintain populations at a constant level.

Removal of Strayed Animals

The Bureau of Land Management is responsible for the welfare of wild horses, their habitat (HMAs), and adjacent areas of public and private land that are effected by the presence of wild, free roaming horses. EA WY-037-EA1-039, completed in 1991, specifically addressed the geographic areas in the Rawlins Field Office where wild horses may become established that were not within designated HMAs. Bairoil and I-80 North are two of those areas. In addition, EA WY-037-EA0-037 completed in 2000 addressed alternative management strategies for wild horses within the Rawlins Field Office jurisdiction. The net effect of all of these individual analyses is to affirm that in order to maintain the healthy habitats that wild horses and other users of the public lands require, it is necessary to control population levels within established levels and areas as prescribed by law. The action described in this plan will meet those requirements.

Horses that occupy the Bairoil and I-80 North areas, for the most part, have strayed from the Stewart Creek HMA and will continue to do so as long as the Stewart Creek population continues to expand above the AML set for it. The nearby Green Mountain HMA also contributes a few to the Bairoil area.

During the course of the year, horses that enter the Bairoil area may be periodically relocated to the nearby HMA or removed from the range when they pose a threat to human safety and private property within and adjacent to the Bairoil town site. Horses that enter the I-80 North area do not typically pose an immediate threat to public safety nor private property and therefore may not be relocated until an actual gather is planned.

The planned action would limit wild horse distribution to HMAs and prevent damage to private and public lands. Establishment of HMAs occurred under the planning process after evaluation and analysis in 1994. Refer to EA# WY-037-EA4-122.

Specific Project Management
The three areas are contiguous with one another and with the Divide Basin HMA in the Rock Springs Field Office jurisdiction, and the Antelope Hills and Green Mountain HMAs in the Lander Field Office jurisdiction. The Antelope Hills, Divide Basin, and Crooks Mountain HMAs are also scheduled to be gathered during this same time period (summer of 06). The Green Mountain HMA was gathered the preceding fall (05) and may require some additional attention in 06. The Antelope Hills HMA was gathered in the fall of 2003 and fertility control was administered to most of the mares between the ages of two and twelve. Inventories and monitoring conducted periodically have suggested that the reproductive rate in the Antelope Hills HMA may well have been reduced significantly enough that the population level has not increased to a level indicating the need for further adjustment at this time. Thus, it is likely that work in that entire area will be arranged to proceed as follows:

1. Green Mountain, Crooks Mountain, Lost Soldier pasture of Stewart Creek and Bairoil
2. Western Stewart Creek HMA and eastern I 80 North
3. Lost Creek and western I 80 North
4. Northern Divide Basin
5. Southern Divide Basin

This order may change in response to unforeseen changes in any number of things.

RELATIONSHIP TO THE LAND USE PLAN

The planned action conforms with the land use plan terms and conditions as required by 43 CFR 1610.5-3. This action is subject to the Great Divide Resource Management Plan (RMP), approved November 8, 1990. Actions proposed in this plan are consistent with the Wild Horse Management Objective on page 41 of the RMP which states . . . to protect, maintain, and *control* a viable healthy herd of wild horses . . . (Emphasis added).

The action would also be in conformance with the Great Divide Herd Management Area Evaluation and the associated EA (WY-037-EA4-122). Recommendations from this evaluation were the basis for increasing AMLs from previous levels and adjusting HMA boundaries. Rangeland conditions have not changed significantly since 1994. The proposed action is consistent with all other federal, state, and local plans. The proposed action is in conformance with Appendix III of the RMP - *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management*. No additional permits or authorizing actions are required.

RELATIONSHIP TO OTHER AREAS AND PLANNED ACTIONS

The area affected by this plan is that portion of the Rawlins Field office that is north of Interstate 80 and west of US 287. It contains two Herd Management Areas (HMAs): Stewart Creek and Lost Creek which are managed by the RFO and two areas outside of these HMAs. One of these areas outside of the HMA is referred to as Bairoil and the other as I-80 North. It also contains a portion of one HMA, Antelope Hills, managed by the Lander Field Office. Determination of the AMLs for these HMAs considered several factors. Among them was the level at which horses began to leave the seemingly abundant forage supply within the HMAs and seek space in areas outside of the HMAs. Thus it was made clear that the total, combined populations of the Stewart Creek, Lost Creek, and Antelope Hills HMAs determined whether or not horses would leave the HMAs and attempt to establish residence outside the HMAs in the areas known as I-80 North and Bairoil. This high degree of apparent interaction was an important consideration in the identification of the Red Desert metapopulation and the horses comprising that metapopulation. (See EA# WY-039-EA0-037 for a complete discussion of metapopulations). When PMAs are planned for these and adjacent HMAs, careful consideration will be given to reestablishing the population balance indicated

for the entire area. The Stewart Creek HMA is joined on the west by the Lost Creek HMA and on the north by the Green Mountain HMA. The Lost Creek HMA is joined on the west by the Divide Basin HMA which is managed by the Rock Springs Field Office. The Antelope Hills HMA is closely associated with the Crooks Mountain and Green Mountain HMAs which are managed by the Lander Field Office. The entire area is dominated by the Great Divide Basin which is a closed basin with no external drainage to either ocean. The Red Desert is in the approximate center of the basin and gives its name and mystique to many things that occur there.

The Stewart Creek HMA corresponds with one grazing allotment, the Stewart Creek allotment. The Stewart Creek pasture comprises the western portion of the HMA while the Ferris Incommon pasture comprises the eastern portion. The Lost Soldier pasture is in the north central portion of the HMA.

The Lost Creek HMA corresponds with a portion of one grazing allotment, the Cyclone Rim allotment.

The I 80 north area contains several grazing allotments. All are under the jurisdiction of the Rawlins Field Office. They are: GL, North Tipton, Red Desert, Monument Lake, North Wamsutter, Ruby Knolls, Monument Draw, Latham, Chain Lakes, Jawbone, Separation Flats, Shamrock Hills, Sandstone, Larson Knoll, Shamrock Ranch and North Creston West. This is the northern portion of the checkerboard area and these areas are all at least one half private land.

The Lost Creek HMA is entirely within the Cyclone Rim Allotment which is under the jurisdiction of the Rawlins Field Office. The northern portion of the Antelope Hills HMA is within the Green Mountain Common Allotment and its southern portion is within the Cyclone Rim Allotment. The Crooks Mountain HMA is entirely within the Green Mountain Common Allotment. A portion of the Green Mountain HMA is within the Green Mountain Common Allotment and a portion of it is within the Whiskey Peak Allotment. These allotments are within the jurisdiction of the Lander Field Office.

WILD HORSE MANAGEMENT IN WYOMING

Wild Horse Management Areas and AMLs are determined and managed by the local BLM staff on a site-specific, case-specific basis in a multiple use setting and interdisciplinary context. Local interactions are identified and considered. The needs for specific, individual removal actions are one of the products of this process. Significant, highly specialized resources are required to meet those needs and insure that the best possible care is available for affected animals. Most of these needs are met by contracts that are awarded at the regional level. Additional resources are maintained and managed at the State level. Effective and responsible use of these resources requires a high degree of coordination. The time available to complete actions is constrained and therefore movement of equipment during that time must be minimized in order to make good use of the time available. While some flexibility to meet changing circumstances still remains, it is extremely important to remain aware of the inherent interdependencies of the various parts of the removal process. When a specific removal action is scheduled, facility availability, personnel availability, equipment availability, and local weather trends are just part of the list of things that must be considered. Simply put, a single person or piece of equipment cannot be in two places at once. In the initial scheduling of the entire year's work for the personnel and equipment responsible for completing the individual removal actions, there is some opportunity for adjusting activities to get the best possible fit. Variations in the mix of contractual services employed can increase flexibility. However, private contractors are not currently available to perform some parts of the process such as holding and processing. Once the schedule is made, however, opportunities for change are much more limited. For instance, a particular action that has been scheduled for March cannot be rescheduled for August unless the action already scheduled for August can, in turn, be rescheduled and the facilities can accommodate any changes in numbers, mix, etc as a result of the change. The completion of the year's planned

activities requires a mixture of contractual and BLM controlled activities that is determined at the budget and planning time.

WILD HORSE MANAGEMENT IN THE BLM

Just as individual field offices in Wyoming exist within the State, the State of Wyoming exists within the larger national setting with respect to Wild Horse Management. Facilities similar to the one in Rock Springs, Wyoming exist in Nevada, Utah, Colorado, Oregon, California, Arizona, Nebraska, Oklahoma, and Tennessee. Herds of wild horses exist in ten of the western states where the public lands are and Movement of horses and availability of personnel and equipment is necessarily coordinated among all of these. For instance, the successful completion of planned adoptions in the Eastern United States has a major effect on the completion of planned roundups in Wyoming. The entire process is referred to as the Pipeline and under the overall direction of the Washington office of the BLM. Coordination is such that horses captured in Wyoming may go to a facility in some other state for processing in order to make most efficient use of all available resources.

NEPA RECORD

The entire National Environmental Policy Act (NEPA) record for this action comprises more that just EA# WY-030-EA3-291, prepared for the action described in this plan. It consists of at least the following and can include other actions which are less directly related to Wild Horse management activities.

YEAR	NEPA DOCUMENT	SUBJECT
1978	Seven Lakes Grazing EIS	Domestic Livestock grazing vis-à-vis other uses of the public forage resource
1983	Divide Grazing EIS	Domestic Livestock grazing vis-à-vis other uses of the public forage resource
1990	Great Divide RMP/EIS	Interrelationship of all public land uses
1991	EA WY037-EA1-039	Removal of strayed horses from areas outside of HMAs
1994	EA WY037-EA4-122	Adjustment of HMA boundaries and establishment of AMLs based on monitoring data collected since 1989
1999	EA WY030-EA9-156	Removal of strayed horses from areas outside of the Adobe Town HMA
1999	EA WY030-EA0-037	Maintaining Viable Populations of Wild Horses in Herd Management Areas of the Rawlins Field Office
1999	EA WY030-EA0-038	Wild Horse Gathering in I80N
2000	EA WY030-EA0-181	Wild Horse gathering in the area.
2000	EA WY030-EA0-214	Wild Horse gathering in Stewart Creek.

NUMBER OF ANIMALS TO BE CAPTURED/REMOVED

All horses captured will be transported to the BLM facilities in Rock Springs or Canon City, Colorado.

The net effect will be that approximately 531 horses one year of age and older and 163 colts of the year will be captured and handled. 356 horses one year of age and older and 153 colts of the year will be selected for removal and the remaining returned to the range.

SELECTIVE REMOVAL

It has been the policy of the BLM since 1992 not to remove horses for which no adoption demand exists from the public lands. Horses captured for which no adoption demand exists have historically been returned to the HMA where they were captured. That policy is adjusted periodically to reflect a variety of issues

such as adoption demand and success and legal requirements. The current national policy at gather time is reflected in the final decisions as to which horses to remove from the public lands and how to handle them.

DATE(S) OF PMA AND ANY DATE RESTRICTIONS OR ALTERNATIVE DATES

This action is scheduled to start on or about August 15, 2006 and end on or about October 1, 2006. Should weather or other conditions make this period of time unavailable, this action would have to be rescheduled for some other time when all necessary resources were available. It will not be conducted during the period April 1- July 15 to avoid stress to heavy mares and small foals.

TRAPS

Trap site selection is a process which begins with the identification of areas and conditions for the location of traps and often ends just a few days before the actual PMA with the final selection of the exact location and its final configuration.

a. General

General location/exclusion criteria are identified by the field office staff in the preliminary planning for the specific PMA. Such things as access, raptor nesting, seasonal wildlife restrictions, other permitted activities result in general areas in which specific traps may be located or must not be located and steps required to finalize trap site selection (e.g. cultural, landowner permission). Location of fences that may restrict horse movement and typical distribution of animals at the proposed time are also noted.

b. Specific

Specific trap site selection will be made by the contractor, and the trap will be located on the site that will function best and produce a minimum of impacts. Required clearances (i.e. cultural, T&E) will then be obtained. Personnel working at the trap sites will inspect the area within the wings and the approach to the wings to insure that dangerous obstacles or obstructions are identified and alleviated. (Reference aviation plans) For trap construction, refer to the statewide plan/standards. Arrangements for fence modifications, gate openings, closings, herding of livestock, water availability, etc. will be finalized at this point.

The weather conditions and current location of the horses will be the final determining factor in the number and location of traps utilized.

When a trap site has been initially selected for use, it will be reviewed in accordance with the practices prescribed in the Handbook and analyzed in EA# WY-030-EA0-037. This includes consultation under Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act.

c. Trap Construction, Management

Trap construction is a complex science/art. Years of practice, observation, and experience have yielded the materials and methods presently employed. The corrals, themselves are constructed of portable steel panels. The wings are jute fabric on steel posts. The wings are usually reinforced with plastic snow fence where they join the trap. The loading chute is portable and moved from trap to trap. Trap construction is described in detail in the Wyoming Supplemental Program Guidance. Traps will typically be constructed and removed within a few weeks of their use and will rarely remain in place for more than a few weeks.

CAPTURE METHOD

An approved BLM contractor will be utilized. BLM approved contractors employ helicopters, Judas horses, and wranglers on foot or horseback. A few horses may

be roped in employing this combination of practices. Roping will not be the primary method of capture but will only be employed by experienced personnel in appropriate circumstances.

Feed or water trapping will not be employed because of the widespread availability of forage and water sources in the gather area and nearby. The presence of wildlife and livestock in the area also precludes the use of feed or water trapping for this action.

TRANSPORTATION

Captured animals will be transported to the BLM facility in Rock Springs via US HWY 287 and Interstate Highway 80 and the county roads in the area. Transportation to Canon City will be via US HWY 287, Interstate HWY 80, Interstate HWY 25 and US HWY 50. Equipment and handling will be in accordance with the instructions contained in the Handbook.

PRACTICES PLANNED TO MINIMIZE STRESS TO CAPTURED ANIMALS

Standard operating procedures will be employed which include the following practices:

GATHERING

The horses will be allowed to set the pace until they are within ~1/4 mile of the trap. If bands must be brought long distances, they will be allowed time to rest along the way if they indicate a need. Horses may be brought to the trap in stages which may include separate days if difficult terrain or obstacles warrant. Horses that run more than five miles at once will do so of their own choosing.

CAPTURE AND HANDLING AT THE TRAP SITE

Handling at the trap site is carefully monitored to insure that aggression and injury are kept to a minimum. The decision on when and how to load is determined by the behavior of the captured animals. Individuals or bands may be separated, if necessary. The long years of experience in trap construction have resulted in the use of materials such as jute, plastic snow fence, and panels of particular height and spacing; and methods including pen, gate, alley and chute design and use which minimize the horses' and wranglers' exposure to injury. When members of the public view the gather operation, they are required to occupy specific areas and conduct themselves so as to avoid additional stress to captured horses.

TRANSPORTATION

In order to minimize stress, only approved vehicles are employed and secure footing is maintained by the use of appropriate mats and/or bedding materials. The transport vehicles are continuously inspected for safety and adequacy and provide for separation in groups of twelve or less. When warranted, colts may be separated and transported separately.

FERTILITY CONTROL

This plan does not include the use of fertility control in an operational mode. This plan will be amended or a separate plan prepared prior to any operational application of fertility control in the field. An appendix to this plan contains a model for development of such a plan should it be warranted.

VETERINARIAN

The US Department of Agriculture/Animal and Plant Health Inspection Services (USDA/APHIS) will be consulted pursuant to the Memorandum of Understanding (MOU) between our agencies. This will result in the following:

Plan Consultation

USDA/APHIS has reviewed BLM practices in general and will continue to do so. This plan is reflective of that process. Additional specific recommendations as to specific practices may be generated at any time during the year and incorporated into existing practices.

On Site Consultation

For this particular action, USDA/APHIS may provide on-site consultation. This may consist of at least one site visit for the purpose of inspecting animal condition. It may also include additional periodic visits to the trap site(s) or facilities for the purpose of additional inspection/observation. The need for these additional visits will be determined by the USDA/APHIS vet who conducts the first site visit. USDA/APHIS is the primary agency responsible for compliance with requirements for interstate shipment of animals.

On Site Services

The USDA/APHIS vet who completes the initial on site visit will determine the need for and availability of on site services. This will include the collection of blood samples for genetic analysis. On site services may be procured from local practitioners if deemed necessary.

EUTHANASIA OF SICK, LAME, OR INJURED ANIMALS

Sick, lame, or injured animals will be euthanized at the trap site by trained, authorized personnel only, in accordance with the pertinent regulations. Remains will be disposed of at the site in accordance with established procedures.

ORGANIZATION

The team consists of the:
The Contracting Officers Representative
The Contractor and his employees
The Rock Springs Facility Manager and his employees
The Wyoming State Office Wild Horse Program Leader

CONSULTATION AND COORDINATION

a. Government Agencies.
The US Fish and Wildlife Service has been regularly consulted in accordance with Section 7 of the Endangered Species Act, as amended and will be consulted in accordance with procedures outlined in the Handbook.

b. Public Input.

C. Wyoming Game and Fish Department.
The WGFD is regularly consulted for its input concerning wildlife populations and needs.

PUBLIC VIEWING OF THE OPERATION

Commercial photographing or videotaping for other than personal use may be approved by the authorized officer provided that timely and appropriate application is made pursuant to 43 CFR 2920.

Media representatives may make arrangements to observe and/or record events by contacting Mary Wilson at 307-328-4329.

Interested members of the public may request to view gather operations by contacting the Contracting Officers Representative (COR) in the RFO. If the requests can be accommodated without compromising the safety or integrity of the operation, the COR will arrange for the viewing. Captured animals may be viewed

at the facility in Rock Springs, Wyoming which is generally open to the public during regular business hours.

Once begun, gather operations are subject to daily adjustment and modification and the opportunity for viewing is difficult to predict and manage. Trap sites are selected with a number of purposes in mind. Whether or not the site presents viewing or photographic opportunities is not one of those primary considerations.

BRANDED AND CLAIMED ANIMALS AND COMPLIANCE WITH STATE LAWS CONCERNING OWNERSHIP

Any branded horses captured will be transported to the Rock Springs facility where they will be processed in accordance with state laws regarding estray livestock as provided for by the Act.

Horses destined for interstate shipment will be made available for brand inspection by authorized personnel.

Approval/Signature.

I have reviewed the capture plan for the Rawlins Field Office for FY 2006. I find it to be complete.

RAWLINS FIELD MANAGER DATE

APPENDIX 1
Fertility Control

APPENDIX 1
FERTILITY CONTROL

The fertility control vaccine, PZP (Porcine Zona Pellucida) is available to BLM under a research protocol only and administered under a use permit (INAD) held by the Humane Society of the US (HSUS).

BLM applications of fertility control are divided into Individual-based and Population-based trials. These trials are designed to evaluate the 1 and 2 year vaccines. Individual-based trials involve intensive field monitoring efforts both pre and post treatment of mares.

The following describes the practices employed in the McCullough Peaks HMA and would be the guide for development of specific methods for the Lost Creek and Stewart Creek HMA if fertility control were employed.

SUMMARY OF FERTILITY CONTROL METHODOLOGY
Specific to McCullough Peaks HMA

1. PROPOSED FERTILITY CONTROL AGENT:

At this time, all published research indicates that the Immunocontraceptive Porcine Zona Pellucida (PZP) vaccine meets BLM requirements for an ideal contraceptive agent including criteria for safety and efficacy. When injected, PZP vaccine acts as an antigen and causes the mare's immune system to produce antibodies. These antibodies then bind to eggs in the mare's ovaries and effectively block sperm binding and fertilization. The vaccine is relatively inexpensive ($20 per dose), can be remotely administered in the field, and requires a single annual booster dose to confer infertility for one breeding season. Research has shown that contracepted mares clearly show improvements in body condition and may actually live longer. From a mare physiological standpoint, PZP contraception appears to be completely reversible, does not appear to cause out-of-season births, and has no ill effects on ovarian function if contraception is not repeated for more than 5 consecutive years on a given mare.

If mares are already pregnant, research has shown that PZP vaccine will not affect normal development of the fetus, hormone health of the mare or behavioral responses to stallions. Recent behavioral studies with the Assateague Island and Shackleford Banks wild horses have shown that contracepted and uncontracepted mares had virtually identical activity budgets, associated in a similar manner with the harem stallion and showed no increase in harem exchange behavior or change in their social status during the study. All mares affected by the proposed action would continue to be monitored for body condition and aspects of social behavior. The latter would be compared to existing baseline data and control studies.

2. VACCINE QUALITY and REMOTE-DELIVERY PROTOCOL:

All PZP vaccine used on mares within the McCullough Peaks HMA would be provided by the Science and Conservation Lab (SCC), Zoo Montana and subjected to quality control testing. All documented aspects of PZP vaccine provision, mare selection, vaccine remote-delivery, dart recovery, record keeping, veterinary emergencies, and media relations would be strictly adhered to by all participants in the proposed action. This protocol shall serve as the Standard Operating Procedures (SOPs) for the proposed management action. Implementation of the SOPs would take into consideration all safety concerns, individual animal health and condition, seasonal distribution of the horses, as well as local weather and environmental considerations.

II. PARTICIPANTS

Project Manager:	Patricia L. Hatle, Wild Horse and Burro Specialist, CYFO, BLM
Horse Identification:	Field-trained and experienced Susan Hahn, Seasonal Employee, USGS, BRD Adam Inbody, Seasonal Volunteer, USGS, BRD Phyllis Preator, Seasonal Employee, USGS, BRD
Vaccine Preparation:	Robin Lyda, The Science and Conservation Center, Zoo Montana, 2100 South Shiloh Road, Billings, MT 59106
Designated Vaccine Handlers	Jay F. Kirkpatrick, Kim Frank and Robin Lyda, The Science and Conservation Center, Zoo Montana, Billings, Mt. Dr. John Turner Medical College of Toledo, Ohio Ron Hall, NPO, BLM
Research Oversight:	Linda Coates-Markle, BiFO, BLM Francis Singer, USGS, BRD Jason Ransom, USGS, BRD Dr. Al Kane, APHIS
Contract Veterinarian:	Lyle Bischoff, DVM, Powell Veterinary Service 522 S. Division, Powell, WY 82435

3. PERMISSION and CRITERIA for VACCINE USE:

The Humane Society of the United States (HSUS) has made the PZP vaccine available to the BLM under the Investigational New Animal Drug exemption (INAD #8857) filed with the federal Food and Drug Administration (FDA). As a condition of using the PZP vaccine, the HSUS expects the BLM to follow the Draft Criteria for Immunocontraceptive Use in Wild Horse Herds recommended by the Wild Horse and Burro National Advisory Board in August 1999.

4. AUTHORITY for PROPOSED ACTION:

The Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195) as amended, Section 3(b) (1), states that the Secretaries of the Interior and Agriculture shall "determine appropriate management levels of wild free-roaming horses and burros on areas of public lands; and determine whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization or natural controls on population levels)." The authority may also be found at Title 43 of the Code of Federal Regulations (CFR-4700, Protection, Management and Control of Wild and Free-Roaming Horses and Burros).

With implementation of the proposed action, selected wild horse mares would be contracepted under a humane approach for a one-year period in accord with 43 CFR 4700.0-6 which identifies that [...wild horses]" shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.", and with Public Law (PL) 92-195 Sec 3 (b) (2) which identifies the need to maintain appropriate management levels of wild horses within their herd management area (HMA).

The BLM has developed a long-term research strategy for the Wild Horse and Burro Program. A final draft of the Strategic Research Plan was reviewed and supported by the National Wild Horse and Burro Advisory Board in August 2002, and the BLM Director's Science Advisory Board in January 2003. Within this strategy, continuing research on fertility control is identified as a high priority and

directions are provided in the National Wild Horse Fertility Control Field Trial Plan (FCFTP) (Singer and Coates-Markle, 2002). The implementation of additional fertility control field trials, under this research protocol, began in the summer 2002.

The proposed action would adhere to all guidance and research protocol set by the oversight documents. The intent of this research is to answer those remaining questions and concerns about fertility control using PZP that are best answered on free-ranging populations in the wild. The plan details protocols for injections, experimental design, and research methods that will be employed to evaluate effects of PZP on free-ranging animals. The research focuses on the effects of immunocontraceptive treatment on seasonality of foaling, any possible compensatory reproduction of mares post-treatment, duration of estrus cycles, population growth rates, and harem behavior. The behavior and fertility of the treated mares will be studied both during the treatment phase, and for a minimum of two years post-treatment to assure that a return to normal fertility occurs.

5. PROCEDURES

A. Vaccine preparation and shipment: Vaccine would be prepared under the supervision of Robin Lyda, Science and Conservation Center (SCC), Billings, MT and transported to the field site in Wyoming on dry ice, under Food and Drug Administration authority (Investigational New Animal Drug exemption No.8857 (G0002 & 0003). FDA form "Notice of Drug Shipment" would be completed for each shipment of the PZP vaccine and filed in the offices of the Science and Conservation Center at Zoo Montana, Billings, MT.

B. Selection of subject animal: Animals to be treated will be identified by BLM and USGS-BRD field personnel. Approximately 40 released mares will be treated within the herd. The number and identity of animals would be selected on the basis of age and social structure as per the Environmental Assessment (EA) Alternative 1: Proposed Action. All animals selected for treatment would be female and at least one year old.

C. Delivery of contraceptive vaccine:

Target mares released back to the HMA would be treated with an immuno-contraceptive vaccine, porcine zona pellucidae (PZP), administered by trained BLM personnel. The inoculation of mares would consist of a liquid dose of PZP vaccine and a time released portion of the drug in the form of pellets. The approach incorporates the PZP into a non-toxic, biodegradable material which can be formed into small pellets. The pellets are injected with the liquid and are designed to release PZP at several points in time much the way time-release cold pills work.

Delivery of the vaccine would be by means of jab stick syringe or dart with a 12 gauge needle or 1.5" barbless needle respectfully, 0.5 cc of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be placed in the barrel of the syringe or dart needle and would be injected with the liquid. Upon impact the liquid in the chamber would be propelled into the muscle along with the pellets. This formulation would be delivered as an intramuscular injection by a jab stick syringe, while mares are restrained in the working chute. This delivery method has been used previously to deliver immuno-contraceptive vaccine with acceptable results. Administration of this two-year vaccine to mares in late summer (before November) would be expected to be 94% effective the first year, 82% the second year, and 68% the third year.

D. Monitoring:

The intent of the monitoring would be to assess vaccine effects on mare estrus, foaling, body condition, behavior, fitness and survival. The use of the immunocontraceptive would adhere to well-developed research protocol, and is responsible to restrictions and requirements placed on continuing research efforts with the PZP vaccine as set by the Humane Society of the United States

(HSUS), the Food and Drug Administration (FDA), Animal and Plant Health Inspection Service (APHIS) and the National Wild Horse and Burro Advisory Board.

The field trials will provide either three or four years of contraception to treated mares. Following three or four years of contraception, treated mares will be allowed to return to normal reproductive function. Their reproductive rates, behavior, and harem social structure will be observed for a minimum of two years post-treatment, to assure that normal fertility is resumed. The treated mares will be individually marked and/or be individually recognizable without error. The treated mares must be left on the range for the duration of the research, and are not likely to be treated again.

In May 2003, United States Geological Survey – Biological Research Division (USGS-BRD) biological technicians under the supervision of BRD research biologists began the field trial studies to assess effects on mare estrus, foaling, body condition, behavior, fitness and survival. Individual behavior, reproduction, survival, and any health abnormalities will be closely monitored in the individually recognized horses.

Mares in 7 or 8 harems were selected for intensive studies during the summer of 2003. Pretreatment data on harem dynamics, population dynamics, and behavior was collected in 2003 and will have been gathered for two consecutive years prior to contraception. Treated mares will be compared to untreated mares (controls) in the same harems. Multivariate models will include age of mare, year, weather, density-dependent relations, and compensatory responses. If possible, harems with no treated mares will also be observed.

As of August 1, 2004 USGS-BRD field technicians have identified and entered into WHIMS a total of 498 individuals as part of the field trial study. In conformance with the Fertility Control Field Trial Plan for Individual-Based Study Herds, individuals would be initially recognized from natural markings using a computerized photo ID system call WHIMS (Wild Horse Information Management System, USGS_BRD, Ron Osborne, Final report to BLM 1999). Records and any photos will be maintained at the field office and a copy of the completed PZP treatment form will be sent to the National Program Office (NPO), Reno NV and the WH&B Research Coordinator and BRD-USGS.

A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, the disposition of any unused PZP, and the number of treated mares by HMA, FO and State along with the freeze-mark applied by HMA. In the vast majority of cases, the released mares will never be gathered sooner than the mandatory three- year holding period. In those rare instances when, due to unforeseen circumstances, a treated mare(s) are removed from an HMA they will be maintain either in a BLM facility or a contracted Long Term Holding Facility until the expiration of the three- year holding period. In the event that it is necessary to remove treated mares, their removal and disposition will be coordinated through NPO. After expiration of the three-year holding period, the animal may be placed in the adoption system.

APPENDIX B
DEMOGRAPHICS

This presents the source and methods used to derive pre-gather population estimates, post gather population targets and possible alternative targets that might be made necessary by policies directed by the National Program Office for the Wild Horse and Burro program regarding the removal of sale eligible horses from the range in conjunction with scheduled gather activities. These tools are also employed to predict population growth and change, over time.

Derivation of pre-gather population estimates utilizes the following:

1) WHBIS age/sex data from recent gathers.
2) WHBIS age/sex data from all gathers.
3) Annual field observations which include foaling rates and foal survival.
4) Excel spreadsheets developed by the Rawlins Field Office. These spreadsheets employ many of the same data and relationships as Dr Stephen Jenkins' population model. They lack the stochastisity of Dr Jenkins' model but offer a less complex method for arraying and cataloging some frequently used projections. In addition, they provide some analysis of the nature of the population portrayed such as percentages of age classes and groups of age classes. While one could certainly argue for additional permutations, it should be noted that all of these were designed to print legibly on a single sheet of paper.

Derivation of post gather population targets and possible alternative targets utilizes all of the above plus:

1) Age/sex data from published studies for other populations.
2) Selective Removal policies in place or anticipated.
3) Experience gained from ongoing observations and gather activities.

The following spreadsheets are attached. The formulas utilized are displayed for information purposes, only. Each spreadsheet is briefly described. These are the formats/sources that are common to both the Lost Creek and Stewart Creek HMAs:

AGESEX	This spreadsheet is used to develop, analyze, compare and display age/sex distributions.
AGESEX+5	This spreadsheet is used to estimate population growth for a five year period and provides the opportunity to compare the effects of various foaling and survival rates. It is formula driven and employs variables specific for each situation.
AGESEXIC.5+3	This spreadsheet is used to compare projected growth for three years, employing a fertility control strategy which treats ½ of released mares. The opportunity is provided to adjust for variations in the effectiveness of the vaccine utilized and to employ herd specific foaling and survival rates.
AGESEXICall+3	Same as above except that the fertility control is administered to all released mares. The base line or control is derived by the same process employed above.
AGESEXslall	Using WHBIS as the source, displays age/sex distribution for all horses captured in the Seven Lakes area for a multi-year period. It should be noted that a large percentage of the gathers represented here were conducted in the late winter period, prior to the birth of the current year's foal crop. Thus, the 0 age class is underrepresented in this portrayal.

Next, the following are presented for each HMA, first Stewart Creek, then Lost Creek:

STEWART CREEK

AGESEX06scpg	Pre gather estimate
AGESEXSC02	One of the sources for estimating Stewart Creek population. Last large gather conducted here.
AGESEXSC06	Post gather target (proposed action).
AGESEXIC.5+3SC06	Projected growth under one fertility control scenario.

LOST CREEK

AGESEX06lcpg	Pre gather estimate
AGESEXLC06	Post gather target (proposed action)
AGESEX+5lcpa	5 years projected growth
AGESEX+5lcnse	Comparison if no sale eligible horses could be removed in 2006 (not proposed)
AGESEX+5lcase	Comparison if all sale eligible horses were removed in 2006 (not proposed)

DISCUSSION

Both

The post gather target distribution for each HMA considers the historical Observations and then smoothes the results and therefore would not mimic any past Catastrophic events. It reflects the reality of age specific removal criteria that would likely be employed.

Lost Creek

The current population (pre-gather)estimate includes only a slight gain from Immigration. A few individuals came from Stewart Creek and a few from The Red Desert allotment. It also includes a number (~60) who water in the Chain Lakes Management Area but spend most of their time nearby in the HMA. It does not include the few (~16 who spend all of their time in the Chain Lakes nor the approximately 29 that remain in the Red Desert Grazing Allotment.

All of the above analysis assumes that the 100 recommended as the desired minimum to maintain the integrity of the suspected Spanish Colonial genetics will be the basis, rather than the 60 which is the Lower limit of the AML at least until a decision is reached on the genetic importance of the herd and the long term management approach adopted which may or may not include other, nearby populations.

If Fewer Than the ~15 Proposed 10 And Older Are Removed In 2006

Growth rate will be decreased and a corresponding number of younger horses will have to be removed with the potential for decreasing the growth rate even more. If that were taken to the extreme and NO sale eligible horses could be removed, the resulting geriatric population would grow at a very low rate and be vulnerable to catastrophic events.

If More Than The ~15 Proposed 10 And Older Can Be Removed In 2006

Growth rate will be increased slightly. More younger horses can be left with the potential for increasing the growth rate even more. It is interesting to note that the other end of the extreme, removing all sale eligible horses (NOT proposed but analyzed for comparison) would not significantly increase the population.

Stewart Creek

The current population (pre-gather)estimate reflects significant immigration from The Green Mountain HMA in 2004 and 2005.

Results from the various removal practices would be similar to those for Lost Creek.

AGE/SEX DISTRIBUTION					
	NUMBER	NUMBER	NUMBER	PER CENT	CUMULATIVE
AGE	FEMALES	MALES	OF ANIMALS	FOR AGE	PER CENT
0			=B4+C4	=D4/$D$35	=+E4
1			=B5+C5	=D5/$D$35	=+F4+E5
2			=B6+C6	=D6/$D$35	=+F5+E6
3			=B7+C7	=D7/$D$35	=+F6+E7
4			=B8+C8	=D8/$D$35	=+F7+E8
5			=B9+C9	=D9/$D$35	=+F8+E9
6			=B10+C10	=D10/$D$35	=+F9+E10
7			=B11+C11	=D11/$D$35	=+F10+E11
8			=B12+C12	=D12/$D$35	=+F11+E12
9			=B13+C13	=D13/$D$35	=+F12+E13
10			=B14+C14	=D14/$D$35	=+F13+E14
11			=B15+C15	=D15/$D$35	=+F14+E15
12			=B16+C16	=D16/$D$35	=+F15+E16
13			=B17+C17	=D17/$D$35	=+F16+E17
14			=B18+C18	=D18/$D$35	=+F17+E18
15			=B19+C19	=D19/$D$35	=+F18+E19
16			=B20+C20	=D20/$D$35	=+F19+E20
17			=B21+C21	=D21/$D$35	=+F20+E21
18			=B22+C22	=D22/$D$35	=+F21+E22
19			=B23+C23	=D23/$D$35	=+F22+E23
20			=B24+C24	=D24/$D$35	=+F23+E24
21			=B25+C25	=D25/$D$35	=+F24+E25
22			=B26+C26	=D26/$D$35	=+F25+E26
23			=B27+C27	=D27/$D$35	=+F26+E27
24			=B28+C28	=D28/$D$35	=+F27+E28
25			=B29+C29	=D29/$D$35	=+F28+E29
26			=B30+C30	=D30/$D$35	=+F29+E30
27			=B31+C31	=D31/$D$35	=+F30+E31
28			=B32+C32	=D32/$D$35	=+F31+E32
29			=B33+C33	=D33/$D$35	=+F32+E33
30			=B34+C34	=D34/$D$35	=+F33+E34
TOTALS	=SUM(B4:B3	=SUM(C4:C	=SUM(D4:D34)		
HMA			**YEAR**		
SR @ BIRTH					
(% FEM)	=B4/D4	# FEM 3-14	=SUM(B7:B18)		
AV AGE	=G35/D35	#>0	=D35-D4		
% FEM	=B35/D35	% FEM 3-1	=D40/D35		
% <6	=F9	NOTES			
% 6-9	=SUM(E10:E				
% 10 +	=F34-F13				

AGE/SEX DISTRIBUTION

AGE	NUMBER FEMALES	NUMBER MALES	TOTAL ANIMALS	% AGE	CUM %	**EST** YR + 1	**EST** Y+ 2	**EST** Y+3	**EST** Y+4	EST Y+5
0			=SUM(B4:C4)	=D4/$D$35	=E4	=SUM(G5:G34	=SUM(H5:H	=SUM(I5:I34	=SUM(J5:J3	=SUM(K5:K
1			=SUM(B5:C5)	=D5/$D$35	=F4+E5	=D4*$G$41	=G4*$G$41	=H4*$G$41	=I4*$G$41	=J4*$G$41
2			=SUM(B6:C6)	=D6/$D$35	=F5+E6	=D5*$G$42	=G5*$G$42	=H5*$G$42	=I5*$G$42	=J5*$G$42
3			=SUM(B7:C7)	=D7/$D$35	=F6+E7	=D6*$G$43	=G6*$G$43	=H6*$G$43	=I6*$G$43	=J6*$G$43
4			=SUM(B8:C8)	=D8/$D$35	=F7+E8	=D7*$G$44	=G7*$G$44	=H7*$G$44	=I7*$G$44	=J7*$G$44
5			=SUM(B9:C9)	=D9/$D$35	=F8+E9	=D8*$G$45	=G8*$G$45	=H8*$G$45	=I8*$G$45	=J8*$G$45
6			=SUM(B10:C10)	=D10/$D$35	=F9+E10	=D9*$G$46	=G9*$G$46	=H9*$G$46	=I9*$G$46	=J9*$G$46
7			=SUM(B11:C11)	=D11/$D$35	=F10+E11	=D10*$G$47	=G10*$G$4	=H10*$G$4	=I10*$G$47	=J10*$G$4
8			=SUM(B12:C12)	=D12/$D$35	=F11+E12	=D11*$G$48	=G11*$G$4	=H11*$G$4	=I11*$G$48	=J11*$G$4
9			=SUM(B13,C13)	=D13/$D$35	=F12+E13	=D12*$G$49	=G12*$G$4	=H12*$G$4	=I12*$G$49	=J12*$G$4
10			=SUM(B14,C14)	=D14/$D$35	=F13+E14	=D13*$G$50	=G13*$G$5	=H13*$G$5	=I13*$G$50	=J13*$G$5
11			=SUM(B15,C15)	=D15/$D$35	=F14+E15	=D14*$G$51	=G14*$G$5	=H14*$G$5	=I14*$G$51	=J14*$G$5
12			=SUM(B16,C16)	=D16/$D$35	=F15+E16	=D15*$G$51	=G15*$G$5	=H15*$G$5	=I15*$G$51	=J15*$G$5
13			=SUM(B17:C17)	=D17/$D$35	=F16+E17	=D16*$G$51	=G16*$G$5	=H16*$G$5	=I16*$G$51	=J16*$G$5
14			=SUM(B18:C18)	=D18/$D$35	=F17+E18	=D17*$G$51	=G17*$G$5	=H17*$G$5	=I17*$G$51	=J17*$G$5
15			=SUM(B19:C19)	=D19/$D$35	=F18+E19	=D18*$G$51	=G18*$G$5	=H18*$G$5	=I18*$G$51	=J18*$G$5
16			=SUM(B20:C20)	=D20/$D$35	=F19+E20	=D19*$G$52	=G19*$G$5	=H19*$G$5	=I19*$G$52	=J19*$G$5
17			=SUM(B21:C21)	=D21/$D$35	=F20+E21	=D20*$G$52	=G20*$G$5	=H20*$G$5	=I20*$G$52	=J20*$G$5
18			=SUM(B22:C22)	=D22/$D$35	=F21+E22	=D21*$G$52	=G21*$G$5	=H21*$G$5	=I21*$G$52	=J21*$G$5
19			=SUM(B23:C23)	=D23/$D$35	=F22+E23	=D22*$G$52	=G22*$G$5	=H22*$G$5	=I22*$G$52	=J22*$G$5
20			=SUM(B24:C24)	=D24/$D$35	=F23+E24	=D23*$G$52	=G23*$G$5	=H23*$G$5	=I23*$G$52	=J23*$G$5
21			=SUM(B25:C25)	=D25/$D$35	=F24+E25	=D24*$G$53	=G24*$G$5	=H24*$G$5	=I24*$G$53	=J24*$G$5
22			=SUM(B26:C26)	=D26/$D$35	=F25+E26	=D25*$G$53	=G25*$G$5	=H25*$G$5	=I25*$G$53	=J25*$G$5
23			=SUM(B27:C27)	=D27/$D$35	=F26+E27	=D26*$G$53	=G26*$G$5	=H26*$G$5	=I26*$G$53	=J26*$G$5
24			=SUM(B28:C28)	=D28/$D$35	=F27+E28	=D27*$G$53	=G27*$G$5	=H27*$G$5	=I27*$G$53	=J27*$G$5
25			=SUM(B29:C29)	=D29/$D$35	=F28+E29	=D28*$G$53	=G28*$G$5	=H28*$G$5	=I28*$G$53	=J28*$G$5
26			=SUM(B30:C30)	=D30/$D$35	=F29+E30	=D29*$G$53	=G29*$G$5	=H29*$G$5	=I29*$G$53	=J29*$G$5
27			=SUM(B31:C31)	=D31/$D$35	=F30+E31	=D30*$G$53	=G30*$G$5	=H30*$G$5	=I30*$G$53	=J30*$G$5
28			=SUM(B32:C32)	=D32/$D$35	=F31+E32	=D31*$G$53	=G31*$G$5	=H31*$G$5	=I31*$G$53	=J31*$G$5
29			=SUM(B33:C33)	=D33/$D$35	=F32+E33	=D32*$G$53	=G32*$G$5	=H32*$G$5	=I32*$G$53	=J32*$G$5
30			=SUM(B34:C34)	=D34/$D$35	=F33+E34	=D33*$G$53	=G33*$G$5	=H33*$G$5	=I33*$G$53	=J33*$G$5
TOTALS	=SUM(B4:E	=SUM(C4:	=SUM(D4:D34)			=SUM(G4:G34	=SUM(H4:H	=SUM(I4:I34	=SUM(J4:J3	=SUM(K4:K
	Begin 1 yr or> POP		=D35-D4		**GROWTH %**	=G35/D35-1	=H35/G35-1	=I35/H35-1	=J35/I35-1	=K35/J35-1
HMA			**YEAR**		POP	=G35-G4	=H35-H4	=I35-I4	=J35-J4	=K35-K4

AVERAGE SURVIVAL RATES

					AGE CLASS	RATE
SR @ BIRTH						
% FEM	=B4/D4	# 3-14	=SUM(B7:B18)		0	0.7
					1	0.85
AV AGE	=L35/D35	#>0	=D35-D4		2	0.96
					3	0.96
% FEM	=B35/D35	% 3-14	=D40/D35		4	0.96
					5	0.96
% <6	=F9	NOTES			6	0.96
					7	0.96
% 6-9	=SUM(E10				8	0.96
					9	0.96
% 10 +	=F34-F13				10 -14	0.9
					15 -19	0.76
FOALING %	0.31				20+	0.56

POST GATHER TARGET AGE/SEX DISTRIBUTION AND COMPARATIVE POPULATION PROJECTIONS

AGE	NUMBER FEMALES	NUMBER MALES	NUMBER ANIMALS	% FOR AGE	CUM %	EST Y + 1	W/ IC	EST Y + 2	W/ IC	EST Y+3	W/ IC
0			=SUM(B4:C4)	=D4/$D$35	=E4	=SUM(G5:G3	=SUM(H5:H3	=SUM(I5:I34)	=SUM(J5:J34	=SUM(K5:K3	=SUM(L5:L34
1			=SUM(B5:C5)	=D5/$D$35	=F4+E5	=D4*$G$41	=D4*$G$41	=G4*$G$41	=H4*$G$41	=I4*$G$41	=J4*$G$41
2			=SUM(B6:C6)	=D6/$D$35	=F5+E6	=$D5*$G$42	=$D5*$G$42	=G5*$G$42	=H5*$G$42	=I5*$G$42	=J5*$G$42
3			=SUM(B7:C7)	=D7/$D$35	=F6+E7	=D6*$G$43	=D6*$G$43	=G6*$G$43	=H6*$G$43	=I6*$G$43	=J6*$G$43
4			=SUM(B8:C8)	=D8/$D$35	=F7+E8	=D7*$G$44	=D7*$G$44	=G7*$G$44	=H7*$G$44	=I7*$G$44	=J7*$G$44
5			=SUM(B9:C9)	=D9/$D$35	=F8+E9	=D8*$G$45	=D8*$G$45	=G8*$G$45	=H8*$G$45	=I8*$G$45	=J8*$G$45
6			=SUM(B10:C10)	=D10/$D$35	=F9+E10	=D9*$G$46	=D9*$G$46	=G9*$G$46	=H9*$G$46	=I9*$G$46	=J9*$G$46
7			=SUM(B11:C11)	=D11/$D$35	=F10+E11	=D10*$G$47	=D10*$G$47	=G10*$G$47	=H10*$G$47	=I10*$G$47	=J10*$G$47
8			=SUM(B12:C12)	=D12/$D$35	=F11+E12	=D11*$G$48	=D11*$G$48	=G11*$G$48	=H11*$G$48	=I11*$G$48	=J11*$G$48
9			=SUM(B13:C13)	=D13/$D$35	=F12+E13	=D12*$G$49	=D12*$G$49	=G12*$G$49	=H12*$G$49	=I12*$G$49	=J12*$G$49
10			=SUM(B14:C14)	=D14/$D$35	=F13+E14	=D13*$G$50	=D13*$G$50	=G13*$G$50	=H13*$G$50	=I13*$G$50	=J13*$G$50
11			=SUM(B15:C15)	=D15/$D$35	=F14+E15	=D14*$G$51	=D14*$G$51	=G14*$G$51	=H14*$G$51	=I14*$G$51	=J14*$G$51
12			=SUM(B16:C16)	=D16/$D$35	=F15+E16	=D15*$G$51	=D15*$G$51	=G15*$G$51	=H15*$G$51	=I15*$G$51	=J15*$G$51
13			=SUM(B17:C17)	=D17/$D$35	=F16+E17	=D16*$G$51	=D16*$G$51	=G16*$G$51	=H16*$G$51	=I16*$G$51	=J16*$G$51
14			=SUM(B18:C18)	=D18/$D$35	=F17+E18	=D17*$G$51	=D17*$G$51	=G17*$G$51	=H17*$G$51	=I17*$G$51	=J17*$G$51
15			=SUM(B19:C19)	=D19/$D$35	=F18+E19	=D18*$G$51	=D18*$G$51	=G18*$G$51	=H18*$G$51	=I18*$G$51	=J18*$G$51
16			=SUM(B20:C20)	=D20/$D$35	=F19+E20	=D19*$G$52	=D19*$G$52	=G19*$G$52	=H19*$G$52	=I19*$G$52	=J19*$G$52
17			=SUM(B21:C21)	=D21/$D$35	=F20+E21	=D20*$G$52	=D20*$G$52	=G20*$G$52	=H20*$G$52	=I20*$G$52	=J20*$G$52
18			=SUM(B22:C22)	=D22/$D$35	=F21+E22	=D21*$G$52	=D21*$G$52	=G21*$G$52	=H21*$G$52	=I21*$G$52	=J21*$G$52
19			=SUM(B23:C23)	=D23/$D$35	=F22+E23	=D22*$G$52	=D22*$G$52	=G22*$G$52	=H22*$G$52	=I22*$G$52	=J22*$G$52
20			=SUM(B24:C24)	=D24/$D$35	=F23+E24	=D23*$G$52	=D23*$G$52	=G23*$G$52	=H23*$G$52	=I23*$G$52	=J23*$G$52
21			=SUM(B25:C25)	=D25/$D$35	=F24+E25	=D24*$G$53	=D24*$G$53	=G24*$G$53	=H24*$G$53	=I24*$G$53	=J24*$G$53
22			=SUM(B26:C26)	=D26/$D$35	=F25+E26	=D25*$G$53	=D25*$G$53	=G25*$G$53	=H25*$G$53	=I25*$G$53	=J25*$G$53
23			=SUM(B27:C27)	=D27/$D$35	=F26+E27	=D26*$G$53	=D26*$G$53	=G26*$G$53	=H26*$G$53	=I26*$G$53	=J26*$G$53
24			=SUM(B28:C28)	=D28/$D$35	=F27+E28	=D27*$G$53	=D27*$G$53	=G27*$G$53	=H27*$G$53	=I27*$G$53	=J27*$G$53
25			=SUM(B29:C29)	=D29/$D$35	=F28+E29	=D28*$G$53	=D28*$G$53	=G28*$G$53	=H28*$G$53	=I28*$G$53	=J28*$G$53
26			=SUM(B30:C30)	=D30/$D$35	=F29+E30	=D29*$G$53	=D29*$G$53	=G29*$G$53	=H29*$G$53	=I29*$G$53	=J29*$G$53
27			=SUM(B31:C31)	=D31/$D$35	=F30+E31	=D30*$G$53	=D30*$G$53	=G30*$G$53	=H30*$G$53	=I30*$G$53	=J30*$G$53
28			=SUM(B32:C32)	=D32/$D$35	=F31+E32	=D31*$G$53	=D31*$G$53	=G31*$G$53	=H31*$G$53	=I31*$G$53	=J31*$G$53
29			=SUM(B33:C33)	=D33/$D$35	=F32+E33	=D32*$G$53	=D32*$G$53	=G32*$G$53	=H32*$G$53	=I32*$G$53	=J32*$G$53
30			=SUM(B34:C34)	=D34/$D$35	=F33+E34	=D33*$G$53	=D33*$G$53	=G33*$G$53	=H33*$G$53	=I33*$G$53	=J33*$G$53
TOTALS	=SUM(B4:B	=SUM(C4:	=SUM(C4:C34)			=SUM(G4:G3	=SUM(H4:H3	=SUM(I4:I34)	=SUM(J4:J34	=SUM(K4:K3	=SUM(L4:L34
				GROWTH RATES		=G35/D35-1	=H35/D35-1	=I35/G35-1	=J35/H35-1	=K35/I35-1	=L35/J35-1
HMA/YR				Adult Populations		=SUM(G5:G3	=SUM(H5:H3	=SUM(I5:I34)	=SUM(J5:J34	=SUM(K5:K3	=SUM(L5:L34

AVERAGE SURVIVAL RATES

					AGE CLASS						
	SR @ BIRTH										
% FEM	=B36/C36	# 3-14	=SUM(B7:B9)				Average W/ out FC			=AVERAGE(C	
					0	0.67					
AV AGE	=M35/D35	#>0	=D35-D4		1	0.75	Average W/ FC			=AVERAGE(H	
					2	0.9					
% FEM	=B36/D36	% 3-14	=D40/D36		3	0.9					
					4	0.9					
% <6	=F9	NOTES			5	0.9					
					6	0.9					
% 6-9	=SUM(E10				7	0.9					
		Assumes treatment of 1/2 released mares			8	0.9					
% 10 +	=E36-E10	and average survival rates			9	0.9					
FOALING rate w/out IC. Enter .000	0.257				10 -14	0.9					
					15 -19	0.8					
					20+	0.56					

INSTRUCTIONS FOR USE: WHBIS is best source for developing a present Distribution. A recent gather can be used and adjusted as needed. The distribution used here should be the **POST GATHER TARGET (what do you want left)**. This plus removals should equal the present distribution. FR can be either calculated from % foals above or supplemented by Field observations. Foaling Rates with fertility control (FR w/ IC) are calculated based on the ({[100-expected efecacy] X %mares treated}X FR for herd) +(% mares not treated X FR for herd).

POST GATHER TARGET AGE/SEX DISTRIBUTION AND COMPARATIVE POPULATION PROJECTIONS

	NUMBER	NUMBER	NUMBER	%	CUM	EST	W/	EST	W/	EST	W/
AGE	FEMALES	MALES	ANIMALS	FOR AGE	%	Y + 1	IC	Y + 2	IC	Y+3	IC
0			=SUM(B4:C4)	=D4/$D$35	=E4	=SUM(G5:G3	=SUM(H5:H3	=SUM(I5:I34)	=SUM(J5:J34	=SUM(K5:K34	=SUM(L5:L34
1			=SUM(B5:C5)	=D5/$D$35	=F4+E5	=D4*$G$41	=D4*$G$41	=G4*$G$41	=H4*$G$41	=I4*$G$41	=J4*$G$41
2			=SUM(B6:C6)	=D6/$D$35	=F5+E6	=$D5*$G$42	=$D5*$G$42	=G5*$G$42	=H5*$G$42	=I5*$G$42	=J5*$G$42
3			=SUM(B7:C7)	=D7/$D$35	=F6+E7	=D6*$G$43	=D6*$G$43	=G6*$G$43	=H6*$G$43	=I6*$G$43	=J6*$G$43
4			=SUM(B8:C8)	=D8/$D$35	=F7+E8	=D7*$G$44	=D7*$G$44	=G7*$G$44	=H7*$G$44	=I7*$G$44	=J7*$G$44
5			=SUM(B9:C9)	=D9/$D$35	=F8+E9	=D8*$G$45	=D8*$G$45	=G8*$G$45	=H8*$G$45	=I8*$G$45	=J8*$G$45
6			=SUM(B10:C10)	=D10/$D$35	=F9+E10	=D9*$G$46	=D9*$G$46	=G9*$G$46	=H9*$G$46	=I9*$G$46	=J9*$G$46
7			=SUM(B11:C11)	=D11/$D$35	=F10+E11	=D10*$G$47	=D10*$G$47	=G10*$G$47	=H10*$G$47	=I10*$G$47	=J10*$G$47
8			=SUM(B12:C12)	=D12/$D$35	=F11+E12	=D11*$G$48	=D11*$G$48	=G11*$G$48	=H11*$G$48	=I11*$G$48	=J11*$G$48
9			=SUM(B13:C13)	=D13/$D$35	=F12+E13	=D12*$G$49	=D12*$G$49	=G12*$G$49	=H12*$G$49	=I12*$G$49	=J12*$G$49
10			=SUM(B14:C14)	=D14/$D$35	=F13+E14	=D13*$G$50	=D13*$G$50	=G13*$G$50	=H13*$G$50	=I13*$G$50	=J13*$G$50
11			=SUM(B15:C15)	=D15/$D$35	=F14+E15	=D14*$G$51	=D14*$G$51	=G14*$G$51	=H14*$G$51	=I14*$G$51	=J14*$G$51
12			=SUM(B16:C16)	=D16/$D$35	=F15+E16	=D15*$G$51	=D15*$G$51	=G15*$G$51	=H15*$G$51	=I15*$G$51	=J15*$G$51
13			=SUM(B17:C17)	=D17/$D$35	=F16+E17	=D16*$G$51	=D16*$G$51	=G16*$G$51	=H16*$G$51	=I16*$G$51	=J16*$G$51
14			=SUM(B18:C18)	=D18/$D$35	=F17+E18	=D17*$G$51	=D17*$G$51	=G17*$G$51	=H17*$G$51	=I17*$G$51	=J17*$G$51
15			=SUM(B19:C19)	=D19/$D$35	=F18+E19	=D18*$G$51	=D18*$G$51	=G18*$G$51	=H18*$G$51	=I18*$G$51	=J18*$G$51
16			=SUM(B20:C20)	=D20/$D$35	=F19+E20	=D19*$G$52	=D19*$G$52	=G19*$G$52	=H19*$G$52	=I19*$G$52	=J19*$G$52
17			=SUM(B21:C21)	=D21/$D$35	=F20+E21	=D20*$G$52	=D20*$G$52	=G20*$G$52	=H20*$G$52	=I20*$G$52	=J20*$G$52
18			=SUM(B22:C22)	=D22/$D$35	=F21+E22	=D21*$G$52	=D21*$G$52	=G21*$G$52	=H21*$G$52	=I21*$G$52	=J21*$G$52
19			=SUM(B23:C23)	=D23/$D$35	=F22+E23	=D22*$G$52	=D22*$G$52	=G22*$G$52	=H22*$G$52	=I22*$G$52	=J22*$G$52
20			=SUM(B24:C24)	=D24/$D$35	=F23+E24	=D23*$G$52	=D23*$G$52	=G23*$G$52	=H23*$G$52	=I23*$G$52	=J23*$G$52
21			=SUM(B25:C25)	=D25/$D$35	=F24+E25	=D24*$G$53	=D24*$G$53	=G24*$G$53	=H24*$G$53	=I24*$G$53	=J24*$G$53
22			=SUM(B26:C26)	=D26/$D$35	=F25+E26	=D25*$G$53	=D25*$G$53	=G25*$G$53	=H25*$G$53	=I25*$G$53	=J25*$G$53
23			=SUM(B27:C27)	=D27/$D$35	=F26+E27	=D26*$G$53	=D26*$G$53	=G26*$G$53	=H26*$G$53	=I26*$G$53	=J26*$G$53
24			=SUM(B28:C28)	=D28/$D$35	=F27+E28	=D27*$G$53	=D27*$G$53	=G27*$G$53	=H27*$G$53	=I27*$G$53	=J27*$G$53
25			=SUM(B29:C29)	=D29/$D$35	=F28+E29	=D28*$G$53	=D28*$G$53	=G28*$G$53	=H28*$G$53	=I28*$G$53	=J28*$G$53
26			=SUM(B30:C30)	=D30/$D$35	=F29+E30	=D29*$G$53	=D29*$G$53	=G29*$G$53	=H29*$G$53	=I29*$G$53	=J29*$G$53
27			=SUM(B31:C31)	=D31/$D$35	=F30+E31	=D30*$G$53	=D30*$G$53	=G30*$G$53	=H30*$G$53	=I30*$G$53	=J30*$G$53
28			=SUM(B32:C32)	=D32/$D$35	=F31+E32	=D31*$G$53	=D31*$G$53	=G31*$G$53	=H31*$G$53	=I31*$G$53	=J31*$G$53
29			=SUM(B33:C33)	=D33/$D$35	=F32+E33	=D32*$G$53	=D32*$G$53	=G32*$G$53	=H32*$G$53	=I32*$G$53	=J32*$G$53
30			=SUM(B34:C34)	=D34/$D$35	=F33+E34	=D33*$G$53	=D33*$G$53	=G33*$G$53	=H33*$G$53	=I33*$G$53	=J33*$G$53
TOTALS	=SUM(B4:B	=SUM(C4:	=SUM(D4:D34)			=SUM(G4:G3	=SUM(H4:H3	=SUM(I4:I34)	=SUM(J4:J34	=SUM(K4:K34	=SUM(L4:L34
				GROWTH RATES		=G35/D35-1	=H35/D35-1	=I35/G35-1	=J35/H35-1	=K35/I35-1	=L35/J35-1
HMA/YR				Adult Populations		=SUM(G5:G3	=SUM(H5:H3	=SUM(I5:I34)	=SUM(J5:J34	=SUM(K5:K34	=SUM(L5:L34

AVERAGE SURVIVAL RATES

SR @ BIRTH					AGE						
% FEM	=E34/D4	# 3-14	=SUM(B7:B18)		CLASS	RATE	Average W/ out FC			=AVERAGE(C	
					0	0.75					
AV AGE	=M35/D35	#>0	=D35-D4		1	0.85	Average W/ FC			=AVERAGE(H	
					2	0.96					
% FEM	=B35/D35	% 3-14	=B7/D35		3	0.96					
					4	0.96					
% <6	=F9	NOTES			5	0.96					
					6	0.96					
% 6-9	=SUM(E10				7	0.9					
					8	0.9					
% 10 +	=F34-F13				9	0.9					
FOALING rate w/out IC. Enter .000			Y+1 FR w/ IC (.000)		10 -14	0.82					
			Y+2 FR w/ IC (.000)		15 -19	0.58					
			Y+3 FR w/ IC (.000)		20+	0.58					

INSTRUCTIONS FOR USE: WHBIS is best source for developing a present Distribution. A recent gather can be used and adjusted as needed. The distribution used here should be the **POST GATHER TARGET (what do you want left)**. This plus removals should equal the present distribution. FR can be either calculated from % foals above or supplemented by Field observations. Foaling Rates with fertility control (FR w/ IC) are calculated based on the ({[100-expected efecacy] X %mares treated}X FR for herd) +(% mares not treated X FR for herd).

AGE/SEX DISTRIBUTION								
	NUMBER	NUMBER	NUMBER	PER CENT	CUMULATIVE			
AGE	FEMALES	MALES	OF ANIMALS	FOR AGE	PER CENT			
0	53	47	100	9.4%	9.4%			
1	91	76	167	15.7%	25.1%			
2	92	71	163	15.3%	40.5%			
3	65	36	101	9.5%	50.0%			
4	62	56	118	11.1%	61.1%			
5	19	15	34	3.2%	64.3%			
6	31	37	68	6.4%	70.6%			
7	38	32	70	6.6%	77.2%			
8	30	22	52	4.9%	82.1%			
9	17	16	33	3.1%	85.2%			
10	10	11	21	2.0%	87.2%			
11	15	15	30	2.8%	90.0%			
12	22	35	57	5.4%	95.4%			
13	6	11	17	1.6%	97.0%			
14	1	6	7	0.7%	97.6%			
15	3	5	8	0.8%	98.4%			
16	2	2	4	0.4%	98.8%			
17		4	4	0.4%	99.2%			
18	4		4	0.4%	99.5%			
19		1	1	0.1%	99.6%			
20	2	2	4	0.4%	100.0%			
21			0	0.0%	100.0%			
22			0	0.0%	100.0%			
23			0	0.0%	100.0%			
24			0	0.0%	100.0%			
25			0	0.0%	100.0%			
26			0	0.0%	100.0%			
27			0	0.0%	100.0%			
28			0	0.0%	100.0%			
29			0	0.0%	100.0%			
30			0	0.0%	100.0%			
TOTALS	563	500	1063					
HMA	Seven Lakes		**YEAR**	Multiple				
SR @ BIRTH								
(% FEMALE)	53%	# FEM 3-14	316					
AV AGE	4.8	#>0	963					
% FEMALE	53%	% FEM 3-14	30%					
% <6	64%	NOTES						
% 6-9	21%							
% 10 +	15%							

AGE/SEX DISTRIBUTION					
	NUMBER	NUMBER	NUMBER	PER CENT	CUMULATIVE
AGE	FEMALES	MALES	OF ANIMALS	FOR AGE	PER CENT
0	41	42	83	22.7%	22.7%
1	27	29	56	15.3%	38.1%
2	20	22	42	11.5%	49.6%
3	17	19	36	9.9%	59.5%
4	14	17	31	8.5%	67.9%
5	0	2	2	0.5%	68.5%
6	9	10	19	5.2%	73.7%
7	9	11	20	5.5%	79.2%
8	6	7	13	3.6%	82.7%
9	8	8	16	4.4%	87.1%
10	2	3	5	1.4%	88.5%
11	1	3	4	1.1%	89.6%
12	2	5	7	1.9%	91.5%
13	1	5	6	1.6%	93.2%
14		4	4	1.1%	94.2%
15	1	2	3	0.8%	95.1%
16		4	4	1.1%	96.2%
17	1	5	6	1.6%	97.8%
18		2	2	0.5%	98.4%
19		2	2	0.5%	98.9%
20		2	2	0.5%	99.5%
21		2	2	0.5%	100.0%
22			0	0.0%	100.0%
23			0	0.0%	100.0%
24			0	0.0%	100.0%
25			0	0.0%	100.0%
26			0	0.0%	100.0%
27			0	0.0%	100.0%
28			0	0.0%	100.0%
29			0	0.0%	100.0%
30			0	0.0%	100.0%
TOTALS	159	206	365		

HMA	Stewart Creek		**YEAR**	2006	
SR @ BIRTH					
(% FEM)	49%	# FEM 3-14	69		
AV AGE	4.5	#>0	282		
% FEM	44%	% FEM 3-14	19%		
% <6	68%	NOTES			
% 6-9	19%				
% 10 +	13%	pre gather estimate			

AGE/SEX DISTRIBUTION					
	NUMBER	NUMBER	NUMBER	PER CENT	CUMULATIVE
AGE	FEMALES	MALES	OF ANIMALS	FOR AGE	PER CENT
0			0	0.0%	0.0%
1	32	23	55	18.0%	18.0%
2	30	26	56	18.3%	36.3%
3	20	16	36	11.8%	48.0%
4	19	14	33	10.8%	58.8%
5	5	3	8	2.6%	61.4%
6	10	9	19	6.2%	67.6%
7	11	9	20	6.5%	74.2%
8	8	7	15	4.9%	79.1%
9	2	6	8	2.6%	81.7%
10	2	4	6	2.0%	83.7%
11	1	1	2	0.7%	84.3%
12	6	13	19	6.2%	90.5%
13	4	3	7	2.3%	92.8%
14		2	2	0.7%	93.5%
15	3	5	8	2.6%	96.1%
16	2	2	4	1.3%	97.4%
17			0	0.0%	97.4%
18	2		2	0.7%	98.0%
19		1	1	0.3%	98.4%
20	2	3	5	1.6%	100.0%
21			0	0.0%	100.0%
22			0	0.0%	100.0%
23			0	0.0%	100.0%
24			0	0.0%	100.0%
25			0	0.0%	100.0%
26			0	0.0%	100.0%
27			0	0.0%	100.0%
28			0	0.0%	100.0%
29			0	0.0%	100.0%
30			0	0.0%	100.0%
TOTALS	159	147	306		

HMA	Stewart Creek		**YEAR**	2002	
SR @ BIRTH (% FEMALE)	#DIV/0!	# FEM 3-14	88		
AV AGE	5.4	#>0	306		
% FEMALE	52%	% FEM 3-14	29%		
% <6	61%	NOTES			
% 6-9	20%				
% 10 +	18%	Contract gather in March			

AGE/SEX DISTRIBUTION								
	NUMBER	NUMBER	NUMBER	PER CENT	CUMULATIVE			
AGE	FEMALES	MALES	OF ANIMALS	FOR AGE	PER CENT			
0	11	9	20	13.8%	13.8%			
1	10	9	19	13.1%	26.9%			
2	9	7	16	11.0%	37.9%			
3	8	6	14	9.7%	47.6%			
4	7	6	13	9.0%	56.6%			
5	4	6	10	6.9%	63.4%			
6	4	6	10	6.9%	70.3%			
7	3	4	7	4.8%	75.2%			
8	3	4	7	4.8%	80.0%			
9	3	3	6	4.1%	84.1%			
10	7	8	15	10.3%	94.5%			
11			0	0.0%	94.5%			
12			0	0.0%	94.5%			
13			0	0.0%	94.5%			
14			0	0.0%	94.5%			
15	1	1	2	1.4%	95.9%			
16			0	0.0%	95.9%			
17			0	0.0%	95.9%			
18			0	0.0%	95.9%			
19			0	0.0%	95.9%			
20	2	4	6	4.1%	100.0%			
21			0	0.0%	100.0%			
22			0	0.0%	100.0%			
23			0	0.0%	100.0%			
24			0	0.0%	100.0%			
25			0	0.0%	100.0%			
26			0	0.0%	100.0%			
27			0	0.0%	100.0%			
28			0	0.0%	100.0%			
29			0	0.0%	100.0%			
30			0	0.0%	100.0%			
TOTALS	72	73	145					
HMA	Stewart Creek		**YEAR 06**					
SR @ BIRTH								
(% FEMALE)	55%	# FEM 3-14	39					
AV AGE	5.1	#>0	125					
% FEMALE	50%	% FEM 3-14	27%					
% <6	63%	NOTES						
% 6-9	21%							
% 10 +	16%							

POST GATHER TARGET AGE/SEX DISTRIBUTION AND COMPARATIVE POPULATION PROJECTIONS

AGE	NUMBER FEMALES	NUMBER MALES	NUMBER ANIMALS	% FOR AGE	CUM %	EST Y + 1	W/ IC	EST Y + 2	W/ IC	EST Y+3	W/ IC
0	11	9	20	13.8%	13.8%	40	40	45	25	52	27
1	10	9	19	13.1%	26.9%	14	14	28	28	32	17
2	9	7	16	11.0%	37.9%	16	16	12	12	24	24
3	8	6	14	9.7%	47.6%	15	15	16	16	11	11
4	7	6	13	9.0%	56.6%	13	13	15	15	15	15
5	4	6	10	6.9%	63.4%	12	12	13	13	14	14
6	4	6	10	6.9%	70.3%	10	10	12	12	12	12
7	3	4	7	4.8%	75.2%	10	10	9	9	12	12
8	3	4	7	4.8%	80.0%	7	7	9	9	9	9
9	3	3	6	4.1%	84.1%	7	7	6	6	9	9
10	7	8	15	10.3%	94.5%	6	6	6	6	6	6
11			0	0.0%	94.5%	14	14	5	5	6	6
12			0	0.0%	94.5%	0	0	12	12	5	5
13			0	0.0%	94.5%	0	0	0	0	11	11
14			0	0.0%	94.5%	0	0	0	0	0	0
15	1	1	2	1.4%	95.9%	0	0	0	0	0	0
16			0	0.0%	95.9%	2	2	0	0	0	0
17			0	0.0%	95.9%	0	0	1	1	0	0
18			0	0.0%	95.9%	0	0	0	0	1	1
19			0	0.0%	95.9%	0	0	0	0	0	0
20	2	4	6	4.1%	100.0%	0	0	0	0	0	0
21			0	0.0%	100.0%	3	3	0	0	0	0
22			0	0.0%	100.0%	0	0	2	2	0	0
23			0	0.0%	100.0%	0	0	0	0	1	1
24			0	0.0%	100.0%	0	0	0	0	0	0
25			0	0.0%	100.0%	0	0	0	0	0	0
26			0	0.0%	100.0%	0	0	0	0	0	0
27			0	0.0%	100.0%	0	0	0	0	0	0
28			0	0.0%	100.0%	0	0	0	0	0	0
29			0	0.0%	100.0%	0	0	0	0	0	0
30			0	0.0%	100.0%	0	0	0	0	0	0
TOTALS	72	73	145			168	168	192	171	219	180
				GROWTH RATES		16%	16%	14%	2%	14%	5%
HMA/YR	Stewart Creek/06			Adult Populations		128	128	147	147	167	153

SR @ BIRTH				**AVERAGE SURVIVAL RATES**	
% FEM	50%	# 3-14	36	AGE CLASS	Average W/ out FC 147
AV AGE	5.1	#>0	125	0 0.700 1 0.850	Average W/ FC 142
% FEM	50%	% 3-14	27%	2 0.960 3 0.960	INSTRUCTIONS FOR USE: WHBIS is best source for developing a present Distribution. A recent gather can be used and adjusted as needed. The distribution used here should be the **POST GATHER TARGET (what do you want left)**. This plus removals should equal the present distribution. FR can be either calculated from % foals above or supplemented by Field observations. Foaling Rates with fertility control (FR w/ IC) are calculated based on the ({[100-expected efecacy] X %mares treated}X FR for herd) +(% mares not treated X FR for herd).
% <6	63%	NOTES		4 0.960 5 0.960	
% 6-9	21%	Assumes treatment of 1/2 released mares and average survival rates		6 0.960 7 0.960 8 0.960 9 0.960	
% 10 +	16%				
FOALING rate w/out IC. Enter .000	31%	31.00%		10 -14 0.900	
		16.90%		15 -19 0.760	
		18.00%		20+ 0.560	

AGE/SEX DISTRIBUTION					
	NUMBER	NUMBER	NUMBER	PER CENT	CUMULATIVE
AGE	FEMALES	MALES	OF ANIMALS	FOR AGE	PER CENT
0	34	36	70	24.1%	24.1%
1	20	22	42	14.5%	38.6%
2	15	16	31	10.7%	49.3%
3	13	14	27	9.3%	58.6%
4	11	12	23	7.9%	66.6%
5	2	7	9	3.1%	69.7%
6	7	7	14	4.8%	74.5%
7	8	8	16	5.5%	80.0%
8	5	5	10	3.4%	83.4%
9	6	6	12	4.1%	87.6%
10	2	2	4	1.4%	89.0%
11	1	2	3	1.0%	90.0%
12	2	4	6	2.1%	92.1%
13	2	3	5	1.7%	93.8%
14	1	2	3	1.0%	94.8%
15	1	1	2	0.7%	95.5%
16	1	2	3	1.0%	96.6%
17	2	4	6	2.1%	98.6%
18		1	1	0.3%	99.0%
19		1	1	0.3%	99.3%
20		1	1	0.3%	99.7%
21		1	1	0.3%	100.0%
22			0	0.0%	100.0%
23			0	0.0%	100.0%
24			0	0.0%	100.0%
25			0	0.0%	100.0%
26			0	0.0%	100.0%
27			0	0.0%	100.0%
28			0	0.0%	100.0%
29			0	0.0%	100.0%
30			0	0.0%	100.0%
TOTALS	133	157	290		

HMA	Lost Creek		**YEAR**	2006	
SR @ BIRTH					
(% FEM)	49%	# FEM 3-14	60		
AV AGE	4.4	#>0	220		
% FEM	46%	% FEM 3-14	21%		
% <6	70%	NOTES			
% 6-9	18%				
% 10 +	12%	pre gather estimate			

AGE/SEX DISTRIBUTION								
	NUMBER	NUMBER	NUMBER	PER CENT	CUMULATIVE			
AGE	FEMALES	MALES	OF ANIMALS	FOR AGE	PER CENT			
0	3	2	5	4.7%	4.7%			
1	8	7	15	14.2%	18.9%			
2	7	6	13	12.3%	31.1%			
3	6	5	11	10.4%	41.5%			
4	5	5	10	9.4%	50.9%			
5	3	5	8	7.5%	58.5%			
6	3	5	8	7.5%	66.0%			
7	2	4	6	5.7%	71.7%			
8	2	3	5	4.7%	76.4%			
9	2	3	5	4.7%	81.1%			
10	5	7	12	11.3%	92.5%			
11			0	0.0%	92.5%			
12			0	0.0%	92.5%			
13			0	0.0%	92.5%			
14			0	0.0%	92.5%			
15	1	1	2	1.9%	94.3%			
16			0	0.0%	94.3%			
17			0	0.0%	94.3%			
18			0	0.0%	94.3%			
19			0	0.0%	94.3%			
20	2	4	6	5.7%	100.0%			
21			0	0.0%	100.0%			
22			0	0.0%	100.0%			
23			0	0.0%	100.0%			
24			0	0.0%	100.0%			
25			0	0.0%	100.0%			
26			0	0.0%	100.0%			
27			0	0.0%	100.0%			
28			0	0.0%	100.0%			
29			0	0.0%	100.0%			
30			0	0.0%	100.0%			
TOTALS	49	57	106					
HMA	Lost Creek		**YEAR 06**					
SR @ BIRTH								
(% FEMALE)	60%	# FEM 3-14	28					
AV AGE	5.7	#>0	101					
% FEMALE	46%	% FEM 3-14	26%					
% <6	58%	NOTES						
% 6-9	23%							
% 10 +	19%							

AGE/SEX DISTRIBUTION										
	NUMBER	NUMBER	TOTAL	%	CUM	**EST**	**EST**	**EST**	**EST**	EST
AGE	FEMALES	MALES	ANIMALS	AGE	%	YR + 1	Y+ 2	Y+3	Y+4	Y+5
0	3	2	5	4.7%	4.7%	30	34	38	44	50
1	8	7	15	14.2%	18.9%	4	21	24	27	31
2	7	6	13	12.3%	31.1%	13	3	18	20	23
3	6	5	11	10.4%	41.5%	12	12	3	17	19
4	5	5	10	9.4%	50.9%	11	12	12	3	16
5	3	5	8	7.5%	58.5%	10	10	12	11	3
6	3	5	8	7.5%	66.0%	8	9	10	11	11
7	2	4	6	5.7%	71.7%	8	7	9	9	11
8	2	3	5	4.7%	76.4%	6	7	7	8	9
9	2	3	5	4.7%	81.1%	5	6	7	7	8
10	5	7	12	11.3%	92.5%	5	5	5	7	7
11			0	0.0%	92.5%	11	4	4	5	6
12			0	0.0%	92.5%	0	10	4	4	4
13			0	0.0%	92.5%	0	0	9	3	3
14			0	0.0%	92.5%	0	0	0	8	3
15	1	1	2	1.9%	94.3%	0	0	0	0	7
16			0	0.0%	94.3%	2	0	0	0	0
17			0	0.0%	94.3%	0	1	0	0	0
18			0	0.0%	94.3%	0	0	1	0	0
19			0	0.0%	94.3%	0	0	0	1	0
20	2	4	6	5.7%	100.0%	0	0	0	0	1
21			0	0.0%	100.0%	3	0	0	0	0
22			0	0.0%	100.0%	0	2	0	0	0
23			0	0.0%	100.0%	0	0	1	0	0
24			0	0.0%	100.0%	0	0	0	1	0
25			0	0.0%	100.0%	0	0	0	0	0
26			0	0.0%	100.0%	0	0	0	0	0
27			0	0.0%	100.0%	0	0	0	0	0
28			0	0.0%	100.0%	0	0	0	0	0
29			0	0.0%	100.0%	0	0	0	0	0
30			0	0.0%	100.0%	0	0	0	0	0
TOTA	49	57	**106**			125	143	163	185	212
					GROWTH %	18%	15%	14%	14%	14%

HMA	Lost Creek		**YEAR**	6						
					AVERAGE SURVIVAL RATES					
SR @ BIRTH					AGE CLASS					
% FE	60%	# 3-14	28							
					0	0.700				
AV A	5.7	#>0	101		1	0.850				
					2	0.960				
% FE	46%	% 3-14	26%		3	0.960				
					4	0.960				
% <6	58%	NOTES			5	0.960				
					6	0.960				
% 6-9	23%				7	0.960				
					8	0.960				
% 10	19%	Level Proposed in GP			9	0.960				
					10 -14	0.900				
FOALIN	31%				15 -19	0.760				
					20+	0.560				

AGE/SEX DISTRIBUTION										
	NUMBER	NUMBER	TOTAL	%	CUM	**EST**	**EST**	**EST**	**EST**	EST
AGE	FEMALES	MALES	ANIMALS	AGE	%	YR + 1	Y+ 2	Y+3	Y+4	Y+5
0	3	2	5	4.7%	4.7%	29	33	37	41	46
1	8	6	14	13.2%	17.9%	4	20	23	26	29
2	6	4	10	9.4%	27.4%	12	3	17	20	22
3	6	4	10	9.4%	36.8%	10	11	3	17	19
4	5	3	8	7.5%	44.3%	10	9	11	3	16
5	3	2	5	4.7%	49.1%	8	9	9	11	3
6	3	2	5	4.7%	53.8%	5	7	9	8	10
7	3	2	5	4.7%	58.5%	5	5	7	8	8
8	2	2	4	3.8%	62.3%	5	5	4	7	8
9	2	2	4	3.8%	66.0%	4	5	4	4	7
10	2	2	4	3.8%	69.8%	4	4	4	4	4
11	1	2	3	2.8%	72.6%	4	3	3	4	4
12	2	4	6	5.7%	78.3%	3	3	3	3	4
13	2	3	5	4.7%	83.0%	5	2	3	3	3
14	1	2	3	2.8%	85.8%	5	5	2	3	3
15	1	1	2	1.9%	87.7%	3	4	4	2	2
16	1	2	3	2.8%	90.6%	2	2	3	3	1
17	2	4	6	5.7%	96.2%	2	1	2	2	3
18		1	1	0.9%	97.2%	5	2	1	1	2
19		1	1	0.9%	98.1%	1	3	1	1	1
20		1	1	0.9%	99.1%	1	1	3	1	1
21		1	1	0.9%	100.0%	1	0	0	1	1
22			0	0.0%	100.0%	1	0	0	0	1
23			0	0.0%	100.0%	0	0	0	0	0
24			0	0.0%	100.0%	0	0	0	0	0
25			0	0.0%	100.0%	0	0	0	0	0
26			0	0.0%	100.0%	0	0	0	0	0
27			0	0.0%	100.0%	0	0	0	0	0
28			0	0.0%	100.0%	0	0	0	0	0
29			0	0.0%	100.0%	0	0	0	0	0
30			0	0.0%	100.0%	0	0	0	0	0
TOTALS	53	53	106			123	139	155	173	195
	Begin 1 yr or> POP		101		**GROWTH %**	16%	13%	12%	12%	12%
HMA			**YEAR**		POP	94	106	119	132	149

					AVERAGE SURVIVAL RATES					
SR @ BIRTH					AGE					
% FEM	60%	# 3-14	32		CLASS	RATE				
					0	0.700				
AV AGE	7.3	#>0	101		1	0.850				
					2	0.960				
% FEM	50%	% 3-14	30%		3	0.960				
					4	0.960				
% <6	49%	NOTES			5	0.960				
					6	0.960				
% 6-9	17%				7	0.960				
					8	0.960				
% 10 +	34%	no sale eligible removed			9	0.960				
					10 -14	0.900				
FOALING %	31%				15 -19	0.760				
					20+	0.560				

AGE/SEX DISTRIBUTION										
	NUMBER	NUMBER	TOTAL	%	CUM	**EST**	**EST**	**EST**	**EST**	EST
AGE	FEMALES	MALES	ANIMALS	AGE	%	YR + 1	Y+ 2	Y+3	Y+4	Y+5
0	3	2	5	4.7%	4.7%	30	34	39	45	51
1	10	8	18	17.0%	21.7%	4	21	24	27	31
2	8	7	15	14.2%	35.8%	15	3	18	20	23
3	6	6	12	11.3%	47.2%	14	15	3	17	20
4	5	6	11	10.4%	57.5%	12	14	14	3	16
5	3	5	8	7.5%	65.1%	11	11	13	14	3
6	3	5	8	7.5%	72.6%	8	10	11	13	13
7	2	4	6	5.7%	78.3%	8	7	10	10	12
8	2	3	5	4.7%	83.0%	6	7	7	9	10
9	2	3	5	4.7%	87.7%	5	6	7	7	9
10	3	4	7	6.6%	94.3%	5	5	5	7	7
11			0	0.0%	94.3%	6	4	4	5	6
12			0	0.0%	94.3%	0	6	4	4	4
13			0	0.0%	94.3%	0	0	5	3	3
14			0	0.0%	94.3%	0	0	0	5	3
15			0	0.0%	94.3%	0	0	0	0	4
16			0	0.0%	94.3%	0	0	0	0	0
17			0	0.0%	94.3%	0	0	0	0	0
18			0	0.0%	94.3%	0	0	0	0	0
19			0	0.0%	94.3%	0	0	0	0	0
20	2	4	6	5.7%	100.0%	0	0	0	0	0
21			0	0.0%	100.0%	3	0	0	0	0
22			0	0.0%	100.0%	0	2	0	0	0
23			0	0.0%	100.0%	0	0	1	0	0
24			0	0.0%	100.0%	0	0	0	1	0
25			0	0.0%	100.0%	0	0	0	0	0
26			0	0.0%	100.0%	0	0	0	0	0
27			0	0.0%	100.0%	0	0	0	0	0
28			0	0.0%	100.0%	0	0	0	0	0
29			0	0.0%	100.0%	0	0	0	0	0
30			0	0.0%	100.0%	0	0	0	0	0
TOTA	49	57	**106**			125	144	165	189	216
					GROWTH %	18%	15%	14%	14%	14%

HMA	Lost Creek		**YEAR**	6						
					AVERAGE SURVIVAL RATES					
SR @ BIRTH					AGE CLASS					
% FE	60%	# 3-14	26							
					0	0.700				
AV A	5.1	#>0	101		1	0.850				
					2	0.960				
% FE	46%	% 3-14	25%		3	0.960				
					4	0.960				
% <6	65%	NOTES			5	0.960				
					6	0.960				
% 6-9	23%				7	0.960				
					8	0.960				
% 10	12%	Remove all 13-18			9	0.960				
					10 -14	0.900				
FOALIN	31%				15 -19	0.760				
					20+	0.560				

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rawlins Field Office
P.O. Box 2407 (1300 North Third Street)
Rawlins, Wyoming 82301-2407

In Reply Refer To:
4700

June 20, 2006

Dear Interested Party:

The Rawlins Field Office (RFO) will be conducting a Wild Horse Population Management Action (PMA) in and adjacent to the Lost Creek and Stewart Creek Wild Horse Herd Management Areas (HMAs) sometime after August 15, 2006. This action will result in an adjustment of the current population in this area from approximately 595 to approximately 239. The purpose of this PMA is to achieve the Appropriate Management Level (AML) for the Lost Creek and Stewart Creek HMAs and to remove horses that have strayed from those two areas. These AMLs were established in 1994. Since then, the need to achieve and to maintain this wild horse population level has been re-examined several times. Item #6 of the Final Decision for EA # WY030-EA0-037 and item #6 of the Final Decision for EA# WY030-EA2-007 specifically reaffirmed this need and the procedures that would be followed in meeting that need (periodic gathers of excess horses in accordance with law and policy that would evolve, over time). The upcoming PMA in and adjacent to the Lost Creek and Stewart Creek HMAs will address that need. The PMA will be completed by a BLM contractor in accordance with a contract that will result in the completion of a number of planned, scheduled, gathers in HMAs throughout the Western States, including those adjacent to these two.

In arriving at the need for and then the specifics of this PMA, a detailed Gather Plan (GP) was developed. The specifics (dates, locations, numbers and kinds of horses to be retained/removed, methods to be employed, etc.) were analyzed and compared with the expected impacts of some alternative management approaches. EA# WY030-06-EA-165 contains that analysis and comparison. This letter serves to notify you of this and advise you how you may view these documents and submit any comments you might have between now and the time of the PMA via the internet. The documents are available for your viewing at http://www.wy.blm.gov/rfo/wh.htm (the gather Plan is Appendix A to the EA). If you do not have access to the internet, you may request a copy of the documents by writing to:

Mr. Chuck Reed
Bureau of Land Management
Rawlins Field Office
P.O. Box 2407
Rawlins, Wyoming 82301

APPENDIX C

Please request the EA# WY030-06-EA-165 and the Gather Plan for CY 2006.

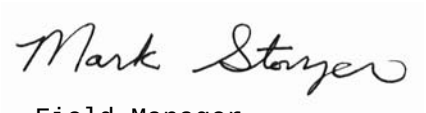
Comments may be addressed to the same address in writing or via e-mail at Chuck_Reed@blm.gov. Comments received prior to July 21, 2006, will be considered when arriving at the final decision. The decision will be available for your information at the same internet address given above.

Your comments are important and will be considered in the environmental analysis process. Please note that public comments submitted for this scoping review, including names, e-mail addresses, and street addresses of the respondents will be available for public review and disclosure at the above address during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays.

Individual respondents may request confidentiality. If you wish to withhold you name, e-mail address, or street address from public review or from disclosure under the Freedom of Information Act, you must state this plainly at the beginning of you written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Than you again for your interest in wild horse management in the Rawlins Field Office. If you have any questions regarding this, please contact Chuck Reed, Resource Advisor, at the address above or phone (307) 328-4213.

Sincerely,



Field Manager